

How are Dry Conditions Affecting Crop Development?

Adequate levels of precipitation are important to maximize crop production. Dry soil conditions were seen throughout Manitoba this spring and continue to persist in some areas. Although most areas received precipitation by the end of May, amounts have been variable and some areas of Manitoba are in need of additional precipitation to aid in crop growth and development. Producers in areas that have received little rainfall are seeing the effects of dry soil conditions on their crops, including stunting, wilting, and crops that are either skipping or moving very quickly through growth stages. Cool season crops such as cereals, canola, and peas generally start growing and using moisture earlier in the season than warm season crops and therefore may see the effects of drought stress sooner.

Cereals

Spring and winter cereals are most sensitive to water stress at tillering and anthesis. Drought stress early in the season causes leaves to stop expanding, and tiller buds will remain dormant. Drought stress at anthesis results in low kernel numbers and kernel weight. In general, drought stressed cereals will move through crop development stages faster than those not experiencing drought stress. Drought stressed cereals typically have a shorter vegetative phase and an earlier flowering time, so in drought stressed conditions don't be surprised to see cereals heading earlier than usual.

Canola

Dry soils and inconsistent seed-to-soil contact resulted in non-uniform crop emergence. Fields seeded in the first two weeks of May have had more issues with uneven emergence than those seeded later, due to precipitation later in May. This is especially true in lighter textured soils where adequate moisture to ensure even germination was lacking. Uneven soil moisture and in some cases deep planting to place seed into moisture have resulted in a situation where growth stage ranges from cotyledon to three leaf stage in some fields. Crops that were seeded later in May, or at shallower depths (less than 1.25") have had more success in uniform germination. In addition, later seeded crops have avoided some of the early flea beetle infestations.

Dry conditions have contributed to canola crops putting more effort into developing a stronger root system to access soil water held deeper in the soil profile. This has caused reduced above-ground tissue development, and in cases where extensive flea beetle feeding has occurred, has caused those crops to be set back. Under drought stressed conditions, canola will generally not produce as many leaves as in a typical year, and early-onset flowering tends to occur. Premature bolting is a visible indicator of drought stress. Since most canola crops are just beginning to form rosettes during the first week of June, premature bolting is not expected at this point.

Peas

As with cereals and canola, dry conditions can result in field peas moving through growth stages very quickly. Pea is more sensitive to water stress during flowering and pod fill than the vegetative state, but with dry conditions field pea may have reduced vegetative growth and flower earlier than normal. Field peas have similar moisture requirements to cereal grains, but do vary in drought tolerance. Indeterminate varieties are more adapted to dry conditions than determinate, semi-leafless varieties, which are more adapted to wetter regions.

Continue Monitoring

Although the rain received has been very important to get the crops off to a good start, it is important to continue monitoring as there are large areas of Manitoba with dry soil conditions. More information on soil moisture conditions and accumulated precipitation can be found in the [weekly maps section](#) of Manitoba's ag weather program website.