Alexandra Beal

From: Southern Reception
Sent: Friday, 6 September 2019 2:47 PM
To: [redacted]
Cc: [redacted]
Subject: PROC – 9175995 Regional harvester set-up workshops for the economic optimisation of harvest losses, effi... [SEC=UNCLASSIFIED]
Attachments: PROC 9175995 - Final Letter - Primary Sales.pdf

Dear Mr Broley,

Please find attached the GRDC response to the, Primary Sales Pty Ltd, application for the procurement **PROC – 9175995 Regional harvester set-up workshops for the economic optimisation of harvest losses, efficiency and grain quality.** If you have any questions or queries please contact me on the number below or contact the Procurement Manager, Courtney Ramsey.

Warm Regards

Mark Waterhouse

Business Support Team
Southern Region

GRDC
GRAINS RESEARCH & DEVELOPMENT CORPORATION

[redacted]
W: www.grdc.com.au
E: southern@grdc.com.au

Grains Research and Development Corporation (GRDC)
Level 1, 187 Fullarton Road, Dulwich 5065, South Australia

Mr Peter Broley
CEO
Primary Sales Australia Pty Ltd

[redacted]

6 September 2019

Dear Mr Broley

Application in response PROC – 9175995 Regional harvester set-up workshops for the economic optimisation of harvest losses, efficiency and grain quality.

Thank you for your application in response to procurement above.

Your application has been evaluated against the selection criteria and following a detailed evaluation, we are pleased to advise you that Primary Sales Australia Pty Ltd has been selected as the preferred applicant.

The evaluation team were impressed with your well detailed approach to achieve the outputs and in particular your approach to training.

Please be reminded that the progression of this Application is Confidential Information to GRDC and is not a representation that a contract will be entered into between GRDC and your organisation.

We note that you provided us with a Compliance Statement in relation to our Standard Service Agreement and that you have agreed to comply with all the terms of that Agreement**.**

Please find attached a range of areas where GRDC would like to seek further information through future discussion. We will contact you shortly to arrange a suitable time to meet and discuss the details of this next stage.

If you have any queries in relation to the above, please feel free contact me on [redacted] or [redacted].

Yours sincerely

Courtney Ramsey
Grower Relations Manager – South
[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

REQUEST FOR TENDER

Terms and conditions

Version 3.0

TABLE OF CONTENTS

PART 1 – TENDER CONDITIONS

1 About this document

1.1 This RFT is made up of:

(a) The Cover Page;

(b) Parts 1 – 3 to this RFT which set out the terms and conditions applying to this RFT process; and

(c) The Draft Contract.

2 Definitions and interpretation

2.1 In this RFT, unless the contrary intention appears:

Term	Definition
Closing Time	means the time and date that Tenders for this RFT must be lodged as specified on the Cover Page.
Commonwealth Agency	means a body subject to the *Public Governance, Performance and Accountability Act 2013* (Cth).
Conditions for Participation	means the mandatory conditions identified in clause 31 of this RFT and any additional conditions for participation identified on the Cover Page with which a Tenderer must comply in order to participate in this RFT process. Conditions for Participation includes reference to "eligibility criteria".
Consortium	An association of two or more legal entities with the objective of responding to this RFT in accordance with clause 27. A reference to "Consortia" (plural) has the same meaning.
Cover Page	means the details of this RFT found on the GRDC website or attached to this RFT in relation to the Requirement.
CPRs	means the Commonwealth Procurement Rules from time to time issued under 105B(1) of the *Public Governance, Performance and Accountability Act 2013* (Cth).
Deadline for Submission of Tenderer Enquiries	means the date specified on the Cover Page.
Draft Contract	means the draft contract or deed for the Requirement identified on the Cover Page and attached to this RFT.
Evaluation Criteria	means the evaluation criteria identified in clause 33 of this RFT including details of the Technical Evaluation Criteria identified on the Cover Page that will be used to evaluate the Tenders. Evaluation Criteria includes reference
Grains Investment Portal	means the portal at **https://access.grdc.com.au**.
GRDC Contact	means the Document Contact and Enquiries on the Cover Page.
Industry Briefing	means, if specified on the Cover Page, an industry briefing to be held in respect of the Requirement conducted in accordance with clause 10.
Minimum Content and Format Requirements	means the mandatory content and format requirements identified in clause 32 of this RFT and any additional forms, attachments or templates identified on the Cover Page that the Tenderer must complete and provide as part of its Tender in order to participate in this RFT process.
Offer Period	means the period specified in clause 20 of this RFT or the Cover Page, whichever is the longest.
Requirement	means the description of GRDC's requirements detailed on the Cover Page and includes the objectives, expected outcomes and expected outputs required to meet the requirements.
RFT	means this document, including all schedules, attachments, or any other documents incorporated by reference, and any addenda issued by GRDC
Tender	means a response to this RFT submitted by a Tenderer via the method specified on the Cover Page.
Tenderer	means an entity or person which submits a Tender.

2.2 In this RFT, except where the contrary intention is expressed:

(a) a reference to time is to the time in the Australian Capital Territory;

(b) words importing a gender include each other gender;

(c) words in the singular include the plural and vice versa;

(d) if any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;

(e) a reference to a clause, paragraph, schedule or annexure is to a clause, paragraph, schedule or annexure to this RFT;

(f) a reference to a person includes a natural person, partnership, body corporate, association, governmental or local authority, agency or other entity;

(g) a reference to a statute, ordinance, code or other law includes regulations and other instruments under it and consolidations, amendments, re-enactments or replacements of any of them; and

(h) the meaning of general words is not limited by specific examples introduced by 'including', 'for example' or similar expressions.

2.3 To the extent of any inconsistency between any of the information in this RFT, the information will be interpreted in the following order of priority (with the first listed having the highest priority and the last listed having the least priority):

(a) The Cover Page to this RFT;

(b) This RFT;

(c) The Draft Contract; and

(d) Any other attachments forming part of this RFT.

3 Invitation to treat

3.1 This RFT is an invitation to treat, and to the extent permitted by law, no binding contract (including process contract) or other understanding on any basis whatsoever will exist between GRDC and a Tenderer unless and until a contract is signed by GRDC and any successful Tenderer.

3.2 To the extent permitted by law, GRDC has no liability to a Tenderer for any compensation on any basis whatsoever in connection with that Tenderer's participation in this RFT.

3.3 Clause 3.1 does not apply to any confidentiality deed or undertaking executed by a Tenderer in respect of its participation in this RFT.

3.4 GRDC will not be responsible for any costs or expenses incurred by any Tenderer in preparation or lodgement of a Tender or taking part in this RFT (including the Tenderer complying with any subsequent requests for information from GRDC or negotiations with GRDC).

4 Approach to market

4.1 GRDC uses AusTender, the online tendering system for Australian Government agencies, to publish notifications of any approach to market that it may issue in relation to an open tender process, including details about accessing RFT documents.

5 RFT download on GRDC website

5.1 All RFT documents are made available, and can be accessed for download, in the "Current Tenders" section on the GRDC website. The "Current Tenders" section can be accessed at the following address:

https://grdc.com.au/Apply/Current-Tenders

6 Enquiries about this RFT

6.1 All enquiries in relation to this RFT must be:

(a) in writing to the GRDC Contact; and

(b) submitted no later than the Deadline for Submission of Tenderer Enquiries.

6.2 GRDC may in its sole and absolute discretion answer, or decline to answer, any communication received from a Tenderer.

7 Errors, addenda and notices by GRDC

7.1 In the event that GRDC varies or supplements this RFT, it will notify potential Tenderers via the GRDC website by posting an addendum notice on the "Current Tenders" section on the GRDC website.

7.2 GRDC will accept no responsibility if a Tenderer is unaware of any addendum notice which would have been apparent from a visit to the "Current Tenders" section on the GRDC website.

7.3 Each addendum forms part of this RFT upon issue.

7.4 If a Tenderer finds or reasonably believes it has found any discrepancy, error, ambiguity, inconsistency, omission or misleading statement (**error**) in this RFT, or in any other information given or made available by GRDC, the Tenderer must promptly notify the GRDC Contact in writing setting out the error in sufficient detail. Any consequential amendment of this RFT or information provided by GRDC will be made available to all Tenderers in accordance with this clause 7.

8 GRDC's rights

8.1 Without limiting its other rights under this RFT, at law or otherwise GRDC may, in its absolute discretion:

(a) vary the terms of this RFT, or the structure, requirements or process referred to in this RFT;

(b) vary the timing referred to in this RFT;

(c) determine, at any stage after the Closing Time, a shortlist of Tenders on any basis that GRDC considers appropriate;

(d) suspend, defer or terminate this RFT process for any reason including where GRDC determines that:

(i) it is in the public interest to do so;

(ii) GRDC is required by law to do so;

(iii) no Tenderer represents value for money;

(iv) no Tenderer meets the Conditions of Participation; or

(v) no Tenderer is fully capable of undertaking the Requirement,

and GRDC will notify Tenderers to this effect,

(e) provide additional information to all Tenderers at any time (and if the information is provided after the Closing Time, allow the submission of revised Tenders);

(f) cancel or amend the information or requirements set out in this RFT;

(g) seek additional information or clarification from any Tenderer (including its subcontractors or agents);

(h) seek and/or contact any contacts or referees other than those proposed by Tenderers;

(i) conduct other stages such as offer definition and improvement activities or requests for best and final offers;

(j) select and negotiate with more than one Tenderer;

(k) enter into a contract on terms different to those in the Draft Contract; and

(l) exclude a Tenderer from further participation in this RFT process:

(i) if the Tender is incomplete or clearly non-competitive; or

(ii) a representation or warranty given by the Tenderer in its Tender is false or misleading.

9 Disclaimer

9.1 GRDC will not be liable to a Tenderer on the basis of any promissory estoppel, quantum meruit or other contractual, quasi contractual or restitutionary grounds whatsoever or in negligence as a consequence of any matter relating or incidental to the Tenderer's participation in this RFT process including instances where:

(a) the Tenderer is not invited to participate in any subsequent process following completion of this RFT process;

(b) GRDC varies or terminates this RFT process;

(c) GRDC decides not to contract for all or any of the requirements; or

(d) GRDC exercises or fails to exercise any of its rights under or in relation to this RFT.

10 Industry Briefing

10.1 If specified on the Cover Page, an Industry Briefing may be conducted in relation to the Requirement and in accordance with this clause 10.

10.2 Unless otherwise specified on the Cover Page, representatives of prospective Tenderers at any Industry Briefing will be limited to two personnel. In relation to a proposed Consortium Tender, the number of representatives will be limited two personnel of the lead Tenderer.

10.3 Nominations to attend the Industry Briefing are to be forwarded in writing to the Document Contact and Enquiries by the date specified in the Cover Page or as notified by GRDC. The following details are required:

(a) Tenderer's name and location; and

(b) full name of each of the Tenderer's representatives.

10.4 Industry Briefings are conducted for the purpose of providing background information only. Tenderers should note the effect of clauses 7, 13 and 23. Tenderers should not rely on a statement made at any Industry Briefing as amending or adding to this RFT unless that amendment or addition is confirmed by GRDC in writing.

11 Application of laws and Commonwealth policies

11.1 Each Tenderer should familiarise itself with all relevant Commonwealth legislation relating to the provision of the Requirement including:

(a) the *Public Governance, Performance and Accountability Act 2013* and associated delegated legislation;

(b) the *Primary Industries Research and Development Act 1989*;

(c) the *Crimes Act 1914*;

(d) the *Criminal Code*, in particular Chapter 7 which provides:

(i) for offences that attract substantial penalties (these offences include theft of Commonwealth property and other property offences, obtaining property or financial advantage by deception, offences involving fraudulent conduct, bribery, forgery and falsification of documents); and

(ii) that giving false or misleading information is a serious offence;

(e) the *Archives Act 1983*;

(f) the *Ombudsman Act 1976*;

(g) the *Modern Slavery Act 2018*;

(h) work health and safety laws;

(i) the Protective Security Policy Framework published by the Attorney-General's Department; and

(j) any other Commonwealth legislation, policies and guidelines applicable to the provision of the Requirement.

11.2 Tenderers must comply with any obligations applicable to them contained in the legislation arising from the *Anti-Money Laundering and Counter-Terrorism Financing Act 2006* (Cth).

11.3 Tenderers' attention is drawn to the obligations under Part 4 of the *Charter of United Nations Act 1945* (Cth) and the *Charter of United Nations (Terrorism and Dealing with Assets) Regulations 2002*. These laws require any person who holds assets or funds belonging to a person or organisation on the list of persons and entities designated as terrorists to immediately freeze those assets. It is an offence to make any funds or assets available to a person or organisation on the list. The list and more information are available at: http://dfat.gov.au/international relations/security/sanctions/pages/consolidated-list.aspx

11.4 Tenderers should be aware that, in accordance with the CPRs, GRDC will not enter into a contract with a Tenderer that has had a judicial decision against it (not including decisions under appeal) relating to employee entitlements and who have not paid the claim.

11.5 The Australian National Audit Office

(a) The attention of Tenderers is drawn to the *Auditor-General Act 1997* (Cth) (the **Auditor-General Act**), which gives the Auditor-General or an authorised person a right to have, at all reasonable times, access to information, documents and records (including information provided by Tenderers to GRDC in its Tender or through a Tenderer's participation in this RFT).

(b) In addition to the Auditor-General's powers under the Auditor-General Act, the Draft Contract contains a right of access by the Auditor- General, or an authorised person, to information, documents, records and GRDC's assets, including those on the Tenderer's (and any subcontractor) premises at reasonable times on reasonable notice for the purpose of carrying out the Auditor- General's functions. The right of access is restricted to information and assets which are in the custody or control of the Tenderer or its employees, agents or subcontractors, and which are related to the contract. Such access applies for the term of the contract and for seven (7) years after its expiry or termination.

(c) Tenderers should obtain, and will be deemed to have obtained, their own advice on the impact of the Auditor-General Act on its participation in this RFT process and any subsequent contract.

11.6 Privacy Legislation

(a) The *Privacy Act 1988* (Cth) (**Privacy Act**) establishes a national scheme providing for the appropriate collection, holding, use, correction, disclosure and transfer of personal information by public and private sector organisations.

(b) The Draft Contract requires the compliance with the Privacy Act.

(c) Tenderers should obtain, and will be deemed to have obtained, their own advice on the impact of the Privacy Act on their participation in this RFT process and any subsequent contract.

11.7 Disclosure of Information

(a) The *Freedom of Information Act 1982* (Cth) (**FOI Act**) gives members of the public rights of access to documents in the possession of the Australian Government and its agencies. The FOI Act extends as far as possible the right of the Australian community to access information (generally documents) in the possession of the Australian Government, limited only by exceptions and exemptions necessary for the protection of essential public interests and of the private and business affairs of persons in respect of whom information is collected and held by departments and public authorities.

(b) Each Tenderer should obtain, and will be deemed to have obtained, its own advice on the impact of the FOI Act and all other relevant legislation on its participation in this RFT process and any subsequent contract. All sensitive and business information or other confidential data which a Tenderer provides in its Tender and considers should be exempt from disclosure under the FOI Act, should be clearly indicated in the Tenderer's Tender.

(c) Tenderers should be aware that, in order to enhance transparency, GRDC will make available on request the names of any subcontractor engaged by a successful Tenderer to provide any part of the Requirement. Consequently, Tenderers agree to:

(i) the public disclosure of the names of any subcontractors engaged under any resultant contract in respect of the Requirement; and

(ii) inform relevant subcontractors that the names of subcontractors engaged under any resultant contract in respect of the Requirement may be publicly disclosed.

(a) GRDC is obliged to report, through various mechanisms, information about the contract. This includes, for instance, GRDC's obligations with respect to:

(i) contracts above the reporting threshold for corporate Commonwealth entities in line with the requirements set out in the CPRs; and

(ii) its other reporting and disclosure obligations (including annual reporting requirements, disclosure to Parliament and its Committees and so on).

11.8 Workplace Gender Equality

(a) Where the Tenderer is currently named as not complying with the *Workplace Gender Equality Act 2012* (Cth), GRDC will exclude its Tender from further consideration.

12 Applicable law

12.1 The laws of the Australian Capital Territory apply to this RFT process.

PART 2 – PREPARATION AND LODGEMENT OF TENDERS

13 Tenderer to inform itself

13.1 The Tenderer acknowledges that it is deemed to have:

(a) examined this RFT, any documents referred to in it, and any other information made available in writing by GRDC to Tenderers for the purpose of lodging a Tender;

(b) examined all further information which is obtainable by the making of reasonable enquiries relevant to the risks, contingencies and other circumstances having an effect on its Tender;

(c) satisfied itself as to the correctness and sufficiency of its Tender, including its fees, rates or prices;

(d) obtained independent advice on the effect of all relevant legislation in relation to the Tenderer's participation in this RFT; and

(e) satisfied itself as to the terms and conditions of the Draft Contract and its ability to comply with those terms and conditions.

13.2 The Tenderer must:

(a) not rely on any representation, letter, document or arrangement, whether oral or in writing, or other conduct as adding to or amending this RFT other than addenda in accordance with clause 7;

(b) not rely upon any warranty or representation made by or on behalf of GRDC, except as expressly provided for in this RFT; and

(c) rely entirely upon its own inquiries and inspection in respect of the subject of its Tender.

14 Electronic lodgement

14.1 Tenders must be lodged and completed electronically in accordance with the method stipulated on the Cover Page before the Closing Time and in accordance with the Tender lodgement procedures set out in this RFT.

14.2 Tenders lodged through the Grains Investment Portal will be deemed to be authorised by the Tenderer named on that Tender.

14.3 Unless specified otherwise in the Cover Page, a Tender submitted by any other means including by email, hand or fax, will not be accepted by GRDC.

15 Preparing to lodge a Tender

15.1 The Tenderer warrants that, when it lodges its Tender through the method stipulated in the Cover Page, it has taken reasonable steps to ensure that any electronic files that form part of the Tender are free of viruses, malicious code or other disabling features which may affect GRDC's ICT environment. Any Tender found to contain viruses, malicious code or other disabling features will not be considered by GRDC.

15.2 Tenders must not contain macros, script or executable code of any kind unless that specific material has previously been approved in writing by GRDC.

15.3 Tenders must be completely self-contained. No hyperlinked or other material may be incorporated by reference.

16 Proof of lodgement

16.1 Where Tenders are submitted via the Grains Investment Portal, Tenderers will receive an on-screen message that their Tender lodgement has been successful, as well as an Application ID number.

16.2 Failure to receive the on-screen message referred to in clause 16.1 means that Tender lodgement has not been successful.

17 Tenderer's acknowledgement

17.1 Tenderers acknowledge that:

(a) lodgement of their Tender on time and in accordance with this RFT is entirely their responsibility;

(b) by lodging a Tender, the terms and conditions in this RFT apply to their Tender; and

(c) GRDC will not be liable for any loss, damage, costs or expenses incurred by Tenderers or any other person if, for any reason, a Tender or any other material or communication relevant to this RFT, is not received on time, is corrupted or altered or otherwise is not received as sent, cannot be read or decrypted, or has its security or integrity compromised.

18 Late Tender policy

18.1 Any Tender lodged after the Closing Time or received after the Closing Time will be deemed to be a late Tender. GRDC will not accept a late Tender, unless the Tender is late solely because of GRDC's own mishandling.

18.2 Notwithstanding clause 18.1, Tenderers are responsible for ensuring their infrastructure, including operating system and browser revision levels, is sufficient to enable it to lodge a Tender before the Closing Time. GRDC does not take any responsibility for any problems arising from the Tenderer's infrastructure and/or internet connectivity.

18.3 Late Tenders and incomplete Tenders, including those with electronic files that cannot be read or decrypted, will not be considered.

19 Corrections by a Tenderer after lodgement

19.1 If, after lodgement of a Tender but before the Closing Time, a Tenderer becomes aware of any discrepancy, error or omission in its Tender and wishes to lodge a correction or additional information, it must resubmit its whole Tender in accordance with this RFT, clearly stating that the Tender is a replacement Tender. If more than one Tender has been submitted by a Tenderer, GRDC will evaluate the Tender lodged at the latest date and time.

19.2 No correcting of Tenders or additional information will be accepted after the Closing Time, unless specifically requested by GRDC in accordance with this RFT.

20 Offer Period and acceptance of offers

20.1 Lodging a Tender will constitute an offer in accordance with this RFT by the Tenderer for a period of not less than 6 months after the Closing Time (**Offer Period**).

20.2 Any such offer is not taken to have been accepted unless a formal contract has been executed by the Tenderer and GRDC on the basis of the Draft Contract (or on different terms as determined by GRDC).

20.3 Any notice by GRDC to the Tenderer that it is, or is not, a preferred or successful Tenderer does not constitute an acceptance or rejection of the Tenderer's offer.

21 Request by GRDC for clarification

21.1 If GRDC requires clarification of information contained in a Tender, it will request clarification from the Tenderer in writing. GRDC may elect not to accept information provided in response to a request for clarification if that information alters the original Tender in any material respect. If the Tenderer fails to supply clarification to the satisfaction of GRDC, GRDC may exclude the Tender from further consideration.

21.2 Tenderers should:

(a) respond to any request for clarification within the time period and in the format specified by GRDC;

(b) ensure that clarifying information provides answers to GRDC's enquiry and is fully consistent with the Tender submitted by the Tenderer; and

(c) not seek to materially alter any aspect of their Tender by providing additional information to GRDC.

22 Unintentional errors of form

22.1 If GRDC considers that there are unintentional errors of form in a Tender, including a Tenderer's failure to comply with the Minimum Content and Format Requirements or to explicitly address the Conditions for Participation, GRDC may, in its absolute discretion and without having any obligation to do so, allow the Tenderer to correct or clarify the error or provide additional information.

22.2 A Tenderer must not seek to materially alter, change or amend its Tender response as a result of any clarification or additional information requested by GRDC under this clause 22.

22.3 GRDC may also, in its absolute discretion, decline to accept any correction or additional information if it considers that to accept it would create unfairness in this RFT process.

22.4 If GRDC gives a Tenderer an opportunity to correct an unintentional error of form it will provide the same opportunity to all Tenderers to the extent that it is applicable to all Tenderers.

22.5 An unintentional error of form is an error that GRDC is satisfied:

(a) represents incomplete information not consistent with the Tenderer's intentions and, if relevant, capabilities at the time the Tender was lodged; and

(b) does not materially affect the competitiveness of the Tenderer's bid.

23 Confidentiality

23.1 For the purposes of this clause 23, **Confidential Information** means:

(c) information that is by its nature confidential; and

(d) is designated by a party as confidential; or

(e) a party knows or ought to know is confidential,

but does not include:

(f) information which is or becomes public knowledge other than by breach of this RFT or any other confidentiality obligation.

23.2 Each Tenderer will:

(a) ensure that all of its employees, agents or sub-contractors involved in meeting GRDC's requirements do not either directly or indirectly record, divulge or communicate to any person any Confidential Information concerning the affairs of GRDC, the Commonwealth or a third party acquired or obtained in the course of preparing a Tender, or any documents, data or information provided by GRDC and which GRDC indicates to the Tenderer is confidential or which the Tenderer knows or ought reasonably to know is confidential;

(b) keep confidential, and not disclose, any information (other than information that is in the public domain or where disclosure is to another Tenderer that is a member of a Consortium which is preparing a Tender in accordance with clause 26), that GRDC provides during this RFT process; and

(c) if requested by GRDC, provide confidentiality undertakings in a form specified by GRDC and arrange for its applicable employees, agents or sub-contractors to also provide such undertakings.

23.3 GRDC will keep confidential any Confidential Information provided to GRDC by Tenderers prior to the award of any contract and, in respect of unsuccessful Tenderers, after the contract is awarded.

23.4 The obligation of confidentiality in clause 23.3 does not apply if the Confidential Information:

(a) is disclosed by GRDC to its advisers, officers, employees or subcontractors solely in order to conduct this RFT process or manage any resulting contract;

(b) is disclosed to GRDC's internal management personnel, solely to enable effective management or auditing of this RFT process or any resulting contract;

(c) is disclosed by GRDC to the responsible Minister;

(d) is disclosed by GRDC in response to a request by a House or a Committee of the Parliament of the Commonwealth of Australia;

(e) is shared by GRDC within the Commonwealth, or with a Commonwealth Agency, where this serves the Commonwealth's legitimate interests including for audit purposes;

(f) is authorised or required by law to be disclosed;

(g) is in the public domain otherwise than due to a breach of the relevant obligations of confidentiality; or

(h) is disclosed with the written consent of the Tenderer.

23.5 GRDC operates within a governance and public accountability framework established under legislation which requires GRDC to minimise the amount of information that is subject to confidentiality requirements. GRDC may agree to keep confidential any specific information provided under, or in connection with, the contract where GRDC considers it appropriate to do so.

23.6 To enable GRDC to consider whether it agrees to keep specific information confidential, Tenderers should include in their Tenders any request that information is to be treated as confidential following the awarding of a contract to it, specifying the information and giving reasons why it is necessary to keep the information confidential. In making a request under this clause 23.6, Tenderers should have regard to the Australian Government's 'Confidentiality Test' relevant to confidentiality throughout the procurement cycle that can be found on the Department of Finance website.

23.7 GRDC will consider any request made under clause 23.6 and will inform the Tenderer whether or not GRDC, in its absolute discretion, agrees to the request and the terms under which it agrees.

23.8 The terms of any agreement under clause 23.7 will form part of any resultant contract to be awarded at the completion of this RFT process.

24 Conflict of interest

24.1 Each Tenderer agrees to immediately notify GRDC in writing if the Tenderer becomes aware of an actual, potential or perceived conflict of interest at any time before the completion of this RFT process, which is not fully disclosed in its Tender.

24.2 In the event of an actual, potential or perceived conflict of interest, GRDC may in its absolute discretion, do any or all of the following:

(a) enter into discussions with the Tenderer to seek to resolve and / or manage the conflict of interest;

(b) exclude the Tender from further consideration (including terminating any contract negotiations); or

(c) take any other action which it considers appropriate.

25 Use of Tenders

25.1 All Tenders lodged in response to this RFT will become the property of GRDC.

25.2 Intellectual property owned by the Tenderer or third parties in material contained in the Tender will not pass to GRDC. However, GRDC may use, reproduce and circulate on a royalty free, perpetual and irrevocable basis any material contained in the Tender, or provided by the Tenderer in response to this RFT, to the extent necessary to conduct this RFT process and in the preparation of any contract if the Tenderer is successful.

26 Ethical dealing

26.1 GRDC's policy is to engage in the highest standards of ethical behaviour and fair dealing throughout this RFT process. GRDC requires the same standards from those with whom it deals.

26.2 Tenders must be compiled without improper assistance of employees or former employees of GRDC and without the use of information improperly obtained or in breach of an obligation of confidentiality.

26.3 The Tenderer must not:

(a) lodge a Tender that contains false or misleading claims or statements or engage in misleading or deceptive conduct in relation to this RFT process;

(b) engage in collusive tendering, anti-competitive conduct or any other similar conduct with any other Tenderer or any other person in connection with this RFT process; or

(c) attempt to influence improperly any officer, employee or agent of GRDC, or violate any applicable laws or GRDC or Commonwealth policies regarding the offering of inducements in connection with this RFT process.

26.4 GRDC may exclude from consideration any Tender lodged by a Tenderer that, in GRDC's reasonable opinion, has engaged in any behaviour contrary to this clause 26 in relation to this RFT process.

27 Consortia

27.1 GRDC will not consider a joint or consortium response other than a response submitted in accordance with this clause 27**Error! Reference source not found.**.

27.2 Unless otherwise provided in the Cover Page, GRDC will not consider Consortia responses.

27.3 Without limiting GRDC's rights, GRDC's preference is to enter into a contract with a single legal entity that will take full responsibility for the performance of the Requirement on behalf of any proposed Consortium.

27.4 If a Tenderer intends to submit a Consortium response for the Requirement, the Consortium Tender is to:

(a) include the details for each member of the proposed Consortium;

(b) describe in detail the relationship between each member of the Consortium and the structure proposed for management of the Consortium, including nominating a single point of contact for all communications in relation to this RFT;

(c) provide that each member of the Consortium will be jointly and severally liable for the performance of all members of the Consortium under any resultant contract or that one member of the Consortium will be fully liable for the performance of all members of the Consortium; and

(d) include such other information that GRDC requires to undertake a risk assessment of the proposed Consortium Tender.

27.5 A reference to Tenderer in this RFT is a reference to each member of any proposed Consortium, unless the Tender clearly states that the Consortium is a single legal entity established for this RFT.

28 Alternative solutions

28.1 Alternative solutions will only be considered where the Tenderer also provides in its Tender a response that conforms to the requirements of this RFT.

28.2 Where an alternative solution is proposed, the Tenderer should:

(a) separately identify, in detail, the proposed alternative approach or solution;

(b) justify the proposed alternative approach or solution with explicit reasons;

(c) demonstrate that the alternative approach is more beneficial that the approach specified in this RFT; and

(d) explain the financial impact (specifically including the impact on cost) and any other consequences of the proposed alternative approach or solution relative to the conforming approach.

29 Complaints

29.1 In the event Tenderers wish to lodge a complaint regarding this RFT, the complaint is to be submitted via https://grdc.com.au/about/contact-us. Tenderers should refer to the GRDC Complaints Handling Procedure: https://grdc.com.au/about/who-we-are/corporate-governance/accountability. On the request of GRDC, Tenderers are to cooperate with GRDC in the resolution of any complaint regarding this RFT.

PART 3 – THE EVALUATION PROCESS

30 Evaluation and process

30.1 Tenders will be evaluated on the basis of best value for money consistent with the CPRs, utilising the Evaluation Criteria and any other information available to GRDC.

30.2 GRDC may at any time during this RFT process:

(a) request presentations to be provided by Tenderers in respect of their Tenders;

(b) obtain additional information (whether that information is obtained through this RFT process or by any other means) relevant to the Tenderer's Tender;

(c) use material tendered in response to one evaluation criterion in the evaluation of other criteria;

(d) seek clarification or additional information from, and enter into discussions with, any or all of the Tenderers in relation to their Tenders;

(e) shortlist one or more Tenderers; or

(f) conduct offer definition and improvement activities or seek best and final offers.

31 Conditions for Participation

31.1 The Conditions for Participation for this RFT are as follows:

(a) The Tenderer must be a single legal entity or recognised firm of partners;

(b) The Tenderer and any proposed subcontractor must be compliant with the *Workplace Gender Equality Act 2012* (Cth);

(c) The Tenderer and any subcontractor must not have a judicial decision against it (not including decisions under appeal) relating to employee entitlements and who have not paid the claim;

(d) The Tenderer and any subcontractor must not be named on the Consolidated List, being the list of persons and entities who are subject to targeted financial sanctions or travel bans under Australian sanction laws, as maintained by the Department of Foreign Affairs and Trade;

(e) If indicated on the Cover Page and in accordance with the Black Economy Procurement Connected Policy, a Tenderer must also include as part of its Tender a satisfactory and valid Statement of Tax Records (**STR**) and, if the total value of all work under any proposed subcontract is expected to exceed $4 million (inclusive of GST), a satisfactory and valid STR of that proposed subcontractor; and

(f) If indicated on the Cover Page, any other Conditions for Participation relating to this RFT.

31.2 Subject to clause 22, GRDC will exclude a Tender from further consideration if GRDC considers that the Tenderer does not comply with the Conditions for Participation.

32 Minimum Form and Content Requirements

32.1 The Minimum Form and Content Requirements for this RFT are as follows:

(a) Tenders must be submitted using the method specified on the Cover Page;

(b) Tenders must be written in English and any measurements must be expressed in Australian legal units of measurement; and

(c) If indicated on the Cover Page, Tenderers must ensure that their Tenders include any other forms and templates to be completed by the Tenderer as part of its Tender (e.g. pricing spreadsheets or confidentiality deeds etc.).

32.2 Subject to clause 22, GRDC will exclude a Tender from further consideration if GRDC considers that the Tender does not comply with any of the Minimum Content and Format Requirements.

33 Evaluation Criteria

33.1 The Evaluation Criteria to be applied for the purposes of evaluation of Tenders are as follows:

No.	Evaluation Criteria
1	Technical – The extent to which the Tender meets the technical requirements *Note: Details of the sub-criteria relating to the Technical Evaluation Criterion are specified on the Cover Page to this RFT.*
2	Price – The tendered price
3	Risk – Any risks inherent in the Tender including the degree of compliance with the Draft Contract and any actual or perceived conflict of interest
4	The following Evaluation Criterion applies if this RFT is valued above $4 million (GST inclusive): **Australian economy** - the economic benefit of the procurement to the Australian economy (unweighted)

33.2 Evaluation Criteria 2, 3 and, where applicable, 4 are unweighted.

34 Draft Contract

34.1 If a Tenderer does not intend to fully comply with any clause of the Draft Contract, it is to state its non-compliances in the Statement of Compliance in the form provided in the Grains Investment Portal or as otherwise specified on the Cover Page. Tenderers are to include details of:

(a) the extent, justification and impact of compliance; and

(b) details of any proposed drafting amendments.

34.2 A Tenderer will be deemed to be fully compliant with any clause not listed in the Statement of Compliance.

35 Shortlisting

35.1 GRDC may shortlist Tenderers based on the assessment of value for money. If it does so, Tenderers will be advised accordingly and shortlisted Tenderers may be invited to provide further information, including through an interview or presentation, on their Tenders to GRDC.

36 Preferred Tenderer status

36.1 GRDC may select a Tenderer as preferred Tenderer, but such selection:

(a) does not affect or limit GRDC's rights or the Tenderer's obligations under this RFT; and

(b) is not a representation that any contract will be entered into between GRDC and that Tenderer, and GRDC may recommence or commence negotiations under this RFT with any other Tenderer whether or not a Tenderer has been selected as preferred Tenderer.

37 Negotiations

37.1 GRDC may engage one or more Tenderers in negotiations, which may involve:

(c) Tenderers being asked to review, clarify, improve or consolidate any of the technical, commercial, legal, financial and operational aspects of their Tenders; or

(d) enter into an agreement with GRDC relating to the terms of the detailed engagement with that Tenderer.

37.2 Without limiting its other rights under this RFT, if in GRDC's view during final negotiations the preferred Tenderer has retracted, or attempts to retract, agreements under which material business, financial, technical and legal issues were resolved during negotiations or parallel negotiations, GRDC may reject the preferred Tenderer's Tender, discontinue negotiations with that Tenderer, re-enter negotiations or parallel negotiations with other Tenderers (including or excluding the successful Tenderer), and exercise any other right GRDC has under this RFT, at law or otherwise.

38 Security, probity and financial checks

38.1 GRDC may perform such security, probity and financial investigations and procedures as GRDC may determine are necessary in relation to any Tenderer, its employees, officers, partners, associates, subcontractors or related entities including Consortium members and their officers, employees and subcontractors.

38.2 A Tender may be rejected by GRDC if the Tenderer does not provide, at its cost, all reasonable assistance to GRDC in this regard.

39 Debriefing of unsuccessful Tenderers

39.1 Tenderers will be notified whether they have been successful or unsuccessful and may request a Tender debriefing. Tenderers requiring a debriefing should follow the instructions provided in any notice.

39.2 Tenderers who request a debrief will receive feedback relating to their Tenders against the Evaluation Criteria.

Harvester Setup Workshops

Run Sheet – Mungindi, Spring Ridge and Collie

27th September 2021		
Location: 'Cleveland' Cleveland Road via Mungindi		
	Activity	Who
7:30 – 8:00	Audio/Visual, Zoom, Systems Check, etc	Andrew B & Jo Weier
8:00 – 8:30	**Registration Process** • COVID Safe Check-in • Coffee & Tea	Jo Weier
8:30 – 8:40	**Welcome and Introduction** • Purpose of the Event – Interactive event focusing on minimising harvest losses, harvest weed seed control and fire suppression. The event is starting a conversation to increase knowledge whilst establishing a broader network of experts for farmers to engage with in relation to optimising their management practices and equipment. • Describe the Agenda • Presenter Introductions – Peter Broley, Ben White, Brett Asphar, Rod Gribble, etc	Jo Weier
8:40 - 9:00	**Harvest Loss & Measurement** Introduction / Setting the Scene	Peter Broley/Rod Gribble

	• Why Harvest loss is important (also why it works with HWSC) • Data on harvest loss • Stories on harvest loss measurement (about productivity) • What are the elements of harvest losses - header front and harvester (sieve, rotor) loss • Introduction to drop trays and GRDC calculators, etc (safety etc).	(using Peter Newman presentation/ research on harvest loss)
9:00 – 9:30	**Front-end Losses** • Virtual presentation on 'Front-end Losses.' Why does this occur? What options are available to reduce front loss? • Facilitated discussion – What front-loss are we seeing in the district? What crops are they having challenges with? What have people tried to minimise front loss?	Ben White Jo Weier/Rod Gribble
9:30 - 10:00	**Harvester - Rotor Losses (increasing performance and reducing losses)** • Virtual presentation on 'what do you do to reduce Rotor Losses and increase performance' including "stories from the west." • Facilitated discussion – What does this mean for NSW? How does it apply to our crop suite?	Brett Asphar Rod Gribble
10:00 – 10:30	**Sieve Losses & Measurement** • Explanation and demonstration of the drop tray system	Rod Gribble

	• Facilitated discussion – What are people's experiences? How are they measuring? What are they changing to reduce loss and maintain productivity?	Jo Weier/Rod Gribble
10:30 - 11:00	**Morning Tea**	
11:00 – 12:00	**Harvest Weed Seed Control** • Why harvest weed seed control • What are the systems (i.e. mill systems, chaff decks and windrow/chaff lining and how do they work) • Cost of HWSC • Update on Mill technologies and specifically Seed Terminator technology. • Facilitated discussion on technologies available and where it's being deployed. Provide further information to attendees on future contact points.	Michael Walsh Brett Asphar Jo Weier/Brett Asphar/ Keagan Grant/Warrick Finlay (Virtual)
12:00 – 12:30	**Harvest Fires/Fire Suppression** • Introduction to the topic – causes, costs and minimisation strategies. Make available the GRDC Pocket Guides • Facilitated discussion examining what locals are doing today, how do they a build a robust plan and share with their neighbours.	Ben White Jo Weier/Rod Gribble
12:30 - 12:45	**Bringing it Together** • Recap of the days session – key messages, opportunities and challenges • Further questions and comments • Completion of feedback sheets	Jo Weier/Rod Gribble
13:30	Rod Gribble travels to Quirindi 373 km (4 hours and 22 minutes)	Accommodation Sunflower Motor Inn

28th September 2021		
Location: 'The Point' Spring Ridge		
	Activity	Who
7:30 – 8:00	Audio/Visual, Zoom, Systems Check, etc	Andrew Bulkeley
8:00 – 8:30	**Registration Process** • COVID Safe Check-in • Coffee & Tea	Peter McKenzie/Andrew Bulkeley
8:30 – 8:40	**Welcome and Introduction** • Purpose of the Event – Interactive event focusing on minimising harvest losses, harvest weed seed control and fire suppression. The event is starting a conversation to increase knowledge whilst establishing a broader network of experts for farmers to engage with in relation to optimising their management practices and equipment. • Describe the Agenda • Presenter Introductions – Peter Broley, Ben White, Brett Asphar, Rod Gribble, etc	Peter McKenzie
8:40 - 9:00	**Harvest Loss & Measurement** Introduction / Setting the Scene • Why Harvest loss is important (also why it works with HWSC) • Data on harvest loss • Stories on harvest loss measurement (about productivity)	Peter Broley/Rod Gribble (using Peter Newman presentation/ research on harvest loss)

	• What are the elements of harvest losses - header front and harvester (sieve, rotor) loss • Introduction to drop trays and GRDC calculators, etc (safety etc).	
9:00 – 9:30	**Front-end Losses** • Virtual presentation on 'Front-end Losses.' Why does this occur? What options are available to reduce front loss? • Facilitated discussion – What front-loss are we seeing in the district? What crops are they having challenges with? What have people tried to minimise front loss?	Ben White Peter McKenzie/Rod Gribble
9:30 - 10:00	**Harvester - Rotor Losses (increasing performance and reducing losses)** • Virtual presentation on 'what do you do to reduce Rotor Losses and increase performance' including "stories from the west." • Facilitated discussion – What does this mean for NSW? How does it apply to our crop suite?	Brett Asphar Rod Gribble
10:00 – 10:30	**Sieve Losses & Measurement** • Explanation and demonstration of the drop tray system • Facilitated discussion – What are people's experiences? How are they measuring? What are they changing to reduce loss and maintain productivity?	Rod Gribble Peter McKenzie/Rod Gribble
10:30 - 11:00	**Morning Tea**	

11:00 – 12:00	**Harvest Weed Seed Control** • Why harvest weed seed control • What are the systems (i.e. mill systems, chaff decks and windrow/chaff lining and how do they work) • Cost of HWSC • Update on Mill technologies and specifically Seed Terminator technology. • Facilitated discussion on technologies available and where it's being deployed. Provide further information to attendees on future contact points.	Michael Walsh Brett Asphar Peter McKenzie/Brett Asphar/ Keagan Grant/Warrick Finlay (Virtual)
12:00 – 12:30	**Harvest Fires/Fire Suppression** • Introduction to the topic – causes, costs and minimisation strategies. Make available the GRDC Pocket Guides • Facilitated discussion examining what locals are doing today, how do they a build a robust plan and share with their neighbours	Ben White Peter McKenzie/Rod Gribble
12:30-12:45	**Bringing it Together** • Recap of the days session – key messages, opportunities and challenges • Further questions and comments • Completion of feedback sheets	Peter McKenzie/Rod Gribble
13:30	Rod Gribble travels to Gilgandra 245 km (2 hours and 45 minutes)	Accommodation at Gilgandra Motel

29th September 2021		
Location: **Collie Hotel** **Collie**		
	Activity	Who
7:30 – 8:00	Audio/Visual, Zoom, Systems Check, etc	Andrew Bulkeley
8:00 – 8:30	**Registration Process** • COVID Safe Check-in • Coffee & Tea	Andrew Freeth/Andrew Bulkeley
8:30 – 8:40	**Welcome and Introduction** • Purpose of the Event – Interactive event focusing on minimising harvest losses, harvest weed seed control and fire suppression. The event is starting a conversation to increase knowledge whilst establishing a broader network of experts for farmers to engage with in relation to optimising their management practices and equipment. • Describe the Agenda • Presenter Introductions – Peter Broley, Ben White, Brett Asphar, Rod Gribble, etc	Andrew Freeth
8:40 - 9:00	**Harvest Loss & Measurement** Introduction / Setting the Scene • Why Harvest loss is important (also why it works with HWSC) • Data on harvest loss • Stories on harvest loss measurement (about productivity)	Peter Broley/Rod Gribble (using Peter Newman presentation/ research on harvest loss)

	• What are the elements of harvest losses - header front and harvester (sieve, rotor) loss • Introduction to drop trays and GRDC calculators, etc (safety etc).	
9:00 – 9:30	**Front-end Losses** • Virtual presentation on 'Front-end Losses.' Why does this occur? What options are available to reduce front loss? • Facilitated discussion – What front-loss are we seeing in the district? What crops are they having challenges with? What have people tried to minimise front loss?	Ben White Andrew Freeth/Rod Gribble
9:30 - 10:00	**Harvester - Rotor Losses (increasing performance and reducing losses)** • Virtual presentation on 'what do you do to reduce Rotor Losses and increase performance' including "stories from the west." • Facilitated discussion – What does this mean for NSW? How does it apply to our crop suite?	Brett Asphar Rod Gribble
10:00 – 10:30	**Sieve Losses & Measurement** • Explanation and demonstration of the drop tray system • Facilitated discussion – What are people's experiences? How are they measuring? What are they changing to reduce loss and maintain productivity?	Rod Gribble Andrew Freeth/Rod Gribble
10:30 - 11:00	**Morning Tea**	

11:00 – 12:00	**Harvest Weed Seed Control** • Why harvest weed seed control • What are the systems (i.e. mill systems, chaff decks and windrow/chaff lining and how do they work) • Cost of HWSC • Update on Mill technologies and specifically Seed Terminator technology. • Facilitated discussion on technologies available and where it's being deployed. Provide further information to attendees on future contact points.	Michael Walsh Brett Asphar Andrew Freeth/Brett Asphar/ Keagan Grant/Warrick Finlay (Virtual)
12:00 – 12:30	**Harvest Fires/Fire Suppression** • Introduction to the topic – causes, costs and minimisation strategies. Make available the GRDC Pocket Guides • Facilitated discussion examining what locals are doing today, how do they a build a robust plan and share with their neighbours.	Ben White Andrew Freeth/Rod Gribble
12:30-12:45	**Bringing it Together** • Recap of the days session – key messages, opportunities and challenges • Further questions and comments • Completion of feedback sheets	Andrew Freeth/Rod Gribble

Harvester Setup Workshops

Run Sheet – Dalby and Clermont (8th and 9th September)

8th September 2021		
Location: **'Fassifern'** **15 Crofts Road, Kupunn via Dalby**		
	Activity	Who
7:30 – 8:00	Audio/Visual, Zoom, Systems Check, etc	Paul Mc and Andrew B
8:00 – 8:30	**Registration Process** • COVID Safe Check-in • Coffee & Tea	Paul Mc
8:30 – 8:40	**Welcome and Introduction** • Purpose of the Event – Interactive event focusing on minimising harvest losses, harvest weed seed control and fire suppression. The event is starting a conversation to increase knowledge whilst establishing a broader network of experts for farmers to engage with in relation to optimising their management practices and equipment. • Describe the Agenda • Presenter Introductions – Paul Mc, Marney Strachan, Ben White, Brett Asphar, Warrick Finlay, Peter Broley etc	Paul Mc
8:40 - 9:00	**Harvest Loss & Measurement** Introduction / setting scene	Peter Broley

	• Why Harvest loss is important (also why it works with HWSC) • Data on harvest loss • Stories on harvest loss measurement (about productivity) • What are the elements of harvest losses - header front and harvester (sieve, rotor) loss • Introduction to drop trays and GRDC calculators, etc (safety etc).	(using Peter Newman presentation/ research on harvest loss)
9:00 – 9:30	**Front-end Losses** • Virtual presentation on 'Front-end Losses.' Why does this occur? What options are available to reduce front loss? • Facilitated discussion – What front-loss are we seeing in Kupunn? What crops are they having challenges with? What have people tried to minimise front loss?	Ben White Paul Mc/Marney Strachan
9:30 - 10:00	**Harvester - Rotor Losses (increasing performance and reducing losses)** • Virtual presentation on 'what did to reduce Rotor Losses and increase performance' including "stories from the west." • Facilitated discussion – What does this mean for Qld? How does it apply to our crop suite?	Brett Asphar Paul Mc/Marney Strachan
10:00 – 10:30	**Sieve Losses & Measurement** • Explanation and demonstration of the drop tray system	Paul Mc / Marney

	• Facilitated discussion – What are people's experiences? How are they measuring? What are they changing to reduce loss and maintain productivity?	Paul Mc/ Marney Strachan
10:30 - 11:00	**Morning Tea**	
11:00 – 12:00	**Harvest Weed Seed Control** • Why harvest weed seed control • What are the systems (i.e. mill systems, chaff decks and windrow/chaff lining and how do they work) • Cost of HWSC • Update on Mill technologies and specifically Redekop technology. • Update on Seed Terminator technologies • Facilitated discussion on technologies available, where it's being deployed. Provide further information to attendees on future contact points.	Paul Mc Marney Strachan Brett Asphar Paul Mc/Brett Asphar/ Marney Strachan/Warrick Finlay (Virtual)
12:00 – 12:30	**Harvest Fires/Fire Suppression** • Introduction to the topic – causes, costs and minimisation strategies. Make available the GRDC Pocket Guides • Facilitated discussion examining what locals are doing today, how do they a build a robust plan and share with their neighbours.	Ben White Paul Mc/Marney Strachan
12:30-12:45	**Bringing it Together** • Recap of the days session – key messages, opportunities and challenges • Further questions and comments • Completion of feedback sheets	Paul Mc

Paul McIntosh travels to Emerald.		Accommodation in Emerald
Paul McIntosh travels from Emerald to Kilcummin		
9th September 2021		
Location: **'Tarvellon'** **837 Golden Downs Road** **Kilcummin**		
12:00 - 12:30	Audio/Visual, Zoom, Systems Check, etc	Paul McIn/Andrew Bulkeley
12:30 – 13:00	**Registration Process** • COVID Safe Check-in • Coffee & Tea	Paul Mc
13:00 – 13:10	**Welcome and Introduction** • Purpose of the Event – Interactive event focusing on minimising harvest losses, harvest weed seed control and fire suppression. The event is starting a conversation to increase knowledge whilst establishing a broader network of experts for farmers to engage with in relation to optimising their management practices and equipment. • Describe the Agenda • Presenter Introductions – Paul Mc, Ben White, Brett Asphar, Warrick Finlay, Peter Broley etc	Paul Mc ??
13:10 - 13:30	**Harvest Loss & Measurement** Introduction / setting scene • Why Harvest loss is important (also why it works with HWSC) • Data on harvest loss	Marcel Kringe (using Peter Newman presentation/ research on harvest loss)

	• Stories on harvest loss measurement (about productivity) • What are the elements of harvest losses - header front and harvester (sieve, rotor) loss • Introduction to drop trays and GRDC calculators, etc (safety etc).	
13:30 – 14:00	**Front-end Losses** • Virtual presentation on 'Front-end Losses.' Why does this occur? What options are available to reduce front loss? • Facilitated discussion – What front-loss are we seeing locally? What crops are they having challenges with? What have people tried to minimise front loss?	Ben White Paul Mc
14:00 - 14:30	**Harvester - Rotor Losses (increasing performance and reducing losses)** • Virtual presentation on 'what did to reduce Rotor Losses and increase performance' including "stories from the west." • Facilitated discussion – What does this mean for Qld? How does it apply to our crop suite?	Brett Asphar Paul Mc/Marney Strachan
14:30 – 15:00	**Sieve Losses & Measurement** • Explanation and demonstration of the drop tray system • Facilitated discussion – What are people's experiences? How are they measuring? What are they changing to reduce loss and maintain productivity?	Paul Mc / Marney Paul Mc/ Marney Strachan

15:00 - 15:15	**Break**	
15:15 – 16:00	**Harvest Weed Seed Control** • Why harvest weed seed control • What are the systems (i.e. mill systems, chaff decks and windrow/chaff lining and how do they work) • Cost of HWSC • Update on Mill technologies and Seed Terminator • Facilitated discussion on technologies available, where it's being deployed. Provide further information to attendees on future contact points..	Paul Mc Ben White/ Brett Asphar Paul Mc/Brett Asphar/Warrick Finlay (Virtual)
16:00 – 16:30	**Harvest Fires/Fire Suppression** • Introduction to the topic – causes, costs and minimisation strategies. Make available the GRDC Pocket Guides • Facilitated discussion examining what locals are doing today, how do they a build a robust plan and share with their neighbours.	Ben White Paul Mc
16:30-17:00	**Bringing it Together** • Recap of the days session – key messages, opportunities and challenges • Further questions and comments • Completion of feedback sheets	Paul Mc
17:00	**BBQ for Presenters and Attendees**	

RUN SHEET
WESTERN REGION HARVESTER FORUMS

DATE: 14 September
LOCATION: Goomaling

Time	Topic	Who
9.00-9.05am	**Welcome and Introduction** • Purpose of the Event –minimising harvest losses, harvest weed seed control and fire suppression. The event is starting a conversation to increase knowledge whilst establishing a broader network of experts for farmers to engage with in relation to optimising their management practices and equipment. Presenter Introductions – Peter Broley, Ben White, Brett Asphar, Nick McKenna etc	Peter Newman
9.05-9.30am	**Harvest Loss & Measurement** Introduction / Setting the Scene • Why Harvest loss is important (also why it works with HWSC) • Stories on harvest loss measurement • What are the elements of harvest losses - header front and harvester (sieve, rotor) loss • Introduction to drop trays and GRDC calculators, GRDC reference material	Peter Newman/ Ben White / Peter Broley
9.30-10.00am	**Front-end Losses** • Virtual presentation on 'Front-end Losses.' Why does this occur? What options are available to reduce front loss? • Facilitated discussion – What front-loss are we seeing in the district? What crops are they having challenges with? What	Ben White / Peter Broley

	have people tried to minimise front loss?	
10.30 – 11.00am	**Harvester - Rotor Losses (increasing performance and reducing losses)** • Intro by each grower on their harvester and challenges • What do you do to reduce Rotor Losses and increase performance?	Brett Asphar
11.00 – 11.15am	**Morning Tea**	
11.15 – 11.45am	**Sieve Losses & Measurement** • Facilitated discussion – What are people's experiences? How are they measuring? What are they changing to reduce loss and maintain productivity? • Explanation and demonstration of the drop tray system	Ben White/ Peter Broley/ Brett Asphar
11.45 – 12.30pm	**Harvest Weed Seed Control** • Why harvest weed seed control • Overview on chaff lining/ chaff decks/ cart / Mills • Cost of HWSC • Update on Mill technologies. • Facilitated discussion on technologies available and where it's being deployed..	Peter Newman / Ben White Brett Asphar Michael Bailey
12.30– 1.00pm	**Harvest Fires/Fire Suppression** • Introduction to the topic – causes, costs and minimisation strategies. Make available the GRDC Pocket Guides • What are people doing today, how do they a build a robust plan and share with their neighbours.	Ben White
1.15-1.30pm	**Bringing it Together** • Recap of the days session – key messages, opportunities and challenges • Further questions and comments • Completion of feedback sheets	Peter Newman

DATE: 15 September
LOCATION: Morawa

Time	Topic	Who
9.00-9.05am	**Welcome and Introduction** • Purpose of the Event –minimising harvest losses, harvest weed seed control and fire suppression. The event is starting a conversation to increase knowledge whilst establishing a broader network of experts for farmers to engage with in relation to optimising their management practices and equipment. Presenter Introductions – Peter Broley, Ben White, Brett Asphar, Nick McKenna etc	Peter Newman
9.05-9.30am	**Harvest Loss & Measurement** Introduction / Setting the Scene • Why Harvest loss is important (also why it works with HWSC) • Stories on harvest loss measurement • What are the elements of harvest losses - header front and harvester (sieve, rotor) loss • Introduction to drop trays and GRDC calculators, GRDC reference material	Peter Newman/ Ben White / Peter Broley
9.30-10.00am	**Front-end Losses** • Virtual presentation on 'Front-end Losses.' Why does this occur? What options are available to reduce front loss? • Facilitated discussion – What front-loss are we seeing in the district? What crops are they having challenges with? What have people tried to minimise front loss?	Ben White / Peter Broley
10.30 – 11.00am	**Harvester - Rotor Losses (increasing performance and reducing losses)**	

	• Intro by each grower on their harvester and challenges • What do you do to reduce Rotor Losses and increase performance?	Brett Asphar
11.00 – 11.15am	**Morning Tea**	
11.15 – 11.45am	**Sieve Losses & Measurement** • Facilitated discussion – What are people's experiences? How are they measuring? What are they changing to reduce loss and maintain productivity? • Explanation and demonstration of the drop tray system	Ben White/ Peter Broley/ Brett Asphar
11.45 – 12.30pm	**Harvest Weed Seed Control** • Why harvest weed seed control • Overview on chaff lining/ chaff decks/ cart / Mills • Cost of HWSC • Update on Mill technologies. • Facilitated discussion on technologies available and where it's being deployed..	Peter Newman / Ben White Brett Asphar Michael Bailey
12.30– 1.00pm	**Harvest Fires/Fire Suppression** • Introduction to the topic – causes, costs and minimisation strategies. Make available the GRDC Pocket Guides • What are people doing today, how do they a build a robust plan and share with their neighbours.	Ben White
1.15-1.30pm	**Bringing it Together** • Recap of the days session – key messages, opportunities and challenges • Further questions and comments • Completion of feedback sheets	Peter Newman

DATE: 21 September
LOCATION: Darkan

Time	Topic	Who
1.30-1.35pm	**Welcome and Introduction** • Purpose of the Event –minimising harvest losses, harvest weed seed control and fire suppression. The event is starting a conversation to increase knowledge whilst establishing a broader network of experts for farmers to engage with in relation to optimising their management practices and equipment. Presenter Introductions – Peter Broley, Ben White, Brett Asphar, Nick McKenna etc	Peter Broley
1.35-2.00pm	**Harvest Loss & Measurement** Introduction / Setting the Scene • Why Harvest loss is important (also why it works with HWSC) • Stories on harvest loss measurement • What are the elements of harvest losses - header front and harvester (sieve, rotor) loss • Introduction to drop trays and GRDC calculators, GRDC reference material	Peter Broley/ Ben White / Nick McKenna
2.00-2.45pm	**Front-end Losses** • Virtual presentation on 'Front-end Losses.' Why does this occur? What options are available to reduce front loss? • Facilitated discussion – What front-loss are we seeing in the district? What crops are they having challenges with? What have people tried to minimise front loss?	Ben White / Peter Broley
2.45 – 3.30pm	**Harvester - Rotor Losses (increasing performance and reducing losses)**	

	• Intro by each grower on their harvester and challenges • What do you do to reduce Rotor Losses and increase performance?	Brett Asphar
3.30 – 3.45pm	**Afternoon Tea**	
3.45 – 4.15pm	**Sieve Losses & Measurement** • Facilitated discussion – What are people's experiences? How are they measuring? What are they changing to reduce loss and maintain productivity? • Explanation and demonstration of the drop tray system	Ben White/ Peter Broley Brett Asphar
4.15 – 4.45pm	**Harvest Weed Seed Control** • Why harvest weed seed control • Overview on chaff lining/ chaff decks/ cart / Mills • Cost of HWSC • Update on Mill technologies. • Facilitated discussion on technologies available and where it's being deployed..	Nick McKenna / Ben White Brett Asphar Michael Bailey
4.45– 5.15pm	**Harvest Fires/Fire Suppression** • Introduction to the topic – causes, costs and minimisation strategies. Make available the GRDC Pocket Guides • What are people doing today, how do they a build a robust plan and share with their neighbours.	Ben White
5.15-5.30pm	**Bringing it Together** • Recap of the days session – key messages, opportunities and challenges • Further questions and comments • Completion of feedback sheets	Peter Broley

DATE: 22 September
LOCATION: Kondinin

Time	Topic	Who
1.30-1.35pm	**Welcome and Introduction** • Purpose of the Event –minimising harvest losses, harvest weed seed control and fire suppression. The event is starting a conversation to increase knowledge whilst establishing a broader network of experts for farmers to engage with in relation to optimising their management practices and equipment. Presenter Introductions – Peter Broley, Ben White, Brett Asphar, Nick McKenna etc	Peter Broley
1.35-2.00pm	**Harvest Loss & Measurement** Introduction / Setting the Scene • Why Harvest loss is important (also why it works with HWSC) • Stories on harvest loss measurement • What are the elements of harvest losses - header front and harvester (sieve, rotor) loss • Introduction to drop trays and GRDC calculators, GRDC reference material	Peter Broley/ Ben White / Nick McKenna
2.00-2.45pm	**Front-end Losses** • Virtual presentation on 'Front-end Losses.' Why does this occur? What options are available to reduce front loss? • Facilitated discussion – What front-loss are we seeing in the district? What crops are they having challenges with? What have people tried to minimise front loss?	Ben White / Peter Broley
2.45 – 3.30pm	**Harvester - Rotor Losses (increasing performance and reducing losses)**	

	• Intro by each grower on their harvester and challenges • What do you do to reduce Rotor Losses and increase performance?	Brett Asphar
3.30 – 3.45pm	**Afternoon Tea**	
3.45 – 4.15pm	**Sieve Losses & Measurement** • Facilitated discussion – What are people's experiences? How are they measuring? What are they changing to reduce loss and maintain productivity? • Explanation and demonstration of the drop tray system	Ben White/ Peter Broley Brett Asphar
4.15 – 4.45pm	**Harvest Weed Seed Control** • Why harvest weed seed control • Overview on chaff lining/ chaff decks/ cart / Mills • Cost of HWSC • Update on Mill technologies. • Facilitated discussion on technologies available and where it's being deployed..	Nick McKenna / Ben White Brett Asphar Michael Bailey
4.45– 5.15pm	**Harvest Fires/Fire Suppression** • Introduction to the topic – causes, costs and minimisation strategies. Make available the GRDC Pocket Guides • What are people doing today, how do they a build a robust plan and share with their neighbours.	Ben White
5.15-5.30pm	**Bringing it Together** • Recap of the days session – key messages, opportunities and challenges • Further questions and comments • Completion of feedback sheets	Peter Broley

DATE: 23 September
LOCATION: Ongerup

Time	Topic	Who
1.30-1.35pm	**Welcome and Introduction** • Purpose of the Event –minimising harvest losses, harvest weed seed control and fire suppression. The event is starting a conversation to increase knowledge whilst establishing a broader network of experts for farmers to engage with in relation to optimising their management practices and equipment. Presenter Introductions – Peter Broley, Ben White, Brett Asphar, Nick McKenna etc	Peter Broley
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5.15-5.30pm	**Bringing it Together** • Recap of the days session – key messages, opportunities and challenges • Further questions and comments • Completion of feedback sheets	Peter Broley

Harvester Setup Workshops

Run Sheet – Victorian Harvester Forums

11 – 15th October, 2021	**Activity**	**Responsibility**
Location: Tutye, Kooloonong, Diggora, Birchip, Kaniva	**Prior to the workshops Harvesters required at the farm arranged in a semi-circle.**	**BCG to organise**
Schedule/Time	**Activity**	**Who**
8:00 – 8:45	BCG arrive on site, set up AV, run power, connect Wi-Fi and test, layout resources. Test AV and web-link.	BCG Event Team
8:00 – 8:30	Specialists arrive on site, set up static demos where required, layout resources.	Seed Terminator, Primary Sales, Primary Business, Brand Reps
8:30 – 9:00	**Registration Process** • COVID Safe Check-in • Coffee & Tea	BCG Events Team
9:00 – 9:15	**Welcome and Introduction** • Purpose of the Event – Interactive event focusing on minimising harvest losses, harvest weed seed control and fire suppression. The event is starting a conversation to increase knowledge whilst establishing a broader network of experts for farmers to engage with in relation to optimising their management practices and equipment. • Describe the Agenda • Presenter Introductions, and explanation – Kassie van der Westhuizan, Ned Jefferies and Keagan Grant, Ben	**Tom Draffen, BCG**

	White (via Zoom), Brett Asphar (via Zoom), Brian Legg, Chris Warrick, Michael Walsh (via Zoom)	
9:15 – 9:30	**Harvest Loss & Measurement** Introduction / Setting the Scene • Why Harvest loss is important (also why it works with HWSC) • Data on harvest loss? • Stories on harvest loss measurement (about productivity) • What are the elements of harvest losses - header front and harvester (sieve, rotor) loss?	Tom Draffen/Kassie van der Westhuizen Peter Broley (via Zoom)
9:30 – 10:00	**Front-end Losses** • Virtual presentation on 'Front-end Losses.' Why does this occur? What options are available to reduce front loss? • Facilitated discussion – What front-loss are we seeing in the district? What crops are they having challenges with? What have people tried to minimise front loss? **Ask the growers who own the machines to talk about their own practices and experiences**	Ben White Tom Draffen/Kassie van der Westhuizan + all others as they see opportunity
10:00 - 10:30	**Harvester - Rotor Losses (increasing performance and reducing losses)** • Presentation on 'what do you do to reduce Rotor Losses and increase performance'	Kassie van der Westhuizen/ Brett Asphar (via Zoom)

	• Facilitated discussion – What does this mean for VIC? How does it apply to our crop suite?	Tom Draffen/ Kassie van der Westhuizan
10:30 – 10:45	**Sieve Losses & Measurement** • Explanation and demonstration of the drop tray system • Facilitated discussion – What are people's experiences? How are they measuring? What are they changing to reduce loss and maintain productivity?	Brian Legg Tom Draffen/ Kassie van der Westhuizan + all others as they see opportunity
10:45 – 11:00	**Morning Tea**	
11:00– 11:20	**Harvest Weed Seed Control** • Why harvest weed seed control • What are the systems (i.e. mill systems, chaff decks and windrow/chaff lining and how do they work)? • Cost of HWSC $$$$ options.	Michael Walsh (via Zoom)
11:20- 12:00	**Harvest Weed Seed Control** • Update on Mill technologies and specifically Seed Terminator technology. • Facilitated discussion on technologies available and where it's being deployed. Provide further information to attendees on future contact points.	Ned Jefferies/Keagan Grant Tom Draffen/ Ned Jefferies/ Keagan Grant/Brian Legg + all others as they see opportunity
12:00 – 12:30	**Harvest Fires/Fire Suppression** • Introduction to the topic – causes, costs, and minimisation strategies.	Ben White

	• Facilitated discussion examining what locals are doing today, how do they a build a robust plan and share with their neighbours.	Tom Draffen
12:30 – 1:00	**Grain Storage**	Chris Warrick
1:00 – 1:15	**Bringing it Together** • Recap of the day's session – key messages, opportunities, and challenges • Further questions and comments • Completion of feedback sheets	Tom Draffen
1:15	**Lunch and close**	

Agenda GRDC Training Harvester Trainers
Location: Longerenong Collage Horsham
Date: Thursday 9 & Friday 10 March, 2023

Date & Time	Topic	Who
Thursday 5.00pm-5.15pm	Welcome	Courtney Ramsay - GRDC Southern
5.15pm-6.30pm	Logistics for tomorrow Update harvest loss research 2022 Concaves 2022 Safe Recovery Aim Provide background information that will be part of the Harvester Workshops and how to use this information.	Peter Broley – Primary Sales
6.30pm	Dinner & Drinks	
Friday 7.00am	Breakfast at Longerenong	Longerenong College
7.30am-8.00am	Case IH latest updates on their products 2023+. Aim: Early insight and understanding of what to expect in 2023 and discussion on how this impacts set-up for different environments/ crops.	Case IH
8.00am-9.00am	Case IH - Selling the benefits and differences of the Case Axial-Flow product range to a John Deere/ Claas/ Agco customer. Front to back covering: a) Front & Feeder-house b) Threshing and separation Aim: Hands-on run through and robust discussion on the Case product as if presenting to potential John Deere customer / service technicians to aid understanding on terminology and challenge the thinking.	Case IH
9.00am-9.15am	Morning Tea	
9.15am-10.30am	Continued…Case IH - Selling the benefits and differences of the Case Axial-Flow product range to a John Deere/ Claas/ Agco customer. Front to back covering: c) Cleaning	Case IH

	d) Residue management & HWSC e) Automation	
10.30am-12.30pm	Adult learning - teaching an old dog new trick and other challenges Aim: Learn skills to improve collaborative learning and approaches to better handle difficult /confrontational conversations whilst maintain control.	Hamish Mines – Skill Invest
12.30pm-1.00pm	Lunch	
1.00pm-1.30pm	John Deere latest updates on their products 2023+. Aim: Early insight and understanding of what to expect in 2023 and discussion on how this impacts set-up for different environments/ crops.	John Deere
1.30pm-2.30pm	Selling the benefits and differences of the John Deere Harvester product range covering X9 & S Series to a Case/ Claas/ Agco customer. Front to back covering: a) Front & Feeder-house b) Threshing and separation Aim: Hands-on run through and robust discussion on the John Deere product as if presenting to potential Case customer / service technicians to aid understanding on terminology and challenge the thinking.	John Deere
2.30pm-2.45pm	Afternoon Tea	
2.45pm-4.00pm	Continued…Selling the benefits and differences of the John Deere Harvester product range covering X9 & S Series to a Case/ Claas/ Agco customer. Front to back covering: c) Cleaning d) Residue management & HWSC e) Automation	John Deere
4.00pm-4.30pm	Closing Summary & what next Aim Discussion to understand what attendees/ trainers need from GRDC to build on from the workshops	Courtney Ramsay - GRDC Southern

MEMORANDUM

DATE:	07/08/2020
TO:	Peter Carberry
FROM:	Courtney Ramsey, Grower Relations Manager (GRM)- South
CC:	Luke Gaynor, Lizzie Von Perger, Graeme Sandral
RE:	Request for face to face Harvester set up workshops – COVID POLICY

Background

GRDC currently invests in 'Regional Harvester Set-Up Workshops for the Economic optimisation of harvest losses, efficiency and grain quality.

This investment includes a series of interactive harvester set up days located across each of the Southern, Western and Northern Regions. This project will inform growers, harvest contractors, advisors and machinery resellers through a coordinated harvester set-up and grain quality/ losses and harvest weed seed control interactive education program with the aim to maximise harvest efficiency and improve grower profitability. The project also involves a training component to increase capacity and expertise in the Australian grains industry for the optimisation of harvest losses, set up and harvest weed seed control.

The contracted workshops include:

a) A minimum of 5 interactive set up days in the Western Region (2 in each of the port zones) delivered during spring annually.

b) A minimum of 4 interactive set up days in the Southern Region annually (1 each in at least half of the subregions) delivered during spring.

c) A minimum of 6 interactive set up days in the Northern Region annually (1-2 per subregion with allowances to cover the summer cropping season), delivered by mid-October each year for winter crops and May 31 each year for summer crops to increase understanding on harvester set up and acceptable grain quality and losses including benefits and impacts of harvest weed seed control and harvester add-ons;

GIVEN THE IMPACT OF COVID-19 Service Delivery Partners are seeking permission to proceed with face to face delivery with adjustments to delivery and a strict COVID Policy in place.

Proposed approach / COVID plan

Methodology for the delivery of harvester workshops initially required the use of international expertise. With the COVID imposed shutdowns, this is obviously no longer able to happen. To respond to this deliverables have been adjusted to :

1. Focus on portions of the program which rely in Australian expertise for delivery and able to be sourced in each state to prevent border crossing requirements. These topics are: Harvest weed seed control, Measuring Harvest

losses and Harvester fires. Workshops will be marketed as Harvest forums or Harvest Conversations in 2020 to delineate the altered content from the more in depth set up content of the main program.

2. Victorian delivery has been cancelled for 2020 with additional delivery planned for subsequent years. A single online event to deliver some components (non hands-on) is planned to be delivered via online mechanisms and content generated through this session will form key resources for workshop and training delivery needs into the future.
3. Number of workshops have been adjusted by location in plan for 2020 to reflect the reduced content program and retain budget for scaled up delivery in subsequent years. This has been a risk management strategy should the COVID situation continue to change dramatically. West 4, North 5, South 4 (SA only)
4. Continuous reassessment of risks with final assessment of COVID risks, with potential cancellation an option, up to 2 days prior to event delivery to ensure responsiveness to the fluid COVID situation.
5. Workshops will be held in outdoor locations – on grower properties or community ovals.
6. A COVID safe plan for face to face workshops has been developed (attached).

Workshop locations and timings at present are set for:

Western Region – Facey Group:

23/09/2020 – Esperance – Morning Session
24/09/2020 – Kojonup – Morning Session
24/09/2020 – Cuballing – Afternoon Session
TBC
29/09/2020 – Merriden – Morning Session

Southern Region – AgCommunicators and BCG

28/09/2020 – Cummins – Morning
30/09/2020 – Maitland – Morning
01/10/2020 – Keith – Morning
02/10/2020 – Pinaroo – Morning

Northern Region (to be confirmed ASAP next week)

07/10/2020 – (N) Condobilin – Morning
08/10/2020 – Lake Cargelligo - Morning
14/10/2020 Ardlethan - Morning
15/10/2020 – Lockhart – Morning

Rationale

BUSINESS CRITICAL

Deliverables of this investment are seen as business critical to both service delivery partners, and growers. Given the significant losses attributed to poor harvester set up and the origin of this issue in the Regional cropping solutions networks, these workshops are seen as business critical for growers. The workshops are designed to be practical - hands on demonstrations including fitting equipment as. Growers are better able to understand the technological aspects of changing harvester and add on set ups if they can see the components moving at the same time as hearing about what they are doing.

This investment is also delivered by a range of small subcontractors, primarily farming systems groups that would be significantly adversely affected if not able to meet milestones for delivery with significant costs already incurred in planning phases. All delivery partners have been working hard to put in place alternative and revised delivery mechanisms and stringent COVID management policies.

ALTERNATIVE OPTIONS

ONLINE
Live interaction and demonstrations of equipment/machinery are a crucial part of the delivery of this investment and as such online delivery is not considered an option for complete delivery of the revised program. A range of alternative delivery methods have been considered and are proposed as a response to the COVID environment and are detailed in the 'Proposed approach' section.

POSTPONE

Postponing of some events has been considered and proposed (see proposed approach) as part of the solution moving forward however some delivery in this season is considered crucial for both growers and service delivery partners (see above)

Recommendation

Harvester set up clinics to proceed toward face to face delivery in accordance with the proposed approach and COVID safe plan

GRDC Train the trainer Content – Harvester set up

Intro:

Harvester Set-up Clinics: Train-the-trainer

What is the objective of this Harvester Set-up training program?

This training program is to help harvester operators develop the the skills and knowledge they need to ensure their machines are operating most efficiently by setting them up correctly for the current crop and conditions.

This course will work through harvester set-up from "front to back" focusing on reducing harvest loss, improving harvester productivity an incorporating HWSC.

Our focus here is to provide an environment/platform to learn and share in order to build more profitable farmers.

Some of this shared learning you are going to know, some you'll disagree with, and some may strike you as worth trying.
We want to know what you try and what you learn - good and bad. We will share this learning and improve.
It's your crop, your paddock, your conditions, your profit - it's your decision.

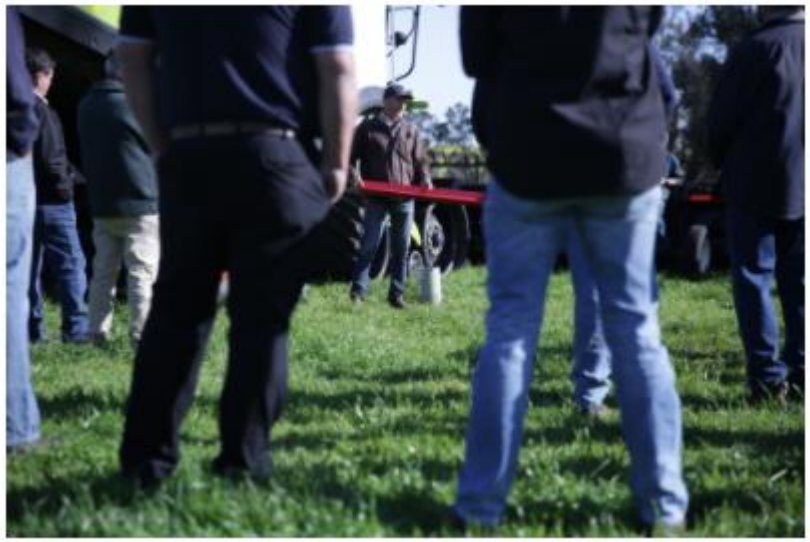
To navigate through the course, go to Modules via the course menu. Or, click Next to begin

1. Module 1 - Harvest Loss Measurement and Calibration

Module 1 Learning Objectives

You will:

1. Understand to measure regularly to help make proactive harvest performance decisions by balancing harvest capacity and harvest loss.



2. Harvest Loss - Practical measure rotor and sieve

Why should you be checking for loss?

When you invest a lot of time and money into growing your crop, why wouldn't you want to make sure you are harvesting as much of your crop as possible? Your yield is paying the bills and that's why you want as much grain in the bin and less wasted in the field. Modern farming

emphasises precision and efficiency. Farmers calibrate seeders, planters, and sprayers, focusing on making sure that the crop gets the proper nutrients in the right quantities, and making sure chemical applications are as precise as possible. Put that same focus and attention on maximizing harvest efficiency by calibrating loss sensors and the combine.

Even with new automation systems we need to have benchmark points for the sensors to act and react by. Otherwise it's like measuring with a tape measure without any numbers and lines on it. It's guess work.

Safety, Safety, Safety. This is of primary importance. It is good that we throw pans to get samples but we need to ensure that people are safe when we do harvest loss measurements. The good news is that the drop pan systems available allow remote dropping of the pan without putting workers at risk.

What we also get from doing harvest loss measurement and calibration is to better understand and improve the performance of the harvester we drive and run. Watch the webinar recording on "harvest loss - overview and practical measure" below.

https://www.youtube.com/watch?v=KiP7fnGvzLs

What systems are available for growers?

There are a number of "drop tray" systems available for growers that make it easier, quicker and safer to measure loss. These include:

- **The Bushel Plus**; Two magnetic trays (narrow & wide) with size options (1.5m, 1.0m, 0.5m), magnetic cover, remote and wireless drop from phone, in-car-charger, separator and app for easy in field calculation and data capture.
- **The Schergain**; single magnetic tray with remote drop. Does not come with cover, separator or app for easy in field calculation and data capture.
- **AgGear;** single tray with magnetic cover with additional cost for separator. No app for easy in field calculation and data capture.
- **Harvestcal.com**; An alternative option of portable trays non-magnetic which are placed in the swath or centre outside of wheel tracks. No separator for sample separation. App available to determine losses.

The GRDC has a calculator available for growers to assist in calculating the losses this is available here (Links to an external site.) from GRDC online.
Also see report done by Kondinin Group on bringing in the harvest and the value of the drop-pan systems to improving productivity here (a)

3. Harvest Loss - When to do harvestloss measurement

When and how often should I be measuring?

When should we be doing harvest loss measurement is a question often asked? Pre-setup for harvest, regularly during the day and as conditions change? And what are the benchmarks that growers should be achieving?

Measuring regularly is key to ensure the loss sensors are calibrated to the conditions and so growers can make proactive decisions to improve productivity.

The benchmark for acceptable losses for canola is less than 2% loss (sieve and rotor). For cereals it is less than 1% loss (sieve and rotor). In terms of dollars in the pocket, 5% loss in a 2.0 tonne Barley crop is costing $30/Ha, the equivalent of $15,000 over a 500Ha program. Or put into terms of hours, if a grower is harvesting at 35 tonnes/hour that equates to a loss of $525/hour.

Watch the video below from Peter Newman on "Harvest loss & Harvest Weed Seed Control - measuring is key"

https://www.youtube.com/watch?v=Eaib1vFxRME

Also have a listen to the following online forum recording with growers and advisers discussing the right time to measure harvest losses and and their experiences with HWSC tools

https://www.youtube.com/watch?v=PxGcyontvCg

4. Harvest Loss - quantify the benefits

Can we quantify the benefits of harvest loss? Yes we can.

Findings from harvest loss research have been published in GRDC's Groundcover magazine "Gains through online networking (Links to an external site.)". Benefits achieved by growers by reducing harvest losses vary by the size of their program, but research presented indicated over $9,000 in savings were able to be achieved on average, by measuring and adjusting header settings to reduce harvest losses.

There is a need to remind growers of the quantitative benefit of measuring losses (rotor, sieve and front) relative to improved productivity. Slowing down is not the only answer and will also lead to increase in labour, fuel and depreciation costs.

https://www.youtube.com/watch?v=qFmmHx7-3FA

It is valuable to understand why growers are taking harvest loss measurements and what their experiences have been. We learn from what growers are doing themselves and what they did to improve their productivity using their harvester, in their program, with their crops.

Grower Michael Altius video illustrates how he sets benchmarks for times of day for measuring harvest loss to help him improve his performance. He also explains why taking the time even when you "just want to get it done" is important in overall harvest.

https://www.youtube.com/watch?v=xbZUcfoMGGU

5. Harvest Loss - Header front loss measurement

Quadrants, pans and other tools

Glen Riethmuller's GRDC sponsored study in 2003 demonstrated that harvest loss of header fronts can cost growers $75/Ha in cereal crops. In lupins, canola and other crops prone to shatter this loss can be even greater. Glen's article explains measuring pre-harvest loss and front harvest loss using quadrants. https://www.agric.wa.gov.au/harvesting/calculating-harvesting-losses. (Links to an external site.)

Drop pans, trays or other tools can be placed in front of the harvester in the crop to capture the loss of the front. As the following video shows (in lupins) it is important to stop the harvester level with the dropped pan so you avoid capturing the rotor spread and hence the losses from the rotor!

https://www.youtube.com/watch?v=PxNjVHdq7KA

Despite this growers often don't regular measure their losses. Ben White explores in the video what some growers are doing and use of pans to measure front loss.

https://www.youtube.com/watch?v=tGmyR1m2698

Please also check the report provided by Kondinin Group on how to measure front losses (1997).

Measuring Front Loss - Kondinin Group.pdf (b)

6. Harvest Loss - Measurement and HWSC

Measuring harvest losses enables growers to also look at their weed seed management at the same time. The module on HWSC discusses keeping the weed seed within the chaff rather than having it in the rotor or in the bin. Measuring harvest losses enable the grower to check where weed seeds are (in the chaff or rotor) so that they can proactively make changes to the harvester to keep the weed seed in the chaff. There are two benefits for measuring with harvest loss when you are using HWSC:

1. It identifies if you are spreading weed seeds (via rotor loss) that you need to redirect to your HWSC system
2. It enables you to understand if you are keeping the weed seeds in the chaff stream and therefore make harvester set-up changes to maximise your HWSC tool; and for mill based HWSC there is a third benefit,
3. It helps you reduce unnecessary mill wear by determining if there is unnecessary material going through the mills.

The following videos demonstrate how to take a harvest loss measurement with many of the HWSC tools:

Seed Terminator  	iHSD 
Chaff Deck  	Chaff Cart 

Videos (copies to be provided)

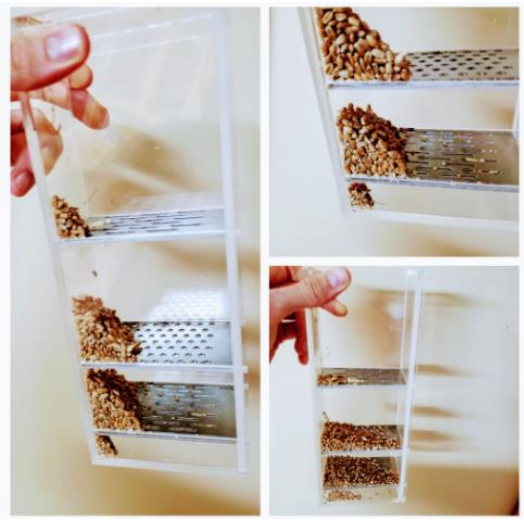
7. Harvest Loss - Using the sample to review quality of grain

Why we should be concerned about quality

- Using a Shaker box or similar system with screens to grade sample allows you to review the quality of your grain sample.
- While this is something many of us do, we need to be concerned with every part and determine what is it costing me?
- What is dockage, what is the saleable part in my sample and what are the percentages?
- This allows you to understand what the cost of reduced quality may be and make changes on the harvester to reduce damage.

Using a Shaker box:

-
  - Put 100 g of grain in the shaker box out of the harvester grain bin to create an average sample.
  - Shake it in all directions for about 1-2 minutes. Now look from the bottom up.



Bottom of shake:

-
  - You have in the bottom the dust and powder plus also the thin weed seeds.
  - Second from bottom (Next up)
  - You will find small cracked grain

Third from bottom (2nd up):

-
  - You will find thicker cracked grain. These are mostly split in half; and,
  - Medium sized grains

On top level:

-
  - You will find the larger grains along with pieces of the chaff fraction, like straw and head pieces.
  - If there is greater than 1% small cracked grain and powder you should count this as harvest losses.

What is the source of cracked grain?

- Look to adjust the Feeder chain (5mm) and open the bottom sieve.
- If you have a lot of bigger cracks you will need to check all the augers in the combine to ensure they are not sharp or identify if they require repair.

8. Harvest Loss - Why do you have cracked grain?

Learning where cracked grain is coming from and how to identify the source is important to maximise profits from adjusting harvester settings

- The powder and the small pieces generally come from the feederhouse chain touching the floor
- There can also be some derived from the return.
- The grain bin auger can also be a source of cracked grains, but these will generally result in larger cracked grain pieces.
- Auger fronts on harvesters can lead to losses through cracked grain damage arising from the gap between the auger and the table or from damaged augers. The auger need to be in good repair and need to check the gap between the auger and the table.
- During threshing, cracks only occur if there is not sufficient material to thresh with, ie:
  - The rotor or drum is not loaded adequately.
  - The concave is not calibrated correctly - this can also lead to crack grain.

See this video of Martin Reichelt discussing cracked grain

https://www.youtube.com/watch?v=CbjA1LWW4i0

QUIZ

Module 1 Quiz

Instructions

- Complete the following quiz consisting of four (4) multiple choice questions.
- You must achieve 100% to be marked satisfactory.
- Multiple attempts are available.

1 Multiple Choice 1 point Question 1

Benchmark of acceptable harvest losses (sieve and rotor) in canola is:

- (●) <2%
- ( ) <5%
- ( ) <10%

2 Multiple Choice 1 point Question 2

Benchmark of acceptable harvest losses (sieve and rotor) in cereal/pulses is:

- (●) <1%
- ( ) <2%
- ( ) <5%

3 Multiple Choice 1 point Question 3

Harvest front losses in cereals have been shown to cost growers:

- (●) $75/ Ha
- ( ) $7.50/ Ha
- ( ) 0.75/ Ha

4 Multiple Choice 1 point Question 4

If you see crack grain in your drop pan/shaker box you should first check:

- (●) The feeder chain (should be 5mm from the floor in the centre)
- ( ) The concaves they are too wide
- ( ) Sieves are too tight

1. Module 2 Reducing Header Front loss and improving performance

Module 1 Learning Objectives

You will learn how to:

1. Proactively fine tune header front settings to suit your harvesting goals
2. Understand all the header-front settings which can be changed
3. Achieve better performance – quality, speed, cost, loss management.

2. The divider and its role. Is it right for your crop and how it affects loss?

- The divider is the first thing on the header front to touch the crop. It's job is to part the crop so that the crop can evenly flow into the header and not lay the crop down so that it can't be picked up.
- The divider must be adjusted so that it is straight to avoid laying crop over.
- Some dividers have a bolt and jam nut to achieve this but a lot of the dividers are welded on and will need to be bent to the proper position.
- Most dividers are bulky and designed for high tonnage crops (+10tonne). Using the wrong divider can lead to harvest losses as crop thrown outside or over header-front.
- You need to adjust the divider so that grain / pulse crop can move without any damage or jam.
- Adjust the divider for reduced material. You need to adjust the divider's height to 10-15cm or where the first node at the grain is. For legumes/ pulses at the height of the first pods.

Case IH Divider - same as Macdon. Designed for high tonne crops.

Claas Divider - multipurpose divider able to work in low and high yield crop.

Claas Divider - close up

MacDon Divider

3. Knife guard & knife section

Knife sections and knife guards - understanding impact on feeding and performance

- The knife guard is there to act as platform for the knife to cut against and assist feeding of crop
- You are using 7.5 kw (10hp) per metre with your header front when the guards and knife are new and cutting well.
- If your knives and guards are old and worn (not cutting effectively) you can be increasing the power requirement by 50% (10-12kw or 12-15hp a metre)

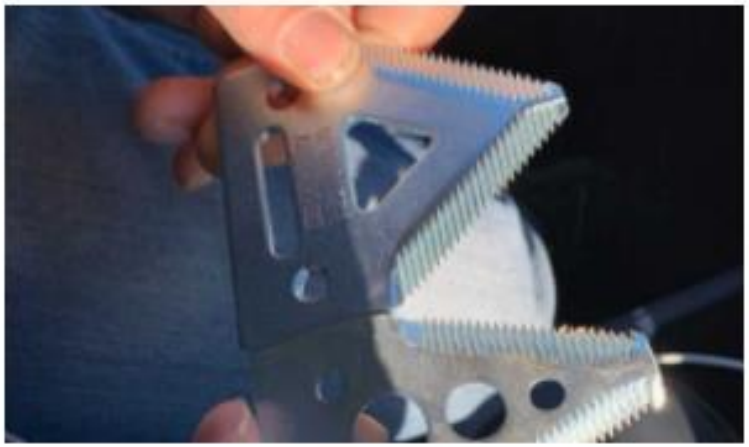
Key Numbers To Remember

- 7.5Kw (10hp) per meter sharp knife and good guards
- Up to 25% more HP in tough/green conditions

4. Knife sections

- Knife sections and knife guards which are not sharp lead to shaking rather than clean cutting of the crop which can result in grain loss, if the grain is ripe.

- In wet and tough conditions, cutting will not work effectively - tearing and/or ripping the stems.
- Poor cutting will lead to losses:
  - as the material lies in small clumps on the belt or the table, and the crop may not fall head-first on to the draper belt or table as preferred (crop material being presented head first into the feederhouse) affecting feeding and subsequent threshing of the crop.
- The knife section has to have a fine tooth (5-6 points per centimetre or 14 points per inch) to be effective at cutting and needs to be managed **every day**.
- Any damaged or worn sections should be replaced.



Double Cut knife section - 14 point

Blunt, damaged or worn knife sections impact performance

Key Numbers to Remember

- 5-6 teeth per centimetre or 14 teeth per inch (fine knife section)

Please watch the video of Martin Reichelt explaining what is required for efficient knife operation:

https://www.youtube.com/watch?v=fpX_lfMTBjc

5. Knife guards

Knife guards are critical to feeding performance. The knife needs a square edge to cut against - not conical or tapered or with no top ledger. If the knife guards do not have a square and sharp ledger plate, with a consistent 5mm gap for knife section then:

- the knife will not cut effectively;
- crop will land on the header at different angles; and,
- it will impact how well your crop feeds into the feederhouse.

Not every guard on your cutterbar is a good one. Check it before you order a whole set.

Good knife guards will improve performance by improving feeding onto the feederhouse.

Improved feeding improves productivity.

Key Numbers to Remember

- 5mm Ledger gap
- 0.5mm gap between knife section and ledger top and bottom

Please watch the video of Martin Reichelt explaining what is required for efficient knife guard operation

https://www.youtube.com/watch?v=CwN8NI525DU

6. Cutter Bar

Angle of header front/knife guard

- Knife Angle can vary from crop to crop but in most cases the guards should be level which is achieved with the feeder house face plate and header tilt. More on the feeder house face plate when we cover the feeder house.
- A level guard angle is used for normal cutting conditions and this angle minimises damage to the knife in stony fields.
- A steeper angle is used for lodged crops or crops that have pods close to the ground (such as beans & lentils).

Cereals	The best angle for cutting cereals is 12 degrees forward (positive).
Canola	In canola with a draper header, the angle should be flat or slightly back (negative). With an auger header it needs to be negative.
Wet conditions	It is best to have an angle of more than 12 degrees forward (positive).
Where to cut	In cereal the aim should be to cut straw under the first node on the stem - because we need the node for more efficient threshing inside the machine.

Belt/draper header front	setting around 0-1
Auger header front	setting 2-5
Note: Important that the stalks do not touch the table to avoid the chance that they flip over i.e. heads land first.	

7. Auger front and feeding

How to set the auger and reel to improve performance in different crop conditions

An auger front/ header needs to have the stripper plates on the back of the auger almost touching to ensure constant and even feeding (see image).

Auger and Stripper Plate

- The retractable fingers must be timed properly. (*This is one of the main causes of poor feeding, a lot of people think the feeder house is back feeding and it's just the finger timing.)*

- When looking at the auger from the right side, there should be approximately 18mm (3/4”) of retractable finger exposed at 8:00 o'clock. This is same on all types of headers.
- Auger headers have drive sprockets which can be changed to get the auger at the right rpm vs. ground speed. If the crop is not being cut properly in the middle of the header, speed-up the auger.
- With Case IH and New Holland fronts, to do this you need to first adjust the auger height position to the table. The gap between table and auger flaps for cereals needs to be equivalent to the of the width measurement of the grain head in mm.
- For Claas and John Deere Auger fronts the key is the gap between the auger and the stripper bar underneath the auger. The back stripper bar needs to be adjusted twice. As tight as possible without scratching against the flaps. Looking at the left hand side of the front, the timing from the fingers need to be adjusted:
  - At the 8:00 o'clock position they should be completely extended
  - At the 2:00 o’clock position they should be completely retracted
- This applies in every crop and every condition!
- The auger runs normal 440 rpm and you should never need to speed it up.

Note:

The only time worth considering changing speed, is if material starts to build up in front of the auger, affecting cutting. If this occurs change the sprocket on the auger to a larger sprocket.

Harvesting Canola

- Before you harvest canola, you need to adjust the auger to a different height setting.
- For canola the auger height should be higher than when in cereal, to improve feeding. Where canola is low yield (<1.0t/ha), the height could be the same as cereals

Points to remember - Table to auger:

- Wheat average 15 mm
- Barley two rows 10 mm
- Canola stalk thickness (in mm) at cutting position + 5mm. That is around 20—30 mm.

8. Reel position and finger pitch

Reel position and finger pitch varies from crop to crop.

Canola

- Reel position in canola should be pulled back behind the cutter bar and finger pitch at a minimum to reduce crop loss.
- The new shatter resistant canolas now allow us to move the reel out to help feeding.

Cereals

- Cereals allow the reel to be moved out slightly ahead of the cutter bar and finger pitch is normally operated in the mid position.
- Reel speed should be slightly faster than ground speed.
- Crops that are lodged or leaning will need more finger pitch to achieve proper feeding
- On severely lodged crops maximum finger pitch is required to lift the crop on to the header.

Points to remember:

- As finger pitch is made more aggressive (positive or forward), the relative speed increases at the tip of the fingers relative to actual reel speed (because they are closer to the centre of the reel).
- Crop shattering can occur and a slower reel speed is required.
- The reel needs to push the grain after cutting in the direction of the Auger or belt.
- If the reel is working too deep, shatter losses will be higher and material could flip over on to the belt/ front affecting feeding.
- A clear indicator that the reel is in too far is paint wear on the reel bar.
- For Auger fronts/headers, the grain needs to fall against the auger and stand there between the flaps to be transported to the centre from the auger.
- For belt/draper fronts/headers the grain needs to fall evenly on the belts with the heads facing toward the rear of the harvester.

- If the position is not right the grain could hang at the reel and be flipped around.
- If the speed of the reel is too high the head hits against the reel and shatter losses will increase

Key to Remember:

- *"The Reel is not a rake!"*
- *5:5:5 (* 5cm down into the crop, 5% faster than ground speed and 5° in front)

https://www.youtube.com/watch?v=4Y4GoN5kk-M

9. Crop Lifters & cereal extensions

Crop Lifters

The angle of the lift needs to be steeper at the header front (max 25 degrees) to better align the lifter to the ground.

- The angle needs to lift the straw onto the cutterbar - but need to clear the ground, the lifters are not a cultivator!
- The optimum angle is dependent on how flat the crops are laying. Look for adjustable lifters.
- A lifter should be installed on every fourth knife guard - or around every 30 cm.
- Do not install lifters on the outside edges of the cutterbar - allow a space of around 50 cm between the outside edge and the first lifter.
- If lifters are used on the outside edges, it can cause problems with pushing soil and plant matter in front of the cutterbar.

Cereal Extensions

Cereal extensions are generally plastic and attach to the knife guard.

Extensions are available in different sizes and width and have shown to be valuable in reducing header-front loss in light crops and where crops are prone to shatter.

Reel Paddles, Coreflut and Brushes

Reel paddles (Duckfoot), Corflut, cut draper-belt and brushes can be useful when harvesting crop that fluffs up or has difficulties clearing the cutter bar.

Typical crops include:

-
  - Lupins
  - Soyabeans
  - Chick peas
  - Lentils
  - Flax
  - Peas
  - Rice
  - Direct-headed canola
  - Cereal in heavy crops
- These tools can help crop feeding and help you increase speed and therefore overall performance.
- Combined with cereal extensions these can reduce harvest front losses by up to 2/3rds.
- Important to change the reel speed (equal to ground speed) and reel pitch (less aggressive - position 1 or 2).

Air Reels

Uses air to blow crop clear of the cutterbar. With short and light crop this helps improve performance (both ground speed and reduce harvest loss).

- Benefit in lupins, chickpeas, barley and similar crops where <1.0-1.5 tonne yield has savings of 100-150kg/ha.
- In crops over 1.0-1.5 tonne/Ha growers have communicated that the air tubes knock-off as much or more than the air blast saves.

AWS and Crary are two recognised suppliers in Australia.

More information

- See section on harvest loss measurement - front loss
- Harvesting in light / patchy crop conditions see article (Links to an external site.) by Glen Riethmuller, DPIRD

10. Feed drum to feederhouse fit

- The job of the feederhouse is to stretch the material to make it thinner, and prepare it for threshing.
- The material in the feederhouse is 10 times thicker than the concave gap.
- That means the crop must present head first in to the feederhouse.
- If the crop is not feeding head first, you are more likely to jam / block material in the feederhouse as it creates uneven filing.
- This can affect threshing and also result in losses at the sieves.
- The feeding of the material from the feed-drum to the feederhouse needs to be consistent width, otherwise material will be pushed to the outside rather than evenly fed through the centre.
- Extensions on header for feed drums are important to align the front with the feederhouse. It is crucial for the performance of threshing and separation systems that the header front is correctly matched to the feedhouse.
- You can see usually see evidence of a poor match by paint wear off the feederhouse.

Please watch this video for more detail.

https://www.youtube.com/embed/V_wtlO1mxQQ

11. Feed drum to feederhouse fit - Continued

The retractable fingers in the feeder drum are crucial to effective feeding of the crop from the header into the feederhouse.

- The gap of retractable fingers to the floor of the header front needs to be same as the largest head (15-20mm)
- Feeder drum fingers should be at fully extended at the 8.00 o'clock position (viewed from the left side of the harvester).
- Flights need to be longer/ taller than standard on Macdon standard feed-drum to improve feed.
- Typhoon/Turbodrum has been a good upgrade to deal with poor feeding on standard feed-drum on JD/Macdon.
- Feeder drum position should be slightly above the minimum height setting and because it floats it will handle light or heavy crops.
- With the drum in this position the feeder chain should be tightened so that the lowest feeder chain slat is 18-25mm (3/4-1”) off the feederhouse floor.

Please watch these videos for more detail:

https://www.youtube.com/watch?v=OVfIrrGcMS0

https://www.youtube.com/watch?v=MhpLHAP9RuU

12. Effective feeding

Improving feeding and what to look for

Quick steps to improve feed performance:

1. Knife speed
2. Reel position – to crop conditions
3. Reel finger pitch
4. Auger retractable finger timing
5. Draper and auger speed. 5% faster.

- The auger timing, reel position, reel finger pitch and draper/belt speed all affect feeding, and any of those can cause losses.
- If the crop appears to be "boiling" in front of the feeder house, one of the above needs to be adjusted.
- Auger headers/fronts of different brands are basically all the same to achieve even feeding. Some can be easier to adjust than others.
- Draper fronts are the same except for the reels.
- CNH reels are more difficult to adjust finger pitch and canvas speed isn't easy to adjust.

Please watch the following video on adjusting the reel finger pitch:

https://www.youtube.com/watch?v=0E6ncB8_5c8

13. Effective feeding - Continued

- Whether it's an auger header or a draper header, the crop needs to be moving at the proper speed.
- Auger headers have drive sprockets that can be changed.
- Draper headers have flow controls on the header to control draper speed.
  - Too fast and it will throw the heads to the middle and will feed all heads up the middle of the feeder house with the butts to the outside.
  - Too slow and material will jam at the cutterbar, as less material is being transported / moved away from it.
- When the draper speed is too high and the heads are thrown to the middle you have crossing material at the centre belt. This results in the material not entering head first into the threshing area, causing rotor losses and white caps.

14. Effective feeding - Knife drive adjustment and speed

- Ensure the knife is running at the right speed. Pulley speed for a Dual knife shoudl be set around 670 rpm, for a single knife, round 640 rpm.
- Too slow and it won't cut properly, leading to blocking, crop not falling correctly on front and therefore harvest losses.

Adjusting the knife drive adjustment video:

https://www.youtube.com/watch?v=FxOXKM4QqYM

15. Harvest Weed Seed Control - HWSC

How to get the crop and weed seeds into the header front and moving with the crop flow

- To support HWSC you want as many weed seeds into your header front and into the harvester as possible.
- As with the crop being harvested, it is essential to have a good cut with the knife and knife guards.
- Weeds are always tough or have green stalks and can be like rubber.
- They won’t flow easily into the front. Poor feeding means more "losses" of crop and weed seed from the front.

- The grass weeds (ryegrass or wild oat) have very thin stalks that are more difficult to cut with dull knives.
- The ground speed needs to be high enough so that weed seeds feed into the front - as with the crop.
  Don't take the reel too far out because you can shatter the weed seed pods before they can be fed into the front.

Please note: *We will look at HWSC set-up in a separate section of this course.*

16. How to set up any header front for effective and even feeding.

Recognising the signs for "poor feeding" and quantifying the "cost".

- Better feeding equals better performance.
- While every step at the front is important, the most important is to cut well.
- Use the reel to help the grain fall in the right direction.
- Always aim to get crop feeding head first on to your header front and feeder house.
- Set the dividers well. Covering the first guard on either end of the front or putting in a piece to direct material into the front so that they are not overloaded with material can assist feeding.
- If you have short (light) crops, cut as low as possible (beer can height) to increase the material. You need the straw material for easier flow of material into the header and for threshing.
- Poor feeding can be because ground speed is too slow. Increase the ground speed to increase the material and to increase pressure against the cutterbar.
  - Adjust the belt speed and the Auger height accordingly

- A set of new guards and a complete new knife sections cost about $200 per meter
  The money is returned very fast - you need less fuel, less horsepower and the knife drive gearbox will not have to work so hard and thus will last longer.
  -
  - If you break a knife head, it costs $300.
  - If you break a knife drive, it costs $3000.
- Regular guards and knife replacement results in better feeding and reduction of harvest losses

Effective feeding is better for HWSC as the weeds are cut well and enter the front!

Key to remember

Reel

- 5:5:5 (5cm down, 5% faster than ground speed, 5° in front)
- The reel is not a rake

Knife section

- 14 (point /inch)

Guards

- 5mm ledger gap, 0.5mm gap between knife section and top and bottom of guard
- Square sides to guard

Feed drum

- Finger at 8 o'clock full in
- 15-20 (gap of largest head) finger to floor

https://www.youtube.com/watch?v=8uHblSfIT-4

QUIZ 2

Module 1: Reducing Header Front Loss

Instructions

- Complete the following quiz consisting of four (4) multiple choice questions.
- You must achieve 100% to be marked satisfactory.
- Multiple attempts are available.

1 Multiple Choice 1 point Question 1

What is the gap between the knife section and the guard?

- (●) 0.5 mm
- ( ) 0.3 mm
- ( ) 5.0 mm
- ( ) Doesn't matter

2 Multiple Choice 1 point Question 2

What do the key numbers 5, 5 and 5 indicate in relation to the reel?

- (●) 5% faster ground speed, 5° in front, 5 cm into the crop
- ( ) 5% Slower than ground speed, 5° in front, 5 cm into the crop
- ( ) 5% faster ground speed, 5° in front, 5 m into the crop
- ( ) 5% faster ground speed, 5cm in front, 5 cm into the crop

3 Multiple Choice 1 point Question 3

How much more horse power (HP) do warn guard and knife section costs per metre?

- (●) 50% more – up to 15hp/metre
- ( ) 25% more – up to 11hp/metre
- ( ) 50% more – up to 10hp/metre
- ( ) Doesn't affect HP

4 Multiple Choice 1 point Question 4

For the feed drum on a header front, what should the gap be for the retractable fingers to the floor of the header?

- (●) Same as largest head of grain (15-20mm)
- ( ) Same as size of straw cut (beer can)
- ( ) Same as smallest head of grain (5-10mm)
- ( ) As wide as possible

1. Module 3 - Feeder house set-up

Module 2 Learning Objectives

You will learn how to:

- Set up any header front for effective and even feeding.
- Recognise the signs of “poor feeding” and quantifying the “cost”.

2. Adjustment of the Feederhouse slats

- Slats in the feeder house need to be correct for the crop harvested.
- Smaller ripples in the slats are better suited to cereal grain.

Please watch this video:

https://www.youtube.com/watch?v=0EstePXwuY8

3. Feeder house - How it works

- The feederhouse's job is to prepare the mat of crop material to the correct thickness for threshing.
- The material is being compressed from the header-front into the feederhouse and then the harvester. Roughly a 1/3 compression.
- To reduce the risk of blocking, the feederhouse needs to be working quicker than the front, to deal with the volume.
- The speed needs to be about 30% faster than the front.
- The material needs to be stretched out until it is 1/4 of it's original thickness.
- The slats need to be adjusted:
    - For the third slat set a 2 mm gap on the left and right. Not in the Centre.
    - The first slats need to be at 90° angle to the floor before the 2mm gap measurement is taken.
- The feederhouse drum has to be set in the down position. There is commonly more than one setting for different brands:
    - CNH (Case); 570 rpm is the proper feeder house speed for most crops, a slightly slower speed is required for crops that are fragile, e.g. dry peas.
    - JD (John Deere); is made for corn. While it is possible to reduce the speed you shouldn't, the highest speed setting (rpm) should be maintained.
    - Claas; 550 rpm is the correct speed.
- Speed of the feeder house should be 30% higher than the front. If you reduce the feederhouse speed you reduce the capacity, resulting in problems with separating, and leading to higher losses and cracked grain.

Please watch this video of Martin Reichelt discussing feederhouse setup:

https://www.youtube.com/watch?v=2iAjMnTsFLY&t=4s

4. Header front to Feederhouse fit

- The wrong angle between the feederhouse and header front can be costly.
- New Holland CR's (rotary combines) have an indicator which should be set at 3.5.
- For harvesters with no indicator, the correct angle can be obtained by having the Feeder house 760mm (30”) from the ground and at this height the face plate should be perfectly vertical.
- These settings will help with proper knife angle, reducing feeding problems and header front damage.

Please watch this video:

https://www.youtube.com/watch?v=wjWz3XsarFA

Key things to Remember

- Slats gap to floor of feeder house 1" / 25mm
- 570 rpm is the magic number for feeder drum speed
- Square face plate. 30" / 75cm off the ground

5. Feederhouse - Stonetrap drive

- New Holland's stone trap beater should be run in Low (650 rpm) to reduce crop damage and plugging.
- Case stone trap beater adjusts automatically with feeder house speed.

https://www.youtube.com/watch?v=1EmqWsPkL7Q

6. Feederhouse front drum height setting

- Adjusting drum, chain and feederhouse differs by brand
    - Case: Look in the Operators Manual - low setting
    - New Holland: Position 1 at the Block
    - John Deere: Position down
    - Claas: Position for grain is down
- Adjust the third slat, left and right at 2 mm Repeat setting two times!
- Always reverse the Chain and do one round check again.
- 5mm gap of the chain to the bottom of the feederhouse.

7. Feederhouse setup summary

Spotting opportunity to improve performance in the feederhouse

- If you have the chain too loose:
    - It causes cracks and uneven feeding.
    - The machine makes noises (banging/ clumping sounds). The grain loss monitor will tend to oscillate up and down and never settle to a fixed position
- If chain is too tight:
    - It will jam from time to time. The machine will make more noise and in the mirror you will constantly see the chopper spray.
    - The grain loss monitor will show large movements or fluctuations.
- If the feederhouse chain is set right:
    - You will not find any tiny cracks in the housing edges!
    - The machine makes no unusual noises.
    - The grain loss monitor will show an even reading of performance - not jerky and varied.

Check your settings once, then reverse and check again.

Module 2 Quiz

Instructions

- Complete the following quiz consisting of four (4) multiple choice questions.
- You must achieve 100% to be marked satisfactory.
- Multiple attempts are available.

1 Multiple Choice 1 point Question 1

What is the proper speed for a case feeder house to run at?

- (●) 570 rpm
- ( ) 750 rpm
- ( ) 520 rpm

2 Multiple Choice 1 point Question 2

The standard slats on John Deere feederhouse are:

- (●) For corn – because they are wide
- ( ) For cereal – because they are wide
- ( ) For cereal and corn – because they are wide

3 Multiple Choice 1 point Question 3

On a properly tightened feeder chain, should the slats be:

- (●) 1" /5mm off the floor
- ( ) Touching the floor
- ( ) Doesn't matter as long as they are tight

4 Multiple Choice 1 point Question 4

Loose feed house chain will:

- (●) Cause cracks and uneven feeding
- ( ) Improve feeding into the trashing area
- ( ) Run the machine more quietly

1. Module 4 - Threshing system

Module 4 Learning Objectives

You will learn:

- About different types of threshing systems and the ability to work in certain areas
- How to realise and analyse what the threshing system is doing and improve performance.

2. Threshing system - Overview of different the threshing systems and improve performance

The threshing system has 3 jobs:

1. Remove grain from heads;
2. Separate grain from straw;
3. Move straw out of threshing area.

Threshing problems arise when the system is not doing these 3 jobs properly or not doing them at the right time.

- Threshing of the heads must happen at the start of the concaves, going too far back results in rotor and sieve loss.
- 90% of the grain, if not more, must exit in the threshing area before the separator grates.
- To do this the concaves must be aggressive but also let the grain out.
- Concaves with as wide an opening as possible will reduce losses and cracking.
- Factory concaves may not be able to achieve this because of limited wire spacing available.
- Cover plates shouldn't be used unless absolutely necessary, because they reduce the area that grain can exit and will cause rotor loss.
- Benefits of getting the threshing area working properly include a reduction in fuel consumption and reduction in rotor hours - 50% reduction in fuel use. Free power upgrade in performance for your harvester!

Watch the following video:

https://www.youtube.com/watch?v=iSwCRigOmKs

3. Threshing system - Overview continued

Space in the concaves

- Most important thing to remember is to use the widest spacing concave possible, relative to the crop, even 2mm can make a huge difference.
- Need space for the grain kernels in the concave.

https://www.youtube.com/watch?v=QXBO-VvFCP8

4. Threshing system- Rasp Bars

Feederhouse - which bars for corn and which for cereal

- Rasp bars quite often are a forgotten item. Standard bars have a 28 degree side angle and the material tends to skirt around the rasp bar. If you look at the rotor skin beside the rasp bar it will be polished from material going around it. There are some after market bars that are 10 degree bars and the material must go up and over the bar resulting in better threshing and separation.
- It is important to catch the heads in the channels. If the channels are too big, like in John Deere S, they create a jam in the threshing area and overload the system with short straw.
- The fine grooves/channels are for cereal
- The big grooves/channels are for corn. Most harvesters from the USA have the big grooves. These include:
    -
        - John Deere (STS, S, WTS, 9600, 9500)

        - Case
        - Challenger Rotary
    - A good indicator is if the channels/ grooves are the same size as the width of the stalk material being cut
- John Deere; You can buy cereal rasp bars, look for flatter angles and narrow channels. If you are not doing corn (which is what the standard rasp bar is on a JD) ask your dealer for rasp bars that don't have corn breakers

Image above: Alternative Rasp bars for John Deere. Note narrow channels and no corn breaker on rear of bar

- Case IH - using hooked rasp bars correctly can significantly improve performance in cereal crops and rice.
- Claas: uses a conventional system and their bars are okay.

https://www.youtube.com/watch?v=gH4V0tvxDco

5. Threshing system - Rotor vanes

- The vanes' purpose is to move the straw from the threshing area towards the back of the rotor
- The vanes shouldn't be in the retarded (backward) position on any combine. As this holds the crop in too long.
- The objective is to thresh the grain head and let it out of the concaves as quickly as possible and then get the straw out of the rotor
- Holding straw in the machine any longer then necessary results in the straw being over threshed. Over threshed straw will carry grain out of the rotor or drop the grain too far back on the sieves resulting in losses. The longer the straw in your residue the less loss you will have.
- Example:
    - A John Deere combine with vanes retarded resulted in the straw making 2 extra revolutions. Losses were 670kg/ha. The vanes were advanced fully and the losses dropped to <67kg /Ha).
- JD:
    - Do not use any cover plates on rotor
- Case and NH:
    - Position in the middle of the three positions from the manual.
- Claas:
    - Do not close the rotor cover plates and check if they are open before starting.

https://www.youtube.com/watch?v=WamcIqIlYmg

6. Threshing system - Calibrating and squaring concaves

Calibrating and squaring of concaves is one of the most important adjustments on the combine. Improper adjustments can result in: over-loading one side of the sieves, white caps and rotor loss.

Case IH must have the pinch point dead centre on the bottom of the rotor and even from front to back. Re-centring the pinch point on concaves is important to avoid losses.

Please read the attached guide on Case Rotor and Concave Adjustment from Brett Asphar: Case Rotor and Concave

adjustments_v2.pdf download

Please view this video on Case Rotor and concave adjustment:

https://www.youtube.com/watch?v=OrNbNUCEsi0

7. Threshing system - Calibrating and squaring concaves (continued)

- New Holland concaves must be square to the rotor. The concave has threshing bars on it and the most inward bar should measure 1/4” to the rasp bar and the same for the most outward concave threshing bar. Front to back must be level
- New Holland CX:
    - Front 10 mm
    - Back 14 mm
- John Deere:
    - Rotary S and STS models, set to 6 mm in pinch point
    - Conventional T and WTS models; set conical front to back 5 to 9 mm at the points
      You will find detailed instructions in the in the Operator Manual.

- Claas Lexion:
    - 9/7/4 mm; concave setting front to back. There are three points left and right.

Please watch this video on Calibrating Claas concaves:

https://www.youtube.com/watch?v=KI8U0idHhuw

Note: Martin Reichelt makes the point that Claas concaves are difficult to set and it may be necessary to seek help from the dealer.

8. Threshing system - Threshing efficiently with minimal cracked grain

You can't thresh all day with one setting.

- You need to reset the machine regularly throughout the day. For this you need benchmarks based on conditions.
- You should be able to gradually increase your ground speed and reduce your rotor speed from the morning through to the early afternoon - unless moisture levels are high
- During the evening or as moisture levels increase, groundspeed should be reduced by 0.5-1kmph and rotor RPM increased as conditions get tougher.
- You need different settings as moisture levels vary
- You will also need different settings if you have a lot of weeds or have to manage different crop material.

Your objective in setting up the threshing system is to find the threshold of efficiency. Beyond this threshold you will start to see:

1. Unacceptable levels of grain loss
2. Use all of the available engine power (100%+ capacity)
3. A dirty sample

Once you find this threshold, you can then "step back" your settings to maximise your productivity without wasting power, fuel or resources.

There are also many other factors which can impact your rotor and concave settings:

- Knife and knife guards which are not sharp
- Rough/ undulating paddocks
- Wet paddocks, lodged / laying crop,
- Volume of weeds.

Starting settings:

1. Concave gap - head width in mm plus 2 mm

2. Drum/Rotor speed - 70 % of max speed
3. Ground speed - commence harvesting at 70% of "usual". If 8Km/hr is usual start about 5.5Km/hr
4. Fan speed 70 % of max

Next you need to determine your benchmarks:

- Increase each setting, one at a time until the "threshold" is reached
- Make small adjustments one at a time to improve your performance
- Cracked grain only occurs if there is too little material in the threshing area (rotor/drum)
- If this is happening, the main cause is usually too high drum or rotor speed. That causes over-threshing, resulting in short straw in the separating system. Longer straw helps threshing and avoidance of losses.

9. Threshing system - Concave setting. Influence of different concave openings

- If you open the concave you give the material more space, resulting in threshing being less aggressive and material is more fluffy/ light and not so compressed. This results in the grain moving more easily through the straw (separating).
- Separating requires less drum or rotor speed. The reduction in speed results in:
    - less over-threshing which reduces the amount of broken material on the sieves
    - less harvest losses through rotor.
    - less broken material on the sieves, which improves separation and reduces harvest loss from the sieves.
- Material shorter than 5cm will move through the threshing area with the centrifugal force and through the wires
- There are no differences between different combines this is true for all makes and models.
- The spacing in the concave should always be wider than the largest grain head (+2mm) or pulse seed width (+5mm). If you use narrow spacing in the concave, the grain will separate more to the back of rotor, which leads to overloading the top sieve in centre concave and resulting in harvest losses.
- You need to pay attention that there is always enough input (ground speed, fan-speed, material) to feed the machine.
- To improve performance, start opening the concave equal to grain head size, then open 1mm at time until you hit your benchmark (i.e. dirty sample / increased losses).

Please watch the following videos on concave selection and changes from Murray Skayman, Martin Reichelt and Brett Asphar.

https://www.youtube.com/watch?v=XsDO63YvsLM

https://www.youtube.com/watch?v=rLy-ONnGN_I

https://www.youtube.com/watch?v=X3kHNzEIVAg

https://www.youtube.com/watch?v=6MibteboSp0

https://www.youtube.com/watch?v=eX27ANnP7_M

10. Threshing system - Supporting HWSC. How to get the seed and weed seeds away from the straw (onto the sieves)

Rotary or Axial Flow combine

Open the concave to increase input and increase the rotor speed one (+50rpm) step at a time.

Try to thresh softly or gently. Over-threshing the weed seeds results in them moving out with the straw/rotary.

Hybrid combine tangential

Open the concave 25 - 35 millimetres

Set the drum speed about 850 -900 rpm

Increase the rotor speed 50 rpm at a time

The trick is to fill the rotor but not over-thresh so it can move the weeds without over-threshing to the back of the combine with the chaff. Over threshing results in rotor loss and weed seeds going out with the straw. You will see this when you measure rotor loss AND by the regrowth in the field the following year of weeds (including volunteers).

More will be covered on this in the HWSC module.

11. Threshing system - spotting opportunity to improve

For every colour of combine:

- First it is important to achieve even filling from the header front.
- If the crop is short:
    - Keep pushing material inside and watch for an even flow. Start with the ground speed setting

- To optimise threshing, increase the key adjustable variables described in the steps explained previously.
- First try to create a good sample in the grain hopper and than restart the program.
- The optimum straw length entering into the machine is around 70 cm. In canola it is around 0.75-1.0m higher depending on crop. Obviously with shorter / lighter crops you want the maximum about of straw possible, as you need the material for threshing and to reduce losses.
- With damp and green material, start with higher rotary or drum speed. 60 % of max plus 100 ensures that you do not plug the machine in the first 100 meters.

For Claas or Fendt Hybrid increase the speed of the rotary.

- Where the yield is very low and the straw is very long you need to find a compromise between losses and capacity
- If the losses are very high (over 1% in cereal and 2% in canola) adjust the fan to optimum.
- The rotor losses are caused from juice and water you produce in threshing. Increase the concave gap (+1mm increments) and increase the drum speed in 50rpm increments at a time.

https://www.youtube.com/watch?v=jsunATmaDCw

Threshing system - spotting opportunity to improve (continued)

- All losses are created by the rotor - sieves do not cause losses unless they are too tight and that is operator error.
- Setting up the threshing area properly will result in less loss and more capacity.
- Try to maintain as high a rotor speed as possible and slowly open the concave until you see un-threshed heads. This will give you maximum capacity.
  You need to take the following steps to optimize threshing:

1. Open concave in small steps in 1 or 2 mm

-
  - In most cases you will need to do this around three times before moving to the next step.
  - The more open concave creates greater space for the grain, resulting in fewer white caps. By the third increment (most likely) the sample in the hopper will look bad/ very dirty.
  - At this point you need stop opening the concave and proceed to the next step.

2. Increase the drum or rotary RPM

-
  - Increase the RPM by steps of about 50 at a time. This is very important.
  - The sample will clean up as a result of this. Repeat this step until the sample is clean, then proceed to step 3.

3. Increase ground speed in increments of 0.5 -1 km/hr

-
  - Repeat this step until losses increase or the sample will be dirty.
  - If the sieve losses climb up at the monitor, stop increasing ground speed and proceed to step 4.

4. Increase fan speed in small steps

-
  - In the morning or tough conditions, increments of around 40-50 RPM should be sufficient steps
  - Around lunchtime and afternoon as conditions dry out increments of 20-30 RPM will suffice.
  - Increase the RPM until losses are acceptable and/or the sample is acceptable .
  - You have now increased your capacity and reduced your losses.
  - Repeat this process until the machine hits capacity

https://www.youtube.com/watch?v=5Ty08FX2uSs

Title

Module 3 Quiz

Instructions

- Complete the following quiz consisting of four (4) multiple choice questions.
- You must achieve 100% to be marked satisfactory.
- Multiple attempts are available.

1 Multiple Choice 1 point Question 1

How much of the grain do you want out of the trashing area?

- (●) At least 90%
- ( ) At least 85%
- ( ) 100%

2 Multiple Choice 1 point Question 2

What position should you never run the vanes in?

- (●) Retarded position
- ( ) Advance position

3 Multiple Choice 1 point Question 3

What is the most important thing to do to your concaves when being installed?

- (●) Square them to the rotor
- ( ) Round them off
- ( ) Fit the smallest wires

4 Multiple Choice 1 point Question 4

What gap should the concave be for grain?

- (●) Head width +2mm
- ( ) Head width –2mm
- ( ) As tight as possible

1. Module 5 - Cleaning area - Sieves

Module 4 Learning Objectives

You will learn about:

1. How sieves can actually work in your favour with different settings
2. Improving performance.

2. Cleaning area - How sieves can work for you with different settings

How do sieves work?

They are not mechanical... Watch this video with Martin Reichelt explaining this.

Also watch Brett Asphar's overview explanation of how sieves work and how you control sieve loss.

- It is essential to achieve an even coverage of crop material across the sieve
- If the coverage of material is not even, excess air blasts pass through the "gaps" resulting in less efficient separation of the grain from the chaff
- An even coverage allows the sieves to work effectively to separate the crop through the combination of mechanical agitation and the steady blast of air
- When everything is working effectively:
    - the chaff will exit out the back of the machine;
    - clean grain will fall towards the clean grain cross auger and elevator; and,
    - incompletely threshed material will be carried to the return elevator.

https://www.youtube.com/watch?v=9PMv6Wb8ww4

https://www.youtube.com/watch?v=4ZI2fNzSzUo

3. Cleaning area - How to optimise your sieves before and during harvest (Case and New Holland)

Case Axial Flow sieve settings:

- The CNH cleaning area includes a grain pan in front of the sieves which is under the concaves.
- When grain is dropped out of the rotor at the front, the grain has lots of time to get to the bottom and when it hits the sieve it will require less separating because it's already on the bottom of all the MOG (material other than grain). So it is very important to get the grain out at the start of the rotor.
- The sieves need to be calibrated before every season and as required. They can go out of calibration for a few reasons, one being opening the sieves. Open to clean them out by using the switches at the back.
- Also to calibrate the sieve properly, we need to add a step to the calibration process described in the operator manual.
    - After you have calibrated the sieves, open them up to 14mm then close them to 6mm.
    - Re-measure the sieves to see if they are 6 mm as most times they are not and will require a tighter calibration (4mm).
- Sieve settings do not require very much adjustment once they are set properly for the crop being harvested. The grain size doesn't change throughout the day so no need to change the sieve settings. Fan adjustments will be required to clean up the sample once the sieves are set.
- Top and bottom sieves are usually set close to one another (For example: Wheat: top sieve 12 mm, bottom 10 mm). These allow the top sieve to separate grain and chaff and the bottom sieve to fine tune it. Table 1 (Coping with crop variation section) shows suggested settings.
- The Case squirrel cage fan will stop working properly when the sieve is set too tight. This can cause grain to back up into the fan.
- Rule of thumb never close a Case bottom sieve less than 6 mm.

For tip for Calibrating sieves in CNH machines, please see the Murray Skayman video below

New Holland sieve settings:

- New Holland and Case settings are similar with New Holland using slightly tighter sieve settings because of the different cleaning fans.

- The New Holland fan is a paddle fan which gives better air flow.

https://www.youtube.com/watch?v=8dGGRd252Zc

https://www.youtube.com/watch?v=MSwm-8zudjo

4. Cleaning area - Pre-sieve

Case and New Holland:

- The pre-sieve on CNH combines has very little air going through it so you need to use it to move the initial grain/ material to the top sieve.
- A pre-sieve too open will let too much chaff drop through and it misses the top sieve entirely, the chaff then falls through the bottom sieve ending up in the hopper and resulting in a dirty sample.
- The pre-sieve should only be open to the width of the grain kernel you are harvesting. Minimum of 10 max of 14.

John Deere:

- Older STS series have a non-adjustable pre-sieve.
- Models with a frogmouth sieve need to open to 20 to achieve better (increased) airflow.

Claas:

- Claas machines do not have a pre-sieve as they have a large preparation floor.

https://www.youtube.com/watch?v=6s3EeNRnY5Q

5. Cleaning area - Overview of how the return works

- Returns for re-threshing should be kept to a minimum. This should be one of your goals in operating a harvester.
- There are 3 ways to reduce returns:

    1. Thresh the grain better.
    2. Run a lower fan speed
    3. A more open bottom sieve setting.

- High returns can cause cracking of grain and grain loss because the returns are dumped on top of the MOG and can ride right out the back.
- To overcome this, maintain as open a bottom sieve as possible.

- If the threshing rotor/drum is doing the job properly this reduces returns and grain loss
- The return overload is always located on the sieves at the side or in the centre.
- High returns are always caused by the back part of the top sieve and the setting of the bottom sieve.
    - Firstly - understand that the back part of the top sieve (return) must be always 4 mm less than the front part of the top sieve.
    - Secondly - never set the bottom sieve less than 8 mm.
    - It is very important to have as clean a return as possible. Threshing material multiple times leads to cracks and hence losses.
- The best method is to take the bottom sieve out (no bottom sieve) and cover the return section with a plate, but that requires everything to be correct at the other parts of the harvester including optimum threshing.
- Traditionally with Case, New Holland, John Deere and Massey harvesters, returns are deposited back to the rotary from the top or on the drum.
- Claas returns, since APS system came out, are to the center of the APS drum.
- The return system does not and cannot thresh but mostly damages the material and leads to cracked grain.
- The newer machines deposit the material back to the top sieves. This can potentially overload the sieves, causing more losses and again more return.
    - The material goes around in the same circle until it is powder or small cracks.
    - This powder and the small cracked grain components will move out with the chaff as losses.
- We need to count powder and cracks as part of our losses from yield as there are settings we can change to minimise these losses.
- If the return is half full, we could be losing 200 kg per ha.

Please watch this Martin Reichelt video - **Reducing turbulence to reduce return**

https://www.youtube.com/watch?v=9K9vSoBnBS4

https://www.youtube.com/watch?v=GIWUaGfz18A

6. Cleaning area - Coping with crop variation

- Different crops do not significantly impact the cleaning area. See Table Crop Settings download for settings.

- Always start work in every crop with the same settings as per the table. Only the fan and the bottom sieve have to be adjusted to match conditions on the day.
- Top sieve and pre-sieve (if fitted) remain the same.
- The density/thickness of the chaff matt moving across the sieves from even filling is only the difference. This we can manage by:
    1. Increasing fan in small steps about 30 RPM at a time; and,
    2. Opening bottom sieves always by 1mm, 1 step at a time

- If you are getting excessive returns:
    1. Open the bottom sieve until return is close to empty.
    2. Adjust the top sieve so that the back of the top sieve is 4mm less than the front (e.g. 18/14)..
    3. Adjust fan in 30 RPM increments.
    4. Then +1mm for the top sieve

7. Cleaning area - Sieve setting for major brands

You can download a printable copy of this table by clicking this link Table 1 - Summary of machine setting for major brands .pdf download

Module 5 Quiz

Instructions

- Complete the following quiz consisting of four (4) multiple choice questions.
- You must achieve 100% to be marked satisfactory.
- Multiple attempts are available.

1 Multiple Choice 1 point Question 1

For the sieve area what tools do we have available to reduce sieve loss?

- (●) Fan speed and sieve opening
- ( ) Rotor speed and sieve opening
- ( ) Fan speed and Concave clearance

2 Multiple Choice 1 point Question 2

The pre-sieve should be opened to what gap?

- (●) Slightly wider than the kernel being harvested
- ( ) Slightly smaller than the kernel being harvested
- ( ) Doesn't make a difference

3 Multiple Choice 1 point Question 3

What is the best way to reduce returns?

- (●) Thresh the grain better
- ( ) Run a higher fan speed
- ( ) Close the bottom sieve

4 Multiple Choice 1 point Question 4

In tough conditions or with tough green weeds rotor drum speed should start:

- (●) 100 rpm higher
- ( ) 100 rpm lower
- ( ) The same

1. Module 6 - Harvest Weed Seed Control (HWSC)

Module 6 Learning Objectives

You will learn about:

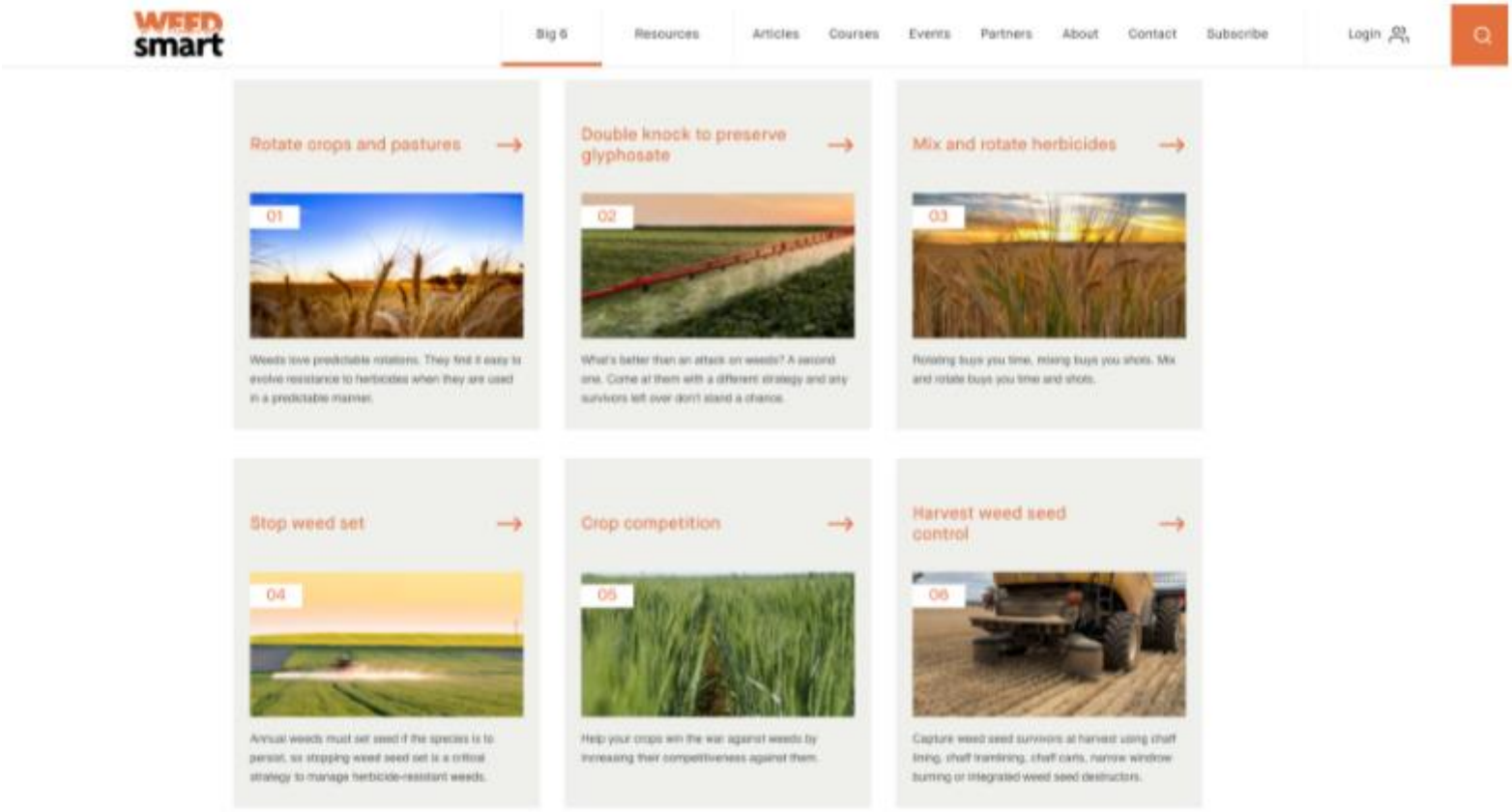
1. The options available for HWSC, what to consider and why to consider it.

2. Harvest Weed Seed Control - Overview

It's understood around 50 to 80% of weed seeds can be captured by the header front at harvest. Consequently, harvest weed seed control (HWSC) alone is not 100% effective at weed reduction, and needs to be be used as part of a strategy involving the 'Weedsmart Big 6'. But HWSC does help achieve a significant reduction in the weed seed bank, and keep it down.

In the absence of HWSC, growers spend money killing weeds with herbicides all year and then spread the survivors out at harvest, exacerbating the weed issue for the following season. Harvest weed seed control is intervening in that continued loop of spreading weed seeds and supporting the populations to grow. Its' important to remember that we need to get the weeds in to the header front, so header front set-up and avoiding header front loss is crucial for success. It is acknowledged that weeds adapt and current HWSC practices put some selective pressure on weeds which drives the survival of early shedding and prostrate weeds. Weed management strategies will need to continue to adapt but this is also a key reason for using a range of tools to manage weeds .

The initial driver for many growers to adopt harvest weed seed control is herbicide resistant ryegrass. While in some areas of the country HWSC is also used to target other resistant weeds including Brome, wild radish etc. GRDC investment in weed surveys of growers' paddocks identified that in the Mid-North SA in 2018, more than 75% of paddocks surveyed had Group A resistance and 75% had Group B resistance including in some instances, to the new pre-emergent herbicides Boxer Gold and Sakura. Continuing to throw herbicides at weeds is not a sustainable solution and herbicides need to be only one part of the tool kit, demonstrating the value of the Weedsmart Big 6 (Links to an external site.)which includes HWSC.



Weed Smart website and access more on Big 6 resources

Any weed that survives the herbicides program, may be resistant. If you can stop weeds setting you're going to have a much smaller resistance problem to manage in the following season.

Further information relating to HWSC can be found in the following literature review.

HWSC Lit Review - Peter Newman.docx download

Please watch video introducing why HWSC and harvest loss reduction is important. Peter Newman at West River 2020.

https://www.youtube.com/watch?v=CrbFM7h89UU

3. HWSC - Get the weeds and the crop in the front of the harvester.

A. Weed species – seed retention

Winter weeds

In southern farming systems, the winter weeds annual ryegrass and wild radish are the best candidates for HWSC and to a lesser extent brome grass and wild oats.

#Rule of thumb: Winter weeds shed their seeds at approximately 1% per day during harvest as shown in Figure 1.

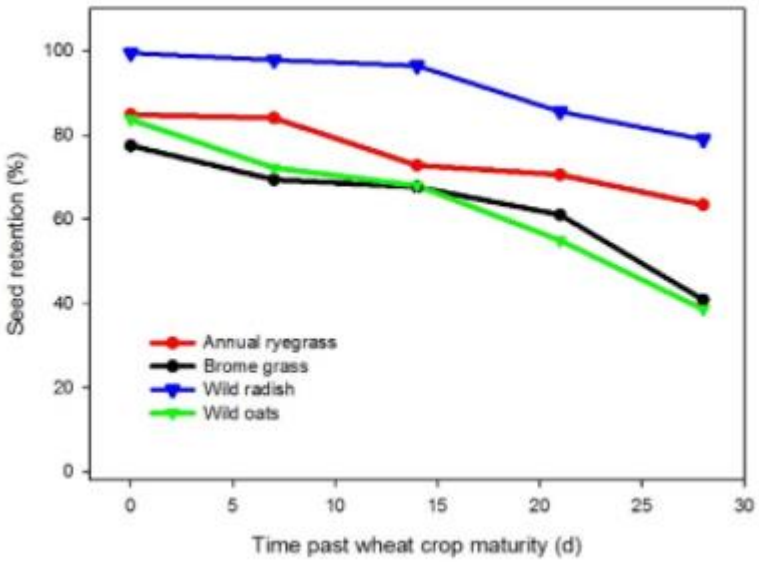


Figure 1: Retention of weed seed species post crop maturity (Dr Michael Walsh).

Northern Weeds

In 2011/2012, a survey of 70 winter and summer cropping paddocks was undertaken by QDAF across northern NSW, southern and central Queensland to identify which weed species were present and setting seed in-crop at harvest time. Table 1 summarises the seed retention of key weed species from this survey.

Weed	Wheat (winter)	Chickpea (winter)	Sorghum (summer)
Barnyard grass	95	100	47
Turnip weed	-	100	95
Feathertop Rhodes grass	-	70	79
Fleabane	93	86	34
Annual ryegrass	92	89	-
Wild oat	67	93	-
African turnip weed / mustard	-	100	-
Sowthistle	53	54	57

Table 1: Seed retention (%) at the beginning of harvest of eight common weed species in the northern region.

B. Crop architecture – competitive crops hold weed seeds high.

The general recommendation for HWSC is to harvest at 'beer can' height, around 10-15cm above ground, to capture as many ryegrass seeds as possible. But what happens if you need to harvest higher than 10cm?

This is where crop competition comes to the fore. A survey of 71 wheat crops by Dr. Michael Walsh Sydney Uni and Dr. John Broster, CSU showed that above 20cm in the canopy, the more competitive (high biomass) crops retained around 73% of ryegrass seed, compared with 44% in the less competitive (low biomass) crops. At 40cm, the competitive crops still retained 51% ryegrass seed compared with just 9% in the poorer crops (see below).

This means that in terms of HWSC efficacy, raising the harvest height can still achieve reasonable ryegrass capture in more competitive crops. However, in poorly competitive crops, or in regions where biomass is limited by rainfall, harvest height should be kept as low as possible to achieve adequate results.

** Please note: Research undertaken by Southern Farming Systems, found that in the southern region high rainfall zone, only around 40% of the ryegrass seed could be captured during harvest. The hypothesis for this was that the very thin and weak stems of ryegrass in the tall, high yielding crops led to excessive lodging prior to harvest. This hypothesis has not been supported by other research, however it is important to be aware of contrary research findings. In general, HWSC is very effective in high yielding crops, .

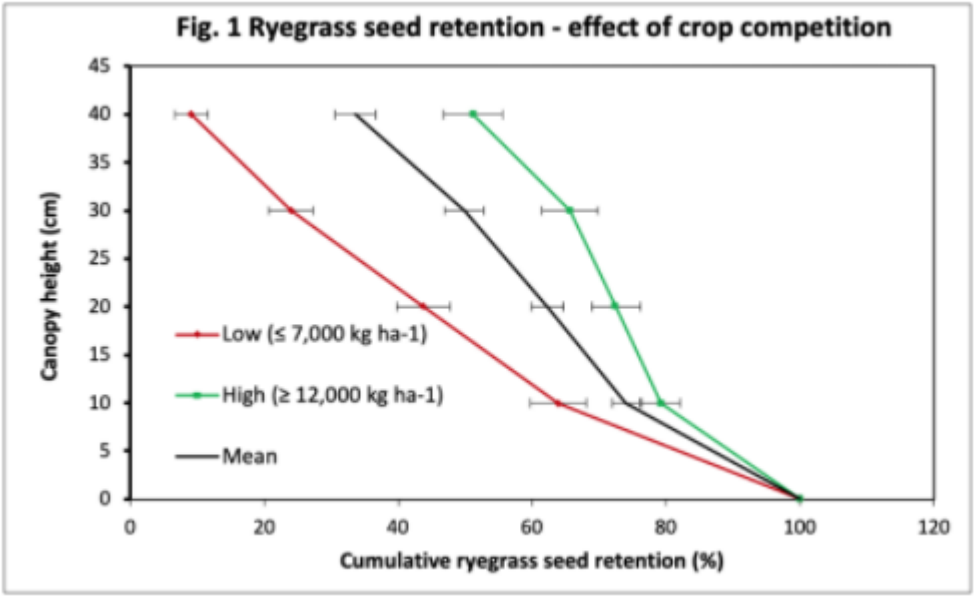


Figure 2: Relationship between crop competition (using canopy height as a proxy measure) and ryegrass seed retention.

C. Front set up – good knife set up – angle – no step

Essentially, the best harvester set up for the crop will be best for weeds as well. So the good news is, what you do to improve performance with reducing harvester front loss will also improve capture of weed seeds on to the header front.

See sections on header front set-up.

4. HWSC - Swathing

We know that weeds will eventually shed their seed or lodge if left in a standing crop. Swathing allows us to cut off weeds prior to seed shed and research has shown that weeds retain their seed while lying in the swath. The swathed crop may even be left for several weeks, while standing crops are harvested, without weed seed shedding.

Research undertaken by Dr Michael Walsh at Darkan in 2012 compared weed seed retention in a standing barley and a swathed barley crop over a three week period, using plastic trays. Results showed a 62% retention of annual ryegrass seeds in standing crop, compared to 95% retention in swathed crop.

Ina trial at the same property the previous year (2011), three strips of a barley crop with approximately 1 ryegrass/m^2 were swathed. Three weeks later, these strips were harvested with a harvester fitted with a Harrington Seed Destructor and compared to direct harvest of a standing crop, with ryegrass germination assessed the following year. The average annual ryegrass density in the standing crop strips was 37 plants/m^2 compared with 4 plants/m^2 in the swathed strips. Thus, the effect of barley crop swathing was a 90% reduction in subsequent annual ryegrass emergence.

Swathing improves HWSC

If a grain grower has taken up harvest weed seed control (HWSC) due to large numbers of resistant weeds, swathing may be the key to driving down the weed seed bank as quickly as possible and maximising the effectiveness of the HWSC tool. In instances where a weed species, such as wild oats, is known to shed seed, swathing becomes a very important option.

The most commonly swathed crops in Australia are canola and barley. Typically they are ready for swathing 7 to 14 days before they could be direct harvested. Growers who use swathing as a tool often start on their canola then move onto their barley. However, swathing is an additional job and can be risky so may not be suitable for every situation or business.

5. HWSC - Threshing the weeds seeds out

Thresh the weed seeds out of the rotor and land them on the sieve

After entering the front of the harvester and travelling up the feeder house, the crop and weeds enter the rotor. The first part of the rotor is the threshing section and as with the crop, this serves to separate the weed seeds from the head / pod of the weed.

The second section is the separator and this is where we are trying to get the grain and weed seeds out of the rotor and land them on the sieve.

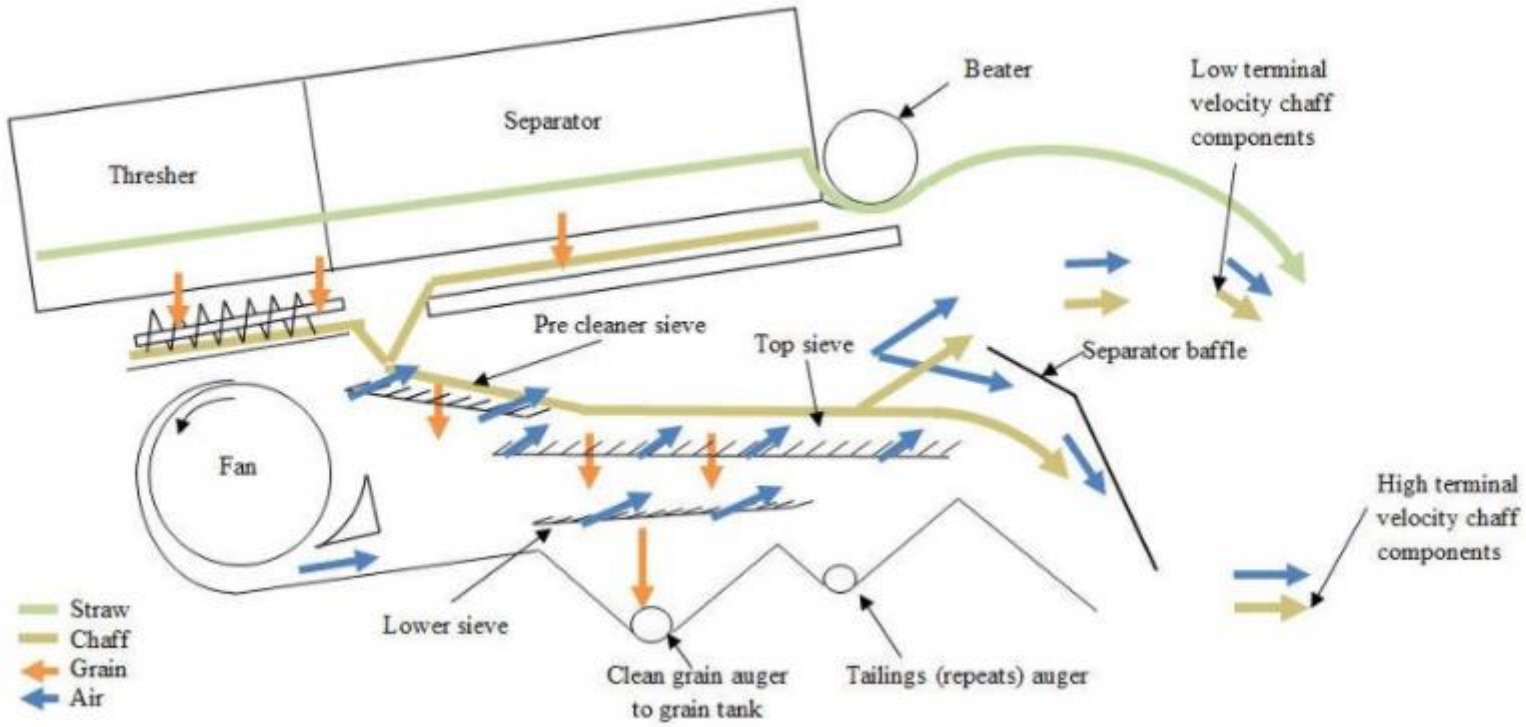


Diagram 1: Straw, chaff and grain movement through the rotor (Berry. N, Seed Terminator)

Rule of thumb: Low grain losses out of the rotor = low weed seed loss. It is critical to measure grain losses with a drop tray

If you are threshing the crop hard enough to get all of the grain out of the rotor you will be also threshing the weeds hard enough to get the weed seeds out of the rotor and land them on the sieve.

There are different opinions on how to best achieve this as outlined through the previous modules.

One annecdote you may like to use to demonstrate this in a workshop is Ray's bucket of golf balls:

Ray Harrington says he wants to throw a bucket of golf balls in the front of the harvester and have them all land on the sieve. In other words, have big holes (openings) in the separator area (opening up the concaves).

6. HWSC - Keeping weeds seeds in the chaff

Once threshing and separation has occurred we should have at least 95% of the weed seeds that entered the front of the harvester in the chaff fraction on the sieve. The aim is to keep the weed seeds in the chaff fraction.

When material is 'on the sieve', it really means the chaff should be floating in a mat around 5 to 10cm above the sieve. The wind blowing from under the sieve should be strong enough to keep this chaff floating, but not so strong that we blow the weed seeds high into the air and risk losing them.

Many growers using HWSC aim to have a slightly dirty sample, turning up the wind (fan) until the grain sample is clean, then backing it off a little so ensure they are not blasting the weed seeds out of the back of the machine.

Importantly, this is a key time to measure your chaff and rotor losses (harvest loss) with your drop pans to check that you are NOT losing your weed seed in your rotor losses.

Rule of thumb: Increase wind speed until achieving a clean sample then back off slightly to ensure no weed seeds are lost.

7. HWSC - Direct weeds into the HWSC tool using a baffle

One of the main limitations of HWSC is the ability to direct weed seeds into the chaff cart, seed impact mill, or any of the other HWSC tools.

Baffles are baffling! Some harvesters need them, others don't. Let's start with the machines that don't need a baffle.

- Claas machines keep chaff and straw completely separate and as a rule don't require a baffle.
- Some New Holland machines have what is known as a PDS belt, a short conveyor belt that transfers straw from the rotor to the chopper. These machines have less requirement for a baffle.
- In general, all Case and John Deere harvesters require a baffle of some sort as all of the chaff and straw exit together. Baffles vary greatly depending on the chopper / straw spreader attached.

The diagram below shows how a separator baffle can be used to divert more weed seeds into the mills. These baffles come in all shapes and sizes, and are often custom made by grain growers to fit their harvesters. The aim is to divert the weed seed containing chaff fraction below the baffle to hopefully target at least 95 to 98% of the weed seeds with one of the many HWSC tools.

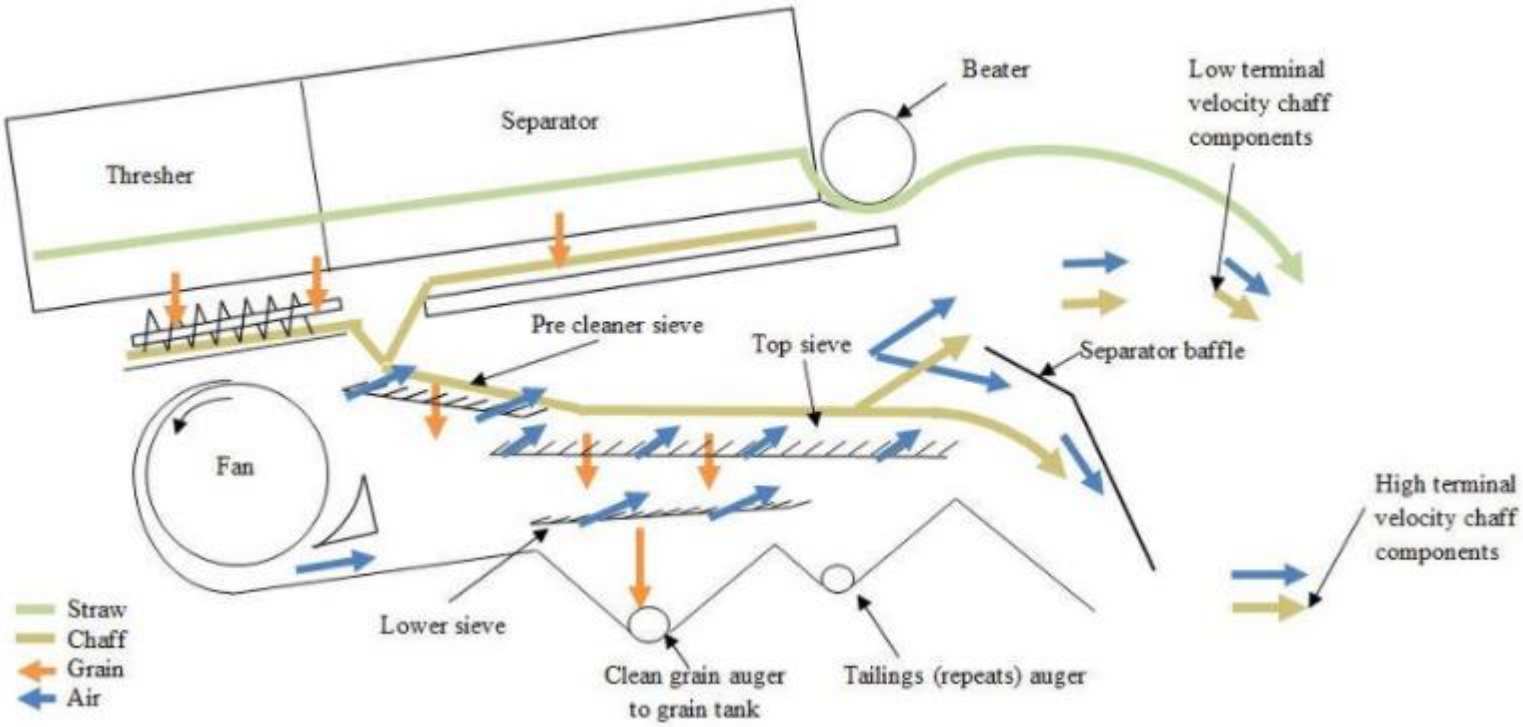


Diagram - Dr. Nick Berry, Seed Terminator

#Rule of thumb: The separator baffle sits around 300 to 400mm above the height of the sieve. The leading edge of the baffle is often directly above the rear of the sieve (when the sieve is as far back as it can go). Please note: there are many variations to this.

Seed mill vs Chaff cart vs Windrow burn

Dr Michael Walsh from University of Sydney has conducted 25 trials across Australia comparing weed seed capture of the chaff cart, narrow windrow burning and the Harrington Seed Destructor. Ryegrass counts the following Autumn showed the three HWSC tools performed equally, reducing ryegrass germination by 56% on average.

In the instance that harvester set up is leading to significant rotor losses, and weed seeds are spread with the straw, narrow windrow burning would be expected to perform better than the other treatments because windrow burning removes all of the straw and chaff where the chaff cart and HSD remove the chaff only. This is evidence that we should aim to minimise rotor losses of weed seeds using good harvester set up.

Walsh and Broster – set up. (This can be a good story to tell at the start of a workshop)

In 2014, John Broster from CSU and Michael Walsh from Sydney University set up HWSC trials with five different harvesters in NSW and found, much to their dismay, that all harvesters were throwing a significant portion of weed seeds (ryegrass) out with the straw fraction.

On average, across five harvesters, about 50% of the weed seeds went out with the straw fraction (through the rotor). This was a disastrous result for anyone considering HWSC, as it is the chaff fraction (not the straw fraction) which ends up being directed into the HWSC tool. Of the remaining 50% of seeds, 3% of the ryegrass ended up in the grain tank with just 47% ending up in the chaff fraction where you want it.

Fortunately, in 2015, the experiment was undertaken again, with a harvester that was set up to destroy weed seeds with an iHSD fitted. Results showed that when the harvester is set up right, the vast majority of weed seeds are directed into the chaff stream and then into the iHSD mills. This experiment was conducted using a Case 9120 harvester fitted with an iHSD that was set up to maximise weed seeds entering the HSD mills. Under optimised set up, just 3% of the ryegrass seed exited with the straw, meaning that 97% of ryegrass entering the front of the harvester could be captured and destroyed. The harvester used was a Case 9120 with the settings Rotor 950, Fan 980 rpm, Concave 10, Sieves; Upper 18 mm, Lower 11 mm. The experiment also showed that harvest speed had little effect on the fate of weed seeds, but it did have a big effect on grain losses.

8. HWSC - Tools, they all work

HWSC - tools overview

As previously stated, the best place to go for info regarding all HWSC tools is the WeedSmart website.

https://www.weedsmart.org.au/big-6/harvest-weed-seed-control/ (Links to an external site.)
There is also a free on-line course consisting of 12 videos about HWSC delivered by Michael Walsh and Peter Newman. This course is currently being updated. https://www.diversityera.com/courses/harvest-weed-seed-control-101 (Links to an external site.)

To access the course you will need to sign-up to Weedsmart.com.au or login if you already have an account. Suggest you join as very useful resource and which provides a quick overview of options...

Windrow burning: windrow burning was established in the 1990s but is in decline due to need to deal with the second high risk activity of burning and coping with fire ban and wet seasons as well as other issues like nutrient loss from the system.

Chaff Cart: The concept of the chaff cart is to collect the chaff and dump in piles that again can be burned or in some cases grazed. Problematic because of fire bans and timing and they didn't burn that efficiently. Growers using chaff carts now primarily select this option if they have sheep and can graze the chaff dumps or heaps. This can also have some trade offs such as chaff dirtying the wool, grazing activities spreading and distributing the heap and/or the need to burn or spread the heap later.

Bale Direct; The Bale direct system involves connecting a harvester directly to a bailer towed behind the harvester. This option has complex set-up but works if there is a market for the bales.

Chaff Deck; The Chaff Deck allows growers to separate that chaff fraction out and isolate the dumping of chaff onto the wheel tracks. The benefit being that the wheel tracks are a fairly hostile environment for weeds (Ryegrass) to grow because due to compaction and that it concentrates high seed densities onto a non productive area, simultaneously reducing the weed seed bank in the productive areas. This option works well with control traffic farming.

Chaff lining: Chaff lining is a similar concept to a chaff deck however, instead of distributing chaff onto the wheel tracks it is concentrated into a narrow band that is left to decay in-situ. Research has shown decomposition of the weed seeds is impacted by, rainfall, crop type, amount of chaff and ecology of the seedbank.

Mills: There are various mill options available on the market. From the original tow-behind Harrington mill to the hydraulic HSD, superseded by the vertical iHSD, the Seed Terminator, Redekop's SCU and the Weed Hog. The report by the Kondinin group (see link) gives a good overview of these. All of these mills, except the Weed Hog, work in a very similar way, using a cage mill with versions of counter rotating bars. With variations on the number of rows of bars, use of screens and coating applied to bars.

- Weed kill rate: In terms of weed kill they're very similar between 95% to 98% weed seed kill. The Weed Hog being the exception of 80-85%. This mill is a lower cost option and still has a fit but may mean it takes a little longer to reduce the seed bank.
- Wear: Mill wear is improving year on year. With most of the manufacturers indicating a wear life on the mills from 400-600 hours. The type of soil and crop affects mill wear. The sandy soils can have a detrimental impact on the mills, increasing wear. Feedback from some growers identified that certain crops, such as lentils, can also lead to higher wear on the mills.

- Loss of capacity: Any mill is going to require about 20%-30% of the power from your harvester. Feedback from Ben White and the Kondinin Group research showed that growers were countering that with “chipping and remapping” their harvester to cater for this loss of power. Brett Asphar has also shown that re-centring the rotor can give you back that capacity.
- Green crops. All mills struggle with green crop/ weeds. Resulting in blockages and also having to slow down

The Kondinin group have provided a great report on HWSC systems: HWSC tools- 2018 - Kondinin Group.pdf download

And mill systems available here: Harvest Weed Seed Warriors - 2020 - Kondinin.pdf download

Please watch the video overview on tools from Harvester online forum 2020 with Peter Newman and Ben White talking on the differences in the mill systems.

https://www.youtube.com/watch?v=s7luZ85tFVM

https://www.youtube.com/watch?v=f8BXaJkVPNc

9. HWSC - Tools, they all work (continued)

Decision on HWSC

When growers are thinking about how they might make this work on their farm, it is important to be focused on the practicalities of each of the various pieces of equipment and what suits the farming practice?

Ask:

- Does it suit your farming system?
- Does it fit / suit your harvester?
- Am I over capitalising? What can you afford to spend?
- How much does it cost to run? There is more information including a calculator on HWSC cost from Peter Newman available at the following links:
    - https://www.weedsmart.org.au/content/calculating-the-cost-of-hwsc-for-your-farm/ (Links to an external site.)
    - https://grdc.com.au/resources-and-publications/grdc-update-papers/tab-content/grdc-update-papers/2020/02/what-is-your-cost-of-harvest-weed-seed-control (Links to an external site.)
- What is the impact on performance? Mills can reduce the capacity of the harvester by20-30%, where is the tipping point for losses that can accommodate this reduction in capacity? Time is at a premium during harvest, so how does the HWSC affect the ability to 'pull up' at a paddock that's got a lot of green material (because we know mills do not cope well with green material)? How easy is it to drop or bypass a mill? What is the trade off in time? It is also important to consider what happens if you have a breakdown? Can you work around it? Can you get parts and how easy is it to repair? You don't want a HWSC system that requires extra time to get the crop off or results in losing crop as a result of this.

10. HWSC - Testing around Australia

HWSC testing around Australia

In 2010, Dr Michael Walsh began comparing HWSC tools, as part of a GRDC funded, AHRI supported trial at Yuna on the northern tip of the WA wheatbelt, using a John Deere 9650 harvester with a tow behind Harrington Seed Destructor and comparing impact on weed reduction with other methodologies such as chaff carts and narrow windrow burning.

Two years of trials highlighted the importance of one, solitary number: 60%! Harvest weed seed control in wheat crops in Australia as a collection of tools has the ability to reduce the annual ryegrass germinations in the following Autumn by 60%, and the HSD, chaff cart and narrow windrow burn techniques are all equally as effective as one another. (He also found out a bit about how frustrating it is to work with agricultural machinery, along with other findings, but that number was the main result.)

Q. Annual ryegrass - how many seeds per plant?

A. 209

Across 24 sites utilised in the afore mentioned trials, average ryegrass seed set in wheat crops was 209 per plant. The range extended from as low as 28 seeds/plant to as high as 425 seeds/plant depending on rainfall, ryegrass density, and crop competition.

Seed bank

This research aimed to target low to medium ryegrass densities in crop. The average was just 10 ryegrass plants/m^2, hardly a 'blowout' in anyone's language. Despite this, ryegrass seed set, on average, 2041 seeds/m^2 highlighting the importance of a multi faceted approach to weed management.

70-80% ryegrass seed removal

To achieve a 60% reduction in ryegrass germination in the year following the HWSC treatments suggests it is likely that 70-80% of the ryegrass seed was removed at harvest. Though this exceeds 60%, we must remember that there's an old seed bank of ryegrass in the soil, some of which germinates in the year after HWSC was utilised but which was not possible to capture through the harvester. To achieve a 60% reduction in germination we need to achieve greater than 60% removal of weed seeds at harvest. Previous research by Michael Walsh has confirmed that 70-80% ryegrass seed removal at harvest is a typical target to significantly reduce the weed seed bank.

Q. Is 60% enough?

A. Yes

Sure, 100% weed seed control at harvest would be amazing, but this isn't achievable with Australian weeds. The impact of ryegrass control on profit has been modelled using the RIM model and in the gross majority of scenarios 60% weed seed removal is enough when used in combination with herbicides and a range of other weed control tools.

Generally speaking, however, many grain growers find they can maintain the ryegrass seed bank at a moderate level under continuous crop with intensive use of modern herbicides. If growers can hold the seed bank level without HWSC, then if we add HWSC at 60% efficacy we find that it puts the seed bank into gradual decline, and this, in essence, is aim of weed management. This can take a few years of persistence for farmers to observe in the field without extensive measurement. As they say, 'it won't happen overnight, but it will happen'.

11. HWSC - Testing around Australia (continued)

Mill (HSD) testing

There are currently eleven Australian weed species for which the efficacy of mill technologies have been evaluated for viable seed reduction.

A study, again led by Dr. Michael Walsh identified that the iHSD mill was effective for seed destruction of 11 different weed species as can be seen in the table below. Other international studies are currently underway assessing weed kill of a wide range of species, with encouraging results.

Weed species	Seed kill (%)
Annual ryegrass (*Lolium rigidum*)	96 (0.9)
Wild oats (*Avena* spp.)	99 (0.1)
Wild radish (*Raphanus raphanistrum*)	99 (0.1)
Barley grass (*Hordeum vulgare*)	99 (0.1)
Brome grass (*Bromus* spp.)	98 (1.0)
Barnyard grass (*Echinochloa* spp.)	99 (0.8)
Indian hedge mustard (*Sysmbrium orientale*)	99 (0.4)
Fleabane (*Conyza bonariensis*)	99 (0.2)
Windmill Grass (*Chloris truncata*)	97 (0.4)
Sowthistle (*Sonchus oleraceus*)	99 (0.5)
Feathertop Rhodes Grass (*Chloris virgata*)	98 (0.3)

Table 1: Percentage of seeds destroyed for 11 weed species from Australian cropping systems using a stationary iHSD mill. Figures in brackets are the standard errors for the mean of eight replicates.

The effect of crop type

Table 2 below, shows small differences in ryegrass seed kill between four crop types. However, other trials conducted under paddock scale commercial settings at harvest achieved 99% kill of ryegrass, wild radish, brome grass, and wild oat while harvesting canola or barley. These findings support the notion that the iHSD mill is effective in all crop types tested so far.

Table 2. Influence of chaff type on rigid ryegrass seed kill.[a]

Chaff type	Rigid ryegrass seed kill
	%
Wheat	92 b
Canola	90 bc
Lupin	98 a
Barley	88 c

[a]Numbers followed by the same letter are not significantly different (P = 0.05)

Mill speed

A small increase in mill speed requires a large increase in horsepower to drive the mill, so we need to make sure we are not overdoing it or we will be costing growers time and money with no additional benefit. The graph below (figure 2) shows how researchers and developers of the iHSD (DeBruin engineering), settled on the 3000rpm mill speed.

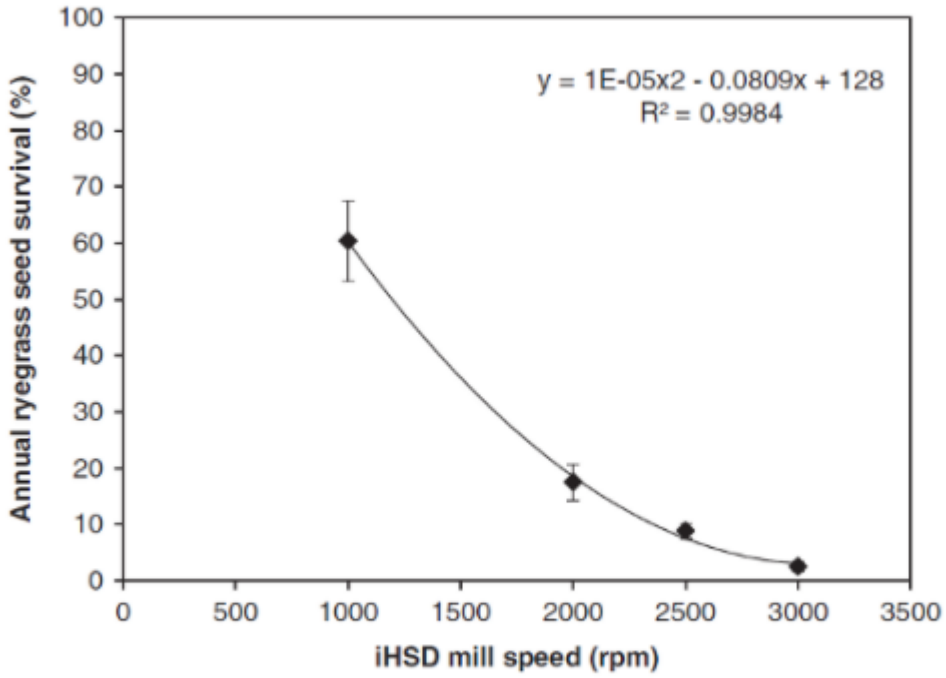


Figure 2. Influence of iHSD mill speed on the survival of annual ryegrass seed processed in wheat chaff.

Moist chaff reduces seed kill

Research conducted to date has included measuring ryegrass seed kill at 10, 12, 14 and 16% moisture levels. Seed kill was 92% at the lower moisture levels (10 and 12%) and dropped to 88% for the higher moisture levels (14 and 16%) so high moisture content can have a significant negative effect on performance of weed seed mills.

Mill type

Extensive testing of the HSD and Seed Terminator has shown very similar weed kill efficacies between the two. If anything, the Seed Terminator has the edge over the HSD with terminator measured at about 98% control of ryegrass and the HSD measured at 96% under similar conditions. The Redekop SCU was originally tested on Canola seed achieving 98% control. All testing of the Redekop has so far been undertaken in Canada and recent tests were conducted on Italian ryegrass which is slightly different to winter ryegrass. This testing showed 98% control however the Redekop is yet to be tested on annual ryegrass in Australian conditions. Watch this space. The WeedHog is WA designed and developed by Tom Lewis (from Tecfarm) and is being manufactured in small numbers by Westoz Boilermaking. This mill is a totally different

design and testing so far has demonstrated 85 to 90% ryegrass seed kill. This mill is lower cost and lower horsepower so it may still have a fit even though the seed kill doesn’t match the that of other competitor impact mills.

Module 6 Quiz

Instructions

- Complete the following quiz consisting of three (3) multiple choice questions.
- You must achieve 100% to be marked satisfactory.
- Multiple attempts are available.

1 Multiple Choice 1 point Question 1

Is 60% weed seed capture enough for HWSC?

- (●) Yes, it may take longer to reduce the seed bank
- ( ) No
- ( ) What is HWSC

2 Multiple Choice 1 point Question 2

Winter weeds shed their seeds at what % per day:

- (●) 1%
- ( ) 5%
- ( ) 10%

3 Multiple Choice 1 point Question 3

If you have low grain loss out of the rotor, you will:

- (●) You will have low weed seed loss out of the rotor
- ( ) You will have high weed seed loss out of the rotor

GRDC Train the trainer Content – Harvester set up

Working with adult learners

Welcome to *Working with adult learners,* a module addressing key aspects of developing and delivering training to adults. The module includes the following sections:

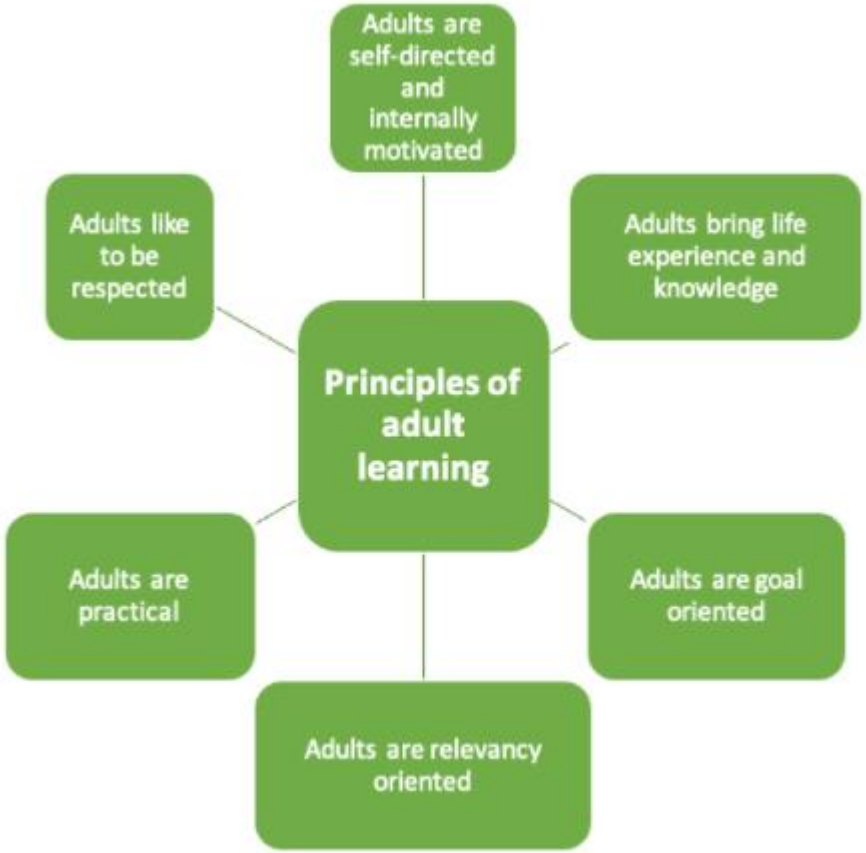
- The fundamentals of adult learning
- Designing training
- Delivery methods
- Designing learning spaces
- Communicating with learners
- Managing groups
- Gathering feedback
- Evaluating and reflecting on training.

Readings, short videos and activities are provided to support you to develop and deliver engaging training.

Short quizzes are included at the end of topic areas to help you check your understanding.

Principles of adult education

Let's start by looking at how adults prefer to learn. Understanding the principles of adult learning and how they are applied helps with structuring and delivering program content.



Title: Knowles principles of adult learning.

Examples of how you can apply each of these principles include:

- Ensuring participants are offered choices
- Connecting participants' past experience with course content
- Clearly identify the learning goals and align activities with the goals
- Relating tasks to participants' learning goals
- Converting theoretical learning into practical activities
- Developing collaborative relationships with participants.

Watch a video discussing The six adult learning principles (4:39 mins).

Read more about how to apply adult learning principles.

Think about workshops you have attended, which trainers have successfully employed adult learning principles? What did they do?

Watch a video discussing The six adult learning principles (Links to an external site.) (4:39 mins).

Read more about how to apply adult learning principles. download

Think about workshops you have attended, which trainers have successfully employed adult learning principles? What did they do?

Learning preferences

Learning preferences are all about how people learn. People learn in different ways and have a style or a preference to help them acquire new skills and knowledge, and to remember things.

Source: Gravells, A, 2020, Learning preferences (Links to an external site.).

Being aware of your participants' learning styles assists you to develop strategies to effectively reach each participant. A frequently applied method broadly categorises learning preferences or styles into four groups:

- Visual
- Auditory
- Reading/writing
- Kinesthetic.

However, it is important to remember that most participants prefer training that offers opportunities for them to use multiple learning styles. The implication of this for you is to ensure your training design and delivery has variety. Look at the diagram below to gather some ideas about how to incorporate different learning preferences.

Applying learning preferences

Visual

- Graphics
- Photos
- Charts
- Maps
- Diagrams

Auditory

- Presentations
- Large and small group discussions

Reading/Writing

- Handouts
- PowerPoint presentations
- Course summaries

Kinesthetic

- 'Hands on' activities
- Demonstrations followed by practice

Watch a video discussing different types of learning preferences (Links to an external site.) (4:31mins).
Watch a video to help you to identify and understand your learning preferences (Links to an external site.)(3:31mins). Reflect on what you discover and how you can apply this when training.

Read an article about how to identify learning styles and to cater to a diverse group of participants download.

Quiz: Working with adult learners

Instructions

Complete the quiz by answering 'True' or 'False' to each question.

1 True or False 1 point Adult learners

Adult learners prefer to participate in training that connects with their experience.

- (●) True
- ( ) False

2 True or False 1 point Learning styles

Participants prefer training where they can use different learning styles.

- (●) True
- ( ) False

3 True or False 1 point Learning styles

A visual learning style is the one that is preferred by most learners.

- ○ True
- ● False

4 True or False 1 point Learning styles

Using photographs is the best way to meet a participant's visual learning style preference.

- ○ True
- ● False

5 True or False 1 point Learning styles

Demonstrations are an important way meet a kinesthetic learning style preference.

- ● True
- ○ False

Alexandra Beal

From: Courtney Ramsey
Sent: Friday, 14 August 2020 10:24 AM
To: 'Tom Draffen'
Cc: Peter Broley
Subject: RE: GRDC Harvester Conversations (2020) [SEC=UNCLASSIFIED]

Hi Tom apologies for the delay getting back to you. Thanks for documenting our discussion and following up.
I have made some comments below against the items below.

Utilising the budget allocated for the 5th Harvester Clinic in 2020, BCG will organise an online discussion forum on Thursday 10th September involving:

1. *3 local growers (Wimmera-Mallee) with different methods of HWSC (i.e Terminator, Destructor, Chaff Deck and Chaff Lining etc)*
2. *Ben White or similar on harvester fire prevention*
3. *A local dealer who will provide a live stream of the machine from the yard for context*
4. *An expert on Harvest Weed Seed Control and Harvest Measurement*

I am happy to approve the development of the online discussion forum which will be recorded as discussed. The budget requirement for online delivery vs face to face forums is likely to be significantly different so we will tidy up in the variation to ensure the additional funds are available for future delivery.

To be able to move forward with certainty we are looking for approval on the following:

1. *Provide written approval from GRDC to run face-to-face harvester clinics with 30 participants (plus approximately 5-10 support staff i.e presenters, event facilitators etc) in 2020.*
2. *Provide approval of the key topics to be covered at the clinics*
3. *Provide approval that due to the current restricted climate and the unknown circumstances surrounding the COVID-19 pandemic that clinics may need to be cancelled within 48 hours of scheduled delivery*
4. *Provide approval that should the events be cancelled due to circumstances out of our control that GRDC will provide payment of works completed (based on invoices and internal time allocated by project partners up until the point of cancellation)*

I am happy to approve the reduced content delivery focusing on measuring Harvest Losses, Harvest weed seed control (chaff lining, decks, carts and seed destructors) and Harvester fire prevention. As discussed I am happy to continue working toward face to face events with continuous reassessment of COVID risks, including the potential for events to be cancelled up to 2 days prior to scheduled delivery. In this event I will work with you to ensure costs to the point of cancellation are covered by the project funds and any remaining funds are restructured to be available for enhanced future delivery in the final years of the project.

Thanks for flagging the additional details in relation to the variation. Hopefully we can get some of these things nutted out on Monday and provide a bit more surety.

Thanks
Courtney

Courtney Ramsey
Grower Relations Manager - South

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GRAINS RESEARCH & DEVELOPMENT CORPORATION

[redacted]
W: www.grdc.com.au
[redacted]

UNCLASSIFIED
Classified by [redacted]

From: Tom Draffen [redacted]
Sent: Friday, 14 August 2020 8:20 AM
To: Courtney Ramsey [redacted]
Cc: Peter Broley [redacted]
Subject: RE: GRDC Harvester Conversations (2020)

Hey Courts,

Are you able to provide any feedback and/or written approvals as per the email below?

We are moving to start locking in specialist presenter agreements next week and require the green light to do so.

Following some feedback and discussions with relevant presenters – we are looking to market these events as "Harvest Conversations" or "Harvest Forums" to ensure that the expectation for attendees is that the events will be a chance to talk about issues and strategies rather than the presentation of "set-up" strategies as we do not have the international input.

The key driver for the Forums/Conversations will be "More growers measuring losses"

Looking forward to hearing from you on the above and below.

Regards,
Tom

Tom Draffen
Senior Manager Extension and Communication
[redacted] [redacted] **W:** www.bcg.org.au
PO Box 85, Birchip, VIC, 3483 - 73 Cumming Ave, Birchip
Become a BCG Member

From: Tom Draffen
Sent: Tuesday, 11 August 2020 8:20 AM
To: Courtney Ramsey [redacted]
Cc: Peter Broley [redacted]
Subject: GRDC Harvester Set-up Clinics - 2020

Dear Courtney,

Thank you for your time last week – it has given us some good clarity to move forward with planning the Harvester Clinics for next year.

As a follow-up I've summarised the key points of the meeting:

1. Harvester Clinics are able to be run in 2020 given they meet the GRDC criteria:
    - The clinics are business critical
    - They have a COVID-Safe Plan
    - They cannot be run digitally
2. Registration at the clinics will be capped at 30 attendees (or as per local/ State guidelines where lower)
3. Clinics will be run on grower properties as priority provided that the growers have been informed of the COVID-safe plan and consent to the clinics.
4. Clinics will be run at local recreation reserves (football ovals as alternative if a suitable grower location is unavailable or preferred)
5. The key topics of the clinics will be:
    - Harvest Weed Seed Control
    - Measuring Harvest Loss
    - Prevention of Harvester Fires (for SA/NSW)
6. Clinics will be run as a panel discussion and prompt conversation with growers and specialists of the three key topics working together to provide the content with the physical machinery (Harvester) as the focal point.
7. BCG as a Victorian organisation are not able to facilitate the clinics in South Australia due to current border closures (we have assumed that the border closures will remain until the end of the year) as such AgCommunicators have been sub-contracted by BCG to deliver the clinics in SA for 2020.
8. 4 clinics will be delivered in SA in 2020 at Cummins, Maitland, Keith and Pinaroo between Monday 20th September and Friday 2nd October
9. As Victoria is currently in stage 3 lockdown the project will deliver an alternative opportunity for Victorian growers
10. GRDC has recognised the extra workload that has been required for the current project and has flagged the need for a variation of contract.

I caught up with Peter B this morning to discuss some further points and plan for the alternative Victorian opportunity and we have decided upon the following, can you please provide approval:

Utilising the budget allocated for the 5th Harvester Clinic in 2020, BCG will organise an online discussion forum on Thursday 10th September involving:

1. 3 local growers (Wimmera-Mallee) with different methods of HWSC (i.e Terminator, Destructor, Chaff Deck and Chaff Lining etc)
2. Ben White or similar on harvester fire prevention
3. A local dealer who will provide a live stream of the machine from the yard for context
4. An expert on Harvest Weed Seed Control and Harvest Measurement

To be able to move forward with certainty we are looking for approval on the following:

1. Provide written approval from GRDC to run face-to-face harvester clinics with 30 participants (plus approximately 5-10 support staff i.e presenters, event facilitators etc) in 2020.
2. Provide approval of the key topics to be covered at the clinics
3. Provide approval that due to the current restricted climate and the unknown circumstances surrounding the COVID-19 pandemic that clinics may need to be cancelled within 48 hours of scheduled delivery
4. Provide approval that should the events be cancelled due to circumstances out of our control that GRDC will provide payment of works completed (based on invoices and internal time allocated by project partners up until the point of cancellation)

We would also like to flag the following for consideration into the contract variation:

1. Due to the lack of seasonal workers due to COVID-19 and an early harvest in North America the train the trainer modules

will not be able to be delivered in the current timeframe indicated in the AOP and will require further time

2. Similarly, Dirk Fiskwick family has been unwell and unable to contribute to the development of the modules, with an extension on delivery may allow input of an alternative specialist.
3. To provide the most value from the multimedia budget and to provide GRDC with the best return on investment, and following feedback from the international harvester specialists, we believe that the videos should be a primary support for the train-the-trainer modules
4. The Case Study Budget should be redirected into filmed one-on-one interviews that can be incorporated (and built on) into the training material as well as a stand-alone communication media. Further production work of video as well as additional video material will need to be determined.

After our meeting with Cindy from FarmLink today we should have all the dates and locations locked in for 2020 and be able to provide you with some marketing products and workshop materials by the end of the week.

Thanks Courts,

Regards,
Tom

Tom Draffen

Senior Manager Extension and Communication

[redacted] [redacted] **W:** www.bcg.org.au

PO Box 85, Birchip, VIC, 3483 - 73 Cumming Ave, Birchip

Become a BCG Member

Alexandra Beal

From: Courtney Ramsey
Sent: Monday, 7 August 2023 8:58 AM
To: Chris Sims
Cc: Danielle Gault
Subject: 1903710122_20240802 (1).pdf [SEC=OFFICIAL]
Attachments: 1903710122_20240802 (1).pdf

Hi Chris,
This is the article in question. If you could flick me through Paul's number so I could have a quick chat to him that would be great. And as discussed if you could just reinforce with all parties and people involved in the forums (particularly if they are on the speaker list) they just cannot mention product names in promoting the forums, and that all media for these needs approval with me, that would be super helpful.

Thank you.
Courts

Courtney Ramsey
Grower Relations Manager - South

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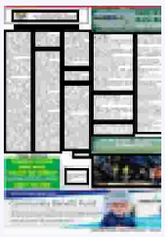
[redacted]
W: www.grdc.com.au
[redacted]

OFFICIAL
Classified by [redacted] on 7/08/2023 8:54:54 AM

AUTHOR: Paul McIntosh SECTION: GENERAL NEWS ARTICLE TYPE: NEWS ITEM AUDIENCE : 0
PAGE: 7 PRINTED SIZE: 417.00cm² REGION: QLD MARKET: Australia ASR: AUD 1,157 WORDS: 940
ITEM ID: 1903710122



03 AUG, 2023

Header calibration and harvest losses

Western Downs Town & Country

Header calibration and harvest losses

By PAUL McINTOSH
Industry Development Agronomist - Northern region
For Pulse Australia and Northern Extension
Agronomist for WeedSmart

What is that old saying about "what ye shall sow, so shall ye reap," referring back to biblical times and which still has plenty of truth in them. So these words do have connotations to our current farming systems where we sow the seeds and then harvest the crop later on.

However unfortunately, our bulk fast harvest practices with various makes of headers or harvesters can leave a certain amount of grain on the ground in the paddock.

Even from my long ago harvesting experiences, grain being lost from the harvester operation was common and you would often be scratching around on the ground in amongst the trash and stubble looking for grain, to see if the header set up and speed was at best practice.

These days we can do this 'on your knees in the dirt looking' process much easier and definitely more effectively than the human eye can.

I am referring to better management of harvest losses and the introduction of the Bushel Plus system. Originally designed in Canada I believe, it is an integrated system which consists of a magnetic cover, drop pan and variable speed separator for quickly measuring harvest losses and the enabling of better calibration and set up of your harvester.

The system works by capturing seed or grain samples from the chaff, straw and other material out the back of the header. The captured sample is run through the Bushel Plus Air Separator to remove the chaff bits and pieces, just leaving behind crop seed.

With a small-calibrated weigh dish, you can easily convert these captured seeds over a hectare to accurately estimate your harvest losses - and it can be very confronting to see how many kgs per hectare of crop you are leaving on the ground. It is even worse when you work it out in current dollars per tonne.

These days you can even use this same Bushel Plus system to estimate where your losses are coming from, for example using the same magnetic set up under the header front.

So the system certainly maximises productivity by minimising harvest losses, whilst increasing harvesting capacity.

Combine this Bushel Plus system with the three Harvester Set-Up Workshops, I am organising across Queensland in late August, and you have a field day morning not to be missed.

The acknowledged Australian experts will go over actual headers (plural) on the day, providing tips and clarity on the setup of your harvester to reduce losses, gain a better sample and even increase productivity.

With these Harvester Set Forums scheduled for the Jimbour Plains near Dalby on August 29, Orion near Springsure on August 30 and at Mackay on August 31, they really are half days not to be missed.

The 2021 events were marred by Covid, however the 2022 harvester mornings were excellent and fully attended.

The 2023 days will be the same where you get to listen, ask questions and generally sticky beak inside and outside various makes of headers provided by generous farmers for the event.

As I said a not to be missed event and as previous farmer and header operator attendees have passed onto me, one of the most important field days they have ever attended.

So as well as seeing the Bushel Plus system, you will also learn a lot about harvesting and harvester set up, plus I will make sure there is enough food and coffee as personal sustenance for you. Don't forget to RSVP to me please for this GRDC invested free day as it certainly will be where your time investment is going to be well worth attending.

MLA Report
July 26, 2023

The number of cattle penned at Dalby remained very close to the previous weeks level at 4,288.

Export buyer representation was strong with continuing support from southern operators.

There was a large variation in demand with export processor lines improving in price with cows 4c to 6c dearer and up to 20c/kg.

Light weight young cattle went against this trend and lost 15c to 20c/kg and considerably more in places quality related.

Light weight yearling steers returning to the paddock made to 359c to average 305c/kg.

Yearling steers to feed for the do-

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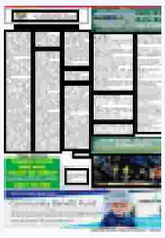

03 AUG, 2023

Header calibration and harvest losses

Western Downs Town & Country

mestic market made to 372c to average from 346c to 350c/kg.

Heavy weight yearling steers to feed with top of 346c to average 338c/kg.

Light weight yearling heifers to re-stockers made to 256c with the largest numbers at 224c/kg.

Yearling heifers to feed made to 288c and averaged from 243c to 268c/kg.

Heavy grown steers to export processors made to 311c and the bullock portion made to 302c to average 286c/kg.

Medium weight 2 score cows made to a top of 206c to average 192c/kg.

The best of the medium weight cows made to 228c to average 217c/kg.

Good heavy weight cows made to a high of 237c to average 230c/kg.

Heavy weight bulls made to 292c/kg.

Our Sales Included:

Angus bullocks 302c/kg and $1888p/head.

Charolais cross cows 231c/kg and $1934p/head.

Brangus cows 230c/kg and $1679p/head.

Angus cross heavy feeder steers 320c/kg and $1604p/head.

Charolais cross heavy feeder steers 340c/kg and $1394p/head.

Charolais cross trade feeder steers 340c/kg and $1273p/head.

Brangus trade feeder steers 325c/kg and $1329p/head.

Charolais cross heavy feeder heifers 298c/kg and $1361p/head.

Shorthorn cross trade feeder heifers 288c/kg and $1129p/head.

Shorthorn cross weaner steers 342c/kg and $1075p/head.

Charolais cross weaner steers 336c/kg and $1029p/head.

Brangus weaner steers 336c/kg and $1047p/head.

That's all folks.

Paul McIntosh

Right

Farmers at a Queensland Harvester Forum in 2022.

Photo Supplied

Harvester Set-up Clinics
Combines (minimum of two)- Claas, Case, John Deere, New Holland, AGCO
Header fronts - Macdon, John Deere and Case or NH or Claas. Draper, Auger and Pickup front to be included
Need grain sample at least one of wheat, canola, barley
Need different guards and knife sections to show.
Need range of different crop lifters, finger extensions, wind systems examples to show
Need to include core-flute, vibra-mats, knife lift kits - range of options
Timing: 8.30am-3.00pm

Title	Summary of session	What grower/ farmers will get from the session	Who

Opening session:	Overview of Front to back and what it will cover.	This is the start of a conversation to improve harvester/ combine performance. What today will cover:
		• Discussion and hands-on combine set-up to improve performance with a focus on
		  ○ what we've tried in our conditions that has worked and what hasn't; and
		  ○ what you've done that has and hasn't worked in local conditions
		• Hands-on loss measurements and analysing of loss & grain sample
			Host / local facilitator

Session 1:	How to put Dollars in your pocket through proper loss measurement and calibration of loss sensors	• Why is measurement important • Practical demonstration how to measure rotor and sieve loss properly in various conditions • How to calibrate the harvesters loss sensors to use the value of the loss measurement going forward.	Peter Broley/ Ben White
Session 2:	Reducing header front loss	• Proactive fine tune header front settings to suit your harvesting goals; understanding all the header-front settings which can be changed to achieve better performance – quality, speed, cost, loss management. • Details on setting up cutterbar for different crops (guard choice, angle of front, what tool for what conditions to choose) • How to set the auger and reel to improve performance in different crop conditions • Knowledge on lifters, reel adaptations etc and how to use which ones in different conditions; what affects the decision	International Speaker + Brett Asphar/ Kassie van der Westhuizen

		• How to set up any header front for effective and even feeding. Recognising the signs for “poor feeding” and quantifying the “cost”. • How to get the crop into the header front and moved with the crop flow • Summary of quick steps to improve performance and what are the challenges for here in their conditions	
Session 3:	Feeder house set up	• Knowledge about efficient and proper crop flow from the header front through the feeder house into the harvester • Step by step set up to get every feeder house to eat more crop (high volume of straw) • Coping with light crop vs heavy crop conditions • Summary spotting opportunity to improve	International Speaker + Brett Asphar/ Kassie van der Westhuizen
Session 4:	Overview optimizing threshing system	• How to realize and analyse what the threshing system is doing • Faults and benefits of the threshing system • How to thresh the grain with less cracks as possible while keeping machine efficiency high • Influence of concaves and concave openings/ settings • Different threshing mechanisms in different crop conditions (long, bulky crops with damp conditions/short low yielding crops/ examples from the group). • Crop variances • Summary spotting opportunity to improve and what are the challenges for here in locally	International Speaker + Brett Asphar/ Kassie van der Westhuizen
Session 5:	By Brand (Claas, Case, JD, NH)	• What are the specific threshing an separating in differences for my combine? (Break up into at least two groups by machine type	International Speaker + Brett Asphar/ Kassie van der Westhuizen
Session 6:	Cleaning area (chaffer)	• A new view on how sieves can actually work in your favour with different settings • How to optimize your sieves before harvest • Optimizing while combining	International Speaker + Brett Asphar/ Kassie van der Westhuizen

		• Crop variances • Overview about how the return works and influences the separation • Mastering the wind and sieve settings for optimal performance • Summary spotting opportunity to improve and what are the challenges for here in locally	
Session 7:	Harvest Weed Seed Control	• Why harvest weed seed control • Overview on chaff lining/ chaff decks/ cart / Mills • Cost of HWSC • Update on Mill technologies. • Facilitated discussion on technologies available and where it's being deployed..	Local Weedsmart rep/ Ben White, Brett Asphar and manufacturers
Session 8	Harvest Fires/Fire Suppression	• Introduction to the topic – causes, costs and minimisation strategies. Make available the GRDC Pocket Guides • What are people doing today, how do they a build a robust plan and share with their neighbour	Ben White
Session 9	Grain Storage and Hygiene Storage	• Challenges and Opportunities • Innovation • Discussion	Chris Warwick/ Ben White
Session 10	Bringing it Together	• Recap of the days session – key messages, opportunities and challenges • Further questions and comments • Completion of feedback sheets	Local facilitator

Harvester Setup clinics -Contingency Dates

September	Location	Time	Coordinator	HWSC Presenter	HWSC Demo	Harvestloss	Harvester Fires	Registration email/link	Grower Property	Grower Presenters		Opposing Events
Tuesday, 1 September 2020												Weedsmart, SA
Wednesday, 2 September 2020												Weedsmart, SA/MIG SFD, ERDS FD Gibson
Thursday, 3 September 2020												Weedsmart, SA, GRDC Crop Consultants Australia Regional Workshop - QLD
Friday, 4 September 2020												
Saturday, 5 September 2020												
Sunday, 6 September 2020												
Monday, 7 September 2020												
Tuesday, 8 September 2020							Ben White Not available					
Wednesday, 9 September 2020							Ben White Not available					Facey Group SFD
Thursday, 10 September 2020	**Victorian - Online Harvester Forum**	**3:30PM**	**BCG**	Peter Newman	N/A	Ben White	Ben White	[redacted]	Online Forum	Ian Ruwold, Ian Taylor, Ben Merrit, Mike McLelland		Liebe Group SFD GRDC Crop Consultants Australia Regional Workshop
Friday, 11 September 2020												Condinup FD
Saturday, 12 September 2020							Ben White Not available					
Sunday, 13 September 2020							Ben White Not available					
Monday, 14 September 2020							Ben White Not available					
Tuesday, 15 September 2020							Ben White Not available					Southern Dirt SFD
Wednesday, 16 September 2020							Ben White Not available					WIFE Annual Forum/CFIG SFD/Morawa SFD
Thursday, 17 September 2020							Ben White Not available					
Friday, 18 September 2020							Ben White Not available					
Saturday, 19 September 2020							Ben White Not available					
Sunday, 20 September 2020							Ben White Not available					
Monday, 21 September 2020	**Cummins, SA**	**9:00am**	**BCG & AgCommunicators**	Chris Preston & Sam Trengrove	Dr James Barr (Seed Terminator)	Keith Hopkins & Ben White	Ben White	https://bit.ly/3htfOI4	Luke Telfer	Jamie Phillis (JD Chaff Deck), Luke Telfer (Case w/ tramlining)		
Tuesday, 22 September 2020	**Maitland, SA**	**9:00am**	**BCG & AgCommunicators**	Chris Preston & Sam Trengrove	Dr James Barr (Seed Terminator)	Keith Hopkins & Ben White	Ben White	https://bit.ly/3htfOI4	Paul Jarret	Ben Francis & Paul Jaret		
Wednesday, 23 September 2020	**WA - West River**	**10:00am**	**Facey Group**	Peter Newman / Ben White	Brett Aspher (Seed Terminator)	Peter Newman/ Peter Broley	Ben White	[redacted]				S2C SFD
	Pinaroo, SA	**9:00am**	**BCG & AgCommunicators**	Chris Preston & Sam Trengrove	Dr James Barr (Seed Terminator)	Keith Hopkins & Ben White	Ben White	https://bit.ly/3htfOI4	Skeet Lawson	Skeet Lawson		
Thursday, 24 September 2020	**WA - Kojonup**	**8:00am**	**Facey Group**	Peter Newman / Ben White	Brett Aspher (Seed Terminator)	Peter Newman/ Peter Broley	Ben White	[redacted]				
Thursday, 24 September 2020	**WA - Cuballing**	**1:30pm**	**Facey Group**	Peter Newman / Ben White	Brett Aspher (Seed Terminator)	Peter Newman/ Peter Broley	Ben White	[redacted]				Cascade FD
Friday, 25 September 2020	**Keith, SA**	**9:00am**	**BCG & AgCommunicators**	Chris Preston & Sam Trengrove	Dr James Barr (Seed Terminator)	Keith Hopkins	Ben White	https://bit.ly/3htfOI4	Andrew Thomas	Skeet Lawson, Andrew Thomas		
Saturday, 26 September 2020												
Sunday, 27 September 2020												
Monday, 28 September 2020												
Tuesday, 29 September 2020	**WA - Merriden**	**9:00am**	**Facey Group**	Peter Newman / Ben White	Brett Aspher (Seed Terminator)	Peter Newman/ Peter Broley	Ben White	[redacted]				
Wednesday, 30 September 2020												
Thursday, 1 October 2020												
Friday, 2 October 2020												
Saturday, 3 October 2020												
Sunday, 4 October 2020												
Monday, 5 October 2020												
Tuesday, 6 October 2020												
Wednesday, 7 October 2020												SAGDA Crop Walk, SE SA & Wimmera
Thursday, 8 October 2020												
Friday, 9 October 2020												
Saturday, 10 October 2020												
Sunday, 11 October 2020												
Monday, 12 October 2020												
Tuesday, 13 October 2020	**North of Condobilin, NSW**	**8:00am**	**Farmlink**	Greg Condon (Grassroots Ag)		Warrack Finlay (Primary Sales)	Rod Gribble (Australian Custom H	[redacted]				
Tuesday, 13 October 2020	**Lake Cargelligo, NSW**	**1:30pm**	**Farmlink**	Greg Condon (Grassroots Ag)		Warrack Finlay (Primary Sales)	Rod Gribble (Australian Custom H	[redacted]				
Wednesday, 14 October 2020												
Thursday, 15 October 2020	**Ardlethan, NSW**	**8:00am**	**Farmlink**	Greg Condon (Grassroots Ag)		Warrack Finlay (Primary Sales)	Rod Gribble (Australian Custom H	[redacted]				
Thursday, 15 October 2020	**Lockhart, NSW**	**1:30pm**	**Farmlink**	Greg Condon (Grassroots Ag)		Warrack Finlay (Primary Sales)	Rod Gribble (Australian Custom H	[redacted]				
Friday, 16 October 2020												
Saturday, 17 October 2020												
Sunday, 18 October 2020												
Monday, 19 October 2020												
Tuesday, 20 October 2020												
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Monday, 26 October 2020												
Tuesday, 27 October 2020												
Wednesday, 28 October 2020												MLA Livestock Adviser Updates
Thursday, 29 October 2020												
Friday, 30 October 2020												

Harvester Setup clinics -Contingency Dates

September	Location	Time	Coordinator	HWSC	HWSC Demo	Improving sample data quality & calibration	Harvest Operation Support	Harvestloss	Harvester Fires	Registration email/link	Grower	Email	Brand	Support growers	School Holidays	School Holidays	Opposing Events
Monday, 2 August 2021																	
Tuesday, 3 August 2021																	
Wednesday, 4 August 2021																	Speed Machinery Field Day, Vic
Thursday, 5 August 2021																	Speed Machinery Field Day, Vic
Friday, 6 August 2021																	
Saturday, 7 August 2021																	
Sunday, 8 August 2021																	
Monday, 9 August 2021																	
Tuesday, 10 August 2021																	
Wednesday, 11 August 2021																	Minganew Midwest Field day - WA
Thursday, 12 August 2021																	Minganew Midwest Field day - WA
Friday, 13 August 2021																	
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Tuesday, 17 August 2021																	Aquip Gunnedah
Wednesday, 18 August 2021																	Aquip Gunnedah
Thursday, 19 August 2021																	Aquip Gunnedah
Friday, 20 August 2021																	
Saturday, 21 August 2021																	
Sunday, 22 August 2021																	
Monday, 23 August 2021																	
Tuesday, 24 August 2021																	
Wednesday, 25 August 2021																	Dowerin Field Day - WA
Thursday, 26 August 2021																	Dowerin Field Day - WA
Friday, 27 August 2021																	
Saturday, 28 August 2021																	
Sunday, 29 August 2021																	
Monday, 30 August 2021	Narromine	AM	Quigley Family, FarmLink	Michael Walsh, Ben White	Seed Terminator		TBC, Ben White, Rod Gribble	Warrick Finlay, Ben White, Rod Gribble	Ben White		Richie Quigley + Narromine grower						
Tuesday, 31 August 2021	Spring Ridge	AM	ACES (Pete Mckenzie), FarmLink	Michael Walsh, Ben White	Seed Terminator		TBC, Ben White, Rod Gribble	Warrick Finlay, Ben White, Rod Gribble	Ben White		TBA						
Wednesday, 1 September 2021	Mungindi	AM	Mungindi Cropping Group, FarmLink	Michael Walsh, Ben White	Seed Terminator		TBC, Ben White, Rod Gribble	Warrick Finlay, Ben White, Rod Gribble	Ben White		Sam Heagney						Newdegate field day - WA
Thursday, 2 September 2021																	Newdegate field day - WA
Friday, 3 September 2021																	
Saturday, 4 September 2021																	
Sunday, 5 September 2021																	
Monday, 6 September 2021																	
Tuesday, 7 September 2021																	
Wednesday, 8 September 2021	Dalby	AM	Paul Macintosh/ FarmLink	Michael Walsh, Ben White, Brett Asphar	Seed Terminator	Brett Asphar, Ben White	Brett Asphar, Ben White	Warrick Finlay, Ben White, Brett Asphar	Ben White		Capung		JD & Claas				BCG MAIN FIELD DAY
Thursday, 9 September 2021	Emerald	PM	Paul Macintosh/ FarmLink	Michael Walsh, Ben White, Brett Asphar	Seed Terminator	Brett Asphar, Ben White	Brett Asphar, Ben White	Warrick Finlay, Ben White, Brett Asphar	Ben White		Gindi - Russell Porcolos						Facey Spring Field Day
Friday, 10 September 2021																	Liebe Spring Field Day
Saturday, 11 September 2021																	
Sunday, 12 September 2021																	
Monday, 13 September 2021																	
Tuesday, 14 September 2021	Goomalling	9:00am		Peter Newman	Michael Bailey, Brett Asphar, iHSD + grower		Brett Asphar	Peter Newman/ Peter Broley	Ben White		Stephen Lord		HWSC, Harvestloss,- Trevor Symes, Stephen Lord, Peter Whitford				
Wednesday, 15 September 2021	Morawa	9:00am		Peter Newman	Michael Bailey, Brett Asphar, iHSD + grower		Brett Asphar	Peter Newman/ Peter Broley	Ben White		Katrina Sasse [redacted]						
Thursday, 16 September 2021																	
Friday, 17 September 2021																	
Saturday, 18 September 2021															Vic/ NSW/ Qld		
Sunday, 19 September 2021															Vic/ NSW/ Qld		
Monday, 20 September 2021															Vic/ NSW/ Qld		
Tuesday, 21 September 2021	**Darkan**	**9:00am**		Nick McKenna	Michael Bailey, Brett Asphar, iHSD + grower		Brett Asphar	Nick McKenna/ Peter Broley	Ben White		Steven Hulse, Compass Ag [redacted]				Vic/ NSW/ Qld		Henty Machinery Field Day - NSW
Wednesday, 22 September 2021	**Kondinin**	**9:00am**		Nick McKenna	Michael Bailey, Brett Asphar, iHSD + grower		Brett Asphar	Nick McKenna/ Peter Broley	Ben White		Neil Whyte				Vic/ NSW/ Qld		Henty Machinery Field Day - NSW
Thursday, 23 September 2021	**Ongerup**	**9:00am**		Nick McKenna	Michael Bailey, Brett Asphar, iHSD + grower		Brett Asphar	Nick McKenna/ Peter Broley	Ben White		Wes Harding [redacted]		Recentring rotor, HWSC -, Losses; Wes Hardy		Vic/ NSW/ Qld		Henty Machinery Field Day - NSW
Friday, 24 September 2021															Vic/ NSW/ Qld		
Saturday, 25 September 2021															Vic/ NSW/ Qld		
Sunday, 26 September 2021															Vic/ NSW/ Qld		
Monday, 27 September 2021															Vic/ NSW/ Qld	WA/ SA	
Tuesday, 28 September 2021															Vic/ NSW/ Qld	WA/ SA	
Wednesday, 29 September 2021															Vic/ NSW/ Qld	WA/ SA	
Thursday, 30 September 2021															Vic/ NSW/ Qld	WA/ SA	
Friday, 1 October 2021															Vic/ NSW/ Qld	WA/ SA	
Saturday, 2 October 2021															Vic/ NSW/ Qld	WA/ SA	

Sunday, 3 October 2021															Vic/ NSW/ Qld	WA/ SA	
Monday, 4 October 2021																WA/ SA	
Tuesday, 5 October 2021																WA/ SA	
Wednesday, 6 October 2021																WA/ SA	Pinaroo Show
Thursday, 7 October 2021																WA/ SA	
Friday, 8 October 2021																WA/ SA	
Saturday, 9 October 2021																WA/ SA	
Sunday, 10 October 2021																WA/ SA	
Monday, 11 October 2021	Tutye	**9:00am**	**BCG/MSF**	Michael Walsh	Ned Jefferies ST,	Adrian Roles - JMAJ Precision [redacted]	Vernon Cogswell [redacted] Kassie van der Westerhuizan [redacted]	Brian Legg	TBC		Nick Westphalen	[redacted]	John Deere				
Tuesday, 12 October 2021	Kooloonong	**9:00am**	**BCG**	Michael Walsh	Ned Jefferies ST,	Adrian Roles - JMAJ Precision [redacted]	Vernon Cogswell [redacted] Kassie van der Westerhuizan [redacted]	Brian Legg	TBC		Simon Craig	[redacted]	NH	Alistair Murdoch - JD Tim Gleeson - Case			
Wednesday, 13 October 2021	Diggora	**9:00am**	**BCG**	Michael Walsh	Ned Jefferies ST,	Adrian Roles - JMAJ Precision [redacted]	Vernon Cogswell [redacted] Kassie van der Westerhuizan [redacted]	Brian Legg	TBC		Anthoney Lees	[redacted]	Case 8170	Massey Delaer in Echuca Matt Elliot -John Deere			
Thursday, 14 October 2021	Birchip	**9:00am**	**BCG**	Michael Walsh	Ned Jefferies ST,	Adrian Roles - JMAJ Precision [redacted]	Vernon Cogswell [redacted] Kassie van der Westerhuizan [redacted]	Brian Legg	TBC		Trevor Botheras	[redacted]	Case	Dan Coffey - NH Trewin - JD Alan Cooke - JD			
Friday, 15 October 2021	Kaniva	**9:00am**	**BCG**	Michael Walsh	Ned Jefferies ST,	Adrian Roles - JMAJ Precision [redacted]	Vernon Cogswell [redacted] Kassie van der Westerhuizan [redacted]	Brian Legg	TBC		Jono Hicks	[redacted]	NH	Jono Dyer - JD w/ SD Ben Crouch - Case iH Alan Bennett - Case iH			
Saturday, 16 October 2021																	
Sunday, 17 October 2021																	
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2021

Harvester Forums

January

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31						

February

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March

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April

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June

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July

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August

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September

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October

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November

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December

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Harvester Setup Workshops – Run Sheet

8th September 2023		
Location: **Navan**		
	Activity	Who
8:30	Arrival, Setup, Equipment Checks, etc	?
8:30-9:00	**Registration Process** • Coffee & Tea	?
9:00-9:10	**Welcome and Introduction** • Purpose of the Event – Interactive event focusing on minimising harvest losses, harvest weed seed control, fire suppression and harvest storage. The event is starting a conversation to increase knowledge whilst establishing a broader network of experts for farmers to engage with in relation to optimising their management practices and equipment. • Describe the Agenda • Presenter Introductions – Peter Broley, Brett Asphar, Kassie van der Westerhuizan, Martin Reichelt, etc • Arrange for a couple of locals to describe their context and expectations of the day.	?/Courtney Ramsay
9:10-9:40	**Harvest Loss Introduction & Measurement** Introduction / Setting the Scene • Why Harvest loss is important (also why it works with HWSC) • Data on harvest loss • Stories on harvest loss measurement (about productivity)	Peter Broley/Ben White

	• What are the elements of harvest losses - header front and harvester (sieve, rotor) loss • Introduction to drop trays and GRDC calculators, etc (safety etc).	
9:40-10:10	**Front-end Losses** • Discussion on 'Front-end Losses.' Why does this occur? What options are available to reduce front loss? • Facilitated discussion – What front-loss are we seeing in the district? What crops are they having challenges with? What have people tried to minimise front loss? • Proactive fine tune header front settings to suit your harvesting goals; understanding all the header-front settings which can be changed to achieve better performance – quality, speed, cost, loss management. • Details on setting up cutterbar for different crops (guard choice, angle of front, what tool for what conditions to choose) • How to set the auger and reel to improve performance in different crop conditions • Knowledge on lifters and how to use which ones in different conditions; what affects the decision • How to set up any header front for effective and even feeding. Recognising the signs for "poor feeding" and quantifying the "cost". • How to get the crop into the header front and moved with the crop flow • Summary of quick steps to improve performance and what are the challenges for here in their conditions	Peter Broley/ Martin Reichelt/Ben/ Brett/Kassie
10:10-10:40	**Feeder House Set Up**	Martin Reichelt/Brett/Kassie

	• Knowledge about efficient and proper crop flow from the header front through the feeder house into the harvester • Step by step set up to get every feeder house to eat more crop (high volume of straw) • Coping with light crop vs heavy crop conditions • Summary spotting opportunities to improve	
10:40-11:00	**Morning Tea**	
11:00-11:30	**Optimising the Trashing System** • How to realize and analyse what the trashing system is doing • Faults and benefits of the trashing system • How to thrash the grain with less cracks as possible while keeping machine efficiency high • Influence of different concaves and concave openings • Different thrashing mechanisms in different crop conditions (long, bulky crops with damp conditions/short low yielding crops/ examples from the group). • Crop variances • Summary - spotting opportunity to improve and what are the challenges for here in a local context	Martin Reichelt/Brett/Kassie
11:30-12:15	**By Brand Review – Thrashing** • What are the specific thrashing an separating in differences for my combine? (Break up into at least two groups by machine type	Martin Reichelt/Brett/Kassie
12:15-12:45	**The Cleaning Area** • A new view on how sieves can actually work in your favour with different settings • How to optimize your sieves before harvest • Optimizing while combining • Crop variances • Overview about how the return works and influences the separation	Martin Reichelt/Brett/Kassie

	• Mastering the wind and sieve settings for optimal performance • Summary spotting opportunity to improve and what are the challenges in the local context	
12:45-13:15	**Lunch**	
13:15-13:45	**Harvest Weed Seed Control** • Why harvest weed seed control • What are the systems (i.e. mill systems, chaff decks and windrow/chaff lining and how do they work) • Cost of HWSC • Update on Mill technologies and specifically Seed Terminator technology. • Facilitated discussion on technologies available and where it's being deployed. Provide further information to attendees on future contact points.	Ben White/Brett/Manufacturers
13:45-14:15	**Harvest Fires/Fire Suppression** • Introduction to the topic – causes, costs and minimisation strategies. Make available the GRDC Pocket Guides • Facilitated discussion examining what locals are doing today, how do they a build a robust plan and share with their neighbours.	Peter Broley
14:15-14:40	**Grain Storage and Hygiene** • Challenges and Opportunities • Innovation • Discussion	Ben White
14:40-15:00	**Bringing it Together/Surveys** • Recap of the days session – key messages, opportunities and challenges • Further questions and comments • Completion of feedback sheets	Peter Broley/?
15:00	Session Closes.	

Presenter Biography's

Murray Skayman - has been providing consulting and running harvester set-up clinics for over 20 years. Born in Canada he sold his Manitoba cereal farm and moved into consulting for the major harvest brands. Murray set-up a contract harvesting business which did contract harvesting across north America. This has given great exposure to all environments and crop conditions growers face. Since 2015 he has run operator training and undertaken harvester set-up for growers and operators in Western Australia. He has worked with Case and New Holland across North America running harvester set-up clinics with customers and training the technical staff of the dealerships. He has run over 500 workshops in this time. He has also worked on improving the threshing capability for Case, New Holland and John Deere combines providing input to improve performance.

Martin Reichelt - Grew up on a mixed farm and has been in contract harvesting for over 20 years. When Martin started there was no clinics or in field training to support farmers to help them set-up their harvester machinery to improve their performance and the profitability of their farm operation. He established the first harvesting clinic because of the impact he was having with the teams he managed at the farms he contracted with. Martin has developed a set-by-step process for Harvester set-up to help growers improve performance of their harvester no matter what colour or model of harvester. This front-to-back harvester clinic has, over the past 12 years, been successfully run throughout Europe, Russia, North America and Australia. With over 200 clinics being run covering all colours of harvester.

Kassie van der Westhuizen - Agriculture diesel technician since 1997. Independent harvester specialist who began his love for all things harvesting as a contractor. Spent 5 years working for Case IH and 10 years John Deere in harvesting. Has spent many years as harvester specialist setting up machines and running training schools for farmers and harvest technicians. He has a very big focus on grain loss and efficiency of harvester.

Brett Asphar - Independent harvester specialist with 30 years' experience working across all brands, including 20 years Case, 5 years Lexion, 1 year JD and 1 Year NH; including a number of years as a product support manager for various brands. Spent 4 years as Educator and Continuous Improvement Engineer with Seed Terminator during early product development.

Peter Broley – CEO of Primary Sales, who strives to provide products and approaches that help broadacre farmers be more profitable. Passionate about understanding how to help farmers reduce harvest loss and increase their productivity, he project leads the GRDC harvester set up investment and has also been involved in a GRDC project led by Grower Group Alliance (GGA) to help quantify harvest losses in WA.

Ben White - Agricultural engineer with a farming background. 20 years working as a research engineer for Kondinin Group with experience measuring front and machine losses and specialising in minimising harvester fire risk.

Peter Newman – Agronomist and recognised leader to the development of HWSC in Australia. Has facilitated workshops on HWSC and the GRDC Harvester workshop program.

Harvester Setup Workshops

Run Sheet – BCG Region

18th September 2023		
Location: **Cook Family Farm** **1659 Hopetoun-Yaapeet Rd**		
	Activity	Who
8:30	Arrival, Setup, Equipment Checks, etc	Kelly + Others
8:30-9:00	**Registration Process** • Coffee & Tea	Kelly
9:00-9:10	**Welcome and Introduction** • Purpose of the Event – Interactive event focusing on minimising harvest losses, harvest weed seed control, fire suppression and harvest storage. The event is starting a conversation to increase knowledge whilst establishing a broader network of experts for farmers to engage with in relation to optimising their management practices and equipment. • Describe the Agenda • Presenter Introductions – Peter Broley, Brett Asphar, Kassie van der Westerhuizan, Martin Reichelt, etc • Arrange for a couple of locals to describe their context and expectations of the day.	Kelly Angel/Courtney Ramsay
9:10-9:40	**Harvest Loss Introduction & Measurement** Introduction / Setting the Scene	Peter Broley/Ben White

	• Why Harvest loss is important (also why it works with HWSC) • Data on harvest loss • Stories on harvest loss measurement (about productivity) • What are the elements of harvest losses - header front and harvester (sieve, rotor) loss • Introduction to drop trays and GRDC calculators, etc (safety etc).	
9:40-10:10	**Front-end Losses** • Discussion on 'Front-end Losses.' Why does this occur? What options are available to reduce front loss? • Facilitated discussion – What front-loss are we seeing in the district? What crops are they having challenges with? What have people tried to minimise front loss? • Proactive fine tune header front settings to suit your harvesting goals; understanding all the header-front settings which can be changed to achieve better performance – quality, speed, cost, loss management. • Details on setting up cutterbar for different crops (guard choice, angle of front, what tool for what conditions to choose) • How to set the auger and reel to improve performance in different crop conditions • Knowledge on lifters and how to use which ones in different conditions; what affects the decision • How to set up any header front for effective and even feeding. Recognising the signs for "poor feeding" and quantifying the "cost". • How to get the crop into the header front and moved with the crop flow	Peter Broley/ Murray Skayman/Ben/ Brett/Kassie

	• Summary of quick steps to improve performance and what are the challenges for here in their conditions	
10:10-10:40	**Feeder House Set Up** • Knowledge about efficient and proper crop flow from the header front through the feeder house into the harvester • Step by step set up to get every feeder house to eat more crop (high volume of straw) • Coping with light crop vs heavy crop conditions • Summary spotting opportunities to improve	Murray Skayman/Brett/Kassie
10:40-11:00	**Morning Tea**	
11:00-11:30	**Optimising the Trashing System** • How to realize and analyse what the trashing system is doing • Faults and benefits of the trashing system • How to thrash the grain with less cracks as possible while keeping machine efficiency high • Influence of different concaves and concave openings • Different thrashing mechanisms in different crop conditions (long, bulky crops with damp conditions/short low yielding crops/ examples from the group). • Crop variances • Summary - spotting opportunity to improve and what are the challenges for here in a local context	Murray Skayman/Brett/Kassie
11:30-12:15	**By Brand Review – Thrashing** • What are the specific thrashing an separating in differences for my combine? (Break up into at least two groups by machine type	Murray Skayman/Brett/Kassie
12:15-12:45	**The Cleaning Area** • A new view on how sieves can actually work in your favour with different settings	Murray Skayman/Brett/Kassie

	• How to optimize your sieves before harvest • Optimizing while combining • Crop variances • Overview about how the return works and influences the separation • Mastering the wind and sieve settings for optimal performance • Summary spotting opportunity to improve and what are the challenges in the local context	
12:45-13:15	**Lunch**	
13:15-13:45	**Harvest Weed Seed Control** • Why harvest weed seed control • What are the systems (i.e. mill systems, chaff decks and windrow/chaff lining and how do they work) • Cost of HWSC • Update on Mill technologies and specifically Seed Terminator technology. • Facilitated discussion on technologies available and where it's being deployed. Provide further information to attendees on future contact points.	Ben White/Brett/Manufacturers
13:45-14:15	**Harvest Fires/Fire Suppression** • Introduction to the topic – causes, costs and minimisation strategies. Make available the GRDC Pocket Guides • Facilitated discussion examining what locals are doing today, how do they a build a robust plan and share with their neighbours.	Peter Broley
14:15-14:40	**Grain Storage and Hygiene** • Challenges and Opportunities • Innovation • Discussion	Chris Warrick
14:40-15:00	**Bringing it Together/Surveys**	Peter Broley/Kelly Angel

	• Recap of the days session – key messages, opportunities and challenges • Further questions and comments • Completion of feedback sheets	
15:00	Session Closes.	
19th September 2023		
Location: Coates Family Farm Cnr Moana Rd and Cossens Rd Traynors Lagoon		
	Activity	Who
8:30	Arrival, Setup, Equipment Checks, etc	Kelly + Others
8:30-9:00	**Registration Process** • Coffee & Tea	Kelly
9:00-9:10	**Welcome and Introduction** • Purpose of the Event – Interactive event focusing on minimising harvest losses, harvest weed seed control, fire suppression and harvest storage. The event is starting a conversation to increase knowledge whilst establishing a broader network of experts for farmers to engage with in relation to optimising their management practices and equipment. • Describe the Agenda • Presenter Introductions – Peter Broley, Brett Asphar, Kassie van der Westerhuizan, Martin Reichelt, etc • Arrange for a couple of locals to describe their context and expectations of the day.	Kelly Angel/Courtney Ramsay
9:10-9:40	**Harvest Loss Introduction & Measurement**	Peter Broley/Ben White

	Introduction / Setting the Scene • Why Harvest loss is important (also why it works with HWSC) • Data on harvest loss • Stories on harvest loss measurement (about productivity) • What are the elements of harvest losses - header front and harvester (sieve, rotor) loss • Introduction to drop trays and GRDC calculators, etc (safety etc).	
9:40-10:10	**Front-end Losses** • Discussion on 'Front-end Losses.' Why does this occur? What options are available to reduce front loss? • Facilitated discussion – What front-loss are we seeing in the district? What crops are they having challenges with? What have people tried to minimise front loss? • Proactive fine tune header front settings to suit your harvesting goals; understanding all the header-front settings which can be changed to achieve better performance – quality, speed, cost, loss management. • Details on setting up cutterbar for different crops (guard choice, angle of front, what tool for what conditions to choose) • How to set the auger and reel to improve performance in different crop conditions • Knowledge on lifters and how to use which ones in different conditions; what affects the decision • How to set up any header front for effective and even feeding. Recognising the signs for "poor feeding" and quantifying the "cost".	Peter Broley/ Murray Skayman/Ben/ Brett/Kassie

	• How to get the crop into the header front and moved with the crop flow • Summary of quick steps to improve performance and what are the challenges for here in their conditions	
10:10-10:40	**Feeder House Set Up** • Knowledge about efficient and proper crop flow from the header front through the feeder house into the harvester • Step by step set up to get every feeder house to eat more crop (high volume of straw) • Coping with light crop vs heavy crop conditions • Summary spotting opportunities to improve	Murray Skayman/Brett/Kassie
10:40-11:00	• **Morning Tea**	
11:00-11:30	**Optimising the Trashing System** • How to realize and analyse what the trashing system is doing • Faults and benefits of the trashing system • How to thrash the grain with less cracks as possible while keeping machine efficiency high • Influence of different concaves and concave openings • Different thrashing mechanisms in different crop conditions (long, bulky crops with damp conditions/short low yielding crops/ examples from the group). • Crop variances Summary - spotting opportunity to improve and what are the challenges for here in a local context	Murray Skayman/Brett/Kassie
11:30-12:15	**By Brand Review – Thrashing** • What are the specific thrashing an separating in differences for my combine? (Break up into at least two groups by machine type	Murray Skayman/Brett/Kassie
12:15-12:45	**The Cleaning Area**	Murray Skayman/Brett/Kassie

	• A new view on how sieves can actually work in your favour with different settings • How to optimize your sieves before harvest • Optimizing while combining • Crop variances • Overview about how the return works and influences the separation • Mastering the wind and sieve settings for optimal performance • Summary spotting opportunity to improve and what are the challenges in the local context	
12:45-13:15	• **Lunch**	
13:15-13:45	**Harvest Weed Seed Control** • Why harvest weed seed control • What are the systems (i.e. mill systems, chaff decks and windrow/chaff lining and how do they work) • Cost of HWSC • Update on Mill technologies and specifically Seed Terminator technology. • Facilitated discussion on technologies available and where it's being deployed. Provide further information to attendees on future contact points.	Ben White/Brett/Manufacturers
13:45-14:15	**Harvest Fires/Fire Suppression** • Introduction to the topic – causes, costs and minimisation strategies. Make available the GRDC Pocket Guides • Facilitated discussion examining what locals are doing today, how do they a build a robust plan and share with their neighbours.	Peter Broley
14:15-14:40	**Grain Storage and Hygiene** • Challenges and Opportunities • Innovation • Discussion	Chris Warrick

14:40-15:00	**Bringing it Together/Surveys** • Recap of the days session – key messages, opportunities and challenges • Further questions and comments Completion of feedback sheets	Peter Broley/Kelly Angel
15:00	Session Closes.	

Presenter Biography's

Murray Skayman - has been providing consulting and running harvester set-up clinics for over 20 years. Born in Canada he sold his Manitoba cereal farm and moved into consulting for the major harvest brands. Murray set-up a contract harvesting business which did contract harvesting across north America. This has given great exposure to all environments and crop conditions growers face. Since 2015 he has run operator training and undertaken harvester set-up for growers and operators in Western Australia. He has worked with Case and New Holland across North America running harvester set-up clinics with customers and training the technical staff of the dealerships. He has run over 500 workshops in this time. He has also worked on improving the threshing capability for Case, New Holland and John Deere combines providing input to improve performance.

Martin Reichelt - Grew up on a mixed farm and has been in contract harvesting for over 20 years. When Martin started there was no clinics or in field training to support farmers to help them set-up their harvester machinery to improve their performance and the profitability of their farm operation. He established the first harvesting clinic because of the impact he was having with the teams he managed at the farms he contracted with. Martin has developed a set-by-step process for Harvester set-up to help growers improve performance of their harvester no matter what colour or model of

harvester. This front-to-back harvester clinic has, over the past 12 years, been successfully run throughout Europe, Russia, North America and Australia. With over 200 clinics being run covering all colours of harvester.

Kassie van der Westhuizen - Agriculture diesel technician since 1997. Independent harvester specialist who began his love for all things harvesting as a contractor. Spent 5 years working for Case IH and 10 years John Deere in harvesting. Has spent many years as harvester specialist setting up machines and running training schools for farmers and harvest technicians. He has a very big focus on grain loss and efficiency of harvester.

Brett Asphar - Independent harvester specialist with 30 years' experience working across all brands, including 20 years Case, 5 years Lexion, 1 year JD and 1 Year NH; including a number of years as a product support manager for various brands. Spent 4 years as Educator and Continuous Improvement Engineer with Seed Terminator during early product development.

Peter Broley – CEO of Primary Sales, who strives to provide products and approaches that help broadacre farmers be more profitable. Passionate about understanding how to help farmers reduce harvest loss and increase their productivity, he project leads the GRDC harvester set up investment and has also been involved in a GRDC project led by Grower Group Alliance (GGA) to help quantify harvest losses in WA.

Ben White - Agricultural engineer with a farming background. 20 years working as a research engineer for Kondinin Group with experience measuring front and machine losses and specialising in minimising harvester fire risk.

Peter Newman – Agronomist and recognised leader to the development of HWSC in Australia. Has facilitated workshops on HWSC and the GRDC Harvester workshop program.

Harvester Setup Workshops

Run Sheet – Northern Region

29th August 2023		
Location: **McLarens Family Farms** **350 McLarens Rd** **Jimbour West**		
	Activity	Who
8:00	Arrival, Setup, Equipment Checks, etc	Andrew, Paul
8:00 – 8:30	**Registration Process** • Coffee & Tea	Paul
8:30 – 8:40	**Welcome and Introduction** • Purpose of the Event – Interactive event focusing on minimising harvest losses, harvest weed seed control, fire suppression and harvest storage. The event is starting a conversation to increase knowledge whilst establishing a broader network of experts for farmers to engage with in relation to optimising their management practices and equipment. • Describe the Agenda • Presenter Introductions – Peter Broley, Brett Asphar, Kassie van der Westerhuizan, Martin Reichelt, etc • Arrange for a couple of locals to describe their context and expectations of the day.	Paul MacIntosh
8:40 – 9:10	**Harvest Loss Introduction & Measurement** Introduction / Setting the Scene	Peter Broley/Warrick Finlay

	• Why Harvest loss is important (also why it works with HWSC) • Data on harvest loss • Stories on harvest loss measurement (about productivity) • What are the elements of harvest losses - header front and harvester (sieve, rotor) loss • Introduction to drop trays and GRDC calculators, etc (safety etc).	
9:10 – 9:40	**Front-end Losses** • Discussion on 'Front-end Losses.' Why does this occur? What options are available to reduce front loss? • Facilitated discussion – What front-loss are we seeing in the district? What crops are they having challenges with? What have people tried to minimise front loss? • Proactive fine tune header front settings to suit your harvesting goals; understanding all the header-front settings which can be changed to achieve better performance – quality, speed, cost, loss management. • Details on setting up cutterbar for different crops (guard choice, angle of front, what tool for what conditions to choose) • How to set the auger and reel to improve performance in different crop conditions • Knowledge on lifters and how to use which ones in different conditions; what affects the decision • How to set up any header front for effective and even feeding. Recognising the signs for "poor feeding" and quantifying the "cost". • How to get the crop into the header front and moved with the crop flow	Peter Broley/ Martin Reichelt/Brett/Kassie

	• Summary of quick steps to improve performance and what are the challenges for here in their conditions	
9:40 – 10:10	**Feeder House Set Up** • Knowledge about efficient and proper crop flow from the header front through the feeder house into the harvester • Step by step set up to get every feeder house to eat more crop (high volume of straw) • Coping with light crop vs heavy crop conditions • Summary spotting opportunities to improve	Martin Reichelt/Brett/Kassie
10:10 – 10:30	**Morning Tea**	
10:30 – 11:00	**Optimising the Trashing System** • How to realize and analyse what the trashing system is doing • Faults and benefits of the trashing system • How to thrash the grain with less cracks as possible while keeping machine efficiency high • Influence of different concaves and concave openings • Different thrashing mechanisms in different crop conditions (long, bulky crops with damp conditions/short low yielding crops/ examples from the group). • Crop variances • Summary - spotting opportunity to improve and what are the challenges for here in a local context	Martin Reichelt/Brett/Kassie
11:00 – 11:45	**By Brand Review – Thrashing** • What are the specific thrashing an separating in differences for my combine? (Break up into at least two groups by machine type	Martin Reichelt/Brett/Kassie
11:45 – 12:15	**The Cleaning Area** • A new view on how sieves can actually work in your favour with different settings	Martin Reichelt/Brett/Kassie

	• How to optimize your sieves before harvest • Optimizing while combining • Crop variances • Overview about how the return works and influences the separation • Mastering the wind and sieve settings for optimal performance • Summary spotting opportunity to improve and what are the challenges in the local context	
12:15 – 12:45	**Lunch**	
12:45 – 13:15	**Harvest Weed Seed Control** • Why harvest weed seed control • What are the systems (i.e. mill systems, chaff decks and windrow/chaff lining and how do they work) • Cost of HWSC • Update on Mill technologies and specifically Seed Terminator technology. • Facilitated discussion on technologies available and where it's being deployed. Provide further information to attendees on future contact points.	Paul MacIntosh/Ben White/Brett/Manufacturers
13:15 – 13:45	**Harvest Fires/Fire Suppression** • Introduction to the topic – causes, costs and minimisation strategies. Make available the GRDC Pocket Guides • Facilitated discussion examining what locals are doing today, how do they a build a robust plan and share with their neighbours.	Peter Broley
13:45 – 14:10	**Grain Storage and Hygiene** • Challenges and Opportunities • Innovation • Discussion	Brock/Alex
14:10 – 14:30	**Bringing it Together/Surveys**	Peter Broley/Paul MacIntosh

	• Recap of the days session – key messages, opportunities and challenges • Further questions and comments • Completion of feedback sheets	
14:30	Session Closes.	
30th August 2023		
Location: Pukallus Farming 247 Wyntoon Road Sprinsure		
	Activity	Who
10:00	Arrival, Setup, Equipment Checks, etc	Andrew, Paul
10:00 – 10:30	**Registration Process** • Coffee & Tea	Paul
10:30 – 10:40	**Welcome and Introduction** • Purpose of the Event – Interactive event focusing on minimising harvest losses, harvest weed seed control, fire suppression and harvest storage. The event is starting a conversation to increase knowledge whilst establishing a broader network of experts for farmers to engage with in relation to optimising their management practices and equipment. • Describe the Agenda • Presenter Introductions – Peter Broley, Brett Asphar, Kassie van der Westerhuizan, Martin Reichelt, etc • Arrange for a couple of locals to describe their context and expectations of the day.	Paul MacIntosh/Peter Broley
10:40 – 11:10	**Harvest Loss Introduction & Measurement**	Peter Broley/Warrick Finlay

	Introduction / Setting the Scene • Why Harvest loss is important (also why it works with HWSC) • Data on harvest loss • Stories on harvest loss measurement (about productivity) • What are the elements of harvest losses - header front and harvester (sieve, rotor) loss • Introduction to drop trays and GRDC calculators, etc (safety etc).	
11:10 – 11:40	**Front-end Losses** • Discussion on 'Front-end Losses.' Why does this occur? What options are available to reduce front loss? • Facilitated discussion – What front-loss are we seeing in the district? What crops are they having challenges with? What have people tried to minimise front loss? • Proactive fine tune header front settings to suit your harvesting goals; understanding all the header-front settings which can be changed to achieve better performance – quality, speed, cost, loss management. • Details on setting up cutterbar for different crops (guard choice, angle of front, what tool for what conditions to choose) • How to set the auger and reel to improve performance in different crop conditions • Knowledge on lifters and how to use which ones in different conditions; what affects the decision • How to set up any header front for effective and even feeding. Recognising the signs for "poor feeding" and quantifying the "cost".	Peter Broley/ Martin Reichelt/Brett/Kassie

	• How to get the crop into the header front and moved with the crop flow • Summary of quick steps to improve performance and what are the challenges for here in their conditions	
11:40 – 12:10	**Feeder House Set Up** • Knowledge about efficient and proper crop flow from the header front through the feeder house into the harvester • Step by step set up to get every feeder house to eat more crop (high volume of straw) • Coping with light crop vs heavy crop conditions • Summary spotting opportunities to improve	Martin Reichelt/Brett/Kassie
12:10 – 12:40	**Optimising the Trashing System** • How to realize and analyse what the trashing system is doing • Faults and benefits of the trashing system • How to thrash the grain with less cracks as possible while keeping machine efficiency high • Influence of different concaves and concave openings • Different thrashing mechanisms in different crop conditions (long, bulky crops with damp conditions/short low yielding crops/ examples from the group). • Crop variances • Summary - spotting opportunity to improve and what are the challenges for here in a local context	Martin Reichelt/Brett/Kassie
12:40 – 13:10	**Lunch**	
13:10 – 14:00	**By Brand Review – Thrashing** • What are the specific thrashing an separating in differences for my combine? (Break up into at least two groups by machine type	Martin Reichelt/Brett/Kassie
14:00 – 14:30	**The Cleaning Area**	Martin Reichelt/Brett/Kassie

	• A new view on how sieves can actually work in your favour with different settings • How to optimize your sieves before harvest • Optimizing while combining • Crop variances • Overview about how the return works and influences the separation • Mastering the wind and sieve settings for optimal performance • Summary spotting opportunity to improve and what are the challenges in the local context	
14:30 – 15:00	**Harvest Weed Seed Control** • Why harvest weed seed control • What are the systems (i.e. mill systems, chaff decks and windrow/chaff lining and how do they work) • Cost of HWSC • Update on Mill technologies and specifically Seed Terminator technology. • Facilitated discussion on technologies available and where it's being deployed. Provide further information to attendees on future contact points.	Paul MacIntosh/Brett/Manufacturers
15:00 – 15:30	**Harvest Fires/Fire Suppression** • Introduction to the topic – causes, costs and minimisation strategies. Make available the GRDC Pocket Guides • Facilitated discussion examining what locals are doing today, how do they a build a robust plan and share with their neighbours.	Peter Broley
15:30 – 16:00	**Grain Storage and Hygiene** • Challenges and Opportunities • Innovation • Discussion	Chris Warrick
16:00 – 16:20	**Bringing it Together/Surveys**	Peter Broley/Paul MacIntosh

	• Recap of the days session – key messages, opportunities and challenges • Further questions and comments • Completion of feedback sheets	
16:20	Session Closes.	
31st August 2023		
Location: **Dean Pastega Farm** **795 Marian-Eton Road** **Marion**		
	Activity	Who
10:00	Arrival, Setup, Equipment Checks, etc	Andrew, Paul
10:00 – 10:30	**Registration Process** • Coffee & Tea	Paul
10:30 – 10:40	**Welcome and Introduction** • Purpose of the Event – Interactive event focusing on minimising harvest losses, harvest weed seed control, fire suppression and harvest storage. The event is starting a conversation to increase knowledge whilst establishing a broader network of experts for farmers to engage with in relation to optimising their management practices and equipment. • Describe the Agenda • Presenter Introductions – Peter Broley, Brett Asphar, Kassie van der Westerhuizan, Martin Reichelt, etc • Arrange for a couple of locals to describe their context and expectations of the day.	Paul MacIntosh/Peter Broley
10:40 – 11:10	**Harvest Loss Introduction & Measurement**	Peter Broley/Warrick Finlay

	Introduction / Setting the Scene • Why Harvest loss is important (also why it works with HWSC) • Data on harvest loss • Stories on harvest loss measurement (about productivity) • What are the elements of harvest losses - header front and harvester (sieve, rotor) loss • Introduction to drop trays and GRDC calculators, etc (safety etc).	
11:10 – 11:40	**Front-end Losses** • Discussion on 'Front-end Losses.' Why does this occur? What options are available to reduce front loss? • Facilitated discussion – What front-loss are we seeing in the district? What crops are they having challenges with? What have people tried to minimise front loss? • Proactive fine tune header front settings to suit your harvesting goals; understanding all the header-front settings which can be changed to achieve better performance – quality, speed, cost, loss management. • Details on setting up cutterbar for different crops (guard choice, angle of front, what tool for what conditions to choose) • How to set the auger and reel to improve performance in different crop conditions • Knowledge on lifters and how to use which ones in different conditions; what affects the decision • How to set up any header front for effective and even feeding. Recognising the signs for "poor feeding" and quantifying the "cost".	Peter Broley/ Martin Reichelt/Brett/Kassie

	• How to get the crop into the header front and moved with the crop flow • Summary of quick steps to improve performance and what are the challenges for here in their conditions	
11:40 – 12:10	**Feeder House Set Up** • Knowledge about efficient and proper crop flow from the header front through the feeder house into the harvester • Step by step set up to get every feeder house to eat more crop (high volume of straw) • Coping with light crop vs heavy crop conditions • Summary spotting opportunities to improve	Martin Reichelt/Brett/Kassie
12:10 – 12:40	**Optimising the Trashing System** • How to realize and analyse what the trashing system is doing • Faults and benefits of the trashing system • How to thrash the grain with less cracks as possible while keeping machine efficiency high • Influence of different concaves and concave openings • Different thrashing mechanisms in different crop conditions (long, bulky crops with damp conditions/short low yielding crops/ examples from the group). • Crop variances Summary - spotting opportunity to improve and what are the challenges for here in a local context	Martin Reichelt/Brett/Kassie
12:40 – 13:10	**Lunch**	
13:10 – 14:00	**By Brand Review – Thrashing** • What are the specific thrashing an separating in differences for my combine? (Break up into at least two groups by machine type	Martin Reichelt/Brett/Kassie
14:00 – 14:30	**The Cleaning Area**	Martin Reichelt/Brett/Kassie

	• A new view on how sieves can actually work in your favour with different settings • How to optimize your sieves before harvest • Optimizing while combining • Crop variances • Overview about how the return works and influences the separation • Mastering the wind and sieve settings for optimal performance • Summary spotting opportunity to improve and what are the challenges in the local context	
14:30 – 15:00	**Harvest Weed Seed Control** • Why harvest weed seed control • What are the systems (i.e. mill systems, chaff decks and windrow/chaff lining and how do they work) • Cost of HWSC • Update on Mill technologies and specifically Seed Terminator technology. Facilitated discussion on technologies available and where it's being deployed. Provide further information to attendees on future contact points.	Paul MacIntosh/Brett/Manufacturers
15:00 – 15:30	**Harvest Fires/Fire Suppression** • Introduction to the topic – causes, costs and minimisation strategies. Make available the GRDC Pocket Guides • Facilitated discussion examining what locals are doing today, how do they a build a robust plan and share with their neighbours.	Peter Broley
15:30 – 16:00	**Grain Storage and Hygiene** • Challenges and Opportunities • Innovation • Discussion	Brock/Alex
16:00 – 16:20	**Bringing it Together/Surveys**	Peter Broley/Paul MacIntosh

	• Recap of the days session – key messages, opportunities and challenges • Further questions and comments • Completion of feedback sheets	
16:20	Session Closes.	
4th September 2023		
Location: North Star Sporting Club		
8:00	Arrival, Setup, Equipment Checks, etc	Andrew, Leigh
8:00 – 8:30	**Registration Process** • Coffee & Tea	Leigh
8:30 – 8:40	**Welcome and Introduction** • Purpose of the Event – Interactive event focusing on minimising harvest losses, harvest weed seed control, fire suppression and harvest storage. The event is starting a conversation to increase knowledge whilst establishing a broader network of experts for farmers to engage with in relation to optimising their management practices and equipment. • Describe the Agenda • Presenter Introductions – Peter Broley, Ben White, Brett Asphar, Kassie van der Westerhuizan, Martin Reichelt, etc • Arrange for a couple of locals to describe their context and expectations of the day.	Leigh Norton/ Peter Broley
8:40 – 9:10	**Harvest Loss Introduction & Measurement** Introduction / Setting the Scene • Why Harvest loss is important (also why it works with HWSC) • Data on harvest loss	Peter Broley/Ben White

	• Stories on harvest loss measurement (about productivity) • What are the elements of harvest losses - header front and harvester (sieve, rotor) loss • Introduction to drop trays and GRDC calculators, etc (safety etc).	
9:10 – 9:40	**Front-end Losses** • Discussion on 'Front-end Losses.' Why does this occur? What options are available to reduce front loss? • Facilitated discussion – What front-loss are we seeing in the district? What crops are they having challenges with? What have people tried to minimise front loss? • Proactive fine tune header front settings to suit your harvesting goals; understanding all the header-front settings which can be changed to achieve better performance – quality, speed, cost, loss management. • Details on setting up cutterbar for different crops (guard choice, angle of front, what tool for what conditions to choose) • How to set the auger and reel to improve performance in different crop conditions • Knowledge on lifters and how to use which ones in different conditions; what affects the decision • How to set up any header front for effective and even feeding. Recognising the signs for "poor feeding" and quantifying the "cost". • How to get the crop into the header front and moved with the crop flow • Summary of quick steps to improve performance and what are the challenges for here in their conditions	Peter Broley/Ben/Martin Reichelt/Brett/Kassie

9:40 – 10:10	**Feeder House Set Up** • Knowledge about efficient and proper crop flow from the header front through the feeder house into the harvester • Step by step set up to get every feeder house to eat more crop (high volume of straw) • Coping with light crop vs heavy crop conditions • Summary spotting opportunities to improve	Martin Reichelt/Brett/Kassie
10:10 – 10:30	**Morning Tea**	
10:30 – 11:00	**Optimising the Trashing System** • How to realize and analyse what the trashing system is doing • Faults and benefits of the trashing system • How to thrash the grain with less cracks as possible while keeping machine efficiency high • Influence of different concaves and concave openings • Different thrashing mechanisms in different crop conditions (long, bulky crops with damp conditions/short low yielding crops/ examples from the group). • Crop variances • Summary - spotting opportunity to improve and what are the challenges for here in a local context	Martin Reichelt/Brett/Kassie
11:00 – 11:45	**By Brand Review – Thrashing** • What are the specific thrashing an separating in differences for my combine? (Break up into at least two groups by machine type	Martin Reichelt/Brett/Kassie
11:45 – 12:15	**The Cleaning Area** • A new view on how sieves can actually work in your favour with different settings • How to optimize your sieves before harvest • Optimizing while combining • Crop variances	Martin Reichelt/Brett/Kassie

	• Overview about how the return works and influences the separation • Mastering the wind and sieve settings for optimal performance • Summary spotting opportunity to improve and what are the challenges in the local context	
12:15 – 12:45	**Lunch**	
12:45 – 13:15	**Harvest Weed Seed Control** • Why harvest weed seed control • What are the systems (i.e. mill systems, chaff decks and windrow/chaff lining and how do they work) • Cost of HWSC • Update on Mill technologies and specifically Seed Terminator technology. • Facilitated discussion on technologies available and where it's being deployed. Provide further information to attendees on future contact points.	Paul MacIntosh/Ben White/Brett/Manufacturers
13:15 – 13:45	**Harvest Fires/Fire Suppression** • Introduction to the topic – causes, costs and minimisation strategies. Make available the GRDC Pocket Guides • Facilitated discussion examining what locals are doing today, how do they a build a robust plan and share with their neighbours.	Peter Broley
13:45 – 14:10	**Grain Storage and Hygiene** • Challenges and Opportunities • Innovation • Discussion	Brock/Alex
14:10 – 14:30	**Bringing it Together/Surveys** • Recap of the days session – key messages, opportunities and challenges • Further questions and comments • Completion of feedback sheets	Peter Broley/Leigh Norton

14:30	Session Closes.	
5th September 2023		
Location: **Red Bobs (Hugh Simson)** **Wandobah Road** **Gunnedah**		
8:00	Arrival, Setup, Equipment Checks, etc	Andrew, Sarah Ball
8:00 – 8:30	**Registration Process** • Coffee & Tea	Sarah
8:30 – 8:40	**Welcome and Introduction** • Purpose of the Event – Interactive event focusing on minimising harvest losses, harvest weed seed control, fire suppression and harvest storage. The event is starting a conversation to increase knowledge whilst establishing a broader network of experts for farmers to engage with in relation to optimising their management practices and equipment. • Describe the Agenda • Presenter Introductions – Peter Broley, Ben White, Brett Asphar, Kassie van der Westerhuizan, Martin Reichelt, etc • Arrange for a couple of locals to describe their context and expectations of the day.	Sarah Ball/ Peter Broley
8:40 – 9:10	**Harvest Loss Introduction & Measurement** Introduction / Setting the Scene • Why Harvest loss is important (also why it works with HWSC) • Data on harvest loss	Peter Broley/Ben White

	• Stories on harvest loss measurement (about productivity) • What are the elements of harvest losses - header front and harvester (sieve, rotor) loss • Introduction to drop trays and GRDC calculators, etc (safety etc).	
9:10 – 9:40	**Front-end Losses** • Discussion on 'Front-end Losses.' Why does this occur? What options are available to reduce front loss? • Facilitated discussion – What front-loss are we seeing in the district? What crops are they having challenges with? What have people tried to minimise front loss? • Proactive fine tune header front settings to suit your harvesting goals; understanding all the header-front settings which can be changed to achieve better performance – quality, speed, cost, loss management. • Details on setting up cutterbar for different crops (guard choice, angle of front, what tool for what conditions to choose) • How to set the auger and reel to improve performance in different crop conditions • Knowledge on lifters and how to use which ones in different conditions; what affects the decision • How to set up any header front for effective and even feeding. Recognising the signs for "poor feeding" and quantifying the "cost". • How to get the crop into the header front and moved with the crop flow • Summary of quick steps to improve performance and what are the challenges for here in their conditions	Peter Broley/Ben/Martin Reichelt/Brett/Kassie

9:40 – 10:10	**Feeder House Set Up** • Knowledge about efficient and proper crop flow from the header front through the feeder house into the harvester • Step by step set up to get every feeder house to eat more crop (high volume of straw) • Coping with light crop vs heavy crop conditions Summary spotting opportunities to improve	Martin Reichelt/Brett/Kassie
10:10 – 10:30	**Morning Tea**	
10:30 – 11:00	**Optimising the Trashing System** • How to realize and analyse what the trashing system is doing • Faults and benefits of the trashing system • How to thrash the grain with less cracks as possible while keeping machine efficiency high • Influence of different concaves and concave openings • Different thrashing mechanisms in different crop conditions (long, bulky crops with damp conditions/short low yielding crops/ examples from the group). • Crop variances Summary - spotting opportunity to improve and what are the challenges for here in a local context	Martin Reichelt/Brett/Kassie
11:00 – 11:45	**By Brand Review – Thrashing** What are the specific thrashing an separating in differences for my combine? (Break up into at least two groups by machine type	Martin Reichelt/Brett/Kassie
11:45 – 12:15	**The Cleaning Area** • A new view on how sieves can actually work in your favour with different settings • How to optimize your sieves before harvest • Optimizing while combining • Crop variances	Martin Reichelt/Brett/Kassie

	• Overview about how the return works and influences the separation • Mastering the wind and sieve settings for optimal performance Summary spotting opportunity to improve and what are the challenges in the local context	
12:15 – 12:45	**Lunch**	
12:45 – 13:15	**Harvest Weed Seed Control** • Why harvest weed seed control • What are the systems (i.e. mill systems, chaff decks and windrow/chaff lining and how do they work) • Cost of HWSC • Update on Mill technologies and specifically Seed Terminator technology. Facilitated discussion on technologies available and where it's being deployed. Provide further information to attendees on future contact points.	Paul MacIntosh/Ben White/Brett/Manufacturers
13:15 – 13:45	**Harvest Fires/Fire Suppression** • Introduction to the topic – causes, costs and minimisation strategies. Make available the GRDC Pocket Guides Facilitated discussion examining what locals are doing today, how do they a build a robust plan and share with their neighbours.	Peter Broley
13:45 – 14:10	**Grain Storage and Hygiene** • Challenges and Opportunities • Innovation Discussion	Brock/Alex
14:10 – 14:30	**Bringing it Together/Surveys** • Recap of the days session – key messages, opportunities and challenges • Further questions and comments Completion of feedback sheets	Peter Broley/Leigh Norton

14:30	Session Closes.	

Presenter Biography's

Peter Broley - Passionate about understanding how to help growers reduce harvest loss and increase their productivity, he leads the team running the GRDC harvester set-up forums which were sparked from discussions back in 2019 with grower groups in Victoria and WA.

Brett Aspher - 30 years harvester mechanic across all brands, including 20 years Case, 5 years Lexion, 1 year JD and 1 Year NH. Including a number of years as a product support manager for various brands. I have been working with Seed Terminator since 2017.

Ben White - Agricultural engineer with a farming background. 20 years working as a research engineer for Kondinin Group with experience measuring front and machine losses and specialising in minimising harvester fire risk.

Kassie van der Westerhuizan - Qualified ag diesel technician in 1997. Always been in the farming industry. Came to Australia in 2000, started working for a harvesting company doing all crops. Spent 5 years working for CIH, mainly harvesters. Spent 10 years with JD, took on the harvester fleet. Spent 4 years as harvester specialist, setting up machines, training schools for customers and technicians. Very big focus on grain loss and efficiency of harvester.

Martin Reichelt - ??

Paul McIntosh -???

Brock Dembowski – Grain Storage & Hygiene

Alex Conway – Grain Storage & Hygiene

Sarah Ball – AMPS

Leigh Norton – Delta Ag.

Adrian Roles - ??

Harvester Setup clinics -Contingency Dates

Month	Location	Time	Coordinator	Facilitation	GRDC representatation	HWSC	HWSC Demo	Improving sample data quality & calibration	Harvest Operation Support	Harvestloss	Harvester Fires	Registration email/link	Grower	Mobile	Email	Brand	Trainees	Support growers	School Holidays	School Holidays	Opposing Events
Monday, 1 August 2022																					
Tuesday, 2 August 2022																					
Wednesday, 3 August 2022																					Speed Machinery Field Day, Vic
Thursday, 4 August 2022																					Speed Machinery Field Day, Vic
Friday, 5 August 2022																					
Saturday, 6 August 2022																					
Sunday, 7 August 2022																					
Monday, 8 August 2022																					
Tuesday, 9 August 2022																					
Wednesday, 10 August 2022																					Minganew Midwest Field day - WA
Thursday, 11 August 2022																					Minganew Midwest Field day - WA
Friday, 12 August 2022																					
Saturday, 13 August 2022																					
Sunday, 14 August 2022																					
Monday, 15 August 2022																					
Tuesday, 16 August 2022	Lowlynn' 1137 Cunningar Road, Galong, Harden/Boorowa NSW	AM	Farmlink	Andrew Bulkeley		Greg Condon			Brett Asphar, Kassie van der Westerhuizan	Peter Broley, Ben White, Warrick Finlay	Ben White	[redacted]	Tony Flanery	[redacted]	[redacted]	JD S670, Case 8240, Claas Current Model	Angus Hodgkinson, Shaun Nowlan				Aquip Gunnedah
Wednesday, 17 August 2022	Caragabal Country Golf Club, Caragabal, NSW	AM	Farmlink	Dave Crowley		Greg Condon			Brett Asphar, Kassie van der Westerhuizan	Peter Broley, Ben White, Warrick Finlay	Ben White	[redacted]	Dave Crowley	[redacted]	[redacted]	JD, Case x2 with Seed Destructor and Tramlining, New Holland	Angus Hodgkinson, Shaun Nowlan				Aquip Gunnedah
Thursday, 18 August 2022	Rosebank' Lockhart (7km south of Lockhart on Albury Road) Lockhart/Yerong Creek, NSW	AM	Farmlink	Heidi Gooden		Greg Condon			Brett Asphar, Kassie van der Westerhuizan	Peter Broley, Ben White, Warrick Finlay	Ben White	[redacted]	Heidi Gooden	[redacted]	[redacted]		Adrian Roles				Aquip Gunnedah
Friday, 19 August 2022																					
Saturday, 20 August 2022																					
Sunday, 21 August 2022																					
Monday, 22 August 2022																					
Tuesday, 23 August 2022																					
Wednesday, 24 August 2022																					Dowerin Field Day - WA
Thursday, 25 August 2022																					Dowerin Field Day - WA
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Monday, 29 August 2022																					
Tuesday, 30 August 2022																					
Wednesday, 31 August 2022																					
Thursday, 1 September 2022																					
Friday, 2 September 2022																					
Saturday, 3 September 2022																					
Sunday, 4 September 2022																					
Monday, 5 September 2022																					
Tuesday, 6 September 2022																					
Wednesday, 7 September 2022																					Newdegate field day - WA
Thursday, 8 September 2022																					Newdegate field day - WA
Friday, 9 September 2022																					
Saturday, 10 September 2022																					
Sunday, 11 September 2022																					
Monday, 12 September 2022	Tarin Rock - 163 O'Neill Road,	PM	Facey Group	Facey Group		Peter Newman	Michael Bailey, Brett Asphar, IHSD + grower		Brett Asphar, Ben White	Peter Newman/ Peter Broley	Ben White		Ashton Gray	[redacted]	[redacted]	New Holland header from McIntosh &	Son Kulin with an HSD - Jack Little [redacted] CASE 9240 with Seed Terminator				
Tuesday, 13 September 2022	Frankland - 1442 Frankland Cr	AM	Facey Group	Facey Group		Peter Newman	Michael Bailey, Brett Asphar, IHSD + grower		Brett Asphar, Ben White	Peter Newman/ Peter Broley	Ben White		Ben Beech	[redacted]	[redacted]	1) JD s680 with Seed terminator 2) Claas Lexion 8800 with a Knuckey pick-up front 3) Claas Lexion with Emar Chaff decks and a Stripper front 4) Case 8240 with a Tin Vario front (5. 2 x Fendt Ideals on ORDER TBC)						
Wednesday, 14 September 2022	Ben not available																				
Thursday, 15 September 2022	Ben not available																				
Friday, 16 September 2022																					
Saturday, 17 September 2022																			Vic/ Qld		
Sunday, 18 September 2022																			Vic/ Qld		
Monday, 19 September 2022																			Vic/ Qld		
Tuesday, 20 September 2022	Merredin - 2551 Chandler Roa	AM	Facey Group	Facey Group		Peter Newman	Michael Bailey, Brett Asphar, IHSD + grower		Brett Asphar, Kassie van der Westerhuizen	Peter Newman/ Peter Broley	Ben White		Pat Alvaro	[redacted]	[redacted]	CASE 7230, CASE 8120, NY with IHD			Vic/ Qld		Henty Machinery Field Day - NSW
Wednesday, 21 September 2022	Dalwallinu - Ag Society Shed, G	AM	Facey Group	Facey Group		Peter Newman	Michael Bailey, Brett Asphar, IHSD + grower		Brett Asphar, Kassie van der Westerhuizen	Peter Newman/ Peter Broley	Ben White		Mike Dodd	[redacted]	[redacted]	2 x CASE 8250 with fronts Veri, D140 and a D65 Macdon			Vic/ Qld		Henty Machinery Field Day - NSW
Thursday, 22 September 2022	Chapman Valley - 150 Lorimer	AM	Facey Group	Facey Group		Peter Newman	Michael Bailey, Brett Asphar, IHSD + grower		Brett Asphar, Kassie van der Westerhuizen	Peter Newman/ Peter Broley	Ben White		Trevor Piggott	[redacted]	[redacted]	draper fronts (Macdon D60). My brother has John Deere S780, with			Vic/ Qld		Henty Machinery Field Day - NSW
Friday, 23 September 2022																			Vic/ Qld		
Saturday, 24 September 2022																			Vic/ Qld		
Sunday, 25 September 2022																			Vic/ Qld		
Monday, 26 September 2022																			Vic/ Qld	WA/ SA/NSW	
Tuesday, 27 September 2022	Jay Dee' 34017 Warrego Hwy, Drillham, Qld 4424 (7km west of Drillham)	AM	Farmlink	Paul McIntosh		Paul McIntosh	Marney Strachan		Rod Gribble, Brett Asphar, Kassie van der Westerhuizan	Peter Broley, Ben White, Rod Gribble, Warrick Finlay	Ben White	[redacted]	Phillip Coggan	TBC	TBC	JD, Fendt 60'			Vic/ Qld	WA/ SA/NSW	
Wednesday, 28 September 2022	Esarra' S297 Meandarra Talwood Road, Inglestone, Qld (53km south of Meandarra)	AM	Farmlink	Paul McIntosh		Paul McIntosh	Marney Strachan		Rod Gribble, Brett Asphar, Kassie van der Westerhuizan	Peter Broley, Ben White, Rod Gribble, Warrick Finlay	Ben White	[redacted]	Annie Gibson	TBC	TBC	TBC			Vic/ Qld	WA/ SA/NSW	
Thursday, 29 September 2022																			Vic/ Qld	WA/ SA/NSW	
Friday, 30 September 2022																			Vic/ Qld	WA/ SA/NSW	
Saturday, 1 October 2022																			Vic/ Qld	WA/ SA/NSW	
Sunday, 2 October 2022																			Vic/ Qld	WA/ SA/NSW	
Monday, 3 October 2022																				WA/ SA/NSW	
Tuesday, 4 October 2022																				WA/ SA/NSW	
Wednesday, 5 October 2022																				WA/ SA/NSW	
Thursday, 6 October 2022																				WA/ SA/NSW	
Friday, 7 October 2022																				WA/ SA/NSW	
Saturday, 8 October 2022																				WA/ SA/NSW	
Sunday, 9 October 2022																				WA/ SA/NSW	
Monday, 10 October 2022																					
Tuesday, 11 October 2022	SA - Keith	12.30 - 5pm	BCG	BCG	Courtney Ramsey	Jana Dixon, WeedSmart	Seed Terminator		Brett Asphar, Kassie van der Westerhuizan	Brian Legg	Ben White	https://www.bcg.org.au/events/grd	Glen Simpson	[redacted]	[redacted]	NH	243 Bubtaylors Road - Keith	Ray? Case			
Wednesday, 12 October 2022	SA - Millicent	8.30am - 1	BCG	BCG	Courtney Ramsey	Jana Dixon, WeedSmart	Seed Terminator		Brett Asphar, Kassie van der Westerhuizan	Brian Legg	Ben White	https://www.bcg.org.au/events/grd	Chris Gilbertson	[redacted]	[redacted]	Has two John Deere one with seed	485 Mount Hope Rendelsham	Brett Gilbertson - cousin on GRDC Southern Panel has Case IH machines and farms about 10kms out the road.			
Thursday, 13 October 2022	Vic/ Hamilton	8.30am - 1	BCG/SFS	Michelle Mclure, SFS Coordinated through BCG	Courtney Ramsey	Jana Dixon, WeedSmart	Seed Terminator - SFS also supported by HSD so plan to have that tech there as well. Will confirm detail.		Brett Asphar, Kassie van der Westerhuizan	Brian Legg	Ben White	https://www.bcg.org.au/events/grd	Don Robertson (host farmer) NH HSD, Graham	[redacted]							
Friday, 14 October 2022	Vic/Inverleigh SFS Trial Site	8.30am - 1	BCG/SFS	Michelle Mclure SFS, Coordinated through BCG	Courtney Ramsey	Jana Dixon, WeedSmart	Seed Terminator. SFS also supported by HSD so will have that tech there as well. Will confirm detail		Brett Asphar, Kassie van der Westerhuizan	Brian Legg	Ben White	https://www.bcg.org.au/events/grd	SFS Main Site, NH, CLASS Caes IH, JD		[redacted]						
Saturday, 15 October 2022																					
Sunday, 16 October 2022																					
Monday, 17 October 2022																					
Tuesday, 18 October 2022																					
Wednesday, 19 October 2022																					
Thursday, 20 October 2022																					
Friday, 21 October 2022																					
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Tuesday, 25 October 2022																					
Wednesday, 26 October 2022																					
Thursday, 27 October 2022																					
Friday, 28 October 2022																					
Saturday, 29 October 2022																					

2021

Harvester Forums

January

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31						

February

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28						

March

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April

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May

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June

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July

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August

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29	30	31				

September

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October

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31						

November

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December

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26	27	28	29	30	31	

Harvester Setup clinics -Contingency Dates

[redacted]

Month	Location	Time	Coordinator	Facilitation	GRDC representatation	HWSC	HWSC Demo	Grain Storage	International	Harvest Operation Support	Harvestloss	Harvester Fires	Accommodation	Flights	Who for	Grower	Mobile	Email	Brand	Trainees	Support growers	School Holidays	School Holidays		Opposing Events
Tuesday, 1 August 2023																									
Wednesday, 2 August 2023																									
Thursday, 3 August 2023																									Agriculture Machinery Field Day, VIC
Friday, 4 August 2023																									Agriculture Machinery Field Day, VIC
Saturday, 5 August 2023																									
Sunday, 6 August 2023																									
Monday, 7 August 2023																									
Tuesday, 8 August 2023																									
Wednesday, 9 August 2023																									Mingenew Midwest Field day - WA
Thursday, 10 August 2023																									Mingenew Midwest Field day - WA
Friday, 11 August 2023																									
Saturday, 12 August 2023																									
Sunday, 13 August 2023																									
Monday, 14 August 2023																									
Tuesday, 15 August 2023																									
Wednesday, 16 August 2023																									
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Monday, 21 August 2023																									
Tuesday, 22 August 2023																									Agcarp Gunnedah
Wednesday, 23 August 2023																									Agcarp Gunnedah
Thursday, 24 August 2023																									Agcarp Gunnedah
Friday, 25 August 2023																									
Saturday, 26 August 2023																									
Sunday, 27 August 2023																									
Monday, 28 August 2023	Travel day - International arrive																								
Tuesday, 29 August 2023	**Cimbour West, Qld. (Dalby)**	10:30-16:30	Andrew Bulkeley	Paul McIntosh		Paul McIntosh		Chris Warrick	Martin Reichelt	Brett Asphar, Kassie van der Westhuizen	Warrick Finlay	Ben White				McLarens Family Farming 350 McLarens Rd Jimbour West									
Wednesday, 30 August 2023	**Springsure, Qld. (Emerald)**	10:30-16:30	Andrew Bulkeley	Paul McIntosh		Paul McIntosh		Chris Warrick	Martin Reichelt	Brett Asphar, Kassie van der Westhuizen	Warrick Finlay	Ben White				Rokelkai Farming 247 Wyntoon Rd, Springsure									Dowerin Field Day - WA
Thursday, 31 August 2023	**Mackay (Qld)**	10:30-16:30	Andrew Bulkeley	Paul McIntosh/Carlie Atkinson		Paul McIntosh		Chris Warrick	Martin Reichelt	Brett Asphar, Kassie van der Westhuizen	Warrick Finlay	Ben White				Owen Pastoga 795 Marian-Eton Rd Marian QLD 4753			Case 8230 Axial flow, front 3152						Dowerin Field Day - WA
Friday, 1 September 2023	Travel day?																								
Saturday, 2 September 2023																									
Sunday, 3 September 2023																									
Monday, 4 September 2023	**North Star, NSW**	8:30-14:00	Andrew Bulkeley	Rob Long (Delta)		Paul McIntosh		Chris Warrick	Martin Reichelt	Brett Asphar, Kassie van der Westhuizen	Warrick Finlay	Ben White				North Star Sporting Club, 6226 North Star Road North Star NSW 2408			New Holland 9.90 MacDon 45ft Front, Case 8250 FD2 Macdon Front						
Tuesday, 5 September 2023	**Gunnedah, NSW**	8:30-14:00	Andrew Bulkeley	Matt Gardner (AAPS)		Paul McIntosh		Chris Warrick	Martin Reichelt	Brett Asphar, Kassie van der Westhuizen	Warrick Finlay	Ben White				Hugh Simson - 'Red Rocks' Wandobah Road, Gunnedah			John Deere, Class, Case						
Wednesday, 6 September 2023	**Travel day**														Booked Peter, Brett, Kassie and Martin Reichelt										Newdegate field day - WA
Thursday, 7 September 2023	**Laura, SA**	9am-3pm	Kelly Angel	Jade Rose [redacted]	Courtney Ramsay	Ben White		Ben White	Martin Reichelt	Brett Asphar, Kassie van der Westhuizen	Chris Bazeley	Ben White				Greg Durrant 791 Georgetown-Huddleston Rd (10kms sth of Laura)			Nil 9.90 with HSD destructor 1 year old. Case 7140 with a 2 year old Seed Terminator . JD 2017 model no destructor. Nil 9.90 with a Redekop destructor from Canada						Newdegate field day - WA
Friday, 8 September 2023	**Glos Corner, SA**	9am-3pm	Kelly Angel	Trevor Day [redacted] Meat Likers Courtney Ramsay	Courtney Ramsay	Ben White		Ben White	Martin Reichelt	Brett Asphar, Kassie van der Westhuizen	Chris Bazeley	Ben White			Booked Peter and Brett	Pat and Mary Connell	[redacted]		Case 7250 + REDEKOP straw chopper + older 35ft Case Flexfront		**David and Janet Laws** – JD S680 + 40ft JD 640D Hydrafloat Front + a REDEKOP (currently for sale and if sold will be replaced with a JD S660) **Vater Machinery/Scott Nicholls** - NH CR9.90 + seed destructor maybe. Air Flex Honeybee Front. **Seed destructor rep with a static display**					
Saturday, 9 September 2023																									
Sunday, 10 September 2023																									
Monday, 11 September 2023															Booked Kassie - confirmed										
Tuesday, 12 September 2023	**Western - Hyden**	8:30 - 3:30			Luke Dawson	Peter Newman			Murray Skayman	Brett Asphar, Kassie van der Westhuizen	Michael Bailey	Ben White				Josh Whitwell	[redacted]	[redacted]							
Wednesday, 13 September 2023	**Western - Dunn Rock**	8:30 - 3:30			Luke Dawson	Peter Newman			Murray Skayman	Brett Asphar, Kassie van der Westhuizen	Michael Bailey	Ben White				Michael West	[redacted]	[redacted]	New Holland with Stripper Front						VCA Main Field Day - VIC
Thursday, 14 September 2023	**Western - Nyabing**	8:30 - 3:30		Nyabing Farm Improvement Group - Fiona Hickley [redacted]	Luke Dawson	Peter Newman			Murray Skayman	Brett Asphar, Kassie van der Westhuizen	Michael Bailey	Ben White				Braden and Kate Johnston 488 Johnston Road Nyabing	Contact Via - Fiona Hickley @ NFIG [redacted]	[redacted]							
Friday, 15 September 2023	**Western - Beverley**	8:30 - 3:30			Berin Gibbons & Jo Wheeler	Peter Newman			Murray Skayman	Brett Asphar, Kassie van der Westhuizen	Michael Bailey	Ben White				Adam Smith	[redacted]	[redacted]	CASE IH (with JH50), New Holland x2 (with Chaff decks), Class Lexion, Gleaner (with chaff decks)						
Saturday, 16 September 2023																									
Sunday, 17 September 2023														[redacted]	Booked Peter, Brett and Murray Skayman Booked [redacted] for Kassie to join							Vic/ Qld			
Monday, 18 September 2023	**Hopetoun, Vic**	9am-3pm	Kelly Angel	Kelly Angel [redacted]	Courtney Ramsay?	Ben White		Chris Warrick	Murray Skayman	Brett Asphar, Kassie van der Westhuizen	Brian Legg	Ben White				Simon Cook	[redacted]		Case IH 8250 with MacDon FD145 Flex		**Lucas Puckle** - Nil 8.90 + MacDon PW8 pickup front **Ross Brown** - Class 7600 + Smale Pickup Front + Seed Terminator **Wayne Huff** - John Deere X9 + HD50 Front	Vic/ Qld			
Tuesday, 19 September 2023	**St Arnaud, Vic**	9am-3pm	Kelly Angel	Kelly Angel [redacted]	Courtney Ramsay?	Ben White		Chris Warrick	Murray Skayman	Brett Asphar, Kassie van der Westhuizen	Brian Legg	Ben White				Colin and Ian Coates	[redacted]		Case IH 8250. Rigid draper front and also a Knuckey Pickup		**Andrew Jesse** - S780 + MacDon FD140 will also have a new JD pickup front - not sure on model sorry **Bruce Matthews** - Nil 9.90 (wont bring a front as same as already on site) Jack is looking into whether a Class machine would be in the area…	Vic/ Qld			Henty Machinery Field Day - NSW
Wednesday, 20 September 2023	**Skipton, Vic**	9am-3pm	Kelly Angel	Michelle McClure [redacted]	Courtney Ramsay?	Ben White		Chris Warrick	Murray Skayman	Brett Asphar, Kassie van der Westhuizen	Brian Legg	Ben White		[redacted]	Booked - Peter, Brett, Kassie and Murray Skayman	Vernon Dawson			Class Header (< 2yo) and MacDon Front			Vic/ Qld			Henty Machinery Field Day - NSW
Thursday, 21 September 2023	UNAVAILABLE																					Vic/ Qld			Henty Machinery Field Day - NSW
Friday, 22 September 2023	**Western - Cunderdin Ag College**	8:30 - 3:30			Berin Gibbons	Peter Newman		Ben White	Murray Skayman	Brett Asphar, Kassie van der Westhuizen	Michael Bailey	Ben White				Cunderdin Ag College Principal Matt Dowell	[redacted]	[redacted]	John Deere S780 with 740D front			Vic/ Qld			
Saturday, 23 September 2023														[redacted]	Booked - Kassie							Vic/ Qld	WA/NSW		
Sunday, 24 September 2023																						Vic/ Qld	WA/NSW		
Monday, 25 September 2023																						Vic/ Qld	WA/NSW		
Tuesday, 26 September 2023																						Vic/ Qld	WA/NSW		
Wednesday, 27 September 2023																						Vic/ Qld	WA/NSW		
Thursday, 28 September 2023																						Vic/ Qld	WA/NSW		
Friday, 29 September 2023																						Vic/ Qld	WA/NSW		
Saturday, 30 September 2023																						Vic/ Qld	WA/NSW	SA	
Sunday, 1 October 2023																						Vic/ Qld	WA/NSW	SA	
Monday, 2 October 2023																							WA/NSW	SA	
Tuesday, 3 October 2023																							WA/NSW	SA	Sheep Field Days - VIC
Wednesday, 4 October 2023																							WA/NSW	SA	Sheep Field Days - VIC
Thursday, 5 October 2023																							WA/NSW	SA	Sheep Field Days - VIC
Friday, 6 October 2023																							WA/NSW	SA	
Saturday, 7 October 2023																								SA	
Sunday, 8 October 2023																								SA	
Monday, 9 October 2023																								SA	
Tuesday, 10 October 2023																								SA	
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Sunday, 29 October 2023																									

2023

Harvester Forums

January

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

February

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26	27	28				

March

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April

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30						

May

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28	29	30	31			

June

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July

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30	31					

August

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September

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October

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22	23	24	25	26	27	28
29	30	31				

November

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December

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31						