

4-11-2016

# Cold Temperatures and Burndown Herbicides

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## Recommended Citation

Hartzler, Robert G., "Cold Temperatures and Burndown Herbicides" (2016). *Integrated Crop Management News*. 2335.  
<http://lib.dr.iastate.edu/cropnews/2335>

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# Cold Temperatures and Burndown Herbicides

## **Abstract**

The weather forecast appears to be favorable for field activities so people will be anxious to get into the field. A concern for many will be the effect of the widespread freeze on the performance of burndown herbicides. Unfortunately, there is no simple blanket statement that can be made since the plant response will vary depending on weed species, weed size, and the herbicides used.

## **Keywords**

Agronomy

## **Disciplines**

Agricultural Science | Agriculture | Agronomy and Crop Sciences | Meteorology | Weed Science

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## Cold Temperatures and Burndown Herbicides ICM News

*April 11, 2016*

The weather forecast appears to be favorable for field activities so people will be anxious to get into the field. A concern for many will be the effect of the widespread freeze on the performance of burndown herbicides. Unfortunately, there is no simple blanket statement that can be made since the plant response will vary depending on weed species, weed size, and the herbicides used.

### Postemergence herbicides

A statement found on most postemergence herbicide labels is 'Apply when weeds are actively growing.' This is by far the most important consideration in determining whether to apply a postemergence product. Most weeds that emerge in March are adapted to sub-freezing temperatures and will not be killed by frost; however, it takes time for them to recover from these events. Performance of herbicides will be reduced if applied too soon following a frost. How long does it take to recover? Again, no simple answer since it

depends on the weed species, severity of the frost, and weather conditions that follow the freeze. Closely monitoring the weeds for evidence of new growth is the best way to determine recovery.



Frost damaged giant ragweed seedlings—wise decision would be to wait for true leaves to emerge.

### **Herbicides vary in how environment affects their performance**

Glyphosate relies on translocation within plants for good activity, and herbicide movement within plants is greatly slowed during cool periods. The general recommendation is to avoid glyphosate applications when evening temperatures fall below 40°F. 2,4-D is somewhat more consistent than glyphosate during cool periods (assuming sensitive weeds), and thus addition of 2,4-D LV ester can enhance burndown performance in certain situations. Burndown herbicides that interfere with photosynthesis such as paraquat are affected both by temperature and the intensity of sunlight the day of and days following application.

### **Weather conditions and herbicide applications**

Weather conditions prior to and following application have a strong influence on performance of early spring herbicide applications. In some situations, the result will simply be a slower kill of target plants, but in other situations control failures may occur.

It is best to avoid applications during periods of prolonged cool temperatures (<40°F at night; <55°F during the day). If applications must be made during marginal conditions, increasing rates of the herbicide and spray additives to maximum levels allowed on labels can enhance performance consistency. Adjusting the sprayer or spray volume to achieve more uniform coverage of the target can also reduce variability in activity.

**Category:** Weeds

**Tags:** burndown herbicides cool temperatures frost Weeds

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Dr. Bob Hartzler is a professor of agronomy and an extension weed specialist. He conducts research on weed biology and how it impacts the efficacy of weed management programs in corn and soybean. Dr. Hartzler also teaches undergraduate classes in weed science and weed identificatio...

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