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Cover Crops and the Corn and Soybean Herbicide Rotational Restrictions

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There has been an increased interest in the use of cover crops. The benefits of using cover crops are well reported. The Midwest Cover Crops Council lists them as reducing soil erosion and increasing nutrient recycling on farmlands [Midwest Cover Crops Council]. They also state that some of the other benefits are improving soil quality, fertility management, landscape diversification, and wildlife habitat. However, there are some challenges to growing a cover crop in fields where corn and soybean are grown.

One of the challenges of cover crops is that if they don't winter kill they have to be chemically or mechanically controlled in the spring before planting corn or soybean. In some cases they are controlled well enough with a typical burndown herbicide program that would be used to control a winter annual weeds. Occasionally due to cool wet environmental conditions, late application timing, or contamination of seed the burndown does not completely control the cover crop in the spring.

One question that has been brought up in recent cover crop situations is replant timing when cover crops are planted after the use of residual herbicides used in corn or soybean. There are several plant species being promoted for the use of cover crops. Some of the plants include annual ryegrass, wheat, buckwheat, clovers, radish, cowpea and vetch. Information regarding effects or corn and soybean herbicides on these species is somewhat lacking. Herbicide label rotation restrictions often require substantial waiting periods before these species can be planted. These waiting periods are to assure that residual effects from the herbicide do not impact the following crop, the buyer (finished product) or livestock negatively. In some cases plants used as cover crops fall under the 'other' or 'not listed' category requiring the maximum duration before planting.

However, in recent conversations with the Office of the Indiana State Chemist we have learned the following. If the cover crop is not harvested, used as feed for livestock or sold in anyway and that the cover crop is terminated in the appropriate manner or left in the field, that the rotation restriction does not apply [personal communication Office of the Indiana State Chemist]. It comes down to the definition of a 'crop' and that a 'cover crop' is not really used as a 'crop.' Label rotation restrictions are in place for crops that are going to be harvested, cover crops are to be destroyed in the spring, left in the field or winter killed. The purpose is in having it there, but there is no finished product at the end of the season. However, because the company selling the herbicide does not recommend or approve a rotation other than the ones listed on the label, the company selling the herbicide is not liable for any injury or germination problems seen in the cover crop.

Purdue is presently working on a study that will look at the response of some cover crops to some of the common corn and soybean herbicides. Look for a future article with that data.

The table below list several herbicides used in corn and soybean and their rotation restrictions to a few of the plants used as cover crops. Remember, failure to follow labels can lead to possible injury of desired plants.

Table 1. Examples of rotation restrictions for several corn and soybean herbicides and a few of the plants used as cover crops in months.

Herbicide Crop	Annual ryegrass	Wheat	Clover	Vetch	Radish	Oats	Cowpea	Buckwheat	Comments
	- - - - - - Replant Interval in Months - - - - - -								
atrazine Corn	NY	NY	NY	NY	NY	NY	NY	NY	NY = next year. If applied after June 10th, do not plant the following year. Taken from the Aatrex label. Injury may occur. Crops not listed are 30 months.
Authority MTZ Soybean Sulfentrazone + metribuzin	12	4	30	30	30	12	12	30	Crops not listed are 18 months.
Balance Flexx Corn isoxaflutole	18	4	18	18	18	18	18	18	Barley can be planted 6 months after application. Rotations require at least 15 inches of cumulative precipitation. Crops not listed are 18 months.
Capreno Corn thiencarbazone + tembotione	18	4	18	18	18	18	18	18	Spring oats can be planted 10 months after application. Rotation restrictions of 18 months require 30 inches of cumulative precipitation.
Callisto Corn mesotrione	N/A	4	18	18	18	0	18	18	Crops not listed are 18 months. Grasses grown for seed can be planted immediately, but annual ryegrass is not directly addressed.
Canopy DF Soybean chlorimuron + metribuzin	4	4	12	30	30	30	12	30	Barley can be planted 4 months after application. Crops not listed are 30 months.
Canopy EX Soybean chlorimuron + tribenuron	30	3	12	30	30	3	9	30	Crops not listed are 30 months.
Dual II Magnum Corn and Soybean S-metolachlor	4.5	4.5	9	N/A	N/A	4.5	N/A	Spr	Clover may be seeded in 9 months. To avoid injury to clover, do not apply more than 1.9 lb ai/A (2 pt/A). Do not make any POST applications.
FirstRate Soybean cloransulam	18	4	18	18	18	9	9	18	Barley can be planted in 12 months. Crops not listed are 18 months
Valor XLT Soybean flumioxazin + chlorimuron	4	4	18	30	30	30	30	30	Crops not listed are given 30 months.