

Herbicide Concerns After a Drought

ACCOUNTING FOR CARRYOVER IN NEXT YEAR'S CROPS

When soils are moist during the growing season, herbicides break down through microbial and chemical processes. These reactions may be slowed greatly in drought conditions. If herbicide residues are significant, they may injure rotational crops in the following season. For this reason, growers need to be aware of herbicide residues and take steps to decrease risk of injury.

HERBICIDE CARRYOVER LEVELS

Herbicides vary greatly in soil persistence and carryover to next year's crops.

- ◆ *Essentially no risk.* Herbicides presenting essentially no risk of carryover for next year's crops include: 2, 4-D, Roundup, Gramoxone, Basagran, Poast, Assure, Fusilade, Sutan, Select, Banvel, Clarity, Blazer, Eptam, Eradicane, Lorox, Buctril, Reflex, Cobra, Butyrac, and MCPA.
- ◆ *Moderate risk.* Herbicides presenting a moderate risk of carryover to next year's crops include: Sencor, Lexone, Bladex, Treflan, Prowl, Accent, Beacon, Broadstrike, Velpar, Balan, Stinger, Classic, Pinnacle, Lasso, Dual, Frontier, Surpass and Harness.
- ◆ *High risk.* Herbicides presenting a high risk of carryover to next year's crops include: atrazine, Pursuit, Scepter, Command and Princep.

AVOIDING RESIDUE PROBLEMS

- ◆ *Check the label of herbicides used during the drought season.* It will tell you the normal interval between application and planting for a specific rotational crop. Footnotes frequently show if the risk of carryover is greater under certain conditions (such as soil pH or dry soils).
- ◆ *Select this year's herbicides carefully.* Do not choose herbicides or use rates that have significant injury potential by themselves. Do not use products that may interact with carryover levels of last year's products. For example, do not use metribuzin (Sencor, Lexone) in soybeans this year if atrazine was used in corn planted during the drought year.
- ◆ *Use tillage.* Tillage will dilute the herbicide, especially if it is concentrated near the surface or in bands over the row.
- ◆ *Look for herbicide tolerance.* Select crop varieties or hybrids with greater tolerance to the herbicide used during the drought year. This information is not available for all varieties. Ask your seed supplier for assistance.
- ◆ *Use good management practices.* Good seedbeds, proper seeding depth and rate, adequate soil fertility, and insect and disease protection will minimize the effect of herbicide carryover. Many crops can tolerate a single stress relatively well, but two or more stresses can result in significant loss of crop vigor and yield.

TESTING FOR CARRYOVER

If you choose to test for herbicide carryover, the best time to do so is between late October and mid-November for most of Wisconsin. By this time, soil temperatures reach and remain below 50 degrees F., a point at which herbicide breakdown is minimal. Do not take soil samples for residues before this time; they may indicate levels greater than actually present when you plant next year.

- ◆ *A bioassay test may be helpful if doubts remain about planting because of possible herbicide residues.* The test will alert you to residue problems by comparing the productivity of your intended crop variety in both affected and unaffected soils. (Follow the guidelines in the UW-Extension publication “A Simple Test for Atrazine Residues.”) Begin the test at least three weeks prior to planting so that sufficient plant growth is available to assess carryover potential. The herbicide label may also contain suggestions on running a bioassay test, as well as information on crop rotations and carryover potential.
- ◆ *A chemical test for herbicide residues can also be done by private laboratories.* These tests are expensive and the results may not be easy to interpret. However, they may be appropriate in cases where bioassays cannot be done or where high value crops are concerned.

Additional resources:

Your county agricultural agent

Related publications:

UW-Extension publications–

“A Simple Test for Atrazine Residues,”
(A2882);

“Reduced Herbicide Rates: Aspects to
Consider,” (A3563);

“Row Crop Cultivators,” (A3483).