





EPISODE 50

**PEOPLE LIKE US
DO THINGS
LIKE THIS**

WITH
**SETH
GODIN**





Harvest weed seed control Cost & latest news

Peter Newman, WeedSmart

WEED
smart
every weed every seed
every farm every year


GRDC
GRAINS RESEARCH
& DEVELOPMENT
CORPORATION



THE WINTER BIG 6



ROTATE CROPS AND PASTURES -

diverse herbicide choices, diverse cultural practices.

- Use double break crops, fallow and pasture phases to drive the weed seedbank down over consecutive years.

MIX AND ROTATE HERBICIDES -

rotating buys you time, mixing buys you shots.

- Rotate between herbicide groups;
- Use different groups within the same herbicide mix;
- Always use full rates.

CROP COMPETITION -

stay ahead of the pack.

- Adopt at least one competitive strategy (but two is better), including reduced row spacing, higher seeding rates, east-west sowing and competitive varieties.

DOUBLE KNOCK -

to preserve glyphosate.

- Follow glyphosate with a high rate of paraquat to control survivors in a fallow or pre-sowing situation.

STOP WEED SEED SET -

take no prisoners.

- Crop top canola, pulses and feed barley (currently under permit) in weedy paddocks;
- Consider hay, brown manure or long fallow in high-pressure paddocks;
- Spray top/spray fallow pasture prior to the cropping phase.

HARVEST WEED SEED CONTROL -

the holy grail.

- Capture weed seed survivors at harvest using chaff lining, chaff tramlining, chaff carts, narrow windrow burning or integrated Harrington Seed Destructor (iHSD).



WEEDSMART WISDOM

- Never cut the rate;
- Spray well – choose correct nozzles, adjuvants and water rates;

- Clean seed – don't seed resistant weeds;
- Clean borders – avoid evolving resistance on the fence line;

- Test – know your resistance levels.

WeedSmart Stakeholders





Chaffline Research

Mike Walsh & John Broster
with GRDC investment







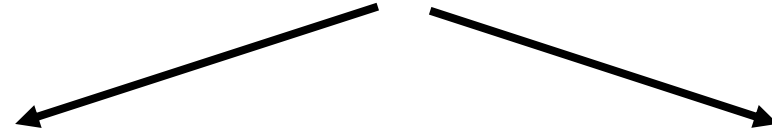
2237

ryegrass seeds /m chaffline at harvest



2237

ryegrass seeds /m chaffline at harvest



Grazed

Un-Grazed



2237

ryegrass seeds /m chaffline at harvest

Grazed



362 /m

in Autumn

Un-Grazed



302 /m

in Autumn



2237

ryegrass seeds /m chaffline at harvest

Grazed



362 /m

in Autumn



84 /m

in crop

Un-Grazed



302 /m

in Autumn



7 /m

in crop

SEED 
TERMINATOR



V

Hydraulic



Michael Walsh – field research 2017
2.4 t/ha wheat. Case 8230 harvesters

SEED 
TERMINATOR

99%

ryegrass kill

Hydraulic

iHSD

95%

ryegrass kill

Mike Walsh
research GRDC
single HSD mill
Lance Turner
94 to 96% control at
8 – 12 km/h



Mike Walsh
research GRDC
Vertical iHSD
Field testing
98% control at
4 - 8 km/h





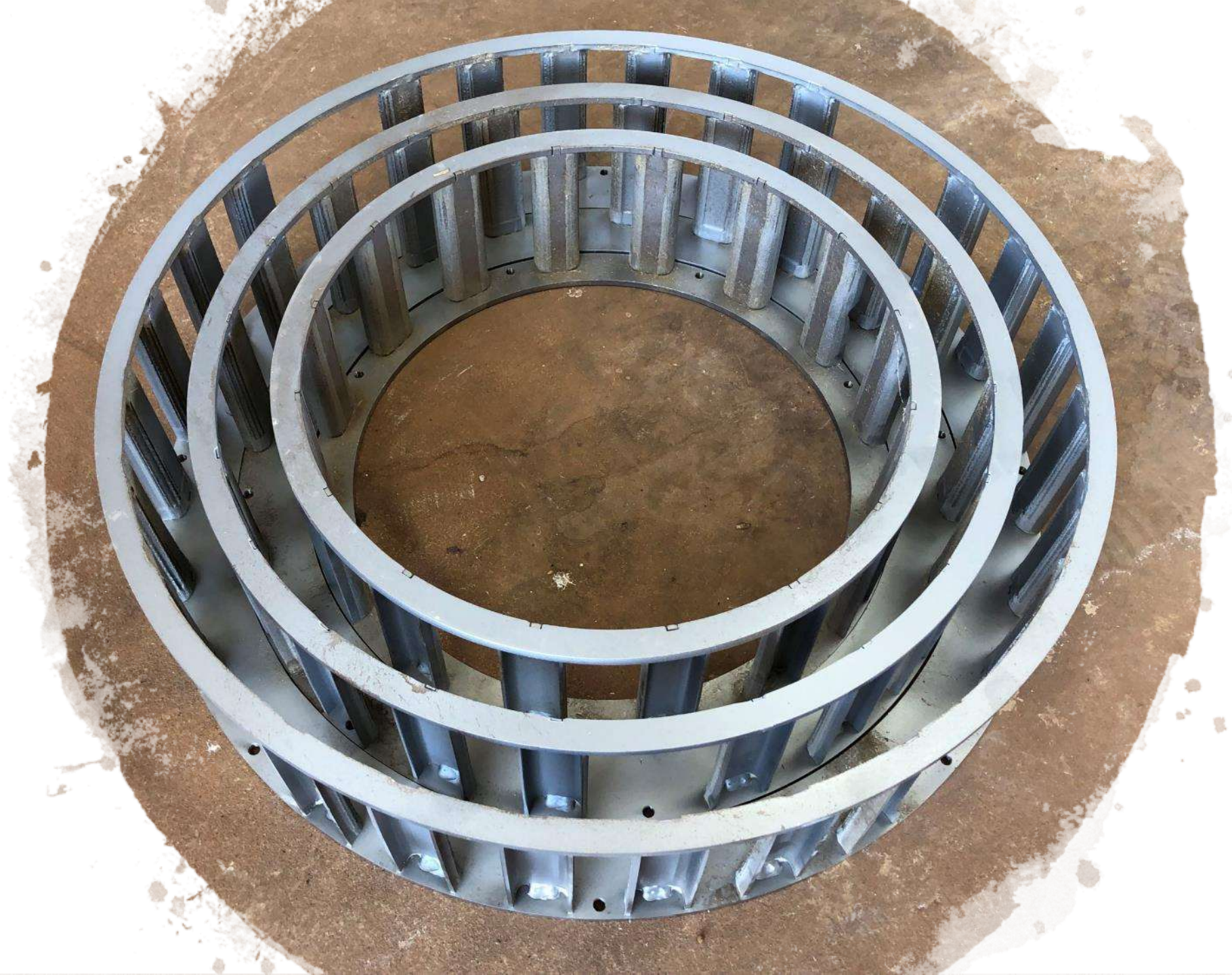
REDEKOP™

Crop Residue Management



REDEKOP









REDEKOP™



Crop Residue Management

98% control

REDEKOP™



Crop Residue Management

98% control

of Canola seed

We need an independent
testing service





Weedhog - TecFarm WA

Prelim results
80% control



\$50-60K





The case for a 90% mill

Peter Newman 2011

Weed seed capture equation

Weed seeds entering front

x

Weeds diverted to HWSC tool

X

Seed kill

98% mill

75% enter front

X

95% diverted to HWSC tool

X

98% seed kill

=

70% total

90% mill

75% enter front

X

95% diverted to HWSC tool

X

90% seed kill

=

64% total

85% mill

75% enter front

X

95% diverted to HWSC tool

X

85% seed kill

=

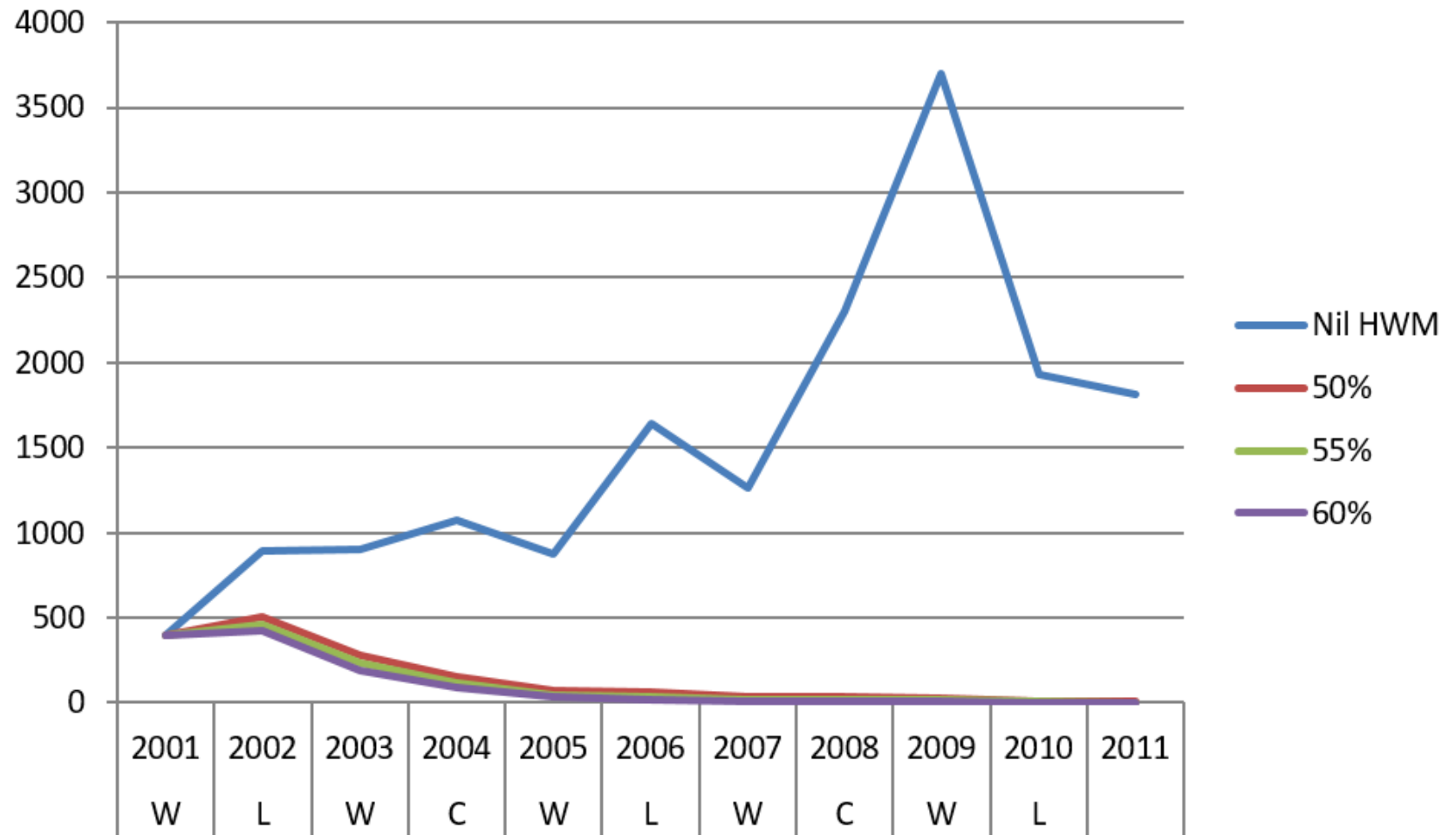
60% total

Overall weed seed removal

Mill kill	98%	90%	85%
Total weed seed removal	70%	64%	60%

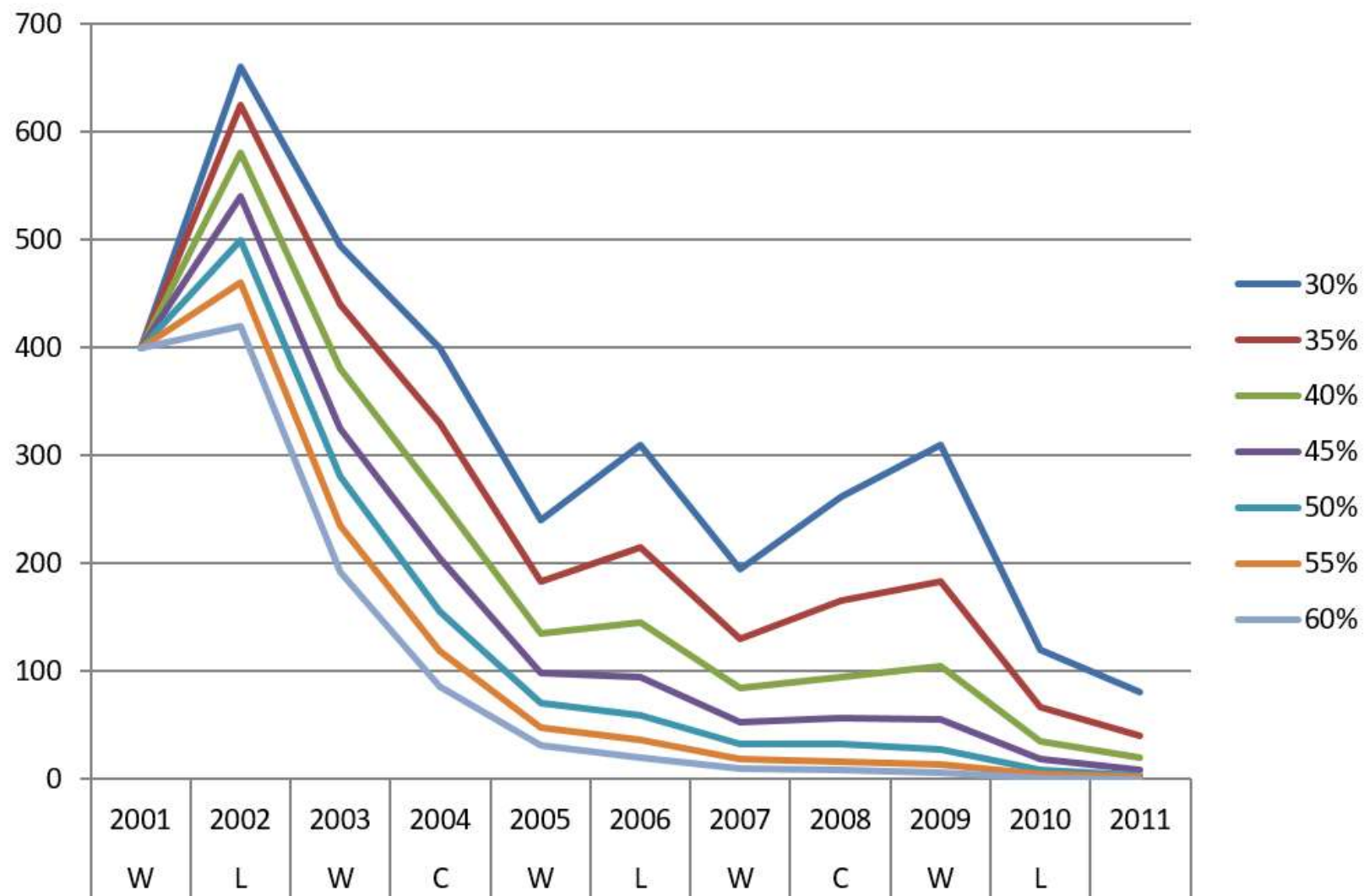
Weed Seed Wizard model runs

Peter Newman 2011



Weed Seed Wizard model runs

Peter Newman 2011





Cost of HWSC



Capital Cost including fitting

What
matters most
to...

Industry

Seed kill %

Capital cost

What
matters most
to...

Industry

Seed kill %

Capital cost

Farmers

Will it slow me down?

Wear rates

Blockages

Capital cost

Maintenance

Cost of replacement mills

Ease of service

Support

Seed kill

Capital cost

Annual cost

=

Capital cost

X

10% Depreciation + 4% interest



Extra Fuel

Mills

Average 1 L/tonne wheat (Kondinin)

Chaff Cart

Approx 0.5 L/ha

Nutrient cost

Units of nutrient per tonne of residue

	Cereal	Canola	Legume
N	5	7	10
K	8	8	8
P	0.5	0.6	0.6
S	0.5	2	1



Chaff spread



Reduced
harvest
capacity

0 to 25%

Cost of harvest (\$350 to \$650/hr)

X

Reduction in capacity

Mill replacement cost

Fans / hammers + rotors + stators

Every 250 to 700 hours

HSD	Seed Terminator	Redekop	Weed Hog
\$10,065	\$10,696	\$18,646	~\$4000

	A	B	C	D
1	Estimated cost of Harvest Weed Seed Control			
2	Enter all of your data on this page - only change the yellow cells			
3	Crops	Area (ha)	Yield (t/ha)	
4	Cereal	2500	2.5	
5	Legume	750	1.5	
6	Canola	750	1.3	
7			total tonnes of grain	
8	total crop area (ha)	4000	8350	
9	number of harvesters	1	those fitted with HWSC tool	

20	Harvest cost \$/hour	400	per harvester and chaser bin	
21	Harvest rate ha/hour	12		
22	Harvest cost \$/ha	\$	33.33	
23	on farm fuel cost (\$/L)	\$	1.10	
24	extra fuel (L/t grain harvested)	1	for iHSD, Terminator and Redikop mills	
25	% reduction in harvest capacity	10	due to HWSC tool, not harvest height	
26	Mill rotor life (hours)	400	see notes below	
27	Mill stator / screen life (hours)	400		
28	cost of new pair of rotors	5000		
29	cost of new pair of stator / screen	5000		

HWSC cost calculator

Mill life 400 hours, 10% reduction in harvest capacity

33	HWSC tool	total cost (\$/ha)	capital cost (fitted)
34	Narrow windrow burn	\$ 27.34	\$ 500
35	Chaff line	\$ 12.34	\$ 5,000
36	Chaff Deck	\$ 12.95	\$ 18,000
37	Chaff cart	\$ 17.76	\$ 60,000
38	Bale Direct	\$ 56.38	\$ 340,000
39	Vertical iHSD	\$ 11.73	\$ 90,000
40	Seed Terminator	\$ 12.78	\$ 120,000
41	Redikop	\$ 12.43	\$ 110,000

Mill life 600 hours, 0% reduction in harvest capacity

33	HWSC tool	total cost (\$/ha)	capital cost (fitted)
34	Narrow windrow burn	\$ 27.34	\$ 500
35	Chaff line	\$ 12.34	\$ 5,000
36	Chaff Deck	\$ 12.95	\$ 18,000
37	Chaff cart	\$ 17.76	\$ 60,000
38	Bale Direct	\$ 52.68	\$ 340,000
39	Vertical iHSD	\$ 7.34	\$ 90,000
40	Seed Terminator	\$ 8.39	\$ 120,000
41	Redikop	\$ 8.04	\$ 110,000

Mill life 250 hours, 20% reduction in harvest capacity, zero K required

33	HWSC tool	total cost (\$/ha)	capital cost (fitted)
34	Narrow windrow burn	\$ 13.98	\$ 500
35	Chaff line	\$ 5.66	\$ 5,000
36	Chaff Deck	\$ 6.27	\$ 18,000
37	Chaff cart	\$ 11.08	\$ 60,000
38	Bale Direct	\$ 40.97	\$ 340,000
39	Vertical iHSD	\$ 17.61	\$ 90,000
40	Seed Terminator	\$ 18.66	\$ 120,000
41	Redikop	\$ 18.31	\$ 110,000

Download the calculator

The screenshot shows the website for the Australian Herbicide Resistance Initiative (AHRI) at the University of Western Australia. The header includes the university logo and the AHRI name. A navigation menu contains links for Faculty Home, School Home, and AHRI Home. A search bar and a dropdown menu for 'UWA Website' are also present. The main content area features a news article with a title banner that reads 'Australian Herbicide Resistance Initiative (AHRI) What's the cost of harvest weed seed control for YOU?'. Below the banner are four small circular icons. The article is dated 'September 19, 2019'. A video player is embedded in the article, showing the AHRI logo and the text 'AHRI insight #126'. The video player has a 'Watch later' button and a 'Share' button. To the right of the video player is a small image of wheat stalks. A left-hand sidebar contains a list of navigation links: About, Featured paper, Research, AHRI insight, Watch, Video links, Podcasts, Complete our survey!, Jobs, and Contact us.

THE UNIVERSITY OF WESTERN AUSTRALIA

Australian Herbicide Resistance Initiative (AHRI)

Faculty Home School Home Australian Herbicide Resistance Initiative Home

Search... UWA Website GO

Australian Herbicide Resistance Initiative > News > What's the cost of harvest weed seed control for YOU?

Australian Herbicide Resistance Initiative (AHRI)

What's the cost of harvest weed seed control for YOU?


September 19, 2019

AHRI insight #126

Watch Watch later Share



Free HWSC?



Ed Riggall, Agpro management

Economic modelling

2000 ha farm

1000 ha crop

1000 ha pasture – 9.5 DSE

\$29,000 benefit per year

Who can afford a seed mill?





Farm Business Consulting 101





Farm Business Consulting 101

	Target
Operating Efficiency (OpEx %)	< 65%
Drawings	
Finance	
Machinery	
Surplus	



Farm Business Consulting 101

	Target
Operating Efficiency (OpEx %)	< 65%
Drawings	<10%
Finance	
Machinery	
Surplus	



Farm Business Consulting 101

	Target
Operating Efficiency (OpEx %)	< 65%
Drawings	<10%
Finance	<10%
Machinery	
Surplus	



Farm Business Consulting 101

	Target
Operating Efficiency (OpEx %)	< 65%
Drawings	<10%
Finance	<10%
Machinery	<10%
Surplus	



Farm Business Consulting 101

	Target
Operating Efficiency (OpEx %)	< 65%
Drawings	<10%
Finance	<10%
Machinery	<10%
Surplus	>5%



Farm Business Consulting 101

	Target	Making money
Operating Efficiency (OpEx %)	< 65%	<60%
Drawings	<10%	<7%
Finance	<10%	<7%
Machinery	<10%	<7%
Surplus	>5%	19% +



Farm Business Consulting 101

	Target	Making money
Operating Efficiency (OpEx %)	< 65%	<60%
Drawings	<10%	<7%
Finance	<10%	<7%
Machinery	<10%	<7%
Surplus	>5%	19% +

Research Report

Kondinin Group

FEBRUARY 2020 No. 121 www.farmingahead.com.au

Price: \$95



THE WAR AGAINST WEEDS HARVEST WEED SEED WARRIORS

Independent information for agriculture

Out in two weeks

Which tool to choose?



Thank you



WeedSmart Stakeholders

