When to Seed Canola

Seeding Canola:
The Ideal Timing

One of the key decisions that affects the final yield of a canola crop is seeding date. Although there has been considerable interest in fall seeding, research shows that early spring seeding offers more consistent benefits than fall seeding. While the maximum potential yield of a canola crop may be reached by earlier seeding, many factors must be balanced when making the decision when to start seeding. Some of the factors to consider include soil temperature and frost concerns. In addition, early seeding dates may change the management of different weeds, insects and diseases compared to later seeding dates.

Potential Benefits of Early Spring Seeding

Four benefits of early seeding are:

- The crop is out of the ground at or before warm season weeds get going.
- The crop can reach maximum leaf area while day lengths are moving toward the June 21 peak.
- The crop flowers in the early part of summer, hopefully avoiding hotter mid- to late-summer temperatures. High temperatures can cause flowers to blast or abort, reducing yield.
- The crop can mature before early fall frosts.

The above benefits can improve the chances of a higher yield and good quality.

Canola Production Centre Results

Six years of seeding date trials were conducted by the Canola Council of Canada's agronomists at Canola Production Centres (CPCs) across western Canada (Table 1). The Centres have amassed 26-station years of data on seeding date. Since the trials were conducted with field-scale equipment on farm fields, the management situations the agronomists faced are identical to those growers face.

The trials consisted of:

- 'Early seeding' – sown at or before seeding became general in the area.
- 'Normal seeding' – sown at the same time seeding became general in the area.
- 'Late seeding' – sown seven to 10 days after seeding became general in the area.

The results show that early seeding of canola had a significant benefit for both yield and oil content. The following is a summary of what the agronomists found:

Early Seeding

- Average seeding date was May 6 (plus or minus five days in 90% of the trials).
- Yields were the highest seven times out of 10.
- Oil contents were the highest.
- Swathing was earliest for the early-seeded treatments.

Normal Seeding

- Average seeding date was May 18 (plus or minus six days in 90% of the trials).
- Yields were 94.5% of the early-seeded canola and were the highest only three times out of every 10 trials.
- Oil contents averaged 0.25% lower than early-seeded canola.
- Swathing began an average of eight days later than the early-seeded canola.

Late Seeding

- Average seeding date was May 27 (plus or minus eight days in 90% of the trials).
- Yields were 88.4% of the early-seeded canola.
- Oil contents averaged 0.87% lower than early-seeded canola.
- Swathing began an average of 19 days later than the early-seeded canola.

TABLE 1 **Canola Production Centre Seeding Date Trials 1998–2000**

Timing	Average seeding date	Yield (% of early seeded)	Odds of this treatment giving the highest yield	Oil content (% oil versus early seeded)	Extra days until swathing commenced
Early-seeded	May 6	100.0%	70%	–	–
Normal-seeded	May 18	94.5%	30%	0.25% less than early-seeded	Eight days later than early-seeded
Late-seeded	May 27	88.4%	0%	0.87% less than early-seeded	19 days later than early-seeded

The trend:

Early seeding pays...

The results clearly show that early seeding impacts both yield and quality. The difference in yield between early seeding dates and normal or late seeding dates ranges from 5% to 12% when all data are averaged. Even more significant, the early seeding treatments out-yielded later seeding treatments about 70% of the time.

Observations made by the CPC agronomists reinforce the theory surrounding early seeding.

Agronomists noted in some cases:

- Less blossom blast in early-seeded versus late-seeded canola (Lethbridge, 1997).
- More aggressive weed competition from canola seeded early versus late (Whitewood, 1997).
- Better use of early season moisture by early-seeded canola versus late (Unity, 1997).
- Dramatic grade losses in some of the late-seeded treatments. For example, in 1996 in Grande Prairie, AB late seeded canola attained a #3a Grade while the early seeded material attained a #2 Grade.

...but caution is advised.

It is important to note that weather and management problems can negatively impact early-seeded canola, leading to a lower yield than later-seeded canola.

The problems encountered by the agronomists (in early-seeded crops) included:

- heavy early insect infestations,
- ponding or soil crusting, and
- slow emergence due to cold soil and frost damage.

Close attention must be paid to weed and disease problems that may occur earlier than later-seeded crops.

Few management practices in agriculture deliver this kind of benefit across this range of years and geographies with this consistency.

Still, the overwhelming evidence shows that early seeding pays.

A Summary

Seeding Date Recommendations

Here are the considerations when planning a canola crop seeding date:

- Seed as soon as frost risk for your area has declined. Canola can tolerate some frost damage, but there are limits to what the crop will withstand. If frost destroys the growing points of the canola seedlings, the plants will die and re-seeding may be necessary. Frost can also be greater in minimum or zero-tillage situations, since the soil is often cooler and less able to buffer cold air temperatures.
- Plan your seeding date based on the maturity of the variety to be planted. While seeding as soon as possible will reduce the risk of fall frost damage for any variety, those varieties requiring more days to mature will still be at greatest risk. Therefore, early seeding may be more critical for these varieties.
- Be prepared to initiate weed and disease control early! Late applications of these inputs will erase any potential gains.

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