

**A LITTLE BIT COUNTRY
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Know Rules For Herbicide Carryover

Herbicides have become a very important tool in almost every corner of raw food production. Without them, weeds would grow out of control, production would be severely impaired, precious top soil would be lost to wind and or water erosion and the cost to feed a family would be higher than it is today.

Years ago when there were less than a handful of herbicides available to wheat producers crop diversity was almost non-existent. Now that we have many more herbicides available, farm producers of this area can choose valuable crops such as lentils, peas, safflowers, sunflowers, canola and others to rotate with wheat. Not only do such rotations reduce weed pressures but the rotations to other crops following wheat can play a significant role in reducing diseases and insects which target specific crops.

However, using specific herbicides on certain crops can present some management problems because of possible carryover of a herbicide which can damage certain crops to follow. For example, the herbicide WideMatch is an economical formulation of clopyralid and very effective on kochia, buckwheat and Canada thistle. However, it can be damaging to lentils planted the following year.

To assist crop producers assess potential carryover of a herbicide, the North Dakota Weed Control Guide contains a section listing possible crop rotation restrictions. The Guide is available free of charge at any County Extension Office in North Dakota.

Many herbicides are broken down in the soil by microbial decomposition. Some are broken down by chemical reactions. Most herbicide molecules are more tightly absorbed to soil particles in dry soil than moist soils. Chemical degradation of herbicides in soil is affected by soil

pH. Acid hydrolysis nearly ceases at soil pH above 6.8 which is unheard of in this part of North Dakota. The bulk of our soils have pH level above 7.25.

Persistence of phytotoxic levels of a herbicide for more than one year can be a problem with some herbicides. Herbicide residues are most likely to occur following years with low rainfall because chemical and microbial activity needed to degrade herbicides are limited in dry soil.

Herbicide residues often can be detected by a bioassay which simply is the growing of a susceptible crop in a sample of soil collected from the field where the crop is grown and also in another soil sample collected from a field known not to have the herbicide in question. It is important to remember the effects of some herbicides do not show their heavy-hand until 2-3 weeks after emergence. Always make comparisons of plants growing in soil pots of both the field in question and that of the pot with soil known to be free of the herbicide in question.