1. Reasons to control winter annual weeds in the fall between row crops

It’s not uncommon to spray or work wheat stubble fields in the fall to control volunteer wheat and winter annual weeds before planting a row crop the following spring. But it’s less common to control winter annual weeds following a row crop in the fall. There are several reasons to spray winter annuals in fall in this situation, rather than waiting until spring burndown:

1. There’s a wide spray window in fall, from fall harvest until the soil freezes. Most falls, we have a lot of clear, crisp days with gentle breeze, ideal for herbicide application. Work loads are lower once harvest is done. Plus, spray drift problems are much reduced in fall, as trees go dormant and the gardening season is past. The main spray drift concern in fall, is fields with newly emerged wheat. Contrast this with trying to work around winds, rains, and planting preparations in spring.

2. Seedling weeds in fall are much easier to kill than plants that have overwintered. The control spectrum is wider, and herbicide rates can be lower. For example, henbit is one of the tougher winter annuals. In spring, you’d expect a pint of 2,4-D LV4 plus 2-4 fl oz of dicamba to give 50 to 75 percent control. With fall applications, we’d expect this recipe to give complete control of not only henbit, but also the mustards, prickly lettuce, evening primrose, and marestail.

3. The following spring, soils covered with dead stubble warm up more readily than soils under a cover of growing winter annuals. Chances for earlier planting are enhanced. Planter operation is simplified when there’s no ropey vegetation wrapping around residue managers, etc.

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2. Utilizing green soybeans

It is not unusual to have reports of immature, green soybeans at harvesttime somewhere in Kansas nearly every year. This can occur any time plants die prematurely before the seeds are fully developed. Usually this is due to a hard freeze before the beans are mature, or because of periods of extremely hot, dry weather. Occasionally there can be other causes, such as late flooding that kills the plants before the beans are fully developed.

Green beans are undesirable to processors because they can affect the color of oil and meal. Processors will discount green soybeans based on the color definition in the U.S. Grades. The green color from immature beans has to be refined out of the oil. Not only that, but oil from immature beans often contains high levels of free fatty acids, which are causes of rancidity.

Processors may not like to receive green beans, but cattle don’t mind. Green soybeans can be used as cattle or swine feed under certain conditions.

If these beans are free of storage molds, they can be fed to most types of beef cattle as long as they are introduced gradually into the diet, according to Dale Blasi, K-State Research and Extension beef cattle nutrition and management specialist. Rapid introduction may result in diarrhea and reduced performance.

Raw beans should be coarsely crushed if possible before feeding. The beans may gum up rollers or grinders if they are not mixed with another grain. They also need to be fed within one week of crushing in hot weather, and two weeks of crushing in cold.

Beans cannot replace all the soybean meal in a corn-silage-based diet. They should be limited to seven percent of the diet for growing calves and five percent for finishing calves, or to the amount needed to meet the animals’ protein needs, whichever is less. The amount fed to growing calves can be increased to 10 percent if the beans are roasted.

Green soybeans should not be fed to young calves that do not have a functional rumen. Nutritional muscular dystrophy and abomasal torsion may result if soybeans are fed to young calves.

For swine, raw soybeans may be used in gestation diets (but not lactation) without adversely affecting performance. Raw soybeans contain high quantities of trypsin inhibitor, which blocks normal protein digestion in pigs. As the pig becomes older, its susceptibility to trypsin inhibitor decreases.

Finishing pigs may also be able to utilize raw soybeans in their diets. However, because of the trypsin inhibitors, it may be best to use raw beans as a substitute for grain sorghum as an energy source rather than soybean meal.
Oil content is usually lower in immature, green soybeans than in mature beans because oil is one of the last constituents to be put into the seed during a normal growing season. Otherwise, there is no nutritional difference between green soybeans and regular soybeans, both on a raw and roasted basis, according to Ron Lacky, Feed Ingredients and Byproducts Specialist with the Ontario Ministry of Agriculture and Food.

“Ruminants, such as cattle, can use either raw or roasted soybeans. But raw soybeans should not be mixed and fed with feeds containing urea, since the urease in the raw soybeans can break down the urea to ammonia. Heat treatment of soybeans destroys the urease and will increase the percent of protein that is considered as bypass protein. It is recommended that any soybeans be analyzed prior to feeding and that the rations be balanced with the help of a knowledgeable nutritionist.” Source: http://www.omafra.gov.on.ca/english/livestock/swine/facts/info_green_soybeans_fed.htm

Next week’s e-Update will discuss some considerations when storing green beans.

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3. Musk thistle control in fall

Fall is a good time to spray for musk thistle control. Producers can apply a herbicide for musk thistle control in the fall anytime from early October until the ground freezes.

Musk thistles are primarily biennial plants. Most of them germinate in the spring, grow through the summer, remain in the rosette stage in the fall, go through the winter, then bolt and set seed in the spring. Some will germinate in the fall and bolt the following spring. In either case, musk thistle plants are easier to control with most herbicides in the rosette stage in the fall than after they have bolted in the spring. This is one big advantage of fall control versus spring control.

Another advantage of fall control is that chemical drift is not as much of a concern as in the spring.

The main problems associated with fall control are dry conditions and cold temperatures. Musk thistle plants under drought stress are harder to control with certain herbicides. Some herbicides also work better under cool conditions than others. After a hard freeze, with temperatures in the mid- to low-20s, musk thistle plants will shut down. If temperatures get back into the 50s and 60s, however, the plants will resume physiological activity and can again be controlled by certain herbicides. Producers should wait at least 4 to 5 days after a hard freeze before applying a herbicide to musk thistles.

Most herbicides for musk thistle control will be more effective if they are applied when the sun is shining and temperatures are at least 55 to 60 degrees.

There are several herbicide options for musk thistle control. The best choices for fall application are picloram (Tordon 22K) at the rate of 8-10 fluid oz per acre and 2,4-D LVE at the rate of 2 lb/acre. These herbicides are effective under the drier and cooler conditions that often occur in the fall. 2,4-D LVE can be mixed with picloram, but it doesn’t seem to improve musk thistle control much by doing so.

A new herbicide called Milestone is also very effective when applied in the fall.

Dicamba, at rates as low as 1/3 lb per acre, can be effective on musk thistle when applied in the fall, but only if growing conditions are especially good. The best use for dicamba would be as part of a mixture with 2,4-D LVE. There are some dicamba/2,4-D premixes available, such as Weed Master and Range Star. These products are also best used under good growing conditions in the fall.

Other herbicides for musk thistle control are best used in the spring – such as clopyralid/2,4-D (Curtail), clopyralid/triclopyr (Redeem R&P), diflufenzopyr/dicamba (Overdrive), metsulfuron methyl (Ally, Escort XP, Cimarron, and others), and triasulfuron/dicamba (Rave). These herbicides are not as effective under dry, cool conditions in the fall as picloram and 2,4-D LVE, but they can be effective on musk thistle plants that have bolted in the spring.
Producers should be aware that musk thistle plants with a very large rosette in the fall may be hiding some young musk thistle plants underneath the leaves. In this situation, the herbicide does not usually reach those protected plants, and these escapes can survive the winter and bolt the following spring.

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These e-Updates are a regular weekly item from K-State Extension Agronomy. All of the Research and Extension faculty in Agronomy will be involved as sources from time to time. If you have any questions or suggestions for topics you'd like to have us address in this weekly update, contact Jim Shroyer, Research and Extension Crop Production Specialist and State Extension Agronomy Leader
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