

What's The Potential For Herbicide Carryover In 2012?



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The 2011 growing season tended to demonstrate extremes in precipitation; wet soil slowed spring planting in many areas, but conditions were quite dry across large areas as the season progressed into July and August.

Dry soil undoubtedly contributed to less-than-ideal performance of some foliar-applied herbicides, as weeds growing under hot, dry conditions were frequently "hardened off" and difficult to control with postemergence herbicides. Poor control of weeds is one obvious outcome of a dry growing season, but herbicide degradation and dissipation also can be reduced when soil moisture is limited. Reduced herbicide dissipation in soils may result in residues high enough to injure rotational crops.

Several factors should be considered when determining the potential for herbicide carryover, including what herbicide was applied, when the application was made, soil pH, and soil moisture. The labels of most soil-residual and many foliar-applied herbicides indicate the time that must elapse between application and planting a rotational crop. Late-season applications of herbicides with soil-residual activity can result in crop injury if the rotational interval is not ob-

served.

Soil pH affects the stability and persistence of some herbicides. A pH of 7.0 or higher may slow the dissipation of certain herbicides by reducing the degradation process known as hydrolysis. Even when soil moisture is adequate, degradation of some triazine and sulfonamide herbicides when soil pH is high can be reduced enough to result in carryover.

Soil moisture is often the most critical factor governing the efficacy and persistence of soil-residual herbicides. Many herbicides are degraded in soil by the activity of soil microorganisms, and these microorganisms can be greatly depressed when soil moisture is limited. Dry soils also can enhance herbicide adsorption to soil colloids, reducing the availability of the herbicide for plant uptake and degradation by soil microbial populations.

If herbicide carryover is a concern, a soil chemical analysis or bioassay can determine whether herbicide residues are high enough to injure rotational crops. Chemical analyses are performed by commercial laboratories and can be a bit expensive. Bioassays, often conducted using the rotational crop of choice, do not quantify the amount of herbicide residue in the soil, but they can give an indication if the rotational crop might be injured by remaining herbicide residues. Δ

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