

BlacksheepStrategy

Pulse Crops: Drivers and Barriers

Prepared for Alberta Agriculture and Rural
Development
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Executive Summary

Executive Summary

To gain a better understanding of the drivers and barriers to growing pulse crops, Alberta Agricultural and Rural Development added several proprietary questions to the FarmShift: Open-Market Wheat study, a survey of 500 prairie wheat growers. Following is a summary of the highlights:

- Just under half of prairie wheat growers typically include pulse crops in their rotation, about 30% have previously grown them, and another quarter have never grown pulses. Specific to Alberta: 40% are growing pulses, 28% have previously grown them, and 32% have never done so.
- When it comes to the main reasons for growing pulse crops, crop rotation tops the list, particularly among Alberta respondents (where the majority mention this). Other prevalent reasons seen across the prairies include good prices/returns and that it fixes nitrogen/saves on fertilizer.

Executive Summary (cont'd)

- Those who typically include pulses in their rotation cite a number of different barriers to increasing their pulse acres (i.e. there is no single barrier that the majority mention). The most common barriers cited include the hassle factor (don't like to grow them/hard to harvest), and low prices/returns.
- Among growers who used to grow pulses, but don't anymore, there have a number of reasons for this. The most frequently mentioned are the hassle factor, low prices/returns and equipment requirements/hard on machinery.
- Among those who have never grown pulses, again there are a mix of reasons. The most common are the hassle, equipment requirements/hard on machinery, and a lack of experience with them (i.e. don't know much about them).

Summing up, the main driver for pulse crops is crop rotation and the main barrier is that growers don't like them/find them difficult to harvest.

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Introduction and Research Methodology

Introduction and Research Methodology

Alberta Agriculture and Rural Development added several proprietary questions to the FarmShift: Open-Market Wheat study. The questions were geared to developing a better understanding of the drivers and barriers of pulse acres .

FarmShift: Open-Market Wheat was conducted by telephone between March 29 and April 11, 2012, with a random sample of 500 prairie wheat growers. Growers who participated in the study were screened to meet the following criteria: main/joint decision-maker, not planning to retire or exit farming in the next five years, typically grows at least 200 acres of wheat, and of the various classes of wheat, grows either spring wheat or durum (and may also grow other classes).

The 500 sample was by stratified by province using a proportional sampling plan based on the provincial distribution of 200+ acre wheat growers in the 2006 Census. The final sample included 77 respondents from Manitoba, 290 from Saskatchewan and 133 from Alberta.

Research Methodology cont'd)

The sample was also stratified by size categories (based on growers' wheat acres) with a slight over-sampling of the medium and larger grower categories to generate more data points in these segments. The final study data has been weighted to reflect the actual distribution of wheat growers and their acres (see the FarmShift: Open Market Wheat report for these details).

The following slides provide a brief profile of the survey respondents by province, total cropped acres and age.

Profile of Survey Respondents

	% of respondents in each province
Manitoba	15%
Saskatchewan	58%
Alberta	27%

Profile of Survey Respondents

Total acres under crop	% of respondents in each size category			
	Total Prairies	Manitoba	Sask.	Alberta
Less than 1,000 acres	22%	25%	22%	22%
1,000 to 1,999 acres	40%	45%	39%	41%
2,000 to 2,999 acres	19%	14%	20%	21%
3,000 to 4,999 acres	10%	8%	11%	10%
5,000 acres or more	7%	8%	8%	6%
Average acres under crop	2,138	2,039	2,221	2,015

Profile of Survey Respondents (cont'd)

Age	% of respondents in each age group			
	Total Prairies	Manitoba	Sask.	Alberta
Under 35	2%	-	1%	3%
35 to 44	13%	16%	12%	14%
45 to 54	30%	36%	25%	37%
55 to 64	43%	44%	46%	34%
65 years or older	11%	4%	14%	10%
Average age	55	53	56	53
Comparison: Average farmer age, as per most recent census (2006)	52	51	53	52

AARD's Proprietary Questions

Following are the proprietary questions that Alberta Agriculture and Rural Development added to the survey:

1. A series of questions to classify growers into the following three segments:

- Typically includes pulse crops in their rotation

- Previously grew pulse crops, but not any more

- Have never grown pulse crops

If typically grows pulses, ask Q2 and Q3:

2. What are the main reasons that you grow pulse crops? Probe: Any other reasons? [OPEN ENDED. CAPTURE UP TO FOUR MENTIONS]

3. What do you consider to be the greatest barriers to growing more acres of pulse crops? Probe: Any others? [OPEN ENDED. CAPTURE UP TO FOUR MENTIONS]

.... continued

AARD's Proprietary Questions (cont'd)

If previously grew pulses, but not anymore, ask Q4:

4. What are the main reasons that you stopped growing pulse crops? Probe: Any other reasons?
[OPEN ENDED. CAPTURE UP TO FOUR MENTIONS]

If have never grown pulse crops, ask Q5:

5. What are the main reasons that you have never grown pulse crops? Probe: Any other reasons?
[OPEN ENDED. CAPTURE UP TO FOUR MENTIONS]

AARD's Proprietary Questions (cont'd)

AARD's proprietary questions regarding the drivers and barriers of pulse acres were posed to the wheat growers participating in the study. Following is the level of accuracy associated with the overall survey results, and the results specific to each segment of pulse crop usage:

	Sample size (unweighted)	Maximum margin of error at the 95% confidence level
All respondents	500	+/- 4.3%
Those that typically include pulse crops in their rotation	235	+/- 6.4%
Those that have previously grown pulses, but not anymore	148	+/- 8.0%
Those that have never grown pulse crops	117	+/- 9.0%

Results have also been analyzed by province, farm size (total cropped acres), and age. Any differences noted in this report were found to be statistically significant at the 90% confidence level.

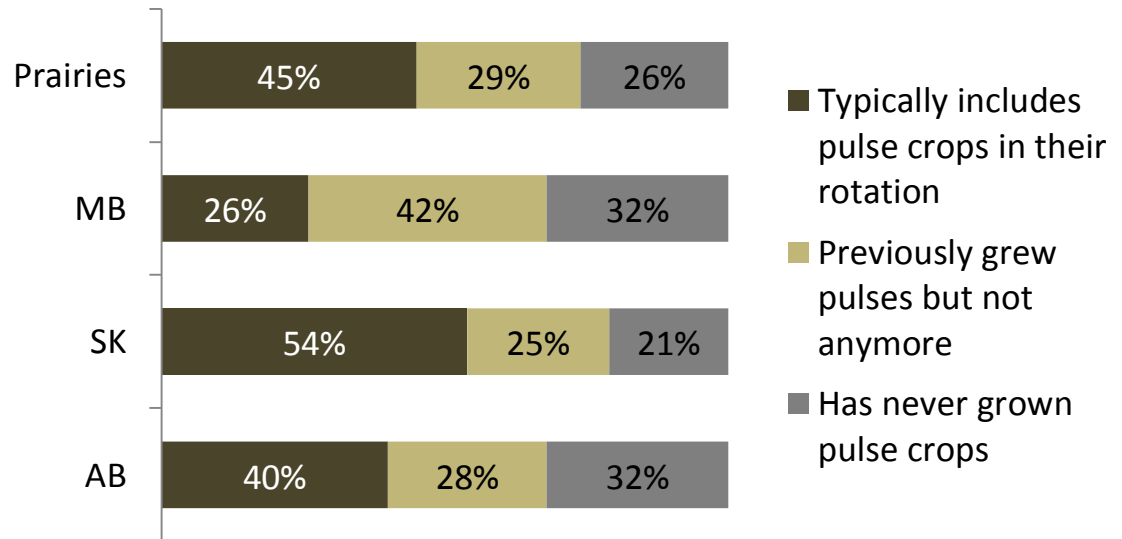
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Research Findings

Pulse segments

Almost half (45%) of prairie wheat growers typically include pulse crops in their rotation. Almost 30% previously grew pulses (but not anymore) while one-quarter have never grown them.

Provincially, Saskatchewan growers are the most likely to be using pulses in their rotation.



% of all wheat growers,
Base for prairies overall n=500

Pulse segments (cont'd)

In addition, the larger the farm (in terms of total cropped acres), the more likely they are to be including pulses in their rotation.

	< 1000 total cropped acres	1000-1999 acres	2000-2999 acres	3000+ total cropped acres
Those that typically include pulse crops in their rotation	34%	42%	56%	58%
Those that have previously grown pulses, but not anymore	23%	31%	30%	29%
Those that have never grown pulse crops	44%	27%	15%	14%

There were no significant differences in pulse crop usage by age.

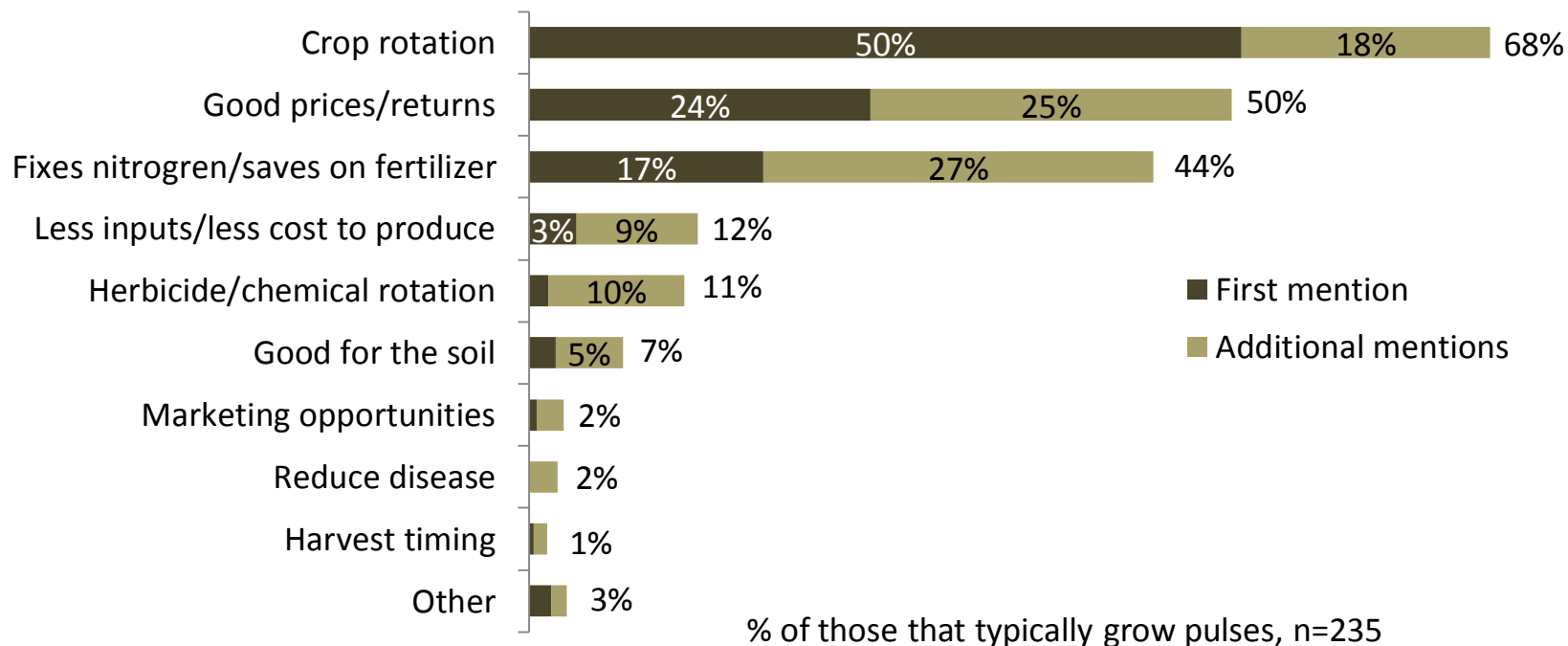
Drivers of pulse acres

There are three main reasons that prairie wheat growers are using pulse crops:

- Crop rotation – half of growers mentioned this top-of mind (i.e. as their first reason), and in total it was mentioned by two-thirds
- Good prices / returns – mentioned first by almost one-quarter, and mentioned in total by half
- Fixes nitrogen / save on fertilizer – mentioned first by 17%, and mentioned in total by 44%

Additional reasons include less inputs/less costly to produce, herbicide rotation, they're good for the soil, marketing opportunities, they reduce disease, and harvest timing.

Main reasons for growing pulse crops *(more than one response allowed)*



Differences by segment

Several of the reasons growers cited for growing pulse crops differ depending on province, farm size and age:

Crop rotation

- Provincially, those in Alberta were more likely to mention crop rotation first, compared to their counterparts in the other provinces (65% of Albertans mentioned crop rotation first, compared to 46% in the other two provinces). In total, 79% of Albertans mentioned crop rotation as one of the main reasons they grow pulse crops.
- In addition, younger farmers were also more likely to cite crop rotation (68% of those under 45 years mentioned crop rotation first, compared to 45% of those over 65 years). In total, 84% of those under 45 mentioned crop rotation.

Differences by segment (cont'd)

Good prices/returns

- Those 65 and older were less likely to mention good prices/returns. In total, 29% of those 65 and older mentioned this, compared to 44% of those under 45, and over 50% of those between 45 and 65.

Fixes nitrogen/saves on fertilizer

- This reason was more apt to be mentioned by growers with smaller farms. In total 53% of those with less than 1000 acres of cropland mentioned fixes nitrogen/saves on fertilizer, compared to 30% of those with 3000 or more acres.
- In addition, older farmers were also more likely to mention this reason, and it was more likely to be top of mind among the older segment. For example, 29% of those over 65 years mention this reason first, compared to just 3% of growers under 45 years. In total, 50% of those over 65 mentioned this reason, compared to 28% of those under 45 years.

Differences by segment (cont'd)

Less inputs/less cost to produce

- This reason was less likely to be cited by Alberta growers. In total, just 5% of Albertans mentioned less inputs/less cost to produce, compared to 14% in the other two provinces.

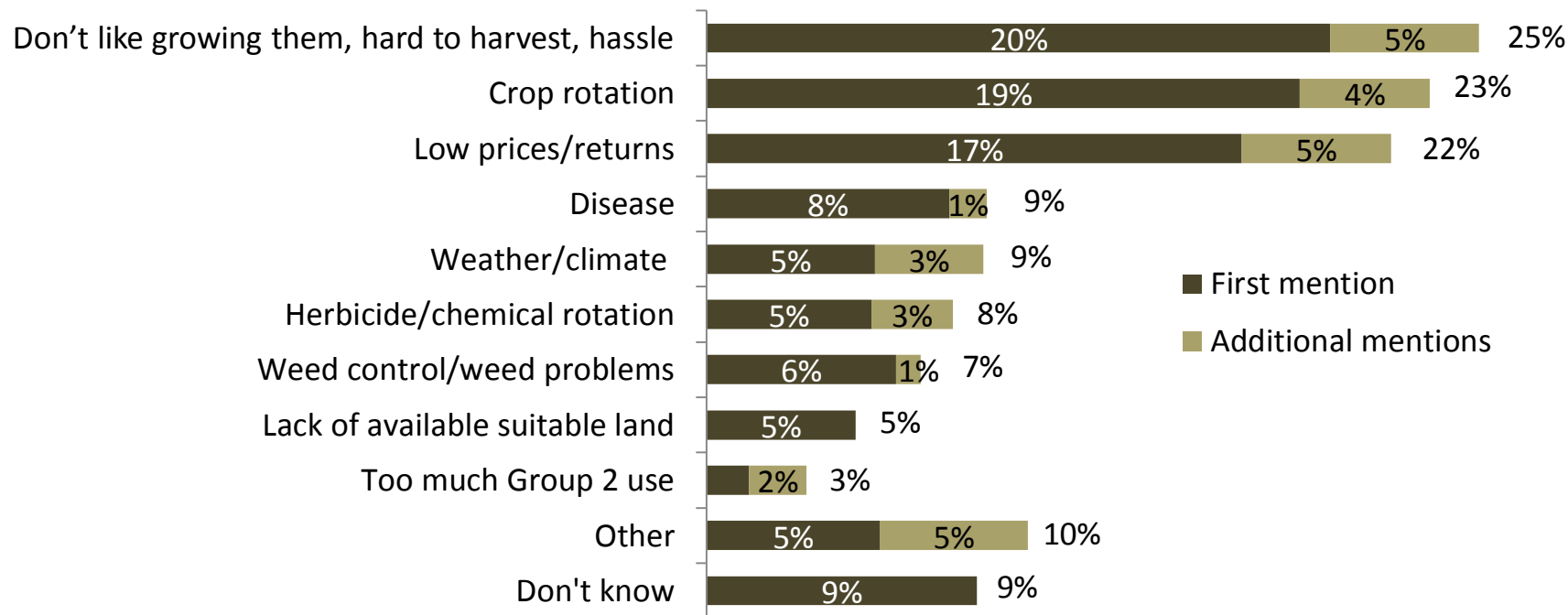
Barriers to growing more pulse acres

Growers who typically include pulse crops in their rotation consider the main barriers to growing more pulse acres to be:

- Don't like growing them, hard to harvest, hassle – 20% of growers mentioned this top-of mind (i.e. as their first reason), and in total it was mentioned by one-quarter
- Crop rotation – mentioned first by 19%, and in total by 23%
- Low prices / returns – mentioned first by 17%, and mentioned in total by 22%

Additional barriers mentioned include disease, weather, the need for herbicide rotation, weed control issues, a lack of suitable available land (e.g. limitations due to physical characteristics of the land), and too much Group 2 herbicide use. As well there were a host of other reasons mentioned by small percentages (and collapsed into the Other category) – these included equipment requirements/hard on machinery (2%), shortness of the season/maturity of varieties (1%), limited variety choices (1%), location/geography (1%) and some miscellaneous responses (5%).

Barriers to growing more pulse acres *(more than one response allowed)*



% of those that typically grow pulses, n=235

Differences by segment

Several of the barriers to increasing pulse acres differ depending on province, farm size and age:

Don't like growing them, hard to harvest, hassle

- Provincially, Albertans were more likely to mention this issue. In total, 38% of Albertans mentioned the hassle factor, compared to 17% in Manitoba and 21% in Saskatchewan.

Crop rotation

- Crop rotation was more likely to be mentioned by larger growers. In total, 32% of those with 3000+ acres of cropland mentioned crop rotation, compared to 12% of those with less than 1000 acres.

Disease

- Disease was more likely to be mentioned in Saskatchewan than in Alberta. In total, 11% of Saskatchewan growers mentioned disease, compared to 3% in Alberta.

Differences by segment (cont'd)

Weather/climate

- Weather/climate was more likely to be mentioned in Saskatchewan than in Alberta. In total, 11% of Saskatchewan growers mentioned this, compared to 3% in Alberta.

Lack of available suitable land

- This barrier was more likely to be cited in Manitoba and Alberta. In total, 14% of Manitoba growers and 11% of Alberta growers mentioned this reason, compared to 2% in Saskatchewan.

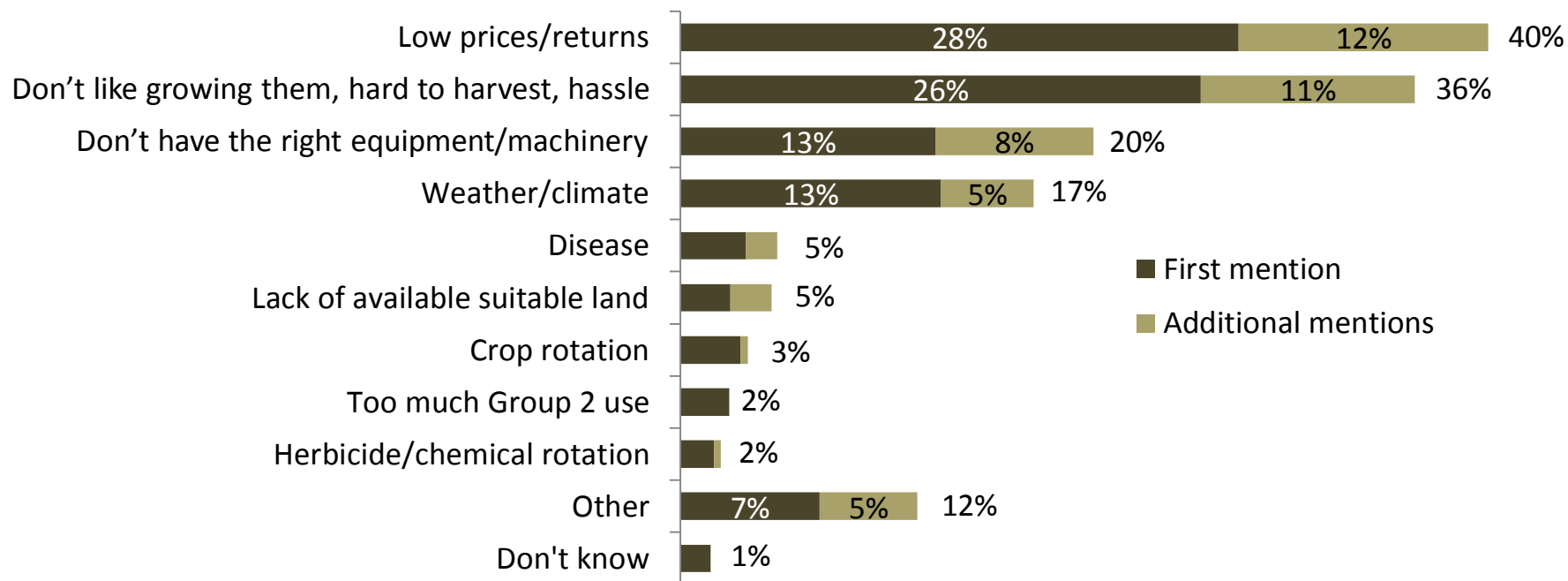
Reasons growers stopped growing pulse crops

Growers who have previously grown pulse crops, but no longer do so indicate the following main reasons for stopping:

- Low prices / returns – mentioned top-of mind (first) by 28%, and in total by 40%
- Don't like growing them, hard to harvest, hassle – mentioned first by just over one-quarter and mentioned in total by 36%
- Don't have the right equipment/hard on machinery – mentioned first by 13%, and in total by 20%
- Weather/climate – mentioned first by 13%, and in total by 17%

Additional reasons included disease, a lack of suitable available land, too much Group 2 herbicide use, and the need for herbicide rotation. As well there were a several other reasons mentioned by small percentages (and collapsed into the Other category) – these included equipment weed control issues (1%), location/geography (1%) and some additional miscellaneous responses .

Reasons growers stopped growing pulse crops *(more than one response allowed)*



% of those that previously grew pulses, but not anymore, n=148

Differences by segment

When looking at the reasons growers stopped growing pulse crops, most responses are not statistically different across provinces, farm size and age. There was only one notable difference:

Low prices/returns

- Growers with 2000-2999 acres under crop were more likely to mention this reason than growers in the other size categories. In total, 66% of those with 2000-2999 acres mentioned this, compared to 47% of those with < 1000 acres, 25% of those with 1000-1999 acres, and 43% of those with 3000+ acres.

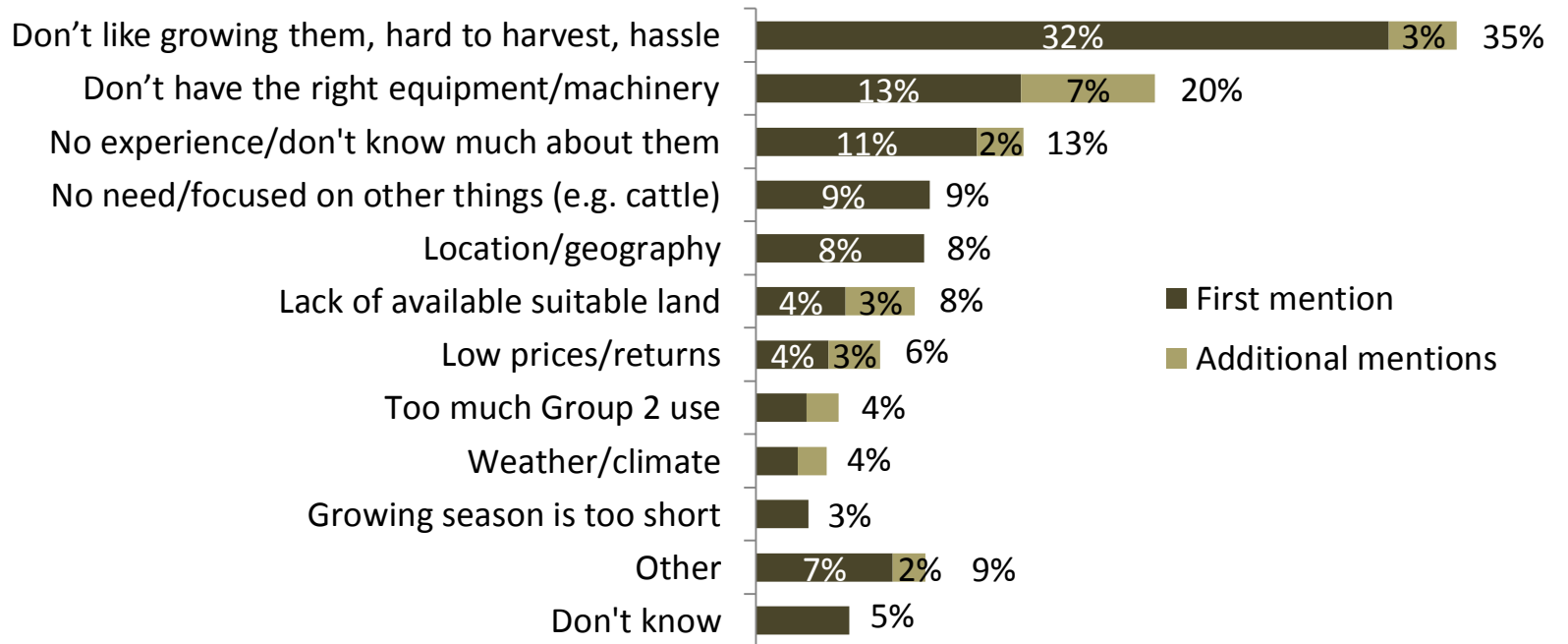
Reasons growers have never used pulse crops

Among those who have never grown pulse crops, the following are their main reasons:

- Don't like growing them, hard to harvest, hassle – mentioned first by 32% and mentioned in total by 35%
- Don't have the right equipment/hard on machinery – mentioned first by 13%, and in total by 20%
- No experience/don't know much about them – mentioned first by 11%, and in total by 13%

Additional reasons included: no need/focus on other things (such as cattle, alfalfa, silage, etc.), location/geography, lack of available suitable land, low prices/returns, too much Group 2 use, weather/climate, and too short a growing season. Reasons under the Other category included crop rotation (1%), disease (1%), weed control/weed problems (1%) and some miscellaneous responses (5%).

Reasons growers have never grown pulse crops *(more than one response allowed)*



% of those that have never grown pulses, n=117

Differences by segment

When examining the reasons growers have never grown pulse crops, responses are not statistically different across provinces, farm size and age. There was one notable difference:

No experience/don't know much about them

- Smaller growers were more likely than those with larger farms to mention this reason. Almost one-quarter (24%) of those with < 1000 acres of cropland mentioned this reason, compared to just 8% of all others.

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Alberta Specific Results (Tables)

Main reasons for growing pulse crops – Alberta respondents

% of AB respondents mentioning each reason (total mentions) Base: Those that typically grow pulses (n=56)	
Crop rotation	79%
Good prices/returns	49%
Fixes nitrogen / save on fertilizer	40%
Herbicide/chemical rotation	13%
Good for the soil	5%
Less inputs/less cost to produce	5%
Reduce disease	2%
Marketing opportunities	1%
Other	4%

Barriers to growing more pulse acres – Alberta respondents

% of AB respondents mentioning each reason (total mentions) Base: Those that typically grow pulses (n=56)			
Don't like growing them, hard to harvest, hassle	38%	Herbicide / chemical rotation	4%
Low prices/returns	26%	Disease	3%
Crop rotation	16%	Equipment requirements / hard on machinery	3%
Lack of available suitable land	11%	Weather / climate	3%
Weed control / weed problems	9%	Other	1%
Too much Group 2 herbicide use	5%	Don't know	10%

Reasons growers stopped growing pulses – Alberta respondents

% of AB respondents mentioning each reason (total mentions) Base: those that previously grew pulses (n=38) – caution small sample size			
Don't like growing them, hard to harvest, hassle	46%	Lack of available suitable land	4%
Low prices / returns	35%	Too much Group 2 herbicide use	4%
Don't have the right equipment / machinery	23%	Herbicide / chemical rotation	3%
Weather / climate	11%	Other	12%
Crop rotation	4%	Don't know	2%

Reasons growers have never grown pulses – Alberta respondents

% of AB respondents mentioning each reason (total mentions) Base: those that have never grown pulses (n=39) – caution small sample size			
Don't like growing them, hard to harvest, hassle	42%	Disease	3%
Don't have the right equipment / machinery	17%	Growing season is too short	3%
No experience / don't know much about them	16%	Weather / climate	3%
No need / focused on other things (e.g. cattle, alfalfa, silage)	12%	Low prices / returns	2%
Too much Group 2 herbicide use	8%	Other	3%
Crop rotation	7%	Don't know	3%
Lack of available suitable land	5%		

