

2007 – A YEAR TO REMEMBER. James R. Martin, Jonathan D. Green, and William W. Witt. Extension Professors and Professor, Department of Plant and Soil Sciences, University of Kentucky, Princeton, KY 42445.

It is not unusual for a single weather event on a local level to cause weed control problems in a single growing season. However, 2007 had several major weather events that impacted weed management decisions throughout much of Kentucky and made it unique compared with other seasons. The warm temperatures in late February through March provided a favorable environment for early season plant growth. This unusually warm period ended abruptly April 5th when temperatures dipped into the teens at night and stayed in the 40's during the daytime for a period of 5 days. Following the unexpected freeze the precipitation levels fell nearly ten inches below normal from April 1 through mid October. The duration and severity of this drought set records for many communities in Kentucky.

These unusual weather patterns impacted weed management decisions throughout the state. Horseweed (*Conyza canadensis*) plants emerged early and became larger than normal and were somewhat hardened off as a result of extreme freezing temperatures and dry soil in early April. In some instances burndown applications with 2,4-D were not successful and growers had to resort to tillage as a means of controlling horseweed.

Much of the early planted wheat in Kentucky was developing rapidly and in Feekes 6 and 7 growth stages when the April freeze occurred. As a result of the freeze damage, approximately 104,000 acres of wheat were either harvested for hay or silage or treated with a burndown herbicide to convert damaged fields to full season soybeans or corn. A section 18 label was issued to allow wheat growers to harvest their crop for hay or silage where thifensulfuron or the premix of thifensulfuron plus tribenuron were applied. There was some concern that stem damage from the freezing temperatures would limit translocation of glyphosate; consequently, paraquat was discussed as the preferred burndown treatment to control of wheat where corn or soybeans would be planted. A study initiated on April 20 compared glyphosate and paraquat for controlling freeze damaged wheat. Results showed that control was better with glyphosate than with paraquat, but activity was slow. Label restrictions limited the opportunity to rotate to corn in freeze damaged wheat that was treated with mesosulfuron.

Furthermore, the unusually warm March temperatures tempted growers to plant corn earlier than normal, only to be injured or killed by the April freezing temperatures. It is estimated approximately 100,000 acres of early planted corn had to be replanted due to poor stands. Growers had limited opportunities to control the surviving corn plants when the original planting was a glyphosate-tolerant hybrid.

The prolonged drought and high temperatures throughout the summer reduced stands of fescue and orchardgrass in pastures and hayfields; consequently, very high populations of ragweeds (*Ambrosia* spp.) and crabgrass (*Digitaria* spp.) developed. These stress conditions also limited the effectiveness of herbicides for controlling such weeds as common ragweed (*Ambrosia artemisiifolia*), tall ironweed (*Vernonia altissima*), and Canada thistle (*Cirsium arvense*).

Toward the end of the year the dry conditions that prevailed through the summer months caused concern that herbicides such as atrazine or clomazone would persist longer than normal and injure fall planted crops such as wheat.