Weed Control Advice for Dry Conditions – Frequently Asked Questions

Should I wait for more weeds to emerge?

No. Early weed removal is recommended, especially in thin crop stands that are less competitive.

Different crops have different critical weed free periods. During this time, it is important to minimize weed competition to maximize yield potential, reduce use of soil moisture and nutrients. As well, smaller weeds are usually easier to kill (just not too small). The herbicide label is important for the appropriate crop stage, but also for weed size, so read carefully.

The longer that a weed grows within the crop, the greater the yield loss. The larger the weed when the crop emerges, the greater the speed at which crop yield is reduced due to resource competition. Some weeds, such as C4 pathway weeds, e.g. redroot pigweed or green/yellow foxtail grow rapidly in hot weather, as compared to most crops such as wheat, barley and canola. So the earlier they are removed, the better.

Crop	Critical Weed Free Period
Spring wheat	1 to 3 leaf stage
Canola	2 to 4-6 leaf stage
Soybean	Emergence to 3rd trifoliate leaf
Corn	3 to 10 leaf stage

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What happens when plants are moisture/heat stressed?

Crop injury and decreased weed control are both possible in dry and hot conditions.
Plants may develop a thick wax layer on the leaf surface (lamb's quarters is the prime example) which is a barrier to herbicide absorption. Moisture stress will also result in smaller leaves and shorter stems, which means smaller targets to aim for with herbicide.

If the plant is not actively growing, herbicide movement in the plant is usually reduced, due to slower rates of translocation and metabolism. Slower rate of metabolism may mean increased crop injury for herbicides where differential rates of metabolism are how weed control is achieved.

Manitoba

Contact herbicides may cause more crop injury at high temperatures as well. When temperatures are above 25 degrees celcius, many contact herbicides show increased activity in all plants, which may mean crop injury along with improved weed control.

Low relative humidity, similar to other forms of moisture stress, combined with high temperatures will result in thicker plant cuticles and decreased herbicide activity. High relative humidity combined with heat is quite the opposite, this would enhance herbicide penetration and translocation within the plant, which can lead to herbicide injury in the crop.

What is the best time of day to spray?

The first goal in timing a spray application is to avoid the heat of the day. When plants are stressed, plant leaves reduce over heating and excessive water loss by curling/rolling (e.g. corn) or by wilting (angling their leaves to hang vertically) which reduces the surface area exposed to the hot sun and also reduces herbicide interception.

The best time of day to apply a particular herbicide also depends on how that herbicide works. Systemic herbicides should be applied early in the morning, after plants have recovered from the heat of the previous day. Contact herbicides are best applied in the evening after the temperature has decreased and when there will be several hours of moderate temperatures for the herbicide to take effect.

Should I wait for rain?

If you are confident in the weather forecast, waiting five to seven days after a rainfall will allow plants to begin to actively grow and allow for better herbicide activity. Be cautious in waiting too long, as herbicides are most effective on young weeds. Again, read the label carefully. Weeds that are not controlled will set seed and become more of a problem in future crops.