



**NORTHERN**

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# **GRDC™** **GROWNOTES™**



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GRAINS RESEARCH  
& DEVELOPMENT  
CORPORATION

# **CANOLA**

## **SECTION 12**

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## **HARVEST**

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WINDROWING | DIRECT HEADING | DESICCATION FOLLOWED BY DIRECT  
HEADING | WET HARVEST ISSUES AND MANAGEMENT | RECEIVAL STANDARDS

# Harvest

Canola crops can be either windrowed (Figure 1) or direct-harvested. The method chosen depends on the availability and cost of contract windrowing, the type of harvesters available and the relative risk of adverse weather in a particular locality. Some of the advantages of windrowing are: uniform ripening, earlier harvesting (7–10 days), less exposure to spring storms and rain, reduced shattering losses during harvest, and less hail and wind loss. Harvesting can usually continue 'around the clock'.<sup>1</sup> Some advantages of direct heading include cost, availability of headers on farm and a higher harvest index on low yielding crops.



**Figure 1:** Windrowing prior to harvest is the more common practice.

Photo: Rebecca Jennings

Research by Grain Orana Alliance has demonstrated the importance of getting windrowing timing right to avoid potentially large yield penalties. Other trial work has demonstrated that direct heading of canola is also a viable alternative to windrowing.<sup>2</sup>

## 12.1 Windrowing

The majority of canola is currently windrowed. The objective in windrowing is to lay the cut material on top of the lower stem material to allow air movement under the windrow to assist in the drying process (Figure 2).

### MORE INFORMATION

[Direct heading canola. Fact Sheet.](#)

[Harvest management. Module 7. Better canola.](#)

1 L Serafin, J Holland, R Bambach, D McCaffery (2009) Canola: northern NSW planting guide. NSW Department of Primary Industries, [http://www.dpi.nsw.gov.au/\\_data/assets/pdf\\_file/0016/148300/canola-northern-NSW-planting-guide.pdf](http://www.dpi.nsw.gov.au/_data/assets/pdf_file/0016/148300/canola-northern-NSW-planting-guide.pdf)

2 M Street (2016) GOA investigates Canola desiccation and direct heading and PodGuard canola. GRDC Update Papers 20 July 2016, <https://grdc.com.au/Research-and-Development/GRDC-Update-Papers/2016/07/GOA-investigates-Canola-desiccation-and-direct-heading-and-PodGuard-canola>



**Figure 2:** The majority of canola crops are windrowed prior to harvest.

*Key points*

- Physiological maturity occurs when the seed moisture content reaches 35–45%.
- Check the crop regularly from 14 days after the end of flowering (10% of plants with flowers).
- Look for colour change across the whole plant, particularly in crops with lower plant populations.
- Sample from representative areas of the paddock, and check all varieties for change in seed colour; it will vary within a district.
- Book a contractor early in the season and contact again when the crop has reached the end of flowering.
- Optimal windrowing stage lasts for 4–6 days in most areas.
- When seed losses are obvious on the windrower, stop and consider direct harvesting. Planning is critical for a smooth harvest operation. Less experienced growers are advised to organise a contractor or an experienced neighbour to carry out the windrowing.



**Figure 3:** Windrowed canola near Binalong, NSW.

Photo: Gregory Heath

Canola is an indeterminate plant, which means it flowers until limited by temperature, water stress or nutrient availability. As a result, pod development can last over 3–5 weeks, with lower pods maturing before higher ones. Consequently, canola is often windrowed to ensure that all pods are mature at harvest (Figure 3).

Older canola varieties had a lengthy flowering period, but growers now have access to a greater range of varieties with differing maturities and more tolerance to pod-shattering.

Some early-maturing varieties have been developed with shorter flowering and pod maturity periods. Direct harvesting (instead of windrowing) is more of an option for these shorter statured and earlier maturing varieties in some regions.

Whether the crop is windrowed or direct-harvested will depend on the varieties grown, soil types, seasonal conditions, availability of windrowers, and the size and variability of the crop. Canola crops that are variable in their maturity or show significant differences in the maturity of the top and bottom pods are ideally windrowed to minimise shattering losses. The plant should be windrowed before the lower pods approach shattering stage.

Like hay cutting, windrowing of canola hastens the maturity of the crop, allowing the top pods to be harvested at the same time as the lower pods. By cutting the crop and placing it in a windrow on the stubble, the pods and seeds can dry faster than a standing crop (by as much as 8–10 days). Windrowed canola is much less susceptible than a standing crop to wind, rain and hail damage. In the windrow, seeds will reach a uniform harvest moisture content of 8% within 6–10 days of being cut.

WATCH: [Interview with central NSW farming manager Justin McMillan](#)



Several harvester-front options are available for canola. A belt front, for example, can be used to windrow or direct-head a crop, but with minor modifications, it can also be used to harvest a windrowed crop. Various pick-up attachments or crop lifters can be used on existing open-front headers to harvest canola windrows.

For most canola production areas, windrowing has the advantages of:

- allowing earlier harvest (8–10 days) because seed matures more evenly;
- hastening maturity (in higher rainfall areas);
- evening maturity where soil types are variable in individual paddocks;
- reducing losses from hail and excessive winds;
- providing flexibility for the grower with large areas, because the timing of harvest is not as critical;
- reducing shattering losses during harvest;
- around-the-clock operation to cover large areas; and

- helping to control escaped or herbicide-resistant weeds in some cases.<sup>3</sup>

Disadvantages:

- There are additional costs.
- In very wet seasons, the crop can deteriorate in a windrow.
- The optimum timing only lasts 4–6 days depending on the temperature and humidity.
- The use of contractors may compromise timing.
- Timing of windrowing is determined by percentage change in seed colour, which is a compromise to allow for variability in the weather post-windrowing.
- Windrowing too early can lead to yield losses of up to 30% and reduced oil content, whereas too late makes the crop far more susceptible to shattering losses.
- Poorly made windrows which are uneven resulting in ‘lumps’ or ‘haystacks’ will slow the harvesting process and any blockages that occur can be time consuming and costly to clear especially where contractors charge on a machine hour basis.
- If the cut plants are ‘pushed’ down onto the ground during the windrowing operation the dry down time may be increased especially if moderate to heavy rain is received before harvesting starts.<sup>4</sup>

### Timing

Collect pods from the main stem of a number of plants and from different positions in the canopy to determine the optimum timing for windrowing. The top third of the plant will have mostly green seeds that are firm but pliable; the middle third, ~80% of seeds green or green-red and very firm but pliable, and 20% red-brown to light brown; and the bottom third, dark brown to black seeds.<sup>5</sup>

Check withholding periods when using Reglone, see <http://www.apvma.gov.au/>

### 12.1.1 When to windrow

Windrowing should start when 50–70% of seeds have changed colour to red, brown or black (Figure 4). The crop is usually ready for windrowing 20–30 days after the end of flowering, and should be regularly checked for changes in seed colour. The end of flowering is considered to be when only ~10% of plants have any flowers left on them.

Windrowed crops should be ready to harvest 5–14 days after windrowing, depending on the weather. The moisture content of the grain should be ≤8%.<sup>6</sup>

In warmer, drier areas, windrowing is better done when seed reaches 50–60% seed-colour change. Under higher temperatures, the windrowed plant dries too rapidly to allow seeds to mature fully in the pods and oil content can be lower.

### MORE INFORMATION

GRDC Update Paper: [‘To windrow or not to windrow in 2016?’ This is the question, ‘but if so, when?’](#)

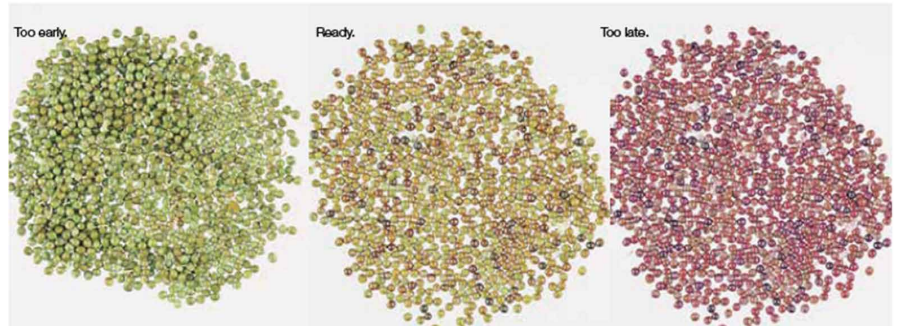
GRDC Update Paper: [A snapshot of results from year 1 trials of canola harvest management in northern NSW](#)

<sup>3</sup> P Carmody (2009) Windrowing and harvesting. Ch. 14. In Canola best practice management guide for south-eastern Australia. (Eds D McCaffrey, T Potter, S Marcoft, F Pritchard) GRDC. [http://www.grdc.com.au/uploads/documents/GRDC\\_Canola\\_Guide\\_All\\_1308091.pdf](http://www.grdc.com.au/uploads/documents/GRDC_Canola_Guide_All_1308091.pdf)

<sup>4</sup> J Midwood (2013) Canola harvest: is direct heading a serious option. GRDC Update Papers, 6 February 2013, <https://grdc.com.au/Research-and-Development/GRDC-Update-Papers/2013/02/Canola-harvest-is-direct-heading-a-serious-option>

<sup>5</sup> J Midwood (2013) Canola harvest: is direct heading a serious option. GRDC Update Papers, 6 February 2013, <https://grdc.com.au/Research-and-Development/GRDC-Update-Papers/2013/02/Canola-harvest-is-direct-heading-a-serious-option>

<sup>6</sup> L Serafin, J Holland, R Bambach, D McCaffery (2009) Canola: northern NSW planting guide. NSW Department of Primary Industries, [http://www.dpi.nsw.gov.au/\\_data/assets/pdf\\_file/0016/148300/canola-northern-NSW-planting-guide.pdf](http://www.dpi.nsw.gov.au/_data/assets/pdf_file/0016/148300/canola-northern-NSW-planting-guide.pdf)



**Figure 4:** Seed-colour changes determine the optimum time for windrow timing.

Photo: DAFWA

In summary, windrowing too early can result in lower yields and oil contents, and too late will lead to shattering losses.

The optimum time for windrowing is when the top third of the plant has mostly green seeds. These should be firm but pliable when rolled between the thumb and forefinger. The middle section of the plant will have 80% of seed green or green-red and be very firm but pliable; the other 20% may be red-brown to light brown. The bottom third of the plant will have dark brown to black seeds.

The time from the end of flowering to windrowing will vary with season, paddock and variety. Check each crop every year to determine the best windrowing time.

If using a contractor, ensure that they are booked well in advance. Noting the end of flowering will help the grower and the contractor to determine approximately when the crop will be ready to windrow. It is most important that a decision to windrow is made based on assessment in a representative area of the paddock.

The optimal windrowing stage for canola lasts ~4–6 days, depending on temperature and humidity. Each day that windrowing is delayed past the optimum time will make the crop more susceptible to shattering losses. These can be minimised by operating at night or when humidity is high after dew or rain. However, where shattering losses during windrowing are obvious, growers are advised to change strategy to direct harvesting or to desiccation followed by direct harvesting.

Windrowing too early, for example, by 4–5 days, can lead to yield losses of up to 10% and reduced oil content. A canola crop should never be windrowed before seed colour has changed, because it will result in significant yield loss. Rollers can be attached to the back of windrowers to help push the windrow down into the stubble and minimise wind damage. Note: withholding periods of pesticides relate to windrowing, not to harvest, if windrowing operations occur.<sup>7</sup>

Grain Orana Alliance (GOA) ran multiple trials in 2009, 2010 and 2011 to examine the impact of windrowing timing on oil, yields and profitability as well as the alternate option of direct heading:

- Windrowing timing within an acceptable window had no impact on oil % in canola
- Windrowing timing can have a significant positive impact on yield and profitability of canola.
- Yield increases up to 0.5 t/ha have been seen over relatively short delays in windrowing of only 8 days.
- Yield loss to shattering with later windrowing has not shown to be as bad as first thought, particularly in contrast to negative yield impacts for going too early.
- Windrowing timing has a limited effect on oil potential in canola.
- Direct heading is a viable option to harvest canola and in many cases could maximise profitability.

## MORE INFORMATION

[Revisiting canola management can lift returns.](#)

<sup>7</sup> P Carmody (2009) Windrowing and harvesting. Ch. 14. In Canola best practice management guide for south-eastern Australia. (Eds D McCaffrey, T Potter, S Marcroft, F Pritchard) GRDC, [http://www.grdc.com.au/uploads/documents/GRDC\\_Canola\\_Guide\\_All\\_1308091.pdf](http://www.grdc.com.au/uploads/documents/GRDC_Canola_Guide_All_1308091.pdf)

**i** MORE INFORMATION

[AOF Harvest Clean Down Guidelines](#)

- An economic benefit of over \$200/ha can be gained from choosing the best method and timing of canola harvesting.<sup>8</sup>

## 12.2 Direct heading

Direct harvesting is cheaper than windrowing and can be done with an open front with an extended platform or with a belt-front attachment. Canola is ready to harvest when almost all pods are dry and rattle when shaken, pods are pale brown, and the seeds are dark brown to black and have <8% moisture content.<sup>9</sup>

Recent research into direct cutting of canola has shown it to be a viable harvest alternative to windrowing in some circumstances. Favourable conditions for direct heading include having a crop canopy that is slightly lodged and knitted together, even maturity across the paddock, and few, green weeds (or when sprayed with a desiccant).

Advantages of direct heading:

- There are no windrowing or desiccation costs.
- Crops dry out faster after wet weather than windrowed crops.
- Crops are allowed to maximise yield potential and oil contents.
- It suits rocky areas, which can be a problem when windrowing, and reduces the risk of harvester blockage that can occur with windrows.

Disadvantage:

- In crops that are variable, the wait for ripening can expose the crop to wind damage, and thicker crops can take a considerable time to ripen evenly.

### Timing

The general colour of the crop is a poor guide of when to harvest; use seed moisture content. The addition of pod sealants is an extra management aid when direct harvesting; it helps by reducing pod shattering and by allowing crops to achieve their full yield potential but is an added cost. When sprayed onto the crop it provides a unique elastic, semi-permeable membrane over the filling pods. Timing is earlier than the optimum time for windrowing.<sup>10</sup>

Direct heading canola can often be carried out sooner than people think because although the crop stalks may still be green, crop delivery is based on grain moisture, not plant moisture.

Most headers are capable of direct heading canola. Many machines come out of Europe where they regularly direct head crops.

It is critically important to correctly set up the header front, according to the manufacturer's instructions.

Common draper fronts can be used to direct harvest canola, but can be problematic when there is an uneven flow of the crop into the machine. When canola is cut and fed onto the mat, it tends to bounce and fluff up and feed in in lumps. To counter this, a top cross auger that sits across the back of the header front above the belt can be fitted. When the canola fluffs up it hits the auger which then flicks it towards the centre to even out the feed into the header.

Conventional, 'tin front' headers which have an auger at the bottom of the table are also capable of direct heading canola.

The crop takes virtually no thrashing to get the grain out of the pods, so machines can be set wide open to handle a significant amount of crop residue.

<sup>8</sup> M Street (2016) 'To windrow or not to windrow in 2016?' This is the question, 'but if so, when?'. GRDC Update Papers 3 March 2016, <https://grdc.com.au/Research-and-Development/GRDC-Update-Papers/2016/03/Windrowing-in-2016>

<sup>9</sup> L Serafin, J Holland, R Bambach, D McCaffery (2009) Canola: northern NSW planting guide. NSW Department of Primary Industries, [http://www.dpi.nsw.gov.au/\\_data/assets/pdf\\_file/0016/148300/canola-northern-NSW-planting-guide.pdf](http://www.dpi.nsw.gov.au/_data/assets/pdf_file/0016/148300/canola-northern-NSW-planting-guide.pdf)

<sup>10</sup> J Midwood (2013) Canola harvest: is direct heading a serious option. GRDC Update Papers, 6 February 2013, <http://www.grdc.com.au/Research-and-Development/GRDC-Update-Papers/2013/02/Canola-harvest-is-direct-heading-a-serious-option>

**i MORE INFORMATION**

[Direct heading canola. Fact-Sheet.](#)

[Direct heading canola delivers at Devenish.](#)

[The benefits of disc seeders direct heading canola and on-farm storage.](#)

[Harvest options for canola—windrowing timing, direct heading, desiccation with Reglone and treatment with Pod Ceal. Effects on yield and oil percentages.](#)

[Harvesting canola in 2013—to windrow or direct head?](#)

[Canola harvest: is direct heading a serious option?](#)

[Early planning the key to canola direct harvesting.](#)

[The nuts and bolts of efficient and effective windrow burning](#)

The incorrect setting up of the reel can cause significant losses in direct heading canola. The reel on the header only comes into play when the crop isn't feeding easily into the machine, so it should be set high, well forward and only slightly faster than the machine's ground speed. The reel is not there to rake the crop into the header front because it will create losses from seed shatter. It should only be a backstop for when the crop doesn't feed into the machine.

Harvesters should have sharp cutter bars so they cleanly cut the crop rather than 'gnaw' it off.

To access the Grain Orana Alliance harvest loss calculator, visit <http://www.grainorana.com.au/documents>

**IN FOCUS**

FAQ

**12.2.1 Comparing windrowing and direct heading**

Grains Orana Alliance (GOA) research, which was funded by the Grains Research and Development Corporation, has examined the timing and adoption of pre-harvest practices in the central west of NSW (Table 1). Research findings include:

- Yield loss due to shattering with later windrowing has proved not as severe as thought.
- Windrowing timing can have a significant positive effect on yield and profitability of canola.
- Relatively short delays in windrowing of only 8 days can lead to yield increases of up to 0.5 t/ha.
- Timing of windrowing has a limited effect on oil potential in canola.
- Direct heading is a viable option for harvesting canola and in many cases could maximise profitability.
- An economic benefit of >\$200/ha can be gained from choosing the best method and timing of canola harvesting.<sup>11</sup>

**Table 1:** Canola harvest treatments, windrow timing and crop maturity.<sup>12</sup>

Treatment	Windrowing timing	Assumptions of crop maturity	Proportion of crop physiologically mature	At risk of not reaching potential
Early windrow	10% seed-colour change in middle third of the main stem	Assume bottom third mature, plus 10% of middle third, nil top third	36% seed potentially already mature	64%
Ideal windrow	50% seed-colour change in middle third of main stem	Assume bottom third mature plus 50% of middle third, 10% of top third	53% seed potentially already mature	47%

<sup>11</sup> M Street (2013) Harvesting canola in 2013—to windrow or direct head. GRDC Update Papers, 22 August 2013, <http://www.grdc.com.au/Research-and-Development/GRDC-Update-Papers/2013/08/Harvesting-canola-in-2013-to-windrow-or-direct-head>

<sup>12</sup> M Street (2010) Harvest options for canola—windrowing timing, direct heading, desiccation with Reglone™ and treatment with Pod Ceal™. Effects on yield and oil percentages. GRDC Update Papers, 30 September 2010, <https://www.grdc.com.au/Research-and-Development/GRDC-Update-Papers/2010/09/Harvest-options-for-canola-windrowing-timing-direct-heading-desiccation-with-RegloneTM-and-treatment-with-Pod-CealTM-effects-on-yield-and-oil-percentages>



Treatment	Windrowing timing	Assumptions of crop maturity	Proportion of crop physiologically mature	At risk of not reaching potential
Late windrow	70% seed-colour change in middle third of the main stem	Assume bottom third mature plus 70% of the middle main stem, 50% of top third	72% seed potentially already mature	28%
Reglone®	70% of all pods have changed colour	70%	70%	30%
Direct head	All seeds mature	100%	100%	0%

From these trials, it could be concluded that timing of windrowing has limited effect on oil percentages in canola. Delaying windrowing or direct heading resulted in significant increases in yields of canola. These yield variations may be explained by the proportion of immature seed present at cutting and the risk that this seed will not fill its potential. For this seed to mature, it must draw on stored substrate, which may be influenced by cutting height, time of day or even variability of the level of maturity within the crop. These aspects require further investigation.

The differences in yield coupled with additional costs contribute to significant increases in net returns for some treatments. Figure 5 depicts the relative benefits of the treatments, taking into account average yields, additional costs, and oil penalties or bonuses.

The limited nature of these trials does not allow a recommendation of 'ideal' timing of windrowing. However, the trials do demonstrate the potential economic benefit of making the right decision. Paddocks, seasons and risk-averseness of growers will all differ. When formulating a time to windrow, remember that there are potential advantages to allowing immature seed in the paddock to mature before windrowing or desiccation. By ceasing the plant's growth during the filling of these seeds, yields could be reduced.

Therefore, a balance must be found between potential yield maximisation by delaying windrowing or desiccation, and the potential increases in loss of yield through shattering. This should be considered in view of the grower's risk-averseness, or other advantages offered through windrowing. Potential risk in terms of pod shattering may be managed by use of products such as Pod Ceal™.

Further investigations may be warranted into:

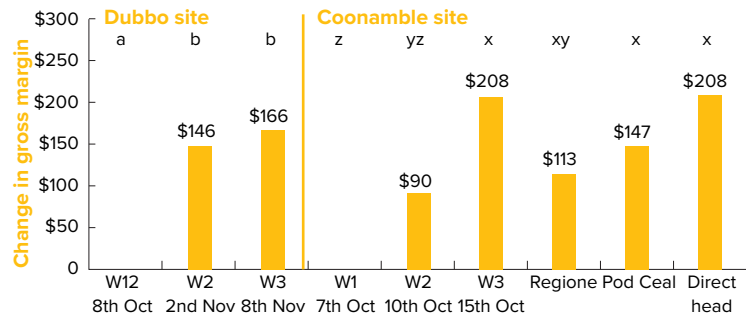
- time of day of windrowing and its effect on maturation of immature seed
- windrowing height—more stem may leave more substrate available to facilitate grainfill and hence reduce yield losses and variability
- quantifying potential sources of losses—standing crop, windrowing losses, losses while in the windrow<sup>13</sup>

**i MORE INFORMATION**

[Harvesting canola in 2013—to-windrow or direct head?](#)

[Harvest options for canola—windrowing timing, direct heading, desiccation with Reglone and treatment with Pod Ceal. Effects on yield and oil percentages.](#)

<sup>13</sup> M Street (2010) Harvest options for canola—windrowing timing, direct heading, desiccation with Reglone™ and treatment with Pod Ceal™. Effects on yield and oil percentages. GRDC Update Papers, 30 September 2010, <https://www.grdc.com.au/Research-and-Development/GRDC-Update-Papers/2010/09/Harvest-options-for-canola-windrowing-timing-direct-heading-desiccation-with-RegloneTM-and-treatment-with-Pod-CealTM-effects-on-yield-and-oil-percentages>



**Figure 5:** Relative cost–profit difference of various harvest options compared with W1 at the Dubbo and Coonamble canola harvest trials. Treatment values headed by the same letter are not significantly different ( $\alpha = 0.05$ ).<sup>14</sup>

## 12.3 Desiccation followed by direct heading

The most common desiccant is diquat (Reglone®), which is registered for aerial application.

Advantages:

- The technique is useful on variable soil types because it allows more even crop ripening.
- It is ideal for weedy crops.
- Crops dry out faster after wet weather than a windrowed crop.

Disadvantages:

- There are shedding losses if a ground rig has to be used.
- Shattering losses can be very high in windy conditions.
- It is expensive, especially if the desiccant is applied by air.

### Timing

The correct time for desiccation is when 70–80% of seeds have changed colour in the middle pods; this is when the crop has passed its optimal windrowing stage. The crop will be ready to harvest within 4–7 days after the desiccant is applied, depending on the size and density of the crop.

Other desiccants such as glyphosate are regularly used pre-harvest on canola in Canada and Europe. This provides far slower senescence of the plants, considerably reducing pod shattering and providing superior end-of-season grass-weed control.<sup>15</sup>

<sup>14</sup> M Street (2012) Windrow timing and direct heading in canola—effects on yield and oil. GRDC Update Papers, 12 April 2012, <http://grdc.com.au/Research-and-Development/GRDC-Update-Papers/2012/04/Windrow-timing-and-direct-heading-in-canola-effects-on-yield-and-oil>

<sup>15</sup> J Midwood (2013) Canola harvest: is direct heading a serious option. GRDC Update Papers, 6 February 2013, <http://www.grdc.com.au/Research-and-Development/GRDC-Update-Papers/2013/02/Canola-harvest-is-direct-heading-a-serious-option>

## IN FOCUS

### 12.3.1 Canola desiccation and direct heading and PodGuard canola

GOA has run a number of trials over 2013–16 to address some of the key concerns for growers including:

- (i) Direct heading delays the commencement and conclusion of canola harvest which can adversely impact the harvest of other crops compared to windrowed crops.
- (ii) Delays in the harvesting of direct headed crops after the crop is ripe can see a rapid decline in yield through pod shattering.

Research findings include:

- Reglone™ when applied as a desiccant in canola has shown some advantage in hastening ripening and bringing harvest forward but generally only by a few days.
- Weedmaster™ DST when applied for pre-harvest weed control has shown little to no practical effect in hastening ripening and bringing harvest forward.
- Windrowing canola crops at an optimal time may not bring harvest forward compared to direct heading as much as conventionally thought - differences may be as little as 2–5 days in some situations.
- Yield loss through pod shattering if direct heading of canola is delayed is not likely to be a linear decline but as a result of extremes in weather conditions which are inconsistent and unpredictable in their timing.
- Yield loss if direct heading is delayed and in the absence of an extreme event may be lower than first thought.
- PodGuard™ canola varieties developed by Bayer, promoted to have increase tolerance to pod shattering, may give growers some insurance against extreme weather conditions and confidence to either delay windrowing later or to direct head crops.<sup>16</sup>

### 12.4 Wet harvest issues and management

Canola generally withstands extended wet harvest periods better than other crops such as wheat. Severe windstorms can cause seed shatter more readily in canola; however, newer varieties have been selected to improve this characteristic.<sup>17</sup>

### 12.5 Receival standards

Canola receival standards are presented in Table 2.<sup>18</sup>

<sup>16</sup> M Street (2016) GOA investigates Canola desiccation and direct heading and PodGuard canola. GRDC Update Papers 20 July 2016, <https://grdc.com.au/Research-and-Development/GRDC-Update-Papers/2016/07/GOA-investigates-Canola-desiccation-and-direct-heading-and-PodGuard-canola>

<sup>17</sup> L Serafin, J Holland, R Bambach, D McCaffery (2009) Canola: northern NSW planting guide. NSW Department of Primary Industries, [http://www.dpi.nsw.gov.au/\\_data/assets/pdf\\_file/0016/148300/canola-northern-NSW-planting-guide.pdf](http://www.dpi.nsw.gov.au/_data/assets/pdf_file/0016/148300/canola-northern-NSW-planting-guide.pdf)

<sup>18</sup> AOF (2014) Quality standards, technical information and typical analysis. 2014/15. Australian Oilseeds Federation, [http://www.graintrade.org.au/sites/default/files/file/Commodity%20Standards/AOF\\_Standards\\_201415\\_Final.pdf](http://www.graintrade.org.au/sites/default/files/file/Commodity%20Standards/AOF_Standards_201415_Final.pdf)

SECTION 12 CANOLA

TABLE OF CONTENTS

FEEDBACK

**i** MORE INFORMATION

[Quality standards, technical information and typical analysis, 2016/17.](#)

[GRDC's Integrated Weed Management Hub.](#)

Links to GRDC Update papers and reports on weed management are available from the [Grain Orana Alliance](#).

**Table 2:** Commodity standards—canola (from AOF 2014).

Parameter	Specification
Oil (%)	42.0 base level; 1.5% premium or deduction for each 1% above or below 42
Free fatty acid (%)	1.0 base level; 2% deduction for each 1% over the base level, rejectable over 2.5
Moisture max. (%)	8.0; 2% deduction for each 1% over maximum
Test weight min. (kg/hL)	62.0; rejectable under this limit
Protein	Unlimited
Seed retention	Unlimited
Germination	Unlimited