

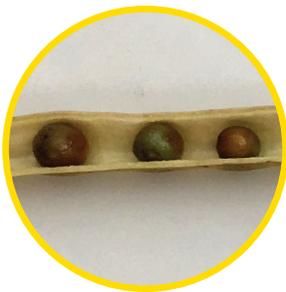
# GUIDE TO MANAGING CANOLA HARVEST

## SWATH TIMING

For optimal canola yield and quality, time swathing to at least 60% seed colour change (SCC) on the main stem of the plant.

### WHAT CONSTITUTES SCC?

Any degree of mottling or speckling contributes to the overall percentage of SCC.



*All of these seeds would contribute to the percentage of SCC, even though they have not completely turned.*

### WHAT DOES 60% SCC LOOK LIKE?

Divide the main stem into thirds and assess seeds inside pods from each third.



*Seeds from the top third of the main stem will still be green, but are firm to roll.*

### WHY WAIT UNTIL 60% SCC?

Research conducted through the Canola Production Centres in 2001 and 2002 indicated a potential yield benefit of 8% or more by delaying swathing from 30-40% to 50-60% SCC.



*Seeds from the middle third of the plant will be mostly brown, with some speckling and mottling.*

### HOW QUICKLY DOES CANOLA ADVANCE TO 60% SCC?

Seed moisture will drop at a rate of 1.3% to over 2% per day (at the low end of the range if it's cool and wet, and at the high end if it's hot and dry). To mature from the very first signs of SCC (approximately 40% moisture content) to 50-60% SCC (approximately 20% moisture content) will take 10-15 days on a normal year.



*Seeds from the bottom third of the main stem will have completely turned brown-black in colour.*

## TIP

- 1. Having trouble finding the main stem?** It tends to be the longest stem, with the most robust pod development. In plants that have extensive branching, it may not be so obvious. When in doubt, follow "the smooth side of the stem" to the main stem. At each node, a slight bump or protrusion will be felt, while the opposite side will be smooth. Starting from the bottom of the plant, move your finger upwards following the smooth side until you've reached the last remaining branch – the main stem.
- 2. Threshing loss potential:** threshing losses in canola, whether swathing or straight cutting, can be substantial. Always ground truth loss monitors in combines to ensure losses are acceptable.

# MANAGING FALL FROST EVENTS

Regardless of the season zone on the Prairies, the risk of a fall frost prior to the maturity of the canola crop is a reality in any given year.

## WHAT IS A KILLING FROST?

The severity of frost damage is dependent on the duration of the frost, how cold the temperature gets and the stage of the canola crop at the time of frost. Temperatures below 0°C are likely to cause damage to pod material and could cause damage to immature seeds, depending on the length of time below this temperature threshold. Significant seed quality deterioration can occur at temperatures of -4°C or lower (in seeds with higher moisture content).

## WHAT ARE THE EFFECTS OF FROST?

Frost events can lock in green seed. This green seed is unlikely to drop an appreciable amount over time. Frost events can also lead to substantial pod splitting, similar to that of a hail event.



*The canola in this photo has white speckling on the outside of the pods. This is indicative of light frost damage that is unlikely to cause substantial pod splitting.*



*Pods can start desiccating and splitting open within the day after a severe frost event.*

## WHEN IS CANOLA SAFE FROM THE EFFECTS OF FROST?

A canola crop that contains less than 20% overall seed moisture is typically safe from the effects of frost. **20% seed moisture roughly corresponds to 50-60% SCC.**

## SWATH IT OR LEAVE IT? WHAT TO DO AFTER A FROST EVENT?

Wait four to six hours (or the next morning) after a frost event to assess the damage. If damage is minimal, or light, assess again in the afternoon and following days.

The goal of swathing after a frost is to limit the speed and degree of desiccation of affected pods, thereby reducing yield loss from shattering. **Swathing immature canola following a frost will not reduce the number of green seeds.**

- **Is there 50-60% SCC or more on the main stem?** There will be no yield loss from swathing in this scenario. If pod shatter losses are a concern, swath as soon as possible. If they are not, try to wait until the recommended straight cutting time (10% moisture or less).
- **Is there 10-50% SCC on the main stem?** The lower the percentage of SCC, the more probable that the losses from swathing will be greater than those from pod shatter in a standing crop. Choose the operation that minimizes losses.
- **Is there less than 10% SCC on the main stem?** The yield losses from swathing at this stage will definitely surpass the yield loss from shattering pods. Let this crop stand to mature further before swathing.

## SWATHING BEFORE A FROST IS A GAMBLE

If there is limited SCC on the plant, it could take three days or more in a swath to drop the seed moisture to 20%. Swathing is a better option for crops that already have a degree of SCC, where yield loss from early swathing will be limited.

## ADDITIONAL RESOURCES FOR MANAGING CANOLA HARVEST

- Spray to Swath Interval Calculator for determining pre-harvest interval of canola pesticides: [spraytoswath.ca](http://spraytoswath.ca)
- Timely, unbiased and research focused agronomic information: [canolawatch.org](http://canolawatch.org)
- Western Canadian canola variety evaluation results, including straight cut trials: [canolaperformancetrials.ca](http://canolaperformancetrials.ca)
- Combine Optimization Tool: [canolacalculator.ca](http://canolacalculator.ca)
- Canola Seed Loss Guide: [canolacouncil.org/links/seedloss](http://canolacouncil.org/links/seedloss)

# STRAIGHT CUTTING CANOLA

Straight cutting can offer both benefits and drawbacks, depending on each grower's operation. It can be used as a tool to manage logistics at harvest, reduce labour, time and equipment requirements, and capture more yield, while it can also slow down the harvest operation and require an additional in-crop application.

## CAN ANY FIELD BE STRAIGHT CUT?

Shatter tolerant varieties allow more flexibility in field characteristics and reduce the critical nature of harvest. It is possible to successfully straight cut standard varieties, but you need to consider that shatter losses on the header will increase, timing of the harvest operation becomes more critical, and more careful evaluation of field characteristics is needed. An **evenly matured, dense and well-knit canopy with good pod integrity** (limited physical or pest damage) is critical for success.

## IS A PRE-HARVEST AID NECESSARY?

Canola can be successfully straight cut without, but a pre-harvest aid can facilitate the harvesting operation by aiding in plant material dry-down. Refer to product labels for recommended use patterns.

	HEAT LQ (SAFLUFENACIL)	DIQUAT PRODUCTS	GLYPHOSATE
<b>Crop stage</b>	75% SCC	90% brown seed*	50-60% SCC
<b>Speed of dry-down</b>	In between that of glyphosate alone and diquat.	Combine 4-5 days later, no more than 14 days.	Similar to swath timing. 7-21 days after application.
<b>Goals</b>	Faster dry-down than glyphosate alone of any herbicide-tolerant canola.	Very fast dry-down of green plant material of any herbicide-tolerant canola.	Perennial weed control. Managing some unevenness in maturity of non-glyphosate tolerant canola.
<b>Product notes</b>	Recommended to be applied with glyphosate.	Not recommended for use in unevenly matured crops. Early application can lock in green seed.	Plant dry-down efficacy is very weather dependent and can be very limited.

\*Brown seed refers to all seeds on the plant that have completely turned brown or black (whereas SCC percentage only refers to seeds on the main stem, and includes seeds with any degree of speckling/mottling through to full maturity).

## WILL HARVEST BE DELAYED?

This depends on the expectation of "readiness", as characterized by factors such as:

- **Pod dry-down** – Unless harvest timing is becoming critical, achieving pod dry-down should be the primary goal. Seed moisture may be acceptable while green, leathery pods remain. These pods are likely to pass through the rotor intact.



Green pods remain in this standing crop. More time is needed for further dry-down.

- **Acceptable seed moisture** – It can be reached while pods and stalk material are still quite green and high in moisture. The harvest operation is possible, but capacity and overall harvesting efficiency could be limited.
- **Stem dry-down** – Complete stem dry-down, as one would expect for a swathed crop, may not occur every year (but harvest can still be successful). Use of a pre-harvest aid/desiccant can successfully hasten dry-down and even dry the stem material as fast as swathing, but results are not consistent from year-to-year based on environment.

## CAN ANY HEADER BE USED TO STRAIGHT CUT?

Research conducted by Prairie Agricultural Machinery Institute concluded that all headers tested could be used to successfully straight cut. While there were differences in ease of operation and small differences in loss, the largest predictor of loss along the header was the degree of shatter tolerance in the variety.

## COMBINE SETTINGS

The characteristics of a standing crop can be distinctly different from that of a windrowed crop. As a result, combine settings may be quite different in each situation. For example, the cleaning system may be the limiting factor in a dry, swathed crop, but the rotor is more likely to be the limiting factor in a straight cut crop.