



Early Seeding Tips

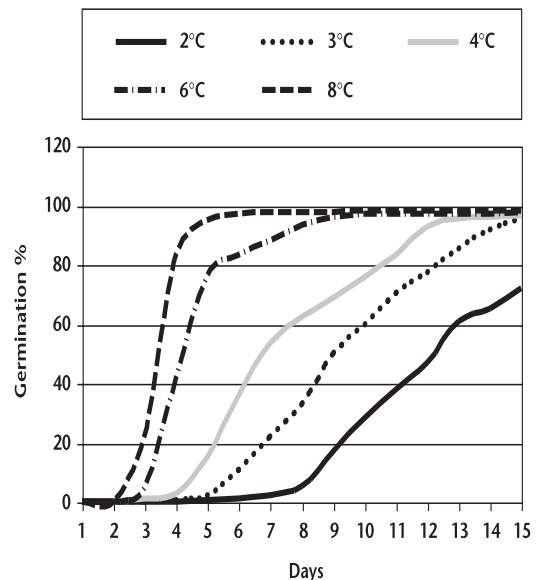
Planning on seeding early to avoid a repeat of last fall's frost damage? Or maybe you want your crop to take advantage of good spring moisture and avoid some heat stress at flowering time. Then consider these tips for seeding early to help ensure your crop performs well.

First of all, consider:

- Geographic area. Remember that there's usually a greater advantage in southern areas of the Prairies because they tend to be warmer and drier.
- Local weather history. Check the typical date of last killing spring frost for the region.
- Date on the calendar must be weighed against other factors such as soil temperature. Seeding into soils that are too cool can add significant stress to seedlings without much potential yield benefit. However, delaying seeding into the end of May or early June almost always reduces yield. The key is to maximize day length for the developing plants to achieve higher yield and quality potential.
- Soil type. Soils will vary in their ability to hold moisture and their potential for crusting problems.
- Seed treatment. Be aware of the level and duration of protection.

TO DO List For Successful Early Seeding

- Check soil temperature. Early plant development is dependent on soil temperature. Soil temperatures of 10°C or higher are ideal for rapid germination, but not always practical when seeding large acreages. However, ensuring soil temperatures are at least 4-5°C will allow the bulk of the seed to germinate reasonably quickly (Figure 1). Determine average soil temperature by taking readings at the 1" to 2" depth at 8:30 am and again at 3:30 pm over several days.





- Avoid deep seeding. Having the crop out of the ground as quickly as possible reduces exposure to soil-borne diseases and prevents weeds from getting a competitive edge on the crop. Seed 1/2" to 1" deep, keeping the seeding depth constant maintaining good seed-to-soil contact for rapid, even emergence.
- Consider hybrid canola. Hybrids tend to have better vigour and more stress tolerance.
- Use large seed. Large seed will handle stress better than smaller seed. Seed size affects seeding rate as well as mortality. Seed size is measured as thousand seed weight in grams.
- Use clean, certified seed. Ensure a true-to-type crop with known performance characteristics.
- Include a seed treatment. Fungicide seed treatments reduce seed-borne blackleg and alternaria black spot and also help prevent seedling diseases. Insecticides also provide protection against flea beetle damage, but the level of protection depends on prior flea beetle pressure and length of time seed takes to germinate and develop adequate biomass.
- Seed 'slow'. A slow seeding speed will ensure uniform seed distribution and emergence, along with proper fertilizer separation in single-pass seeding systems. There can also be economic benefits, as shown in the example below, taken from a trial conducted by Bayer CropScience Canada Inc. Although this is only one years' worth of data it does show what can happen in certain field situations

Seeding Speed	Plants/m ²	Plants/ft ²	% of 5.0 MPH
4.0 mph	82	9	109%
4.5 mph	80	8.5	107%
5.0 mph	75	8	100%
5.5 mph	58	6	77%
6.0 mph	50	5.5	67%
7.0 mph	47	5	63%

Compare 5 mph vs. 5.5 mph. At 50% emergence, an increase in speed of 1/2 mph will use an extra 1.5 lbs/ac seed to achieve the same plant population. At \$4.00/lb for seed, that extra 1/2 mph costs an extra \$6.00/ac!

- Aim for a targeted plant stand. To establish a plant stand in the range of 7-14 plants/ft² for optimum yields, seeding rate could range from 5-10 lb/ac depending on your region. Target plant stand by using the following formula:

$$(9.6 \times \text{plants/ft}^2 \times \text{TSW (g)}) \div \% \text{ survival} = \text{Seeding Rate (lbs/ac)}$$

Why target 7-14 plants/ft² by 21 days after emergence? Adequate plant stands can improve yields and returns by:

- buffering the effect of flea beetles by spreading insect feeding over a greater number of plants;
- cushioning the impact of spring frost or diseases by allowing some plant mortality without an immediate effect on yield potential;
- allowing plants to mature more quickly with less variability thereby reducing risk of fall frost damage; and
- making it easier to judge time of swathing.

Remember to delay plant counts until after the first application of herbicide, which may remove some non-herbicide tolerant volunteers.

Check: www.canola-council.org/growing_publications.html. Look for Canola@Fact "Factors Affecting Canola Survival from Seeding to 21 Days after Emergence".