



Flax on the Farm

Marketing, Grading and Seed Quality

1. MARKETING FLAX

Several factors from pre-harvest environmental conditions, to combine settings, to seed storage environment can affect seed quality and consequently the marketing options for flax seed. While the industrial sector continues to be the largest market for flax, the food and feed markets continue to grow.

Market Considerations

- Commercial flax seed is typically 10% or less moisture.
- Brown seeded flax can enter the food, feed or industrial markets, while yellow seeded flax is predominantly produced for the food market due to its appealing colour.
- Many food flax buyers are looking for very high-quality flax that has tight specifications for visual appearance. Milling quality flax seed typically has low dockage, uniform seed colour and size, is not damaged or diseased, is shiny and comes from the high end of No. 1 quality seed. Buyers typically process and clean flax seed further to remove foreign material and damaged seeds. The presence of chaff, especially boll membranes, is an issue when flax seed is packaged for human consumption.
- High dockage and/or heated seed may be acceptable for the feed market.
- Black coloured seeds (e.g. due to frost, disease, heating, variety) may darken the colour and increase the bitterness of flaxseed oil.

To find a list of flax seed buyers go to:

- [SaskFlax](#)
- [Manitoba Crop Alliance](#)
- [Flax Council of Canada \(FCC\)](#)



Don't forget to check on your stored flax seed! Flax seed will continue to respire after harvest for several weeks and requires regular monitoring of temperature and moisture content at the bottom, middle and top of the bin during the first couple of months to detect the first signs of spoilage (e.g. heating, moisture pockets, insect activity). More frequent monitoring is critical if the seed was binned at higher moisture or temperature. Refer to the [August edition of Flax on the Farm](#) for more advice on flax seed storage.



2. GRAIN GRADING

- The Canadian Grain Commission (CGC) is responsible for establishing and maintaining Canada’s **grain** grading system, whereas the Canadian Food Inspection Agency (CFIA) is responsible for maintaining the **seed** grading system.
- Current designated classes of flax are: brown flaxseed and yellow flaxseed.
- A grade of No. 1 CW (Canada Western) or No. 2 CW can only be assigned to registered varieties of flax in Canada that appear on the [official variety designation list](#).
- The highest grade that grain of an unregistered variety can be assigned is No. 3 CW.
- Grain grading factors are visual characteristics used as indicators of the degree of soundness of a lot of grain. For flax these include: broken seeds, contaminated seeds, damaged seeds, earth pellets, ergot, excreta, extraneous material, fertilizer pellets, fireburnt seed, heated seed, inseparable seeds, odour, other classes of flaxseed, *Sclerotinia sclerotiorum*, soft earth pellets, stones, chemically treated seed and seed with a chemical residue. The percentage acceptable of these grade determinants can be found in Table 1.
- Grain grades are assigned based on an assessment of an official sample for test weight, dockage and the grading factors associated with that commodity. Grades are defined by limits associated with each grading factor, such that the highest grade has the least grading factor issues.

Table 1. Export grade determinants table for flax seed

Grade name	Total removable material %	Foreign material included in dockage			Brown seeded flax	Yellow seeded flax	Damage		
		Ergot %	Sclerotinia %	Stones %	Yellow seeded flaxseed %	Brown seeded flaxseed %	Broken %	Heated %	Total %
No. 1 CW	1.0	0.05	0.10	0.05	2	2	13	0.1	13
No. 2 CW	1.5	0.05	0.20	0.05	3	2	25	0.2	25
No. 3 CW	2.0	0.05	0.25	0.05	4	2	35	10.0	No limit

Adapted from the Canadian Grain Commission Official Grain Grading (<https://grainscanada.gc.ca/en/grain-quality/official-grain-grading-guide/11-flaxseed/primary-grade-determinants-tables.html>)

Harvest Sample Program

- The Canadian Grain Commission’s [Harvest Sample Program](#) generates harvest and export quality data on the Canadian grain crop.
- Growers who submit samples of flax seed will receive an unofficial grade in addition to the oil and protein content and the iodine value (IV) for the flax seed lot.
- This process serves to provide quality data that is used to promote the high quality of Canadian grain and to aid in the marketing of Canadian grain.
- Samples will be accepted until November 30, 2022.

3. SEED QUALITY

Flax seed lots are typically associated with dockage, but several other visual characteristics may also impact the ability to market the seed and the quality of the next flax crop if seeded. Refer to Table 2 for more information on the marketing and agronomy implications of the visual quality of your harvested flax seed.



Table 2. Impact of flax seed quality on marketing and agronomy

Visual characteristic	Cause(s)	Grading factor	Marketing impact	Agronomy impact	Solution	Other suggestions
broken	improper combine settings; seed very dry when combined	y	undesirable for food market	seed will not germinate because the embryo is damaged	can be easily removed through cleaning	large seeds and yellow seed varieties are more susceptible
chaff	improper combine settings	y	low levels suitable for food market; high dockage used for crush or feed market	may act as source of inoculum for many disease if planted with seed	easily removed through cleaning	can contribute to moisture retention when binned
cracked	improper combine settings; seed very dry when combined	y	no market impact unless cracks highly visible	seed prone to microbial attack; oil degradation during storage; reduced germ and vigour		large seeds and yellow seed varieties are more susceptible
frosted/blistered appearance	high moisture conditions at harvest		undesirable for food market		remove boll membrane to improve appearance	
germinated	high moisture conditions at harvest	y	undesirable for food market	seed will not germinate when planted		radicle is visible outside of seed
shrivelled	prematurely aborted or ripened; colonized by saprophytic fungi; drought conditions	y	undesirable for food market	seed will not germinate because the embryo has not properly formed	easily removed through cleaning	due to drought or disease
split	unknown	y	no market impact	seed prone to microbial attack; oil degradation during storage; reduced germ and vigour		occurs during maturation of seed, typically only a problem with yellow seed
weed seeds	ineffective weed control; herbicides resistant weeds; improper combine settings	y	low levels suitable for food market; high dockage used for crush or feed market	planting the seed lot will contribute to weed seedbank	some weeds seeds can be removed using a sieve	common weeds seeds are canola, mustard, cereals, wild buckwheat, cleavers, lady's thumb, wild oat; can contribute to moisture retention when binned
brown seeds in yellow seeded low or yellow seeds in brown seeded lot	improper cleaning of equipment between different coloured seed lots	y	undesirable for food market	amount of off-type seeds will increase with each generation of production	can use a colour sorter to remove	type of admixture
bicoloured seeds	unknown		undesirable for food market		can use a colour sorter to remove	
colour: blue black	Pasmo infection		undesirable for food market	reduced germ and vigour; seedling blight; boll blight; premature ripening of subsequent crop	can use a colour sorter to remove	
colour: dull black	Alternaria infection		undesirable for food market	reduced germ and vigour; boll blight; premature ripening of subsequent crop	can use a colour sorter to remove	
colour: shiny black	frost damage to immature seeds	y	undesirable for food market; produce darker oil with bitter taste	reduced germ and vigour; seed will not germinate because the embryo has not properly formed	can use a colour sorter to remove	immature seeds damaged by temperatures below -3 to -5°C
colour: dull brown	unknown		may be undesirable for food market			due to high moisture in mucilage of seed coat
colour: shiny brown	heated during storage	y	undesirable for food market; limited quantities in feed market; produce darker oil with bitter taste	seed will not germinate when planted		seed may put off heated odour
colour: grey	Pasmo infection		undesirable for food market	reduced germ and vigour; seedling blight; boll blight; premature ripening of subsequent crop	can use a colour sorter to remove	



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Useful links:

1. Seed Quality:

- [Photos of seed quality issues \(Flax Council\)](#)
- [Effect of Fall Frost on Seed Quality \(SK Gov.\)](#)
- [Seed Smart Alberta](#)

2. Grain Storage:

- [Manage Stored Grain \(CGC\)](#)
- [Grain Storage \(AB Gov.\)](#)
- [Grain Storage Considerations \(AB Gov.\)](#)
- [Grain Drying and Storage \(NDSU\)](#)
- [Drying and Storage of Damp Grain \(MB Gov.\)](#)
- [The Process of Grain Aeration \(Ron Palmer\)](#)
- [Grain Drying Calculator \(Ron Palmer\)](#)
- [Grain Drying \(NDSU\)](#)
- [Fan Selection for Grain Bins \(University of Minnesota\)](#)
- [Moisture Content of Canadian Grains \(CGC\)](#)
- [Flax Moisture Meter Conversion Table \(CGC\)](#)

3. Grain Grading

- [Official Grain Grading Guide-Flaxseed Chapter \(CGC\)](#)
- [Variety Designation List for Canada Western Flaxseed \(CGC\)](#)
- [Harvest Sample Program information \(CGC\)](#)

