

# Delayed Seeding & Wet Soils

May 2022

## Impacts of Delayed Seeding

Cold, wet springs with repeated rain and snowfall events can dramatically impact planned seeding operations. As fields dry and can support seeding equipment, farmers should know how to best prepare for outcomes of later seeding dates. Management of land preparation, crop choices, fertility management, crop maturity, and yield expectations should all factor into decision-making

## Land Preparation

Cold, wet soils, if not allowed to drain and dry, will delay planting, and slow crop emergence. Planting when soils are too wet is not advised, regardless of the date, as it can lead to severe soil compaction. Yield reductions from "mudding seed in" may be much greater than those resulting from a slight planting delay. Seed too early, and seed shock from cold soils will increase, as will the risk for *Pythium*, *Rhizoctonia*, and *Phytophthora* seedling diseases. Some tillage may be used to prepare and dry up seedbeds for seeding equipment. The concern with deep tillage is bringing up clods and impairing the seedbed, while shallow tillage via harrowing or vertical tilling is often insufficient for adequate fertilizer incorporation.

## Crop Choices for Better Performance

Longer-season crops will use more moisture in-season, but delayed seeding impacts crop maturity. Among cereals, oats are more tolerant to wet soils than wheat, followed by barley. Flax is better suited to wetter soils (due to shallower roots) than canola, and sunflowers are more water-tolerant than corn.

Table 1 shows relative suitability and salinity tolerance of certain crops to soil textures under imperfectly

**Table 1: Relative crop suitability under imperfectly drained and/or saline conditions, summarized by texture.**

Crop Type	Coarse (Sand)	Medium (Loam, Clay Loam)	Fine (Clay)	Salinity Tolerance
<b>Soybean</b>	S*	S	S	Weak
<b>Field Bean</b>	S*			Weak
<b>Pea</b>	S	S		Weak
<b>Corn</b>	S	S		Weak
<b>Canola</b>	S*	S	S	Moderate
<b>Flax</b>	S*	S	S	Moderate
<b>Wheat</b>	S	S		Moderate
<b>Oat</b>	S	S		Moderate
<b>Sunflower</b>	S	S	S	Moderate
<b>Barley</b>	S	S		Moderate

\*Suitable in wet years, moisture challenges in dry years.

Bedard-Haughn, A. 2009. Managing excess water in Canadian prairie soils: A review. Can. J. Soil Sci. 89: 157-168.

drained conditions. Consider using seed treatments to protect against early root infection for crops sown into damp soils.

## Fertility Management

Wet soils are prone to unintentional fall-applied fertilizer losses from denitrification of nitrate (NO<sub>3</sub><sup>-</sup>) or leaching/runoff. Consider re-testing your soil to better gauge crop nutrition requirements ahead of the growing season. Under saturated conditions with soil temperatures above 5°C, soils can lose 2 to 4 lbs of available N per day, doubling with every 10°C rise in soil temperature. See the *Other Resources* section for more information.

## Crop Maturity

Delayed seeding may mean an elevated risk for fall frost. Annual crops require between 60 to 140 days to reach physiological maturity. The [average frost-free length](#) in Manitoba varies by ecozone, as does the [date of first fall frost](#). Crops planted the third week of May can expect to have on average only 99 frost-free growing days in MASC Risk Area 15 (North Interlake), compared with 106 days in Risk Area 12 (Red River Valley). Consider selecting crops with a [shorter maturation period](#) than your frost-free climate window.

## Yield Expectations

Crop yield expectations are highest with seeding dates in the first half of May, but nearly all crops retain high yield potential (over 70% of average) until June 1. Manitoba farmers can generally plant 25% of their entire crop each week, under favourable conditions. Seeding date is not as critical a yield factor component as placing the seed into good soil conditions, and not excessively compacting soil, leaving clods, or having poor singulation and placement. Mitigate yield loss concerns due to seeding date by selecting earlier maturing crops or hybrids that can ripen prior to a killing fall frost.

## Other Resources

Manitoba Agriculture specialists have put together several new fact sheets on topics related to seeding issues, wet soils, and crop production topics. Visit [www.gov.mb.ca/agriculture/crops/seasonal-reports/current-crop-topics.html](http://www.gov.mb.ca/agriculture/crops/seasonal-reports/current-crop-topics.html) for more detailed information, or click the individual links below.

- [Early Seeding Considerations](#) – Understand minimum germination temperatures for various crops
- [Impact of Spring Flooding on Soil Fertility](#) – A new factsheet on understanding fertilizer behaviours
- [Fertilizer Considerations in a Wet Spring](#) – Analyzing 4R strategies and opportunities
- [Mitigating Risks of Delayed Seeding](#) – Utilize seeding date data to understand yield impacts

## Contact Us

This factsheet was developed by the Manitoba Agriculture Oilseed Specialist.

For more information, contact the department:

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