

Temperatures Affect Glyphosate Activity – Richard Zollinger and Jeff Stachler

Temperatures over the last month have fluctuated greatly. Cold temperatures two weeks ago caused a reduction in glyphosate activity. Individual plants of lambsquarters and annual smartweed species were not completely controlled at a research location while other plants and other species were completely controlled. Cold weather in early June of 2008 also caused a reduction in glyphosate activity.

The following paragraph about glyphosate activity during cool and cold weather can be found on page 88 of the 2009 North Dakota Weed Control Guide. Weed control from glyphosate applied during cool and cold weather will take longer but the end result (weed control) will usually be the same as from application in warm weather. Ideal temperatures for applying POST herbicides are between 65 and 85 F. Speed of kill will be slower during cold weather also. Use higher rates to overcome reduced control if cold temperatures occur a few days before or if forecasted after application. Cold weather is a stress to plants. Weeds with low level resistance may not be controlled whether in good or adverse conditions. Proper timing of glyphosate application is critical for adequate weed control. Glyphosate applied during cold weather and to large weeds will result in less weed control. AMS enhances weed control and can partially overcome reduced control of stressed plants.

Waiting for warmer temperatures usually is not a viable option because plants become older and larger making them more difficult to control as well. The best recommendation is to carefully scout fields 10 to 14 days after the initial glyphosate application to determine if plants present at the time of application were controlled. If plants have survived the initial application, allow them to resume normal growth before applying the second glyphosate application or apply a second glyphosate application 21 days after the initial application. Apply the maximum labeled-rate of glyphosate remaining for the second application. Another option would be to apply a herbicide with an alternative mode of action to control the surviving plants, however, plant height is likely to be too tall for other herbicides to effectively control the surviving plants.