

Planting into dry seedbeds

When faced with dry conditions, the following should be taken into account:

Timing of Seeding

Observe recommended planting dates as closely as possible. Late planting can result in lower yields.

Field Preparations

Avoid excess tillage prior to planting. If a pre-seed fertilizer pass is required, limit soil disturbance with knife-point or minimum angle disc openers, rather than a broadcast and harrow or vertical till operation.

Pre-Emergent Herbicides

Dry soils prior to seeding also reduce winter annual and spring weed growth. Weeds that do grow will have smaller surface area and a thicker, waxy cuticle to withstand dry conditions, and may be less susceptible to a burnoff herbicide. Use the maximum amount of surfactant allowed by the label to help offset this. Perennial weeds have established root systems that can access subsoil moisture, and can thrive in a dry spring, especially if weed control and/or tillage was skipped last fall due to dry conditions. Watch that these don't get away on you and use up valuable water and nutrients. Soil-applied products often require rainfall to activate, so be prepared for delayed activation should a minimum rainfall amount be achieved. Monitor moisture forecasts when applying a pre-emerge residual product and consult product manufacturers to plan for these products to work effectively.

Seed Treatments

Evaluate the risk for seedling disease based on field conditions. Corn and canola are commonly pre-treated, while seed treatments on cereals and soybeans are optional. Earlier sown crops benefit more from a seed treatment than crops sown into warm soils later in May. The pathogen most likely to take hold in dry soils is *Rhizoctonia solani*. In broadleaf crops it can cause wirestem or damping-off once plants have emerged. Most seed treatments should be effective against *Rhizoctonia*. If seeds are already in the ground and it became wet and stayed cool, water-moulds, particularly *Phythium*, may attack primary roots. Seed treatments that contain the active ingredient metalaxyl (group 4) are the most effective against *Phythium*. Untreated seeds might succumb to pre-emergence damping-off.

Fusarium fungi are a potential threat in any moisture situation, dry or wet. The longer the seed takes to emerge, due to cold soils, the greater the chance of *Fusarium* root rots. In cereals, common root rot (*Cochliobolus sativus*) is another seedling disease that warrants a seed treatment. Check product labels for effectiveness – some only claim suppression, rather than control.

Fertilizer Application

Understand that dry seedbed conditions equate to increased risk of seedplaced fertilizer injury. Avoid

placing nitrogen with the seed. Reserve seed placement for starter phosphorus (P) rates, applying higher maintenance P amounts in side or midrow bands. Alternatively, nitrogen and sulphate-sulphur fertilizer may be top-dressed in season.

Planting Depths

Planting depths vary between crops, and some crops can handle being planted deeper than ideal in order to reach moisture. Planting into dry soils and deep planting may result in reduced and variable emergence.

Crop	Planting Depth	Comments
Wheat and Oat	1.5-3"	Place seed only deep enough to reach moisture.
Barley	1.5-2"	Planting deeper than 2" is not recommended.
Corn	1.5-2" ideal, can plant at 3" deep to reach moisture	Planting deeper than 2" may result in delayed emergence if soils are cold.
Canola	0.5-1.25", ideally at 1"	Don't chase moisture by planting deeper than 1.25". Uneven placement into moisture can result in more problems regarding crop staging and harvest.
Flax	1-1.5"	Sow flax prior to the third week of May. Flax needs warm soils to germinate, about 9°C.
Sunflowers	1.5-2" ideal, up to 3" deep in lighter soil	Uniformity of depth is important for crop staging and competition.
Peas	1.5-2"	Peas should be planted into moisture
Soybean & Drybean	0.75-1.5"	Planting down to 2" is not recommended. Deep planting can result in delayed and uneven emergence.

In-Crop Herbicide

If dry soil conditions continue, a good weed control program will help conserve soil moisture for the crop.