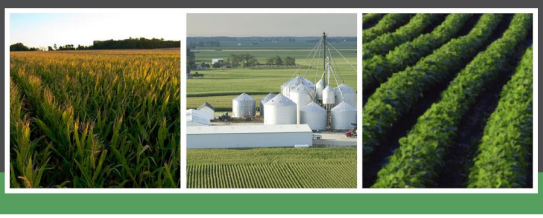

Agronomic Spotlight

Canola Harvest Options

- Due to the risk of pod shattering, planning for canola harvest should begin before the crop is ripe.
- There are four canola harvest methods for consideration: direct combining, swathing, pushing, and desiccation.
- Canola is ready to harvest when seed moisture is between 8 and 10 %.

Planning for canola harvest should begin before the crop is ripe since the crop is prone to shattering. The longer a ripe canola crop stands in the field, the greater the risk of shattering by wind and severe weather. Yield losses ranging from 5 to 75% can be caused by severe weather, therefore when canola is ripe it should be harvested in a timely fashion.[1]

Most of the canola grown in the Northern Great Plains and Canada is swathed prior to harvest due to the need for accelerated uniform dry-down.[2] However, with warm, windy conditions of the Southern Great Plains, direct combining is the most common method for harvesting canola for that area.[3] Swathing can still be an option for southern areas when risk of pre-harvest shattering is high.

Canola is ready to be harvested when seed moisture content is between 8 and 10%.[1] There are four harvest/preparation methods that can be considered for canola harvest and include: direct combining, swathing, pushing and desiccation.

Direct Combining

Direct combining is most successful when the crop matures evenly and crop density is uniform. A thin stand may lead to more branching and pods on younger branches maturing later, resulting in less uniform ripening. Direct combining works well when the crop is relatively heavy, tall, partially lodged or with pods "laced" together. These conditions reduce the risk of pod drop and pre-harvest shattering.

Canola should be cut just below the seed pods, which reduces the amount of green material entering the combine. The effects of shattering by the combine header can be reduced by setting the reel as far back over the grain table as possible. The reel speed should match ground speed and be placed just far enough into the seedpods to lightly pull the crop onto the grain table. Compared to combining wheat, direct combining canola is at a slower speed.

Start with the settings for rapeseed or canola in the operator's manual. Adjustments should be made based on what is coming out the back of the combine. Check for grain losses ahead of the combine (shattering), behind the header (header loss), and behind the combine (tailings). Always refer to the manufacturer's operating manual before performing any adjustments.

Harvest should begin based on seed color and seed moisture content. Waiting until all seed pods are brown and dry may result in potential yield loss. Do not wait until the stems dry down to begin combining. Since canola seed is small, it may be useful to have a roll of duct tape or caulk available to plug holes in combines and trucks.

Advantages of direct combining include:

- One-pass harvest using the same equipment as wheat harvest.
- Can harvest during hot, dry conditions and still maintain high-quality seed.
- Usually results in the highest quality, oil, and potential seed yields.
- Decreased risk of diseases or poor drying and maturing, which potentially may result in swathed canola.

Disadvantages of direct combining include:

- The crop should be harvested when it is ready. Wet fields or inclement weather may delay harvest.
- The risk of seed pod shattering from high winds or severe storms is greater the longer the mature crop stands in the field.

Swathing

Swathing is generally implemented in cool areas where dry-down may be slow. A pull-type (Figure 1) or self-propelled draper swather should be used; do not use a swather with a crimper. The process begins by cutting the crop just below the seed pod area so adequate residue remains to hold the windrow above the ground and increase airflow for ripening. Later the swaths can be harvested with a combine equipped with a pickup header (Figure 2). Depending on drying conditions combining may occur about 7 to 14 days after swathing or until seed moisture content is 8 to 10%.[1,3]

Figure 1. Swathing canola with a roller. Photo courtesy of M. Stamm, Kansas State University.

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Canola Harvest Options

Seed color change is used to determine when canola is ready to swath (Figure 3). When the crop is between 40 to 60% seed color change with 30 to 40% seed moisture content; is the optimum time for swathing.[1,3] Consider swathing during the cooler morning or evening hours, which allows the seed to dry down at a slower rate. Swathing may allow canola harvest to occur 7 to 10 days earlier compared to other harvesting options. Advantages of swathing canola include:

- May be the preferred harvest method for fields with thin stands that have uneven maturity.
- A properly swathed windrow may withstand higher wind storms than standing canola.
- Earlier harvest which may increase the potentisal for double-cropping in some geographies.

Figure 2. Combine with pick-up header used for swathed canola. Photo courtesy of M. Stamm, Kansas State University.

Figure 3. Canola pods with various seed colors.

Disadvantages of swathing canola include:

- Additional equipment and a two-pass harvesting process.
- Potential yield and oil content may be reduced because the stems are cut prior to grain fill completion. However, swathed canola has lower risk for yield losses due to shattering and wind damage when compared to standing canola.
- Light, fluffy field windrows can be picked up and blown by the wind.

Pushing

A canola pusher is a convex shield mounted on the front of a tractor. The goal is to lean or "push" the plant over (forced lodging), but not resulting in a kink or pinch in the canola stem, therefore allowing grain fill to continue. Canola plants that have been pushed lay about 1 to 2 feet from the soil surface and are held in place by other plants. The result allows for airflow around the plant and continued seed ripening. A standard combine header may be able to be used for combining, but the header width should match the width of the pusher.

Advantages of pushing include:

- The grain continues to fill and may have a higher potential yield and seed quality when compared to swathing.
- Best for tall, dense canola crops.
- Pushing can be accomplished with less expensive equipment and in less time compared to swathing.

Disadvantages of pushing include:

- Canola pushing does not increase the ripening process.
- Harvesting is slower because more material goes through the combine.
- Canola must fully ripen before combining, increasing the risk for shattering.
- Harvesting takes place low to the ground surface level, generally leaving the least amount of standing stubble when compared to other harvesting methods.

Desiccation

Herbicides can be used as a desiccant prior to harvest to even out maturity differences within a field, stop growth when excessive lodging exists, and control weeds. Desiccation should take place when 85% of the seed on the main stem has turned color from dark green to reddish-brown, brown, or black. Always follow pesticide label directions.

Generally, any canola that is run over from ground herbicide application will be lost. However, desiccation can be a viable option when conditions are not favorable for swathing or pushing, and the standing crop needs to be harvested promptly.

Summary

Selecting the right seed product for an individual field is an important factor to maximize yield potential. Also choosing a product that improves harvestability can be a selection criteria. Today, technologies are available to add both harvest and agronomic attributes to canola seed products, including **shatter tolerance**. Consult your agronomist or sales representative for more information about selecting the right product and technologies for your fields.

The decision on choosing a canola harvest method is influenced by the area's climate, tolerance to risk of shattering and lodging, stand density, availability of equipment, and overall harvesting costs. A single harvest method is not ideal for all field situations.

Sources

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