Field Crops at Risk for Herbicide Carryover

With 2012 being one of the driest years on record the potential exists for herbicide carryover in crop fields. Weather records at the MU Forage Systems Research Center near Linneus indicate that Linn County had nearly ten inches below average precipitation from April through December 2012. As a result the potential for herbicide carryover is higher than normal.

Rainfall in the first few weeks following herbicide application is the most critical in determining the rate at which the compound will degrade. If adequate moisture is not available after the herbicide is applied the chemical and microbial processes to break down the product are significantly slowed, and the chemical can bind to the soil increasing the risk for herbicide injury to the following crop.

Herbicide carryover is affected by many things beside moisture including soil type, soil pH, herbicide application rate and date of application. The type of herbicide applied is also a factor. Herbicides with residual activity are more likely to cause problems this spring because they are designed to stay in the soil for a period of time. Without the needed moisture to degrade the compound, residual may remain in the soil.

One way to test for herbicide carryover is to conduct a soil bioassay. This can easily be done by collecting several soil samples from the field of concern a few weeks before planting. Mix the soil together and place in a greenhouse flat or pots and plant crop seeds in the soil. Collect soil from a field that is not at risk for herbicide carryover, and plant seeds in this soil to have unaffected plants for comparison. Once the seeds germinate examine the seedlings for herbicide injury.

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