k-state extension AGRONOMY e-Updates

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1. Minimizing the risk of corn stand loss or failure

This year, it will be especially important that producers do everything they can to ensure a good corn stand. With tight seed supplies for many corn hybrids, producers may have a hard time getting seed if they have to re-plant for any reason.

Some of the most important factors for establishing and maintaining a good stand include:

* Seedbed conditions. Don't get in a hurry this year. Wait until soil temperatures at the 2-inch depth are consistently above 55 degrees F at mid-day, especially if planting early in the recommended time frame. Planting into a wet seedbed can cause sidewall compaction and inhibit root growth into the surrounding soil. Cool, wet soils favor seed rots and seedling diseases. Planting into a dry or cloddy seedbed can result in uneven emergence and may delay emergence long enough for rodents or birds to seriously deplete the potential stand in some situations.

* Seed treatments. Consider using seed treated with both a fungicide and a broad-spectrum insecticide such as Cruiser or Poncho, particularly if you have a history of seedling or early-season insect pests.

* Planter maintenance. Make sure your planter is properly maintained and adjusted. It is important that corn seed be planted at the proper depth, with good seed-soil contact, and with good closure of the seed furrow. This is particularly important in no-till situations with greater amounts of residue and a firmer seedbed.

* Starter fertilizer. Avoid placing starter fertilizer in direct contact with the seed if possible. If you are placing starter fertilizer with the seed, be sure to use less than 10 lbs per acre of N and K combined. On the other hand, starter fertilizer applied in a band to

the side of the seed or dribbled on the soil surface at planting time likely will help early corn growth.

* Field scouting. Once the corn emerges and a stand is established, producers should be sure to scout fields closely for any early-season insect problems. Seedling corn can come back from a rapid defoliation that occurs early, but repeated defoliations or a persistent insect infestation (such as flea beetles) can eventually weaken or destroy a stand.

* Weed control. Preplant or planting-time herbicides should provide adequate control during the critical stand-establishment phase. However, scouting is important here as well to maintain the stand and to protect potential yield. Keep an eye on your fields to make sure that rainfall was adequate to incorporate and activate the herbicide, and that it is performing as expected. Don't wait too long with follow-up treatments if necessary.

* Watch the weather – rainfall. On some soils, one of the most common causes of stand failure is soil crusting caused by pounding rains soon after planting. This also is related to planting into a good seedbed and proper planter adjustment. Challenging conditions after planting will magnify errors made in those areas.

* Watch the weather – late spring freeze. One potential problem that producers in Kansas face nearly every year is a hard freeze after the corn has emerged. A hard freeze often burns back the foliage on seedlings or young plants, sometimes to the ground. But as long as the corn is not yet at the V6 (or six-leaf collar) stage, a spring freeze rarely causes death of the entire plant. From the time of emergence through the V5 stage (the first two to three weeks after emergence), the growing point of corn is below the soil surface, and protected from freeze injury. It is possible, at the V3-V5 stages of growth for a freeze to cause some corn development problems as new leaves try to push through dead leaf tissue, but stand and yield losses typically are minimal at this stage. On the other hand, a hard freeze at the V6 or later stages could severely injure a stand, and make re-planting necessary. Avoiding the extremes of the recommended planting window for your area and paying attention to the extended weather forecast should minimize the risk of stand loss from late freezes and yield loss typically associated with late planting dates.

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2. Army cutworms on wheat, canola, and alfalfa

Army cutworms have been detected on some fields of wheat and canola in Kansas as of mid-March. At this time, the cutworms are small. By late March, the cutworms will probably be larger and damage may be more noticeable.

Army cutworms oversummer in the Rocky Mountains. They fly back to Kansas and surrounding areas in the fall and lay eggs in the soil. The eggs hatch either in the fall or early winter. Last fall, some early instar larvae were found in Kansas, indicating that populations this spring could be expected.

Larvae begin feeding whenever temperatures rise a few degrees above freezing. In wheat, larval damage first appears as "windowpane" holes. Larvae hide in loose soil at the base of plants, emerging to feed in the evening. Unlike some other cutworms, only above-ground plant parts are eaten.

Moisture availability, crop condition, and regrowth potential are all factors influencing potential losses to the army cutworm. Late-planted fields under dry conditions with poor tillering may suffer economic damage with as few as one or two larvae per square foot. In most fields, treatment will not be necessary until populations average four to five worms per square foot. This applies to any larval stage. Vigorous, well-tillered fields under optimal growing conditions can tolerate even higher populations – as many as nine or 10 larvae per square foot without measurable yield loss.

Labeled treatment options for army cutworms on wheat include beta-cyfluthrin (e.g. Baythroid XL, and others), lambda-cyhalothrin (e.g. Warrior with Zeon Technology, and others), gamma-cyhalothrin (Proaxis), and zeta-cypermethrin (Mustang MAX).

Canola should be treated when there is an average of two or more larvae per foot of row. It is important to scout canola fields for these insects. Army cutworms find canola very palatable, and 4 to 5 per square foot cause severe damage to stands. Stands can be completely lost if left untreated. Look for foliar tissue damage and severed green leaves lying on the ground as evidence of feeding. Damage may initially be more visible in areas of the field where stands are thin.

Labeled treatment options for army cutworms on canola include bifenthin (e.g. Capture, and others), lambda-cyhalothrin (e.g. Warrior with Zeon Technology, and others), and gamma-cyhalothrin (Proaxis).

When making an insecticide application for army cutworms, be sure that temperatures will be above 50 degrees for three to four days after the application is made. Always read and follow label directions.

Alfalfa may also be affected by army cutworms. First-year fall-planted fields are the most susceptible. However, foliage feeding in established stands may reduce yields, especially in the first cutting. Treat first-year fields when there is an average of two or more larvae per sq. ft. Established stands should be treated when there is an average of four or more larvae per sq. ft. Most of the same insecticides listed for wheat and canola, above, are registered for alfalfa also but always read and follow label directions and consult the K-State Extension Insect Management Guides for the crop of concern.

For more information on treating wheat for army cutworms, see:
http://www.oznet.ksu.edu/library/ENTML2/MF745.pdf

For more information on treating canola for army cutworms, see:
http://www.entomology.ksu.edu/DesktopDefault.aspx?tabid=646

For more information on treating alfalfa for army cutworms, see:
http://www.oznet.ksu.edu/library/ENTML2/MF809.pdf

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