



## Agronomy Update | Early Season Considerations: Cereals

Early season decisions set the trajectory for yield potential in wheat, barley, oats, and other Prairie cereals. Timely weed control, informed seeding timing, proper seeding rates, and an understanding of early season environmental risks are essential for establishing a strong, competitive stand.

### Importance of Early Weed Management

Weeds emerging before or with the crop are the most damaging, as they compete aggressively for moisture and nutrients and may act as hosts for insects and disease. Controlling weeds at the smallest possible stage increases herbicide performance and protects early cereal growth. Pre-seed burnoff should employ multiple effective modes of action to reduce the risk of resistance selection. Always check re-cropping restrictions when selecting residual products.

**- 3% YIELD**

*Research shows that every day wild oats emerge ahead of the crop can reduce yield by approximately three percent, underscoring the economic importance of timely control.*

### Prioritizing Fields

Fields destined for cereals with high wild oat pressure or significant winter annual populations should be sprayed first. Avoid long gaps between pre-seed burnoff and seeding, as weeds emerging during this window gain a competitive edge and cause more yield loss than weeds emerging later. If the pre-seed burnoff window is missed, consider a post-seeding application **prior** to crop emergence.

### Seeding Temperatures for Early Season Success

Cold soil temperatures pose a significant risk to early seeded cereals. Germination and emergence slow under cold conditions, increasing exposure to seedling diseases and frost.

### Minimum Germination Temperatures by Crop<sup>2</sup>

WHEAT	BARLEY	OATS	CANOLA	FLAX	PEAS	CORN
4°C	4°C	4°C	5°C	9°C	4°C	10°C

Research from Alberta and Saskatchewan indicates that spring wheat achieves optimal performance when seeded into soil temperatures between 2 °C and 6 °C, allowing for ultra early establishment that avoids late season heat stress while still maintaining uniform emergence if conditions warm steadily. Measuring soil temperature over several days at target seeding depth provides a more accurate representation of field readiness. Morning and evening readings help determine the daily average.

## **Higher Seeding Rates Improve Competitiveness**

Alberta research demonstrates that higher seeding rates improve crop competitiveness by reducing weed biomass and limiting the weed seedbank. Crop competition is a core component of integrated weed management. A dense, uniform stand shades soil faster, reduces weed emergence, and enhances nutrient uptake efficiency.

## **Impact of Cold Soil on Establishment**

If seeding into cooler soils, consider increasing the seeding rate slightly to compensate for increased seedling mortality and slower emergence. Uniform stands are more difficult to achieve under suboptimal soil temperatures. Seed treatments are recommended when cereals are seeded into cold or wet conditions due to increased risk of seedling disease and root rots.