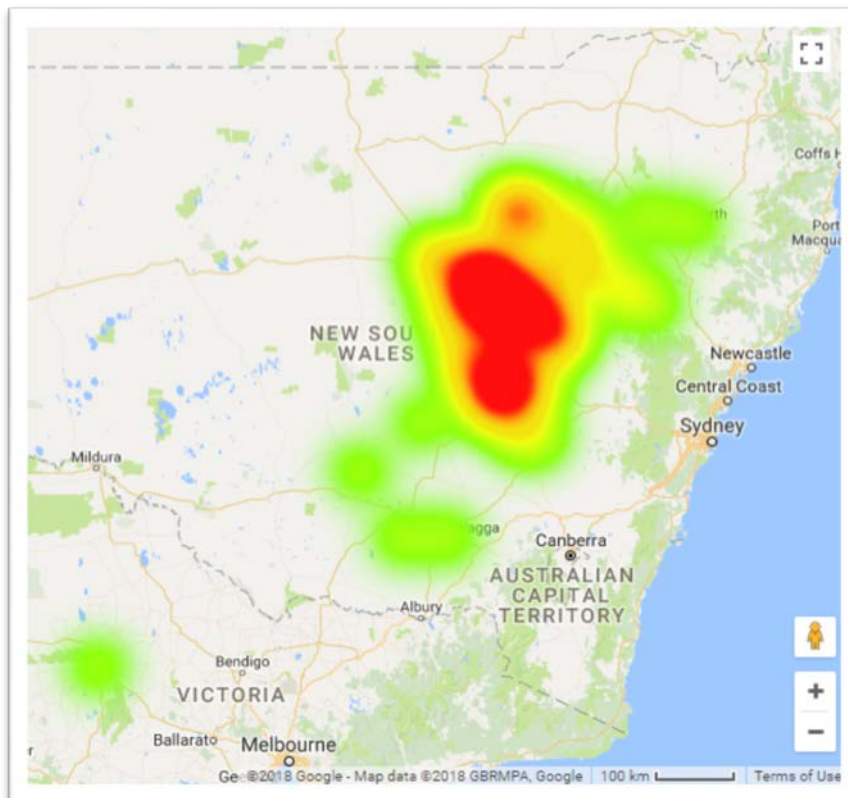


2017 Practice Change Survey **CANOLA HARVEST and NUTRITION**



Location of respondents to the survey who reported their address (postcode). Shading from green to yellow to red indicates increasing numbers of respondents.

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Welcome to the results of GOA's 2017 Practice Change Survey

Background

Towards the end of 2017 GOA conducted an online survey to assess the levels of impact of some of our key research topics, namely Canola harvest management and nutrition. This document contains the data, some of which is also

Aims of the survey

- To understand changes in grower practices from the past to the present for two of GOA's key research themes, canola harvest management and canola nutrition.
- To quantify what has changed and what impact GOA's research and extension has had on canola yields and profitability.
- To make an assessment of the returns on the GRDC's investment in the Grower Solutions Group Projects, one of which funds GOA's research and activities.

Methodology

- The survey was developed in-house comprising of approximately 70 questions, half directed at growers and the other half at advisors. Questions were based around canola windrow timing, direct heading of canola and canola nutrition. Respondents were also asked as to the perception of GOA's influence over any changes in practices and additional questions relating to demographics of participants were included.
- The survey was created and implemented using SurveyMonkey® an internet based survey platform.
- Invitations to complete the survey were sent out to growers and advisers on the GOA mailing list. The same survey was also sent separately to non-growers on the GOA mailing list and made available publically via Twitter, Facebook and on the GOA website. The survey was publicised on the ABC Central Western Rural News.
- The survey remained open for 10 weeks.

Notes

This document contains a representation of the raw data, without any statistical analysis.

Respondents were primarily persons with exposure to GOA, as such the use or interpretation of this data must be undertaken keeping these factors in mind.

All graphs contain combined farmer and advisor responses unless otherwise noted.

Unless otherwise stated the vertical axis on all charts refers to the percentage of respondents who selected that answer choice.

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* Similar questions were asked to growers and advisors (the wording was slightly different), numbers in brackets were asked to a

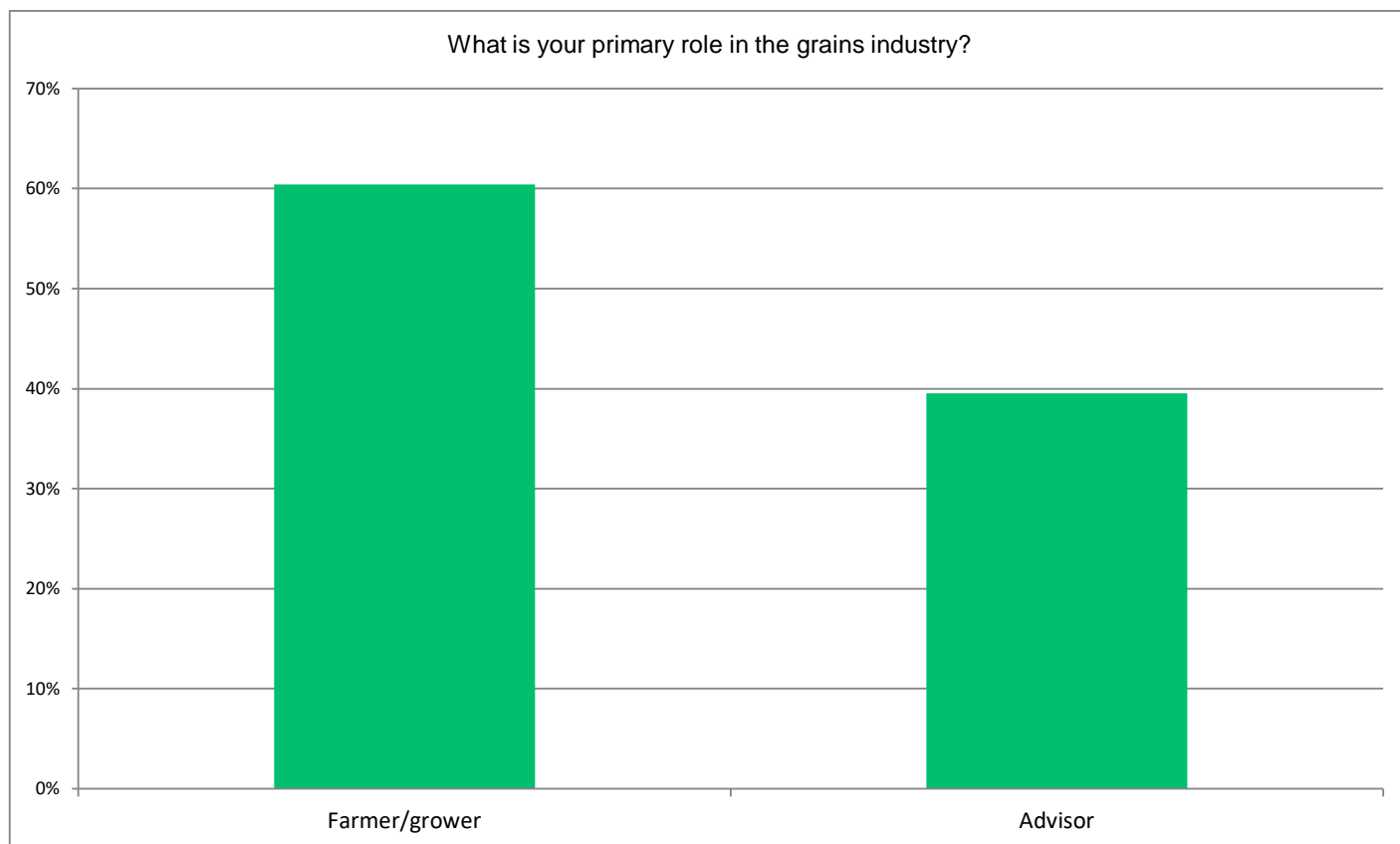
DEMOGRAPHICS

What is your primary role in the grains industry?

Answer Choices	Responses	
Farmer/grower	60%	55
Advisor	40%	36

Answered 91

Skipped 36

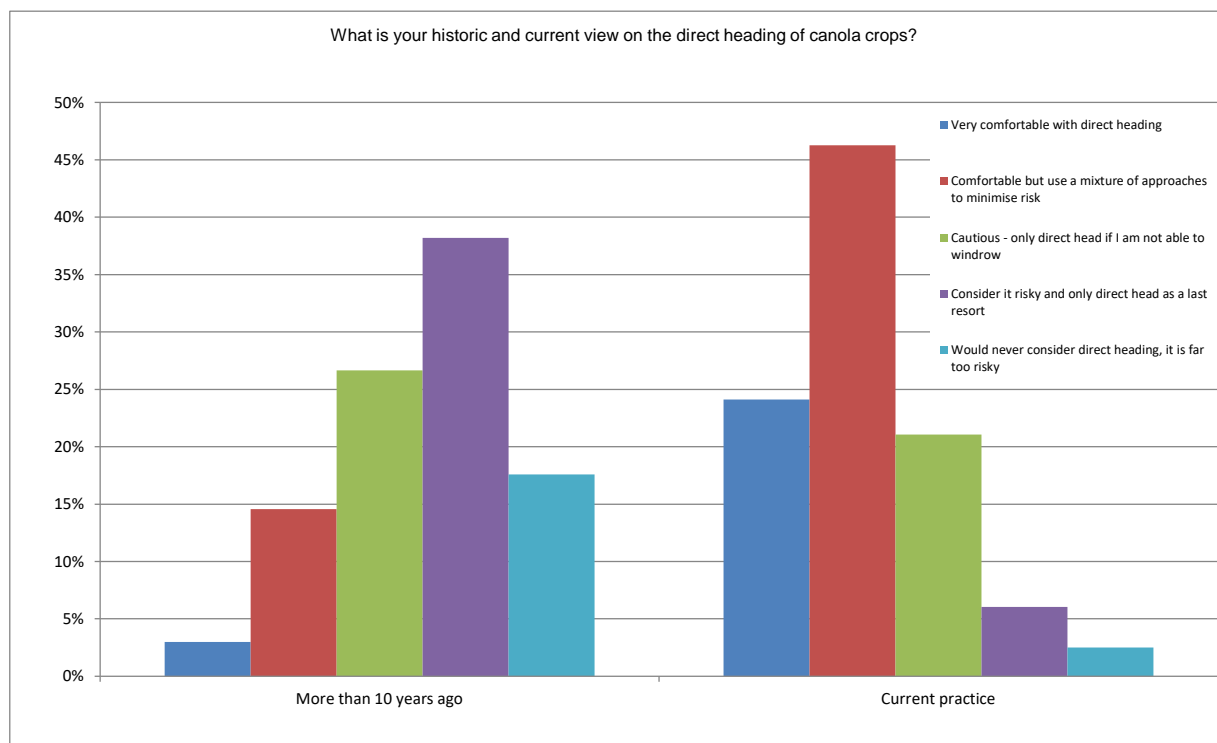


2017 Practice Change Survey CANOLA HARVEST and NUTRITION Direct Heading Canola

What is your historic and current view on the direct heading of canola crops?

		Very comfortable with direct heading		Comfortable but use a mixture of approaches to minimise risk		Cautious - only direct head if I am not able to windrow		Consider it risky and only direct head as a last resort		Would never consider direct heading, it is far too risky		Total
Combined	More than 10 years ago	3%		15%		27%		38%		18%		
	Current practice	24%		46%		21%		6%		3%		
Advisor	More than 10 years ago	6%	3	14%	7	20%	10	40%	20	20%	10	50
Farmer		0%	0	15%	5	33%	11	36%	12	15%	5	33
Advisor	Current practice	24%	12	38%	19	30%	15	6%	3	2%	1	50
Farmer		24%	8	55%	18	12%	4	6%	2	3%	1	33

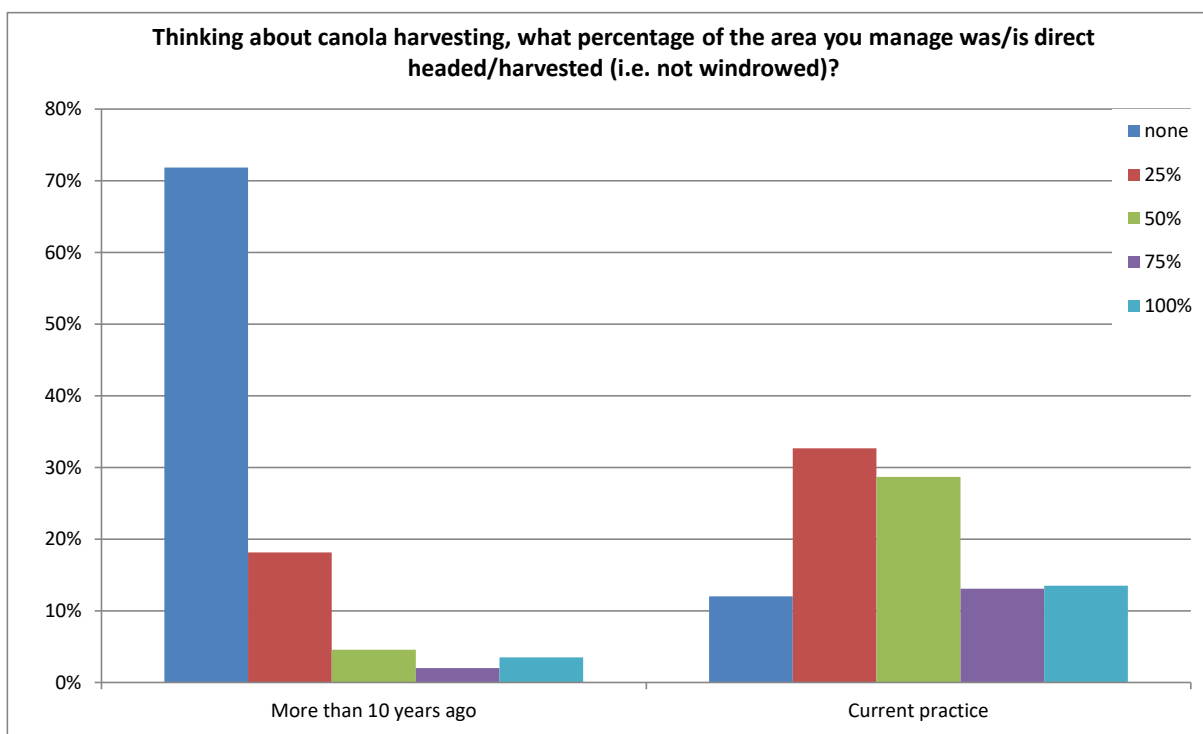
Answered 50
Answered 33
Skipped 41
Skipped 58



Direct Heading Canola

Thinking about canola harvesting, what percentage of the area you manage was/is direct headed/harvested (i.e. not windrowed)?

		none		25%		50%		75%		100%	
Combined	More than 10 years ago	72%		18%		5%		2%		4%	
	Current practice	12%		33%		29%		13%		14%	
Advisors	More than 10 years ago	80%	40	12%	6	0%	0	4%	2	4%	2
Farmers	More than 10 years ago	64%	21	24%	8	9%	3	0%	0	3%	1
Advisors	Current practice	18%	9	32%	16	18%	9	8%	4	24%	12
Farmers	Current practice	6%	2	33%	11	39%	13	18%	6	3%	1

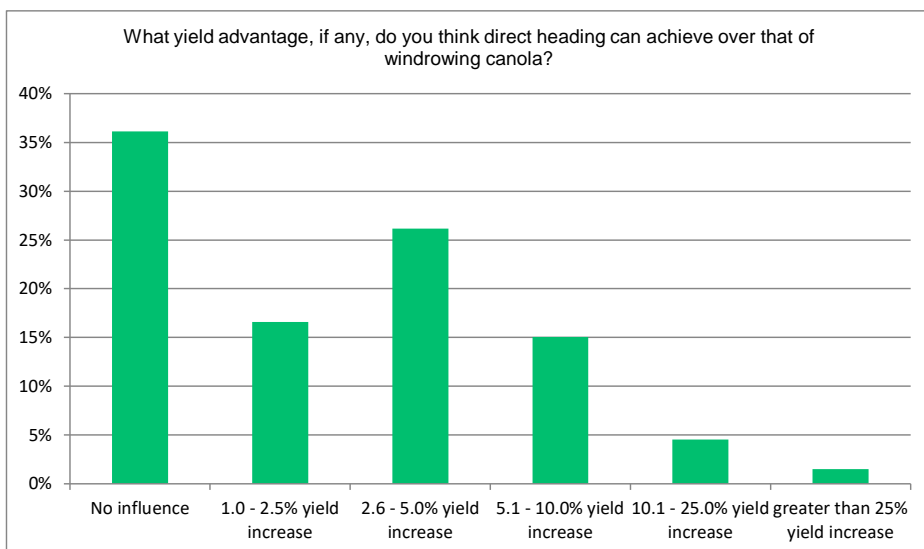


Direct Heading Canola

YIELD IMPACT

What yield advantage, if any, do you think direct heading can achieve over that of windrowing canola?

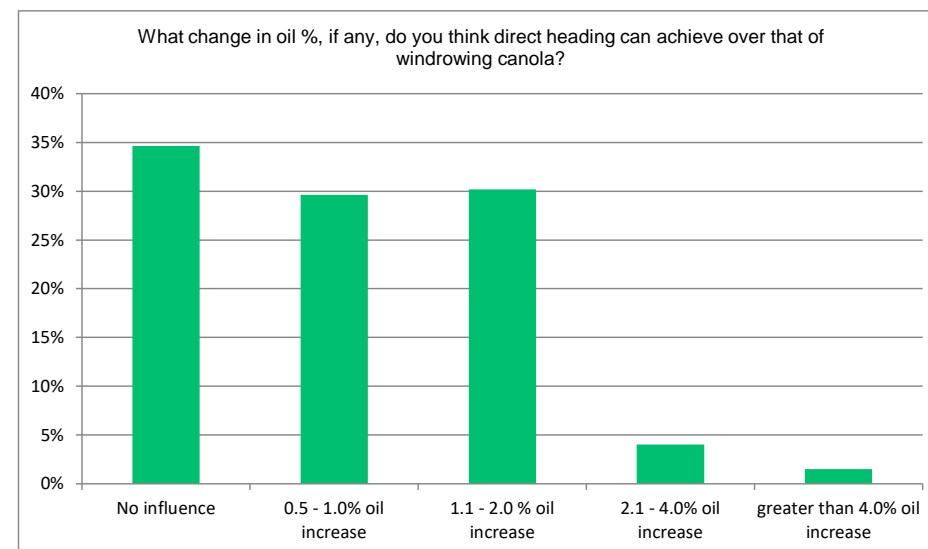
Answer Choices	Responses Advisor		Responses Farmer		Combined
No influence	24	48%	24%	8	36%
1.0 - 2.5% yield increase	6	12%	21%	7	17%
2.6 - 5.0% yield increase	11	22%	30%	10	26%
5.1 - 10.0% yield increase	9	18%	12%	4	15%
10.1 - 25.0% yield increase	0	0%	9%	3	5%
greater than 25% yield increase	0	0%	3%	1	2%
Answered		50	Answered	33	
Skipped		41	Skipped	58	



OIL IMPACT

What change in oil %, if any, do you think direct heading can achieve over that of windrowing canola?

Answer Choices	Responses Advisor		Responses Farmer		Combined
No influence	21	42%	27%	9	35%
0.5 - 1.0% oil increase	16	32%	27%	9	30%
1.1 - 2.0 % oil increase	12	24%	36%	12	30%
2.1 - 4.0% oil increase	1	2%	6%	2	4%
greater than 4.0% oil increase	0	0%	3%	1	2%
Answered		50			
Skipped		41			



2017 Practice Change Survey

CANOLA HARVEST and NUTRITION

Direct Heading Canola

Please add any comments you may have regarding your views on direct heading canola

Respondents	Type	Responses
1	Advisor	Very seasonal dependant, would def consider direct heading in years that bulk is low
2	Advisor	Easier now with better headers, stronger, more HP
3	Advisor	Cheaper, easier and done right better for your soil!
4	Advisor	Direct heading is good. Only windrow to save time and spread machinery.
5	Advisor	Good for lodged and down crops
6	Advisor	direct head short or low yield crops
7	Advisor	Problem is cereals are ripe when should be direct heading
8	Advisor	Have own equipment to direct head but have to pay contractors to windrow which incurs additional cost and availability and timing can be a issue
9	Advisor	Direct heading will clash with wheat harvest. This is one major reason that I windrow.
10	Advisor	The last 2 questions won't answer. I have windrowed for lodged crops u loose to much grain with direct heading and we have a lot of green patches in our crops u should always windrow east an west to stop the chance of wind blowing the windrows around as have happened on a small block this year
11	Advisor	Current varieties chatter less
12	Advisor	We don't feel we lose significant yield or oil by windrowing as we are very careful re timing - direct heading saves on harvest costs on smaller crops
13	Advisor	Allowing plant to fully develop. Does put wheat and canola harvest in same harvest window in our area. Can be tricky to juggle. Less crop losses, picking up windrows led to lots of losses (windrow then pickup)
14	Advisor	Delays canola harvest 7-10 days so pushes into wheat harvest a bit
15	Advisor	Runs into wheat and barley harvest. Windrowing allows it to done earlier. If windrowed at correct time I don't think there is a yield or oil penalty
16	Advisor	Slows down harvest considerably Doesn't enable early start on Canola before other crops
17	Advisor	Use both for management
18	Advisor	GOA have done some great work over recent years in this space. Our farm practices have evolved during this time to help mange a range of challenges. The information provided by GOA's work has helped us with greater confidence
19	Advisor	tried it 12 yrs ago & had a bad experiance but am about to do it again this year over 100% of a greatly reduced plant this
20	Advisor	Very good for harvest efficiency, 40ft windrows take to long to dry down and are very hard on header, harvest speed is more consistant and no large lumps to negotiate in windrows. Direct heading feels a bit more risky but have found some yield and oil benefits, able to take less stalk into header and get less admix generally. Like the practice would love to see podgard in some non roundup ready varieties.
21	Advisor	We are picking up more capacity with the harvester direct heading with the current front and we are harvesting our legumes earlier due to the fact that the canola harvest is delayed a little longer
22	Advisor	be patient and let it dry down, can be frustrating as wheat and canola can ripen on the same day.
23	Advisor	Understanding risks in direct head timing and ability to improve oil content from avoiding wind rowing too early
24	Advisor	Can be problematic without the correct front. Varieties have helped a lot in the past 10years in reducing the shattering of pods before direct heading.
25	Advisor	Cross auger is essential.
26	Advisor	Would rather limit risk with extra harvesting capacity then putting money towards wind rowing
27	Advisor	Getting an even ripening biggest issue
28	Advisor	In heavier crops and better years, spray dessication is necessary to allow timely harvesting without concern over uneven ripeness across the paddock. This is still cheaper than windrowing, and the yield and oil benefits are still achieved
29	Advisor	First year doing it
30	Advisor	Machinery selection and setup is an important part of the decision to direct head
31	Advisor	Think the difference is none existent providing you Windrow on time. Having your own header and windrowing also spreads harvest risk.
32	Advisor	The main reason I do not direct harvest canola is due to the large crops we usually grow and handling these large crops with a normal heads front is challenging.
33	Advisor	It gives another valuable tool in the toolbox!
34	Advisor	Mostly use direct heading in poorer seasons, as light windrows blow away still windrow big crops to get it out of the way of wheat harvest, and get more capacity out of the header picking up
35	Advisor	trying to be flexible, this year everything will be direct headed and overall think we will increase the amount we direct

2017 Practice Change Survey

CANOLA HARVEST and NUTRITION

Direct Heading Canola

Please add any comments you may have regarding your views on direct heading canola

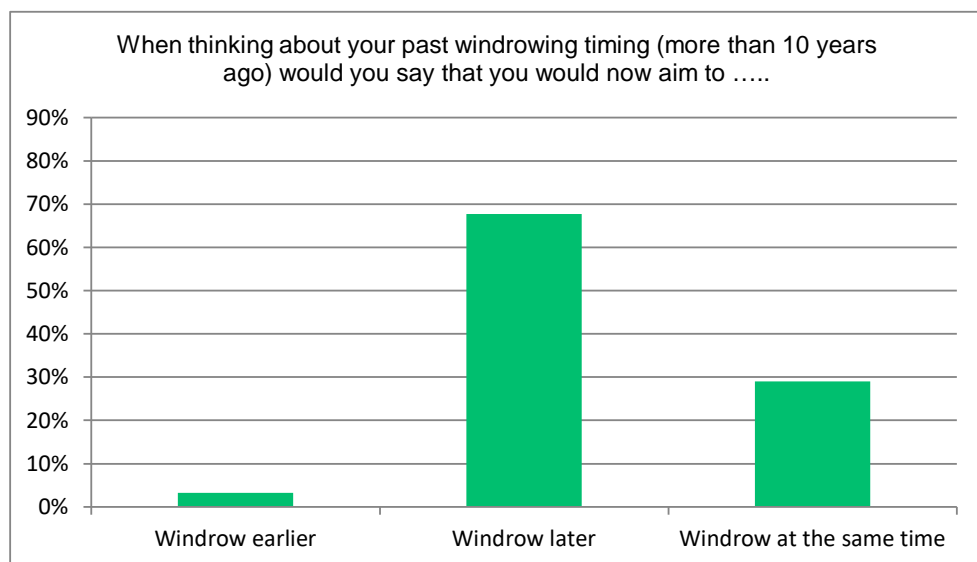
1	Farmer	Direct heading- Unevenness of whole paddock ripening an issue, late weed regrowth, harvest is delayed and causes clashes with other crops, longer in paddock leaves crop more exposed to weather events
2	Farmer	More direct heading has occurred this year due to the height and bulk reduction of crops with the dry.
3	Farmer	Glyphosate spray-topping registration has reduced problems with direct heading of canola.
4	Farmer	Problem in a year like this when yields are down from dry winter & spring, preference for direct heading is considered to reduce growing costs. Late spring rains has cause canola to reflower so there is no cost advantage as harvest is further delayed & extra cost go into defoliation.
5	Farmer	Strong winds and waiting time for correct moisture
6	Farmer	This season will see a lot more crops direct headed due to low crop density. In average-above average seasons the amount of windrowing will generally increase as clients often see this as easier to manage
7	Farmer	As good as a WELL timed windrowing for yield and oil. Early windrowing and your shooting yourself in the foot for both!
8	Farmer	Often hard to get over the top roundup salvage sprays to coincide with susceptible weeds. Weeds are seeding earlier than 20% colour change.
9	Farmer	Easier to do for most people as they don't need a windrower or pickup front
10	Farmer	This season will really test it given the large area dh
11	Farmer	Better way to manage both oil percentages and top end yield whilst minimising overall cost of the crop but use over windrowing could be judged through key indicators such as conditional circumstances (weather), crop conditions such as overall stand for either windrowing (wont blow away when on ground) other activities on the farm (time to direct head in regards to another crop in the system)
12	Farmer	Recent varieties that are more compact and synchronous in maturity have made direct heading more reliable.
13	Farmer	Setup from planting through to harvest is important
14	Farmer	Remove risk of wind taking Canola away from windrows
15	Farmer	Just need more experience with direct heading I think to be more comfortable advising clients on which method to use. May know a whole lot more after 2017 harvest!!
16	Farmer	It can be great but can be a disaster. It's just another option in a game that is very unpredictable.
17	Farmer	Direct heading can significantly increase yield when the crop is light and the risk of losses from wind damage to the windrows is likely.
18	Farmer	Potentially gaining a yield and oil advantage over windrowing, however can be slower to start harvest than indrowing
19	Farmer	Can depend on stage of crop for win rowing. I generally advise a late windrow so I assume not too much oil or yield difference compared to direct heading.
20	Farmer	The information GOA provided on direct heading vs windrowing has had a direct impact on my decision making. Direct heading is now a viable option in canola harvest and windrowing is basically only an option where growers need to get their crop off earlier.
21	Farmer	growers windrowing tend to cut too early losing oil percentages were as direct heading their is less chance of this
22	Farmer	The last 2 questions don't give an option as to what stage you windrow
23	Farmer	Certainly a great option as a cost saving exercise in a marginal year like 2017. I think its ok as long as the timing doesn't clash with harvesting timing of your Cereals and pulses
24	Farmer	Happy to recommend it if the grower owns headers so the canola can be harvested when ready, If using contractors will generally windrow to give a larger safety margin to the crop in case contractor does not turn up on time
25	Farmer	I have seen situations of losses also from direct heading in wet years.

Windrow timing

FARMERS

When thinking about your past windrowing timing (more than 10 years ago) would you say that you would now aim to

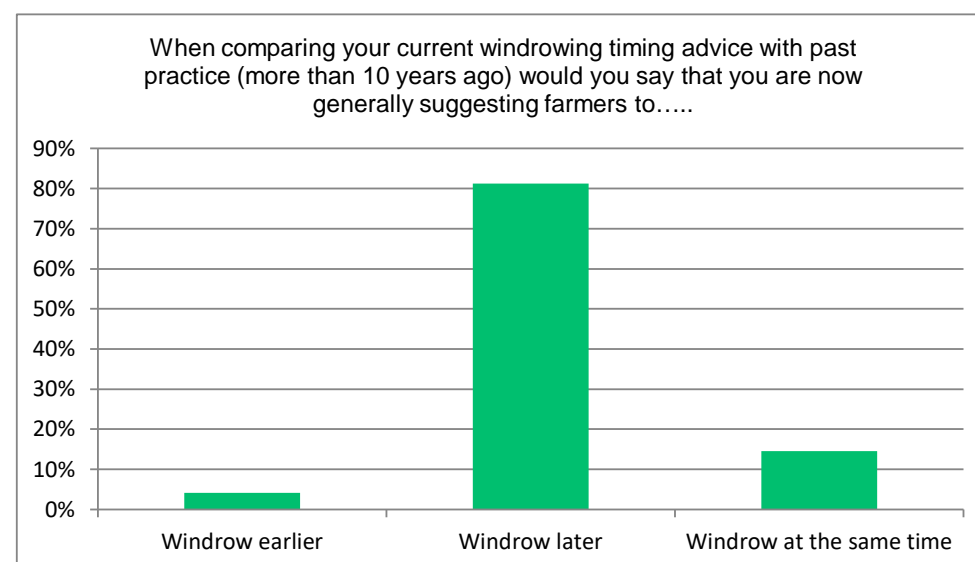
Answer Choices	Responses Farmer	
Windrow earlier	3%	1
Windrow later	68%	21
Windrow at the same time	29%	9



ADVISORS

When comparing your current windrowing timing advice with past practice (more than 10 years ago) would you say that you are now generally suggesting farmers to.....

Answer Choices	Responses Advisor	
Windrow earlier	2	4%
Windrow later	39	81%
Windrow at the same time	7	15%



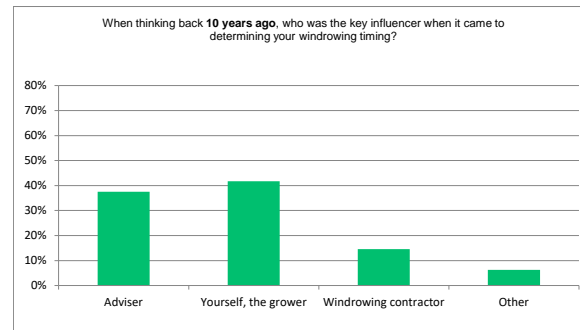
Windrow Timing

FARMERS

When thinking back 10 years ago, who was the key influencer when it came to determining your windrowing timing?

Answer Choices	Responses	
Adviser	38%	18
Yourself, the grower	42%	20
Windrowing contractor	15%	7
Other	6%	3

Answered 48
Skipped 43

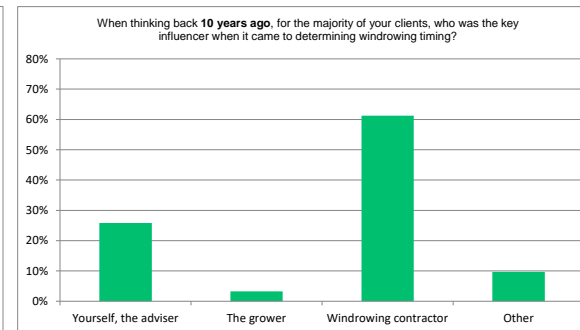


ADVISORS

When thinking back 10 years ago, for the majority of your clients, who was the key influencer when it came to determining windrowing timing?

Answer Choices	Responses	
Yourself, the adviser	26%	8
The grower	3%	1
Windrowing contractor	61%	19
Other	10%	3

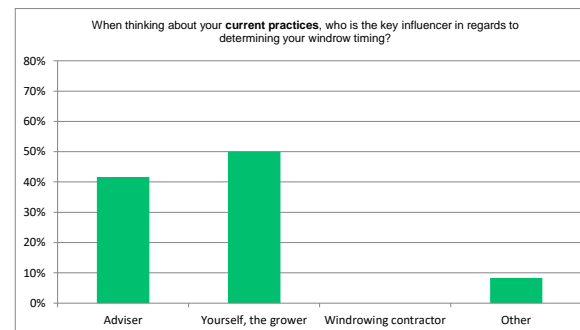
Answered 31
Skipped 60



When thinking about your current practices, who is the key influencer in regards to determining your windrow timing?

Answer Choices	Responses	
Adviser	42%	20
Yourself, the grower	50%	24
Windrowing contractor	0%	0
Other	8%	4

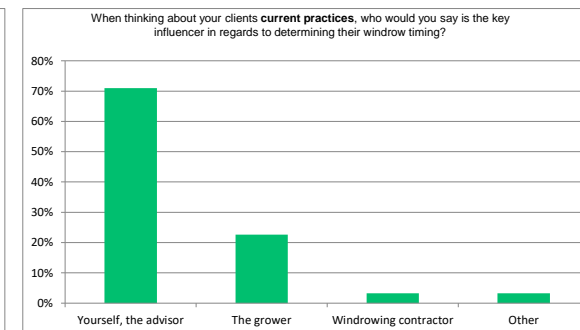
Answered 48
Skipped 43



When thinking about your clients current practices, who would you say is the key influencer in regards to determining their windrow timing?

Answer Choices	Responses	
Yourself, the adviser	71%	22
The grower	23%	7
Windrowing contractor	3%	1
Other	3%	1

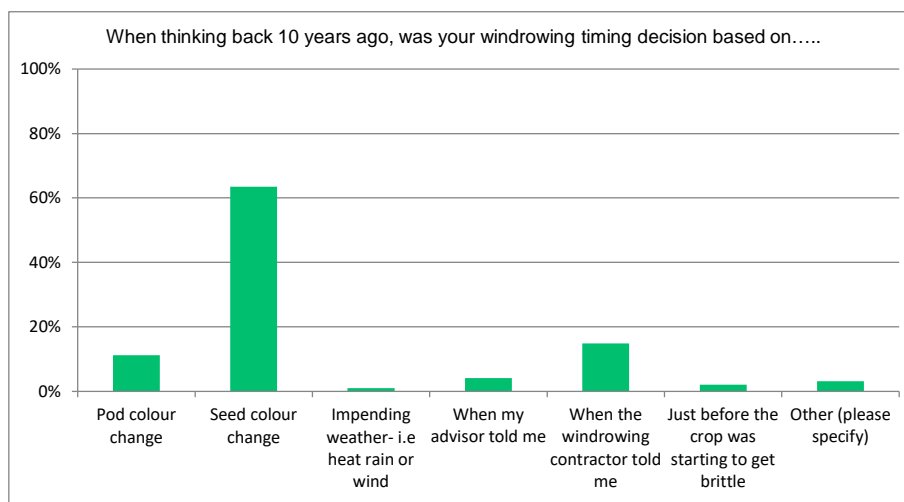
Answered 31
Skipped 60



Windrow Timing

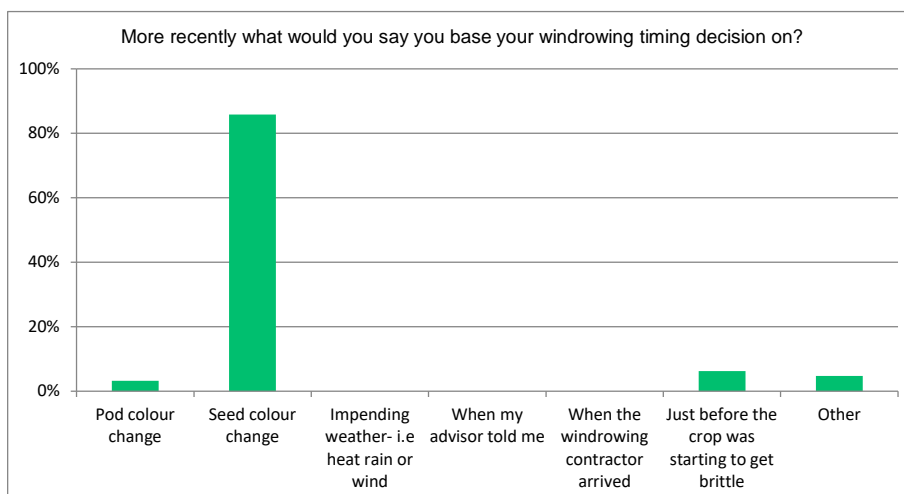
When thinking back 10 years ago, was your windrowing timing decision based on.....

Answer Choices	Responses Advisor		Responses Farmer		Combined
Pod colour change	3	6%	16%	5	11%
Seed colour change	30	63%	65%	20	64%
Impending weather- i.e heat rain or wind	1	2%	0%	0	1%
When my advisor told me	4	8%	0%	0	4%
When the windrowing contractor told me	5	10%	19%	6	15%
Just before the crop was starting to get brittle	2	4%	0%	0	2%
Other (please specify)	3	6%	0%	0	3%
Answered		48	Answered	31	
Skipped		43	Skipped	60	



More recently what would you say you base your windrowing timing decision on?

Answer Choices	Responses Advisor		Responses Farmer		Combined
Pod colour change	0	0%	6%	2	3%
Seed colour change	39	81%	90%	28	86%
Impending weather- i.e heat rain or wind	0	0%	0%	0	0%
When my advisor told me	0	0%	0%	0	0%
When the windrowing contractor arrived	0	0%	0%	0	0%
Just before the crop was starting to get brittle	6	13%	0%	0	6%
Other	3	6%	3%	1	5%
Answered		48			
Skipped		43			



Windrow Timing

Please add any comments you may have regarding windrow timing below

Answered 25
Skipped 78

Respondents	Type	Responses
1	Advisor	having an even crop is important
2	Advisor	It has definitely become later to avoid green grains
3	Advisor	We don't windrow
4	Advisor	We only windrowed to get harvesting earlier, quicker drydown
5	Advisor	We have been fortunate to have very good contract windrowers who can come when the time is right
6	Advisor	When windrowing , waiting for 50%+ colour change over whole plant. Direct heading more area esp < 1.8t/ha crops
7	Advisor	GOA's work in this area has helped us fine tune our windrowing windrow. We have more confidence in windrowing that little be later than we would've otherwise.
8	Advisor	has a fair bit to do with when the contractor is going past which is not ideal hence we have gone to 100 % direct head
9	Advisor	Timing has not changed for us in this time frame.
10	Advisor	Weather, crop stage and other factors come in to play
11	Advisor	Definitely aim to windrow later now - start at 60% colour change now compared to 40% 10 years ago.
12	Advisor	windrow later now than ever have before
13	Advisor	Go later than before
1	Farmer	On large acreages some is done a bit early and some a bit late and the bit in the middle is prob close to right.
2	Farmer	I also take into account the amount of potential yield to be contributed by the secondary tillers if there are significant differences in colour from the main stem.
3	Farmer	Don't know what the debate is about, windrowing always determined by seed colour change.
4	Farmer	Essentially looking to get in JUST before bottom pods on main stem are becoming brittle.
5	Farmer	We certainly take more control over wind rowing as a science rather than a contractors call because we know if we miss it just direct harvest instead
6	Farmer	Seed colour change on main stem and branches on current varieties is much easier than 10 years ago due to variety maturity being more uniform, even if paddock soil types or topography changes within an area
7	Farmer	I'm more comfortable going later than the accepted industry standard in our low rainfall environment as our crops don't have the extra time to fill grain as further east.
8	Farmer	Windrow timing is rarely based on one factor, it's generally based on a number of considerations such as seed colour change, weather forecast, windrower availability, etc.
9	Farmer	The latest research data has empowered growers with evidence to liase with windrow contractors to delay cutting the crop too early
10	Farmer	contractors came and would windrow all paddocks now growers are more aware of timing
11	Farmer	each year seems to throw different challenges
12	Farmer	Certainly more confident now with 70-80% colour change compared to 40-60% 10 years ago. Colour change also needs to be considered on all branches not just the main stem.

Windrow Timing

What was the actual crop maturity, based on seed colour change, when the majority of your canola was/is windrowed?

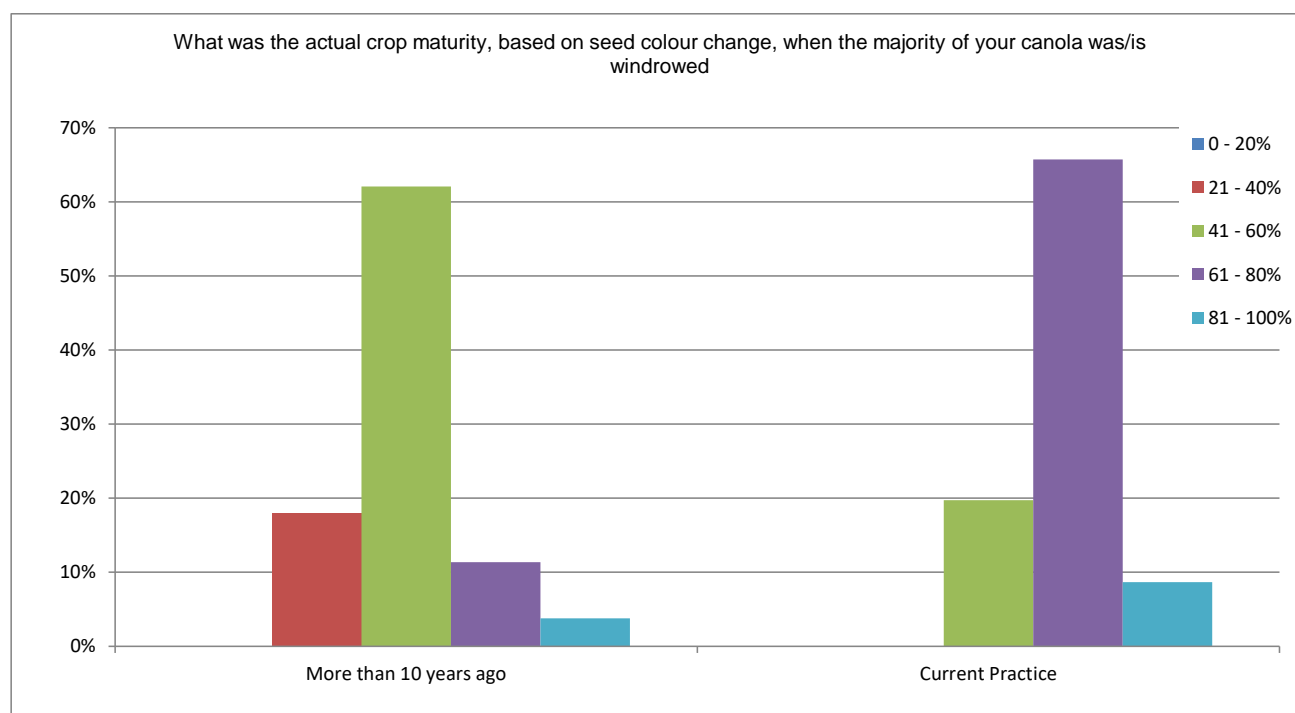
		0 - 20%		21 - 40%		41 - 60%		61 - 80%		81 - 100%		Not applicable		Total
Combined	More than 10 years ago	0%		18%		62%		11%		4%		5%		100%
	Current Practice	0%		0%		20%		66%		9%		6%		100%
Advisor	More than 10 years ago	0%	0	19%	9	57%	27	13%	6	4%	2	6%	3	47
Farmer		0%	0	17%	5	67%	20	10%	3	3%	1	3%	1	30
Advisor	Current Practice	0%	0	0%	0	13%	6	68%	32	11%	5	9%	4	47
Farmer		0%	0	0%	0	27%	8	63%	19	7%	2	3%	1	30

Answered 47

Answered 30

Skipped

Skipped 61

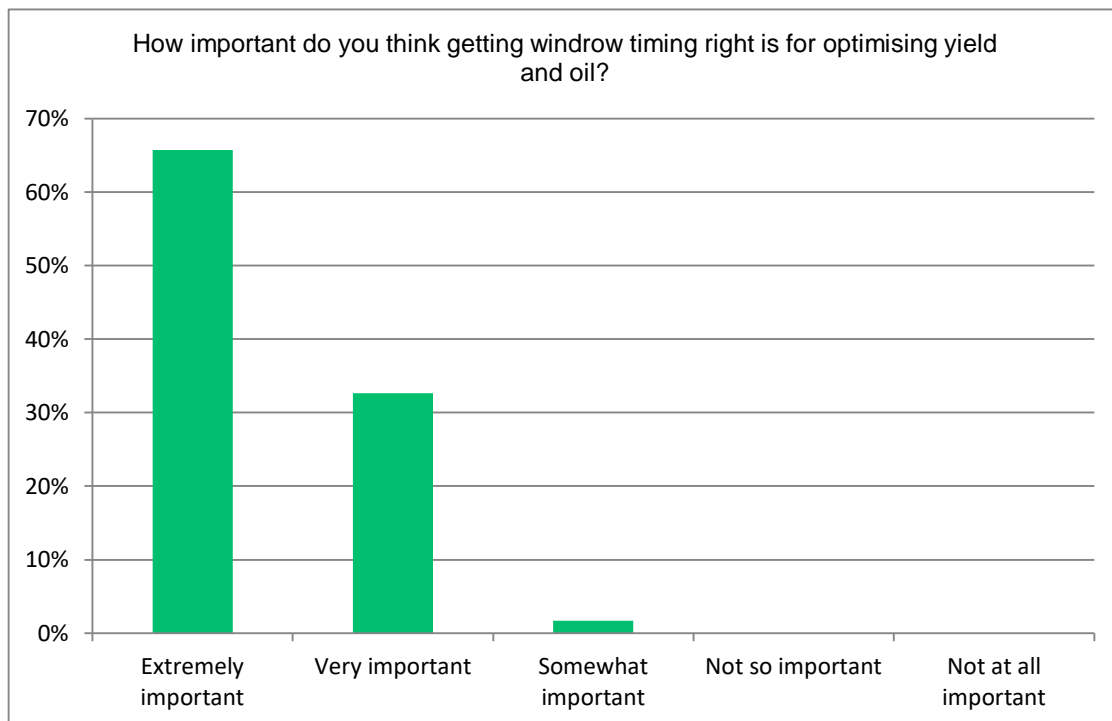


Windrow Timing

How important do you think getting windrow timing right is for optimising yield and oil?

Answer Choices	Responses Advisors		Responses Farmers		Combined
Extremely important	32	68%	63%	19	66%
Very important	15	32%	33%	10	33%
Somewhat important	0	0%	3%	1	2%
Not so important	0	0%	0%	0	0%
Not at all important	0	0%	0%	0	0%

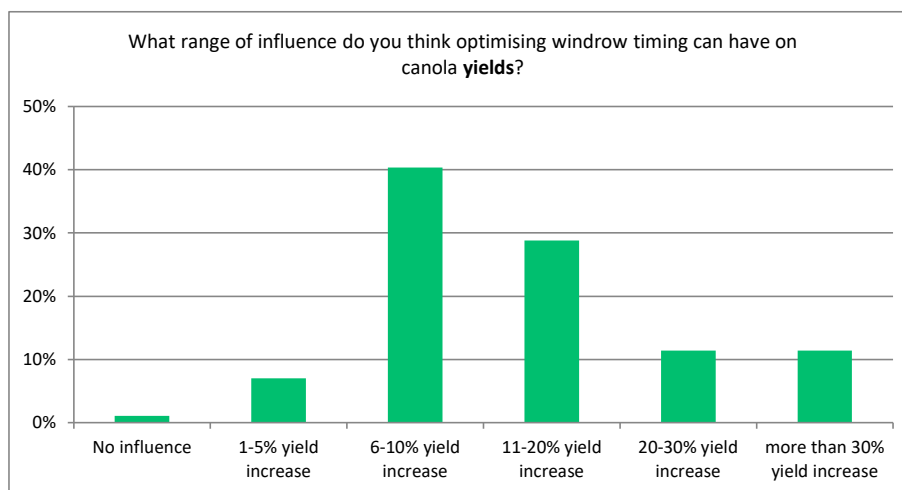
Answered	47	Answered	30
Skipped	44	Skipped	61



Windrow Timing

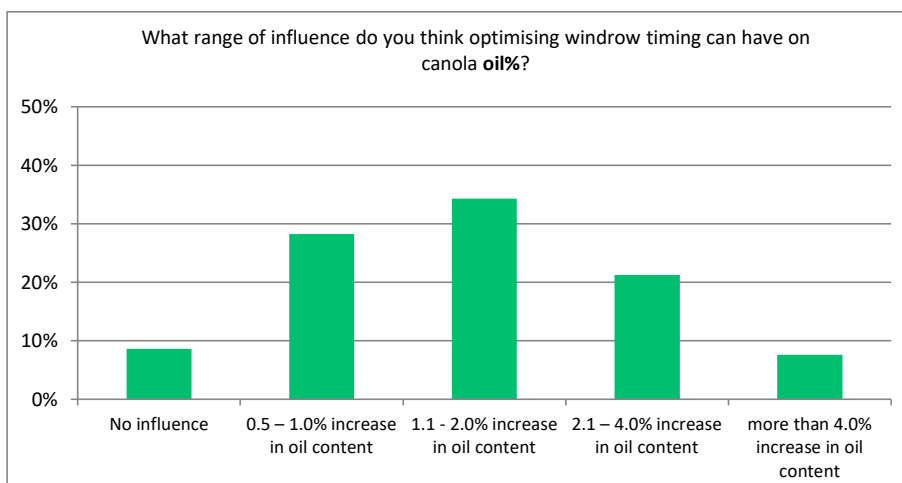
What range of influence do you think optimising windrow timing can have on canola yields?

Answer Choices	Responses Advisor		Responses Farmer		Combined
No influence	1	2%	0%	0	1%
1-5% yield increase	5	11%	3%	1	7%
6-10% yield increase	16	34%	47%	14	40%
11-20% yield increase	13	28%	30%	9	29%
20-30% yield increase	6	13%	10%	3	11%
more than 30% yield increase	6	13%	10%	3	11%
	Answered	47	Answered	30	
	Skipped	44	Skipped	61	



What range of influence do you think optimising windrow timing can have on canola oil%?

Answer Choices	Responses Advisor		Responses Farmer		Combined
No influence	5	11%	7%	2	9%
0.5 – 1.0% increase in oil content	14	30%	27%	8	28%
1.1 - 2.0% increase in oil content	15	32%	37%	11	34%
2.1 – 4.0% increase in oil content	9	19%	23%	7	21%
more than 4.0% increase in oil content	4	9%	7%	2	8%
	Answered	47	Answered	30	
	Skipped	44	Skipped	61	



Windrow Timing and Direct Heading

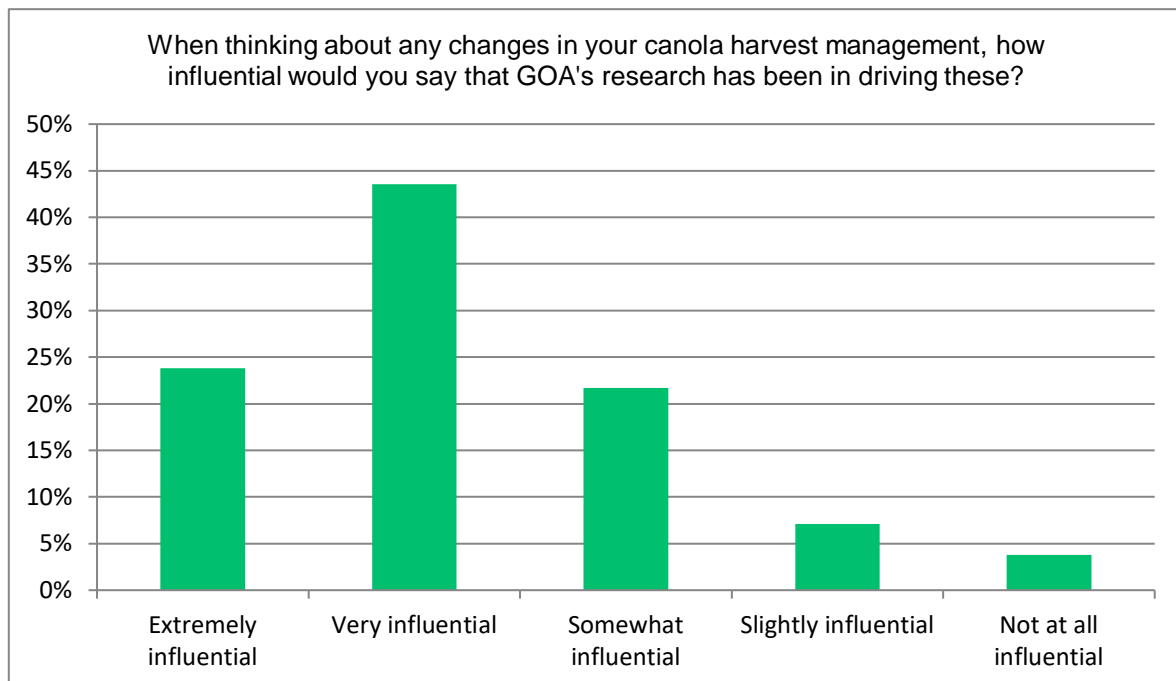
Any further comments on windrow timing or direct heading can be added below.

Respondents	Categories	Responses
1	Advisor	Do it every year
2	Advisor	We are 100% direct head
3	Advisor	Better now because you can get 40ft windrowers and windrow on tramlines. We growing a tap root to open up soil, then run windrower, header of lines, that was a deal breaker
4	Advisor	Spraying under bar at windrowing has been a useful tactic, as well as spraytopping poorer crops prior to direct heading. We believe it's good to be flexible - direct heading can compress harvest operations if cereals are also ready.
5	Advisor	No
6	Advisor	Our adaptation of direct heading is not just around yield and oil considerations, it is also around weed management and variety selection. Opportunities to apply herbicide prior to harvest has been a major influence as well.
7	Advisor	windrowing is expensive per ha if employing a contractor, you can pay off a cross auger in one year when added to a draper front
8	Farmer	re 16 above that is from way too early eg green squashy seed thru to correct.
9	Farmer	One of the biggest influences on profitability of the crop
10	Farmer	Finding a lot of resistance to the idea that windrowing and direct heading have comparable losses.
11	Farmer	It is better to be a week late than two to three days early

CANOLA HARVEST MANAGEMENT

When thinking about any changes in your canola harvest management, how influential would you say that GOA's research has been in driving these?

Answer Choices	Responses Advisors		Responses Farmers		Combined
Extremely influential	13	28%	20%	6	24%
Very influential	19	40%	47%	14	44%
Somewhat influential	11	23%	20%	6	22%
Slightly influential	2	4%	10%	3	7%
Not at all influential	2	4%	3%	1	4%
Answered		47	Answered	30	
Skipped		44	Skipped	61	

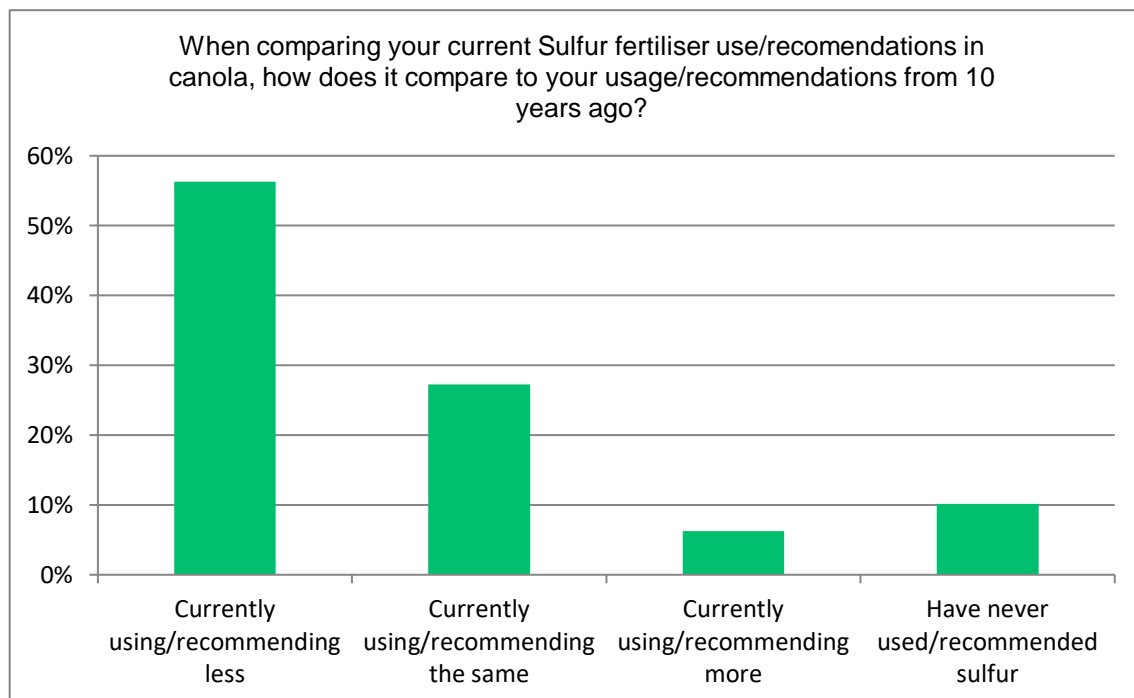


SULFUR MANAGEMENT

When comparing your current Sulfur fertiliser use/advice in canola, how does it compare to your usage 10 years ago?

Answer Choices	Responses Advisor		Responses Farmer		Combined
Currently using/recommending less	28	61%	52%	15	56%
Currently using/recommending the same	14	30%	24%	7	27%
Currently using/recommending more	1	2%	10%	3	6%
Have never used/recommended sulfur	3	7%	14%	4	10%

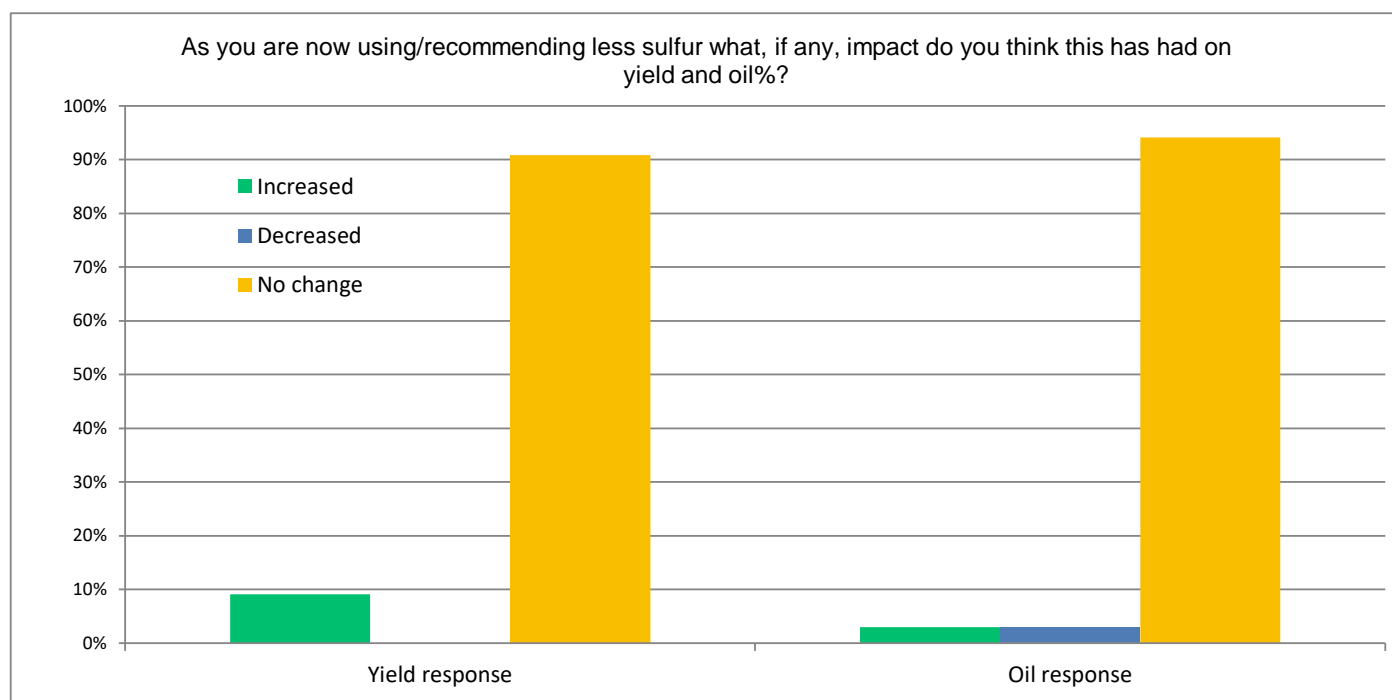
Answered	46	Answered	29
Skipped	45	Skipped	62



SULFUR MANAGEMENT

As you are now using/recommending less sulfur what, if any, impact do you think this has had on yield and oil%?

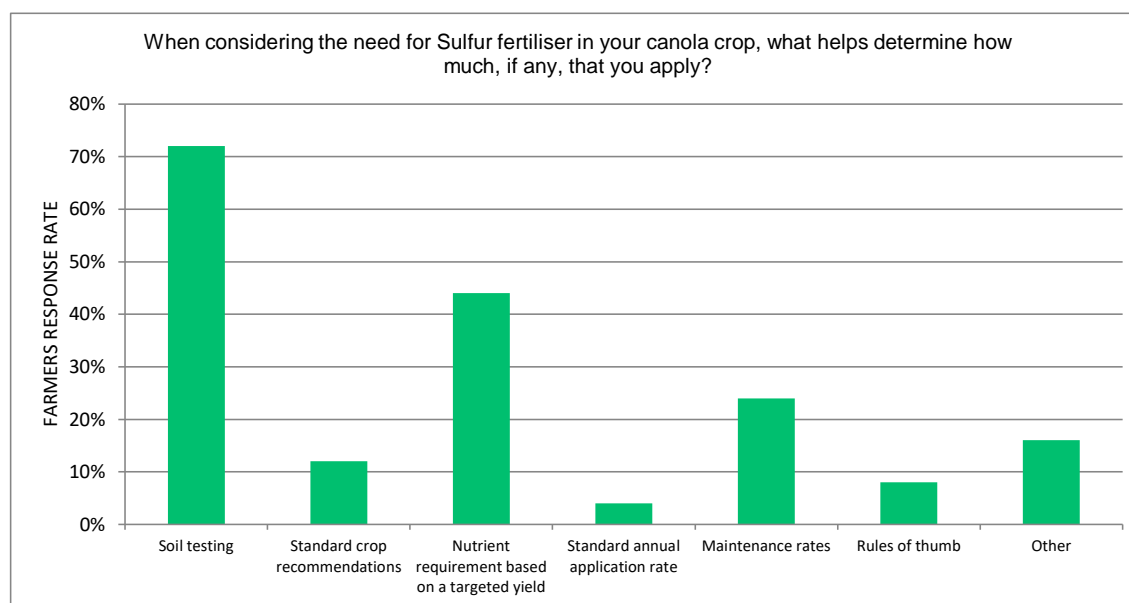
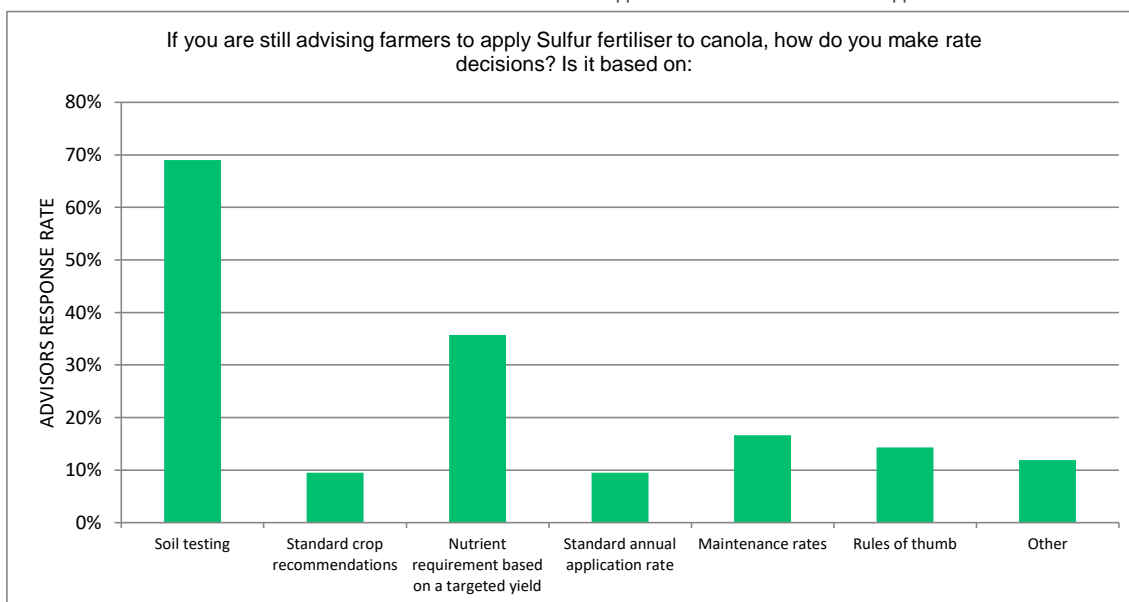
		Increased		Decreased		No change		Total
Combined	Yield response	9%		0%		91%		100%
	Oil response	3%		3%		94%		100%
Advisor	Yield response	12%	2	0%	0	88%	15	17
Farmer	Yield response	6%	2	0%	0	94%	29	31
Farmer	Oil response	0%	0	0%	0	100%	31	31
Advisor	Oil response	6%	1	6%	1	88%	15	17



SULFUR MANAGEMENT

When considering the need for Sulfur fertiliser in your canola crop, what helps determine how much, if any, that you apply?

Answer Choices	Responses Advisor		Responses Farmer	
Soil testing	29	69%	72%	18
Standard crop recommendations	4	10%	12%	3
Nutrient requirement based on a targeted yield	15	36%	44%	11
Standard annual application rate	4	10%	4%	1
Maintenance rates	7	17%	24%	6
Rules of thumb	6	14%	8%	2
Other	5	12%	16%	4
	Answered	42	Answered	25
	Skipped	49	Skipped	66



2017 Practice Change Survey CANOLA HARVEST and NUTRITION

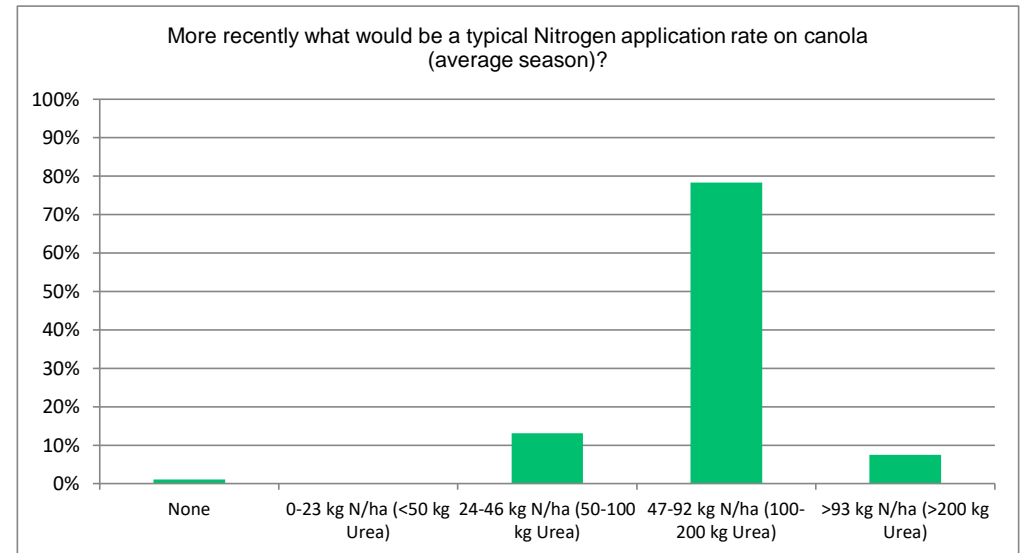
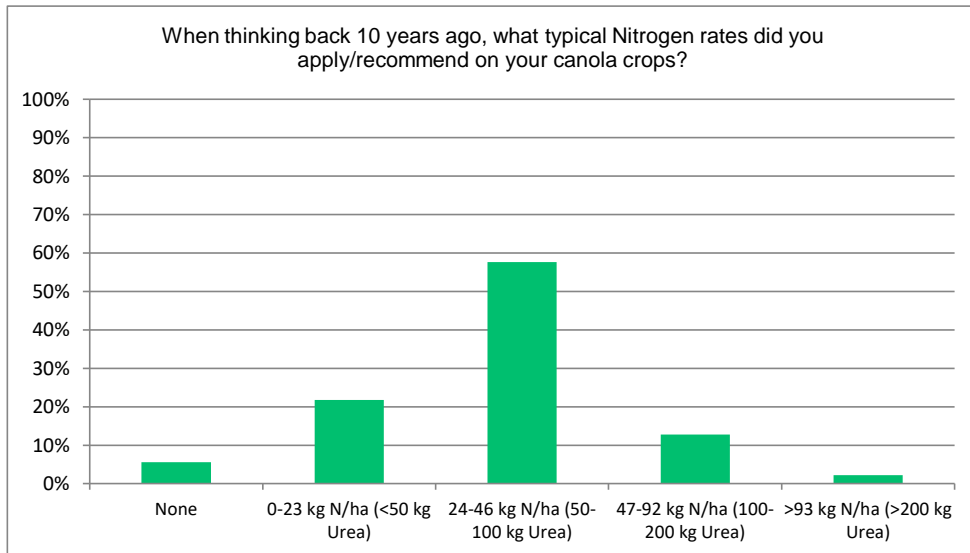
NITROGEN MANAGEMENT

When thinking back 10 years ago, what typical Nitrogen rates did you apply/recommend for your canola crops?

Answer Choices	Responses Advisor		Responses Farmer		Combined
None	5	11%	0%	0	6%
0-23 kg N/ha (<50 kg Urea)	14	31%	13%	3	22%
24-46 kg N/ha (50-100 kg Urea)	20	44%	71%	17	58%
47-92 kg N/ha (100-200 kg Urea)	4	9%	17%	4	13%
>93 kg N/ha (>200 kg Urea)	2	4%	0%	0	2%
Answered		45	Answered		45
Skipped		46	Skipped		46

More recently what would be a typical Nitrogen application rate on canola (average season)?

Answer Choices	Responses Advisors		Responses Farmers		Combined
None	1	2%	0%	0	1%
0-23 kg N/ha (<50 kg Urea)	0	0%	0%	0	0%
24-46 kg N/ha (50-100 kg Urea)	8	18%	8%	2	13%
47-92 kg N/ha (100-200 kg Urea)	33	73%	83%	20	78%
>93 kg N/ha (>200 kg Urea)	3	7%	8%	2	8%
Answered		45	Answered		45
Skipped		46	Skipped		46

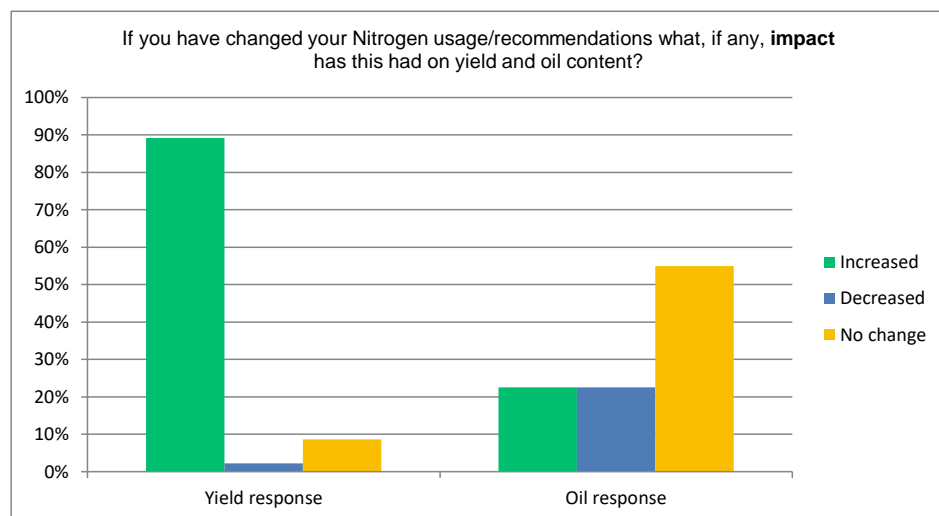


NITROGEN MANAGEMENT

IMPACT

If you have changed your Nitrogen usage/recommendations what, if any, impact has this had on yield and oil content?

		Increased		Decreased		No change		Total
Combined	Yield response	89%		2%		9%		100%
	Oil response	23%		23%		55%		100%
Advisor	Yield response	87%	39	4%	2	9%	4	45
Farmer	Yield response	92%	22	0%	0	8%	2	24
Advisor	Oil response	20%	9	20%	9	60%	27	45
Farmer	Oil response	25%	6	25%	6	50%	12	24

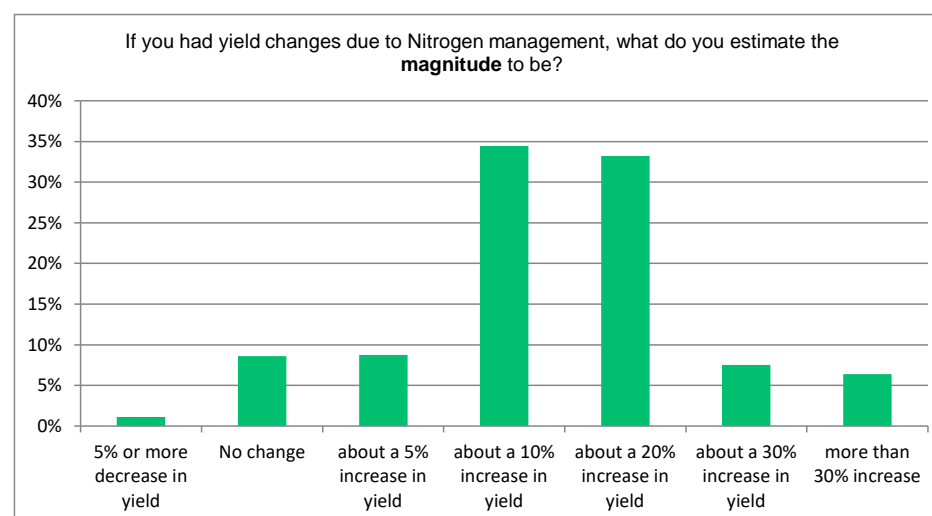


MAGNITUDE

If you had yield changes due to Nitrogen management, what do you estimate the magnitude to be?

Answer Choices	Responses Advisor		Responses Farmer		Combined
5% or more decrease in yield	1	2%	0%	0	1%
No change	4	9%	8%	2	9%
about a 5% increase in yield	6	13%	4%	1	9%
about a 10% increase in yield	16	36%	33%	8	34%
about a 20% increase in yield	13	29%	38%	9	33%
about a 30% increase in yield	3	7%	8%	2	8%
more than 30% increase	2	4%	8%	2	6%

Answered	45	Answered	24
Skipped	46	Skipped	67



NITROGEN MANGEMENT

Increasing Nitrogen fertiliser rates tends to increase yields whilst decreasing oil %! How does this influence your attitude toward nitrogen management?

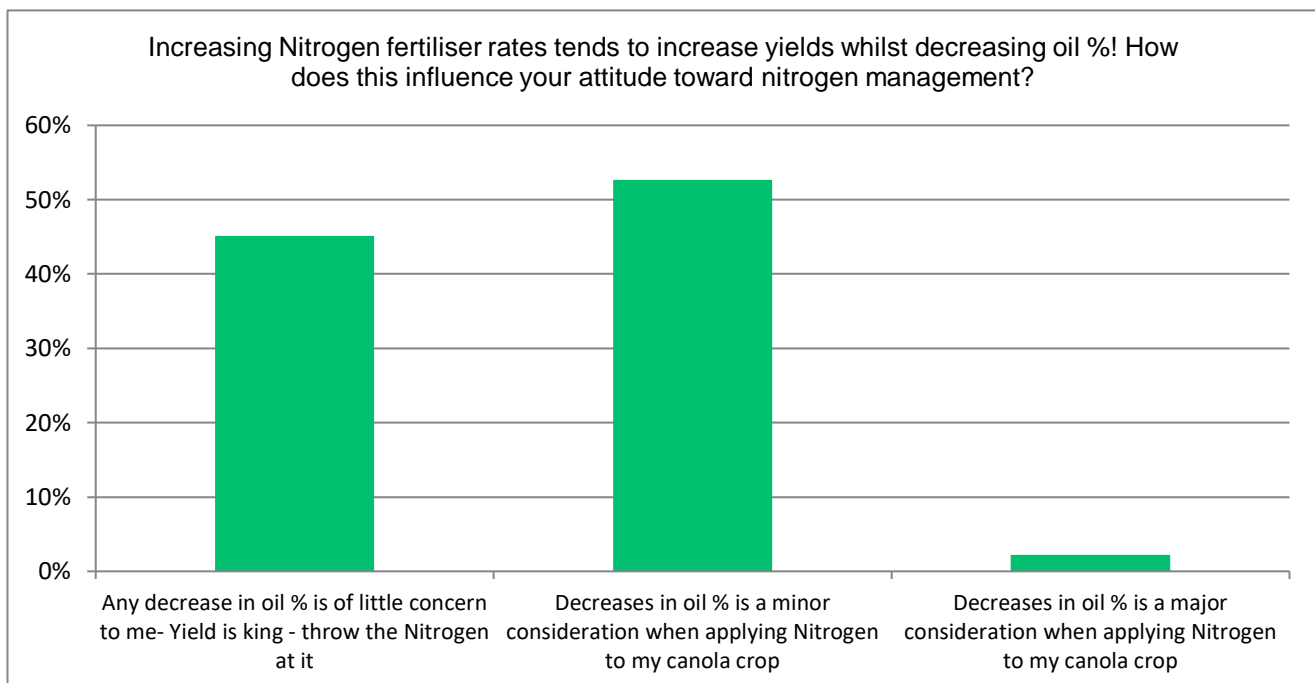
Answer Choices	Responses Advisors		Responses Farmers		Combined
Any decrease in oil % is of little concern to me- Yield is king - throw the Nitrogen at it	20	44%	46%	11	45%
Decreases in oil % is a minor consideration when applying Nitrogen to my canola crop	23	51%	54%	13	53%
Decreases in oil % is a major consideration when applying Nitrogen to my canola crop	2	4%	0%	0	2%

Answered
Skipped

45
46

Answered
Skipped

24
67

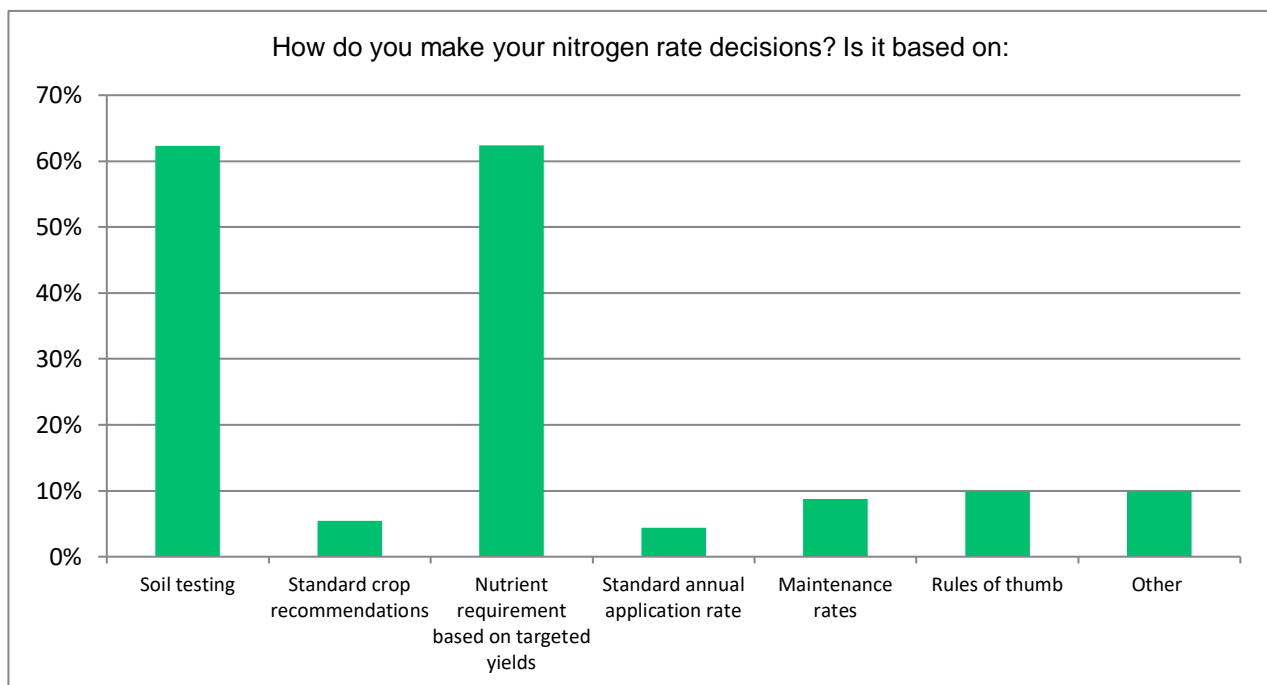


NITROGEN MANAGEMENT

How do you make your nitrogen rate decisions? Is it based on:

Answer Choices*	Responses Advisors		Responses Farmers		Combined
Soil testing	15	33%	91%	21	62%
Standard crop recommendations	1	2%	9%	2	5%
Nutrient requirement based on targeted yields	17	38%	87%	20	62%
Standard annual application rate	2	4%	4%	1	4%
Maintenance rates	2	4%	13%	3	9%
Rules of thumb	5	11%	9%	2	10%
Other	3	7%	13%	3	10%

Answered 45
Skipped 46

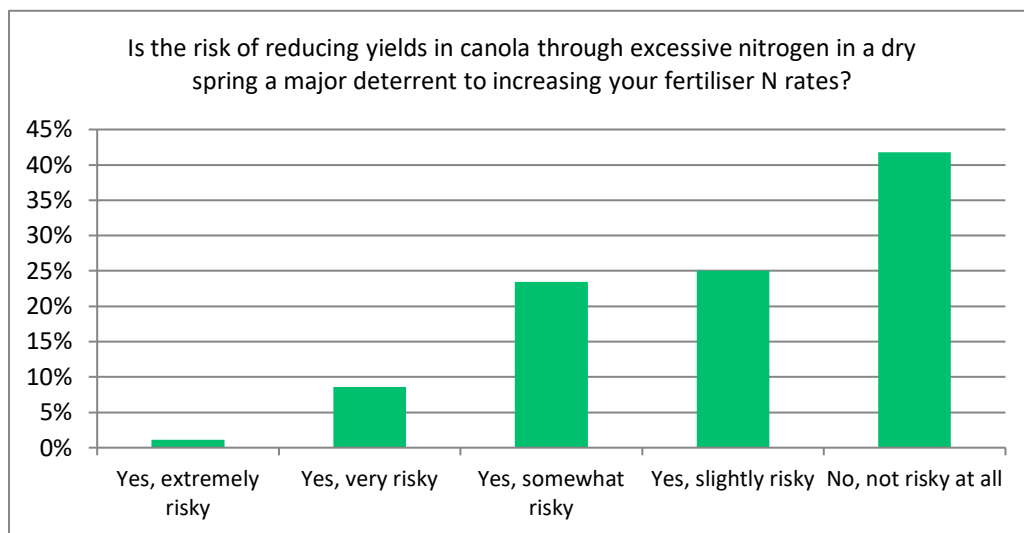


* multiple responses were allowed for this question

NITROGEN MANAGEMENT

Is the risk of reducing yields in canola through excessive nitrogen in a dry spring a major deterrent to increasing your fertiliser N rates?

Answer Choices	Responses Advisors		Responses Farmers		Combined
Yes, extremely risky	1	2%	0%	0	1%
Yes, very risky	4	9%	8%	2	9%
Yes, somewhat risky	8	18%	29%	7	23%
Yes, slightly risky	15	33%	17%	4	25%
No, not risky at all	17	38%	46%	11	42%
	Answered	45	Answered	24	
	Skipped	46	Skipped	67	



NUTRITION COMMENTS

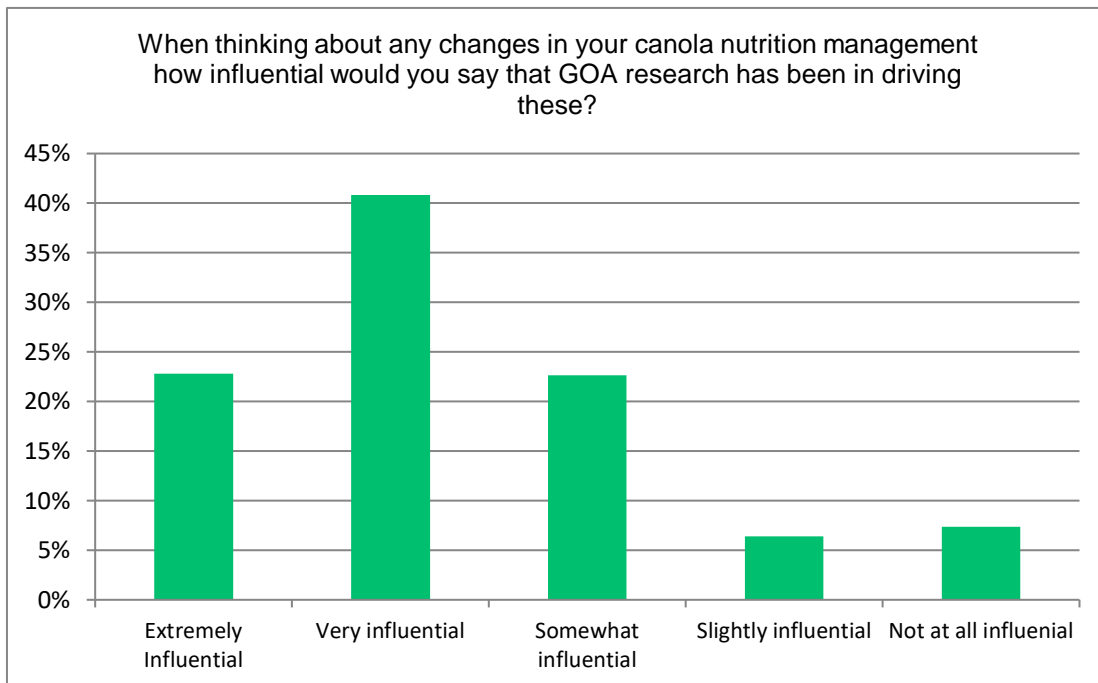
Please add any comments you may have regarding canola nutrition below

Respondents	Categories	Responses
1	Advisor	always split applications ie read the season
2	Advisor	You have to feed it well
3	Advisor	We sow with urea or Pre drill and then top dress if favourable season conditions prevail
4	Advisor	Stick your bag on N where the sun don't shine
5	Advisor	Growing canola on pea stubble has been very successful for us
6	Advisor	No
7	Advisor	Happy to apply good licks of N based on recent work that excess is very likely to carry over to the following years wheat crop.
8	Advisor	Concerned about lower S rates on basalt soils here in eastern central west, have seen S deficiency in our district, Our level of available S appears less and inconsistent in our soil types, I would be wary to rely on soil S in our district, if Single Super has not been regularly applied. Would like to see high N rates(300kg Urea) over long term in district to see long term GM (10yrs).
9	Advisor	apply more N to the canola and residual N will be used by the following wheat crop
10	Advisor	GOA's research on the safeness in \$ returned on investment in nitrogen have lead to much higher rates being used. The safety of not "blowing up" the crop hat was proven is a major driving factor in applying big rates N when otherwise none would've been applied
11	Advisor	Excess nitrogen in a dry year is normally available to following crop
12	Advisor	N levels in overall cropping system dropping
1	Farmer	40 N 20P 10 - 20S /t was a very tried and common practice. Not all N goes on as urea, some is as SOA. Gypsum for soil amelioration plus S was a common practice in some areas and not convinced we don't need any S anywhere.
2	Farmer	I Don't believe applying large amounts of N to reach a target yield has as much detriment on canola in a dry spring as it does with wheat, via haying off and pinching grain etc. Get canola fed early while it's vegetative is what I have always been taught.
3	Farmer	Sulphur is a macro nutrient, and canola is the only crop in the rotation where its added. If we don't add sulphur back to the cropping system, we are just miners.
4	Farmer	100kg urea upfront. 100kg urea in crop depending on rainfall.
5	Farmer	In regards potential oil content reduction with addition of nitrogen, yield is still king but must maintain a oil content to avoid penalty at the silo.
6	Farmer	Make the best of good season and with draw some inputs when soil moisture low and seasonal outlook poor
7	Farmer	We won't applying nitrogen for the sake of it. If it is going to benefit the crop and if there is a rain front coming, we will put it out. If there isn't a strong forecast, we won't waste it.
8	Farmer	i believe timing is the key to applying n and s also applying 100kg/ha n with the crop and the balance say 50kg under the seed all at sowing or before
9	Farmer	the earlier the better
10	Farmer	Confidence in minimal losses to the system and carryover for subsequent seasons has improved. As well as the confidence/knowledge of not burning off yield potential in dry springs also.

NUTRITION MANAGEMENT

When thinking about any changes in your canola nutrition management how influential would you say that GOA research has been in driving these?

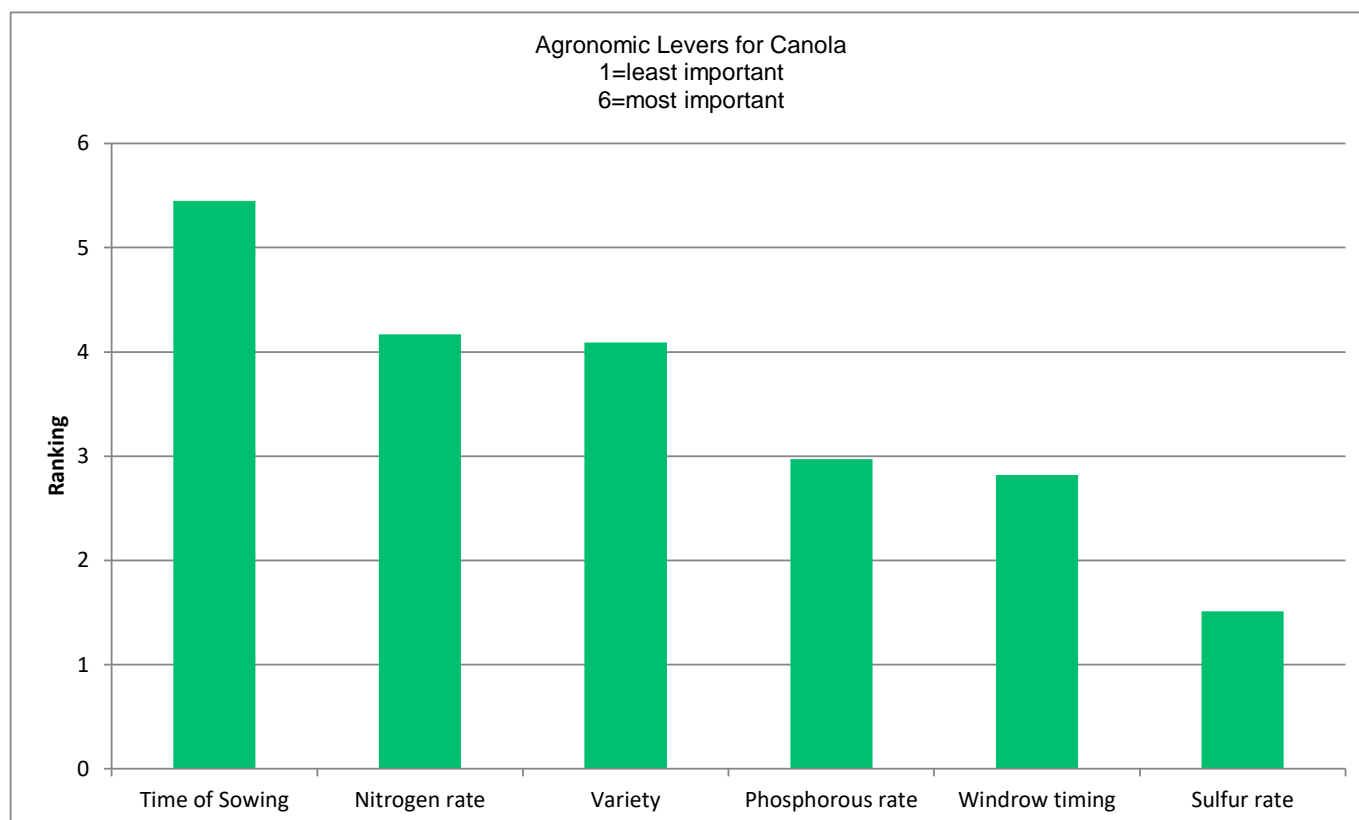
Answer Choices	Responses Advisors		Responses Farmer		Combined
Extremely Influential	13	29%	17%	4	23%
Very influential	18	40%	42%	10	41%
Somewhat influential	11	24%	21%	5	23%
Slightly influential	2	4%	8%	2	6%
Not at all influential	1	2%	13%	3	7%
	Answered	45	Answered	24	
	Skipped	46	Skipped	67	



Agronomic levers

When thinking about the various crop management options you can employ in your canola crops, which do you regard to be the most important to improve yield and profitability? Please give each below a ranking by a number from 1 to 6 (each ranking can only be used once) in the boxes below (highest importance = 1, lowest importance = 6).

RANKING														
	1		2		3		4		5		6		Total	Score
Time of Sowing	65%	42	26%	17	5%	3	0%	0	3%	2	65%	1	65	5.5
Nitrogen rate	14%	9	20%	13	43%	28	18%	12	2%	1	14%	2	65	4.2
Variety	17%	11	29%	19	15%	10	25%	16	12%	8	17%	1	65	4.1
Phosphorous rate	2%	1	14%	9	14%	9	28%	18	37%	24	2%	4	65	3.0
Windrow timing	0%	0	11%	7	20%	13	28%	18	23%	15	0%	12	65	2.8
Sulfur rate	3%	2	0%	0	3%	2	2%	1	23%	15	3%	45	65	1.5
													Answered	65
													Skipped	26



Final Comments

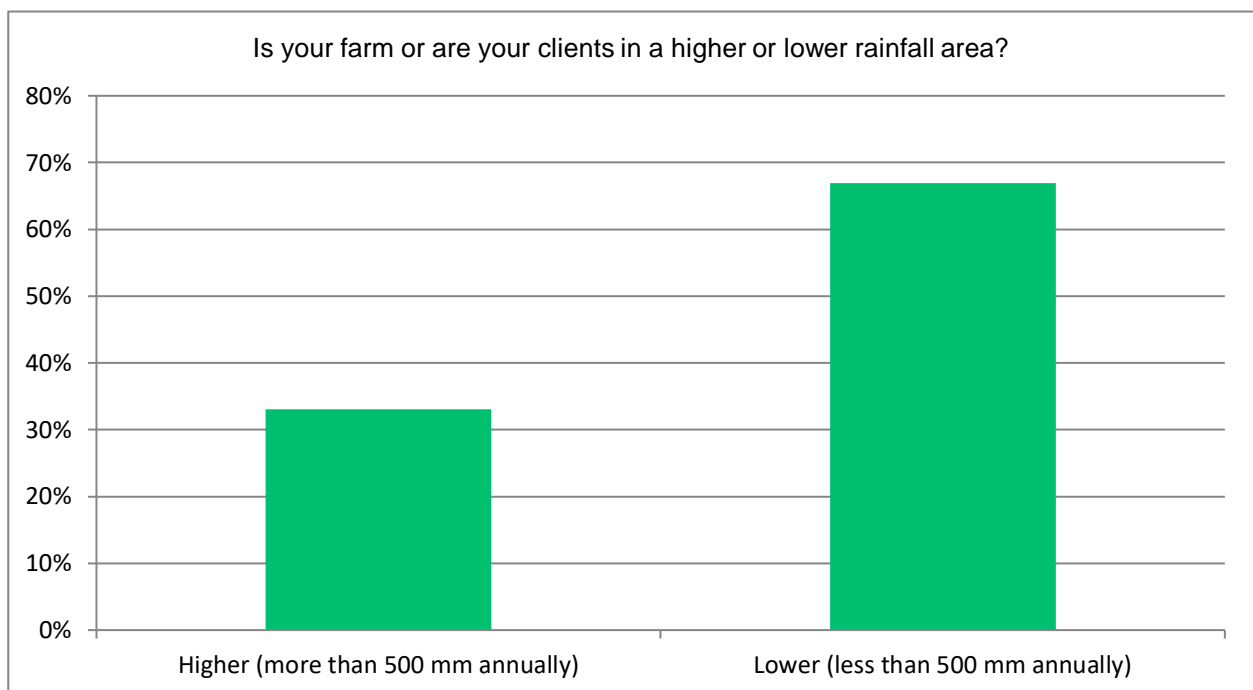
If you have anything to add, questions, research topics, suggestions, please put them below

Respondents	Responses
1	Powder lime vs granulated product regarding changes to pH and soil structure and fertility levels
2	Aphid thresholds best timing for control, Sclerotinia fungicide timing, Options for stem blackleg?
3	Effect of pH on yield. Put some numbers on how limiting pH can be.
4	GOA have changed how we manage canola
5	I think the Goa updates need to be a bit more user friendly - sporadic webinars would be great!
6	PGR on canola, seed sizing, singulation planting, canopy temp management
7	No
8	Effectiveness of aphid insecticides? How early to spray for aphids?
9	Long term rotation trial on profitability, diverse rotations including summer crops/forage crop. Wheat/canola rotation going to be in trouble with resistance in weeds and disease issues in canola.
10	Its a long shot but be good to see GOA do some work on winter wheat's. Impacts of grazing different varieties and lock up times to improve \$/Ha, N management etc
11	Would love to see some new results from your research
12	research desiccation versus direct heading
13	Micro nutrients and trace elements in pulses and cereals How to increase pulse yields through sowing time nutrient
14	Would like to see more work done on Harvest Weed Seed Management sure as chaff tram lining, economics of seed destructors etc
15	Black Oats - think a lot of focus on Ryegrass, Fleabane, Windmill Grass etc but am starting to get very concerned about more and more Black Oats getting through Group A. Possibly more pre-emergent work and looking at the old Mataven formulation
16	Will send in email

DEMOGRAPHICS

Is your farm or are your clients in a higher or lower rainfall area?

Answer Choices	Responses Advisor		Responses Farmer		Combined
Higher (more than 500 mm annually)	18	40%	26%	6	33%
Lower (less than 500 mm annually)	27	60%	74%	17	67%
	Answered	45	Answered	23	
	Skipped	46	Skipped	68	



2017 Practice Change Survey CANOLA HARVEST and NUTRITION

DEMOGRAPHICS

Distribution of respondents* by postcode

Town	Post Code	Number of respondents
Baradine	2396	1
Boree Creek	2652	1
Bumbaldry	2794	1
Cassilis	2329	1
Coolah	2843	1
Coonabarabran	2357	2
Coonamble	2829	6
Cowra	2794	1
Dubbo	2830	3
Eugowra	2806	1
Forbes	2871	3
Gig Gin	2823	1
Gilgandra	2827	2
Griffith	2680	1
Gunnedah	2380	1
Horsham	3400	1
Manildra	2865	1
Merriwa	2329	1
Merrygoen	2831	1
Narromine	2821	7
Nevertire	2826	2
New Mollyan	2842	1
Nyngan	2825	3
Parkes	2870	8
Peak Hill	2869	1
Tamworth	2340	1
Tottenham	2873	2
Trangie	2823	8
Trundle	2875	3
Tullamore	2874	1
Ungarie	2669	1
Wagga wagga	2650	1
Warren	2824	5
Wellington	2820	4
Wongarbon	2831	2

* not all respondents reported their postcodes

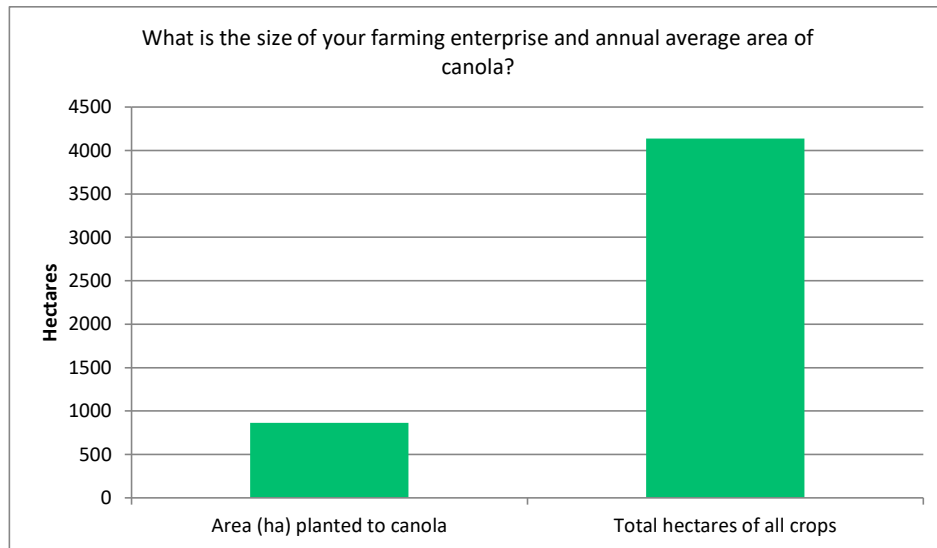
DEMOGRAPHICS

FARMERS

What is the size of your farming enterprise and annual average area of canola?

Answer Choices	Average Cropped Area	Total Area
Area (ha) planted to canola	864	38886
Total hectares of all crops	4135	186091

Answered 45
Skipped 46

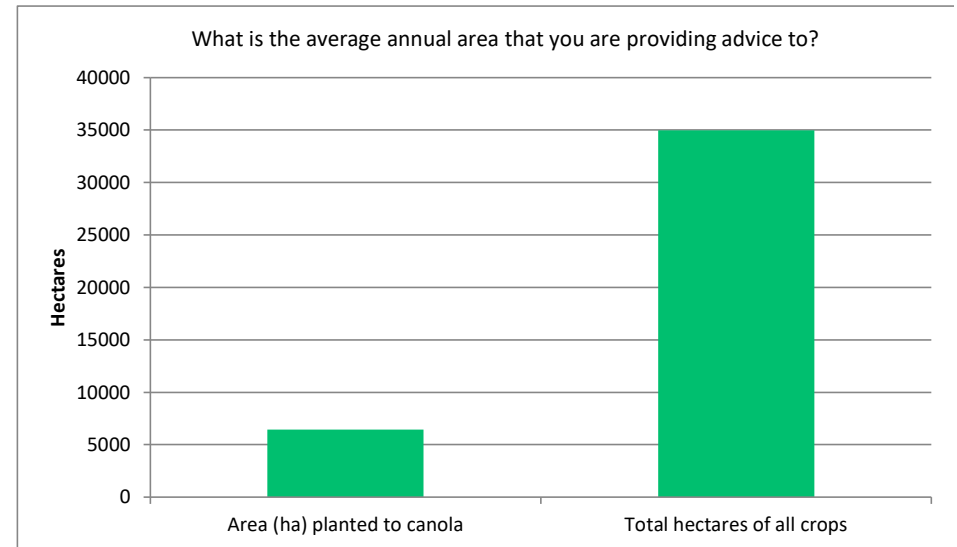


ADVISORS

What is the average annual area that you are providing advice to?

Answer Choices	Average Advised Area	Total Advised Area
Area (ha) planted to canola	6420	147650
Total hectares of all crops	34957	804000

Answered 23
Skipped 68



DEMOGRAPHICS

Have you attended a GOA research update or field day?

Answer Choices	Responses Advisors		Responses Farmers		Combined
I have been to one	4%	2	13%	3	9%
I have been to more than one	89%	40	74%	17	81%
Never been to any	7%	3	13%	3	10%
	Answered	45	Answered	23	
	Skipped	46	Skipped	68	

