

Considerations For Fall-Seeded Small Grains

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The dry conditions of the 2012 growing season did little to improve the performance of many herbicides used in corn and soybean. Of perhaps comparable consequence is that the degradation of many herbicides has also been reduced by the exceptionally dry soil conditions.

Concerns about herbicide carryover were discussed, and recent results from greenhouse bioassays have sustained some of these concerns.

About two weeks ago we collected soil at Urbana, Brownstown, and Perry from plots used for weed control experiments this year to initiate greenhouse bioassays. Our goal for the assays was to improve our understanding of how the

Based on these early observations, we offer the following comments:

- Bioassays conducted with field-collected soil provide an estimate of whether herbicide residues are high enough to injury rotational crops, but they do not quantify the amount of herbicide remaining in the soil. We recognize that indoor bioassays are not infallible, so we implemented field bioassays in the same plots from which we extracted the soil collections used in the greenhouse bioassays. We'll apprise you of the results as they become available.

- Keep in mind that all of the herbicides included in the greenhouse bioassay have rotation intervals for wheat, and these intervals were not satisfied at the time the soil was collected from the fields. If you plan to sow wheat in fields where at least one herbicide has been applied in 2012, be sure to check the label of each herbicide applied for rotational intervals. Most in-



Wheat growing in soil previously treated with a soybean herbicide (right) demonstrates herbicide injury symptoms.

dry conditions have impacted herbicide degradation in soil. Using our research plots allowed us to sample from areas where we knew what herbicides had been applied, when, and at what rates as well as the precipitation amounts received before and after application. Soil samples were also collected from nontreated control plots.

The soil collections were placed in greenhouse pots; half the pots were sub-irrigated for 7 days before planting corn, soybean or wheat, while the other pots were subirrigated only after planting.

Crop species emerged within 7 days after planting. Wheat growing in soil collected at Perry began to demonstrate symptoms of injury to some herbicides within a few days after emergence, suggesting that residues remained high enough to injure the crop. Injury symptoms have not developed on emerged wheat growing in soil collected from Urbana and Brownstown.

tervals are based solely on time, but for some herbicides they are lengthened based on other factors, such as soil pH values or droughty conditions.

- The recent rainfall across much of Illinois will help promote herbicide degradation, but it's unlikely to have completely eliminated the risk of herbicide carryover in all areas of the state. Even with the recently elevated soil moisture, herbicide degradation simply takes time.

In fields where there is no risk of herbicide carryover, be sure to control any existing weed vegetation before planting wheat. Products such as glyphosate, Clarity, Gramoxone, and Sharpen can be applied before planting wheat (but be sure to wait the required time after applying Clarity – 15 days at 8 fluid ounces and 30 days at 16 fluid ounces). Δ

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