



Crop Solutions that Work

August 7, 2009

Corn Plant Development. After the silks have turned brown, the corn kernels begin a period of rapid dry matter accumulation or seed fill. The kernels are approximately 85% moisture and this percentage will gradually decline from now until harvest. At this stage of development, the corn plant has satisfied all of its potassium needs, but only 70% of its phosphorus and nitrogen requirements.

Corn plants now begin to translocate nutrients and form the vegetative parts of the plant to the reproductive parts. Total root mass has also reached its peak and will decline. New root growth will continue, but the death of old roots will exceed new growth. The developing ear will now become the sink for sugar accumulation.

Unfilled ear tips are the result of dry weather, cloudy days after pollination, nitrogen shortage, insect feeding or excessive plant populations. As the ears dry down, the tips shrink and become less noticeable.

Short, late-pollinating corn plants are easy to find in some area fields. Early season disease, insect feeding, uneven emergence, and a generally poor environment for early root growth are just a few of the likely causes. Any early season injury to the young seedling's primary root system or food reserves (endosperm) may have resulted in a re-focus of the plant on developing roots for survival, rather than on normal leaf and root development. Silks may emerge late on these small plants resulting in incomplete pollination and/or increased silk clipping pressure from local insect populations (Japanese beetles and corn rootworm adults).

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Late or replanted corn will be attractive to rootworm beetles and a migration of beetles from surrounding fields may occur. Plan to scout these fields for silk clipping.

Hybrids differ in the time it takes to reach harvestable moisture from black layer. An estimate is that 30 Growing Degree Units (GDUs) are needed to lower the grain moisture each point from 30% to 25%, and 45 GDUs per moisture point to dry from 25% to 20%.

Soybean seed set is affected by temperature. Seed set is most consistent when warm nights (70° F) are followed by warm days (at least 80° F). Night temperatures of 60° F or below and daytime temperatures of 95° F or above will harm seed set. The ideal daytime temperature for soybeans is around 86° F.

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Sudden Death Syndrome (SDS) may soon appear in area soybean fields. Sudden Death Syndrome infection takes place shortly after soybeans emerge. Wet soil conditions appear to promote the development of SDS during the infection phase, environmental conditions similar to what we experienced earlier this cropping season. Following infection, the fungus starts to grow into the plant's vascular tissue, eventually affecting the soybean plant's ability to move water and nutrients. Infected plants will first show mottled yellow and brown leaves while the veins remain green. Later, the leaves fall from the plants leaving only the green stems with leaf petioles attached. There is no resistance or rescue treatment available for this disease. Avoiding plant stress and selection of varieties that tend to withstand disease pressure better are two ways to minimize the symptoms of SDS. Visit with your local FS Crop Specialist for more information about SDS tolerance.

A nitrogen deficiency will appear as an inverted yellow "U" that moves down the midrib of the leaf. Since the nutrient is moved out of the older tissues first, it is initially found in the lower leaves.



Leaf diseases are favored by hot, humid conditions. Corn fields that have received adequate rainfall and have high levels of crop residue, especially corn following corn, are likely to be the first to show signs of disease pressure. The threat of yield loss due to leaf disease is greatest when the pathogen develops at or above the ear leaf within two weeks of pollination. Standability is more often affected than yield because the plant must draw sugar reserves from the stalk when leaf tissue has been killed, rather than relying on the leaf to produce sugars.

Gray Leaf Spot lesions have been identified

on the lower leaves in several corn fields. This fungal disease appears as small, rectangular, grayish-tan lesions about ½ to 1 inch in length running parallel with leaf veins. The disease over winters on old corn residue and infects the lower leaves first, spreading upward with ideal disease conditions. The most favorable environment for disease development is in fields or parts of fields where heavy dews and/or fog lingers in the morning hours, and old corn residues are present. The most economical approach to minimizing harvest yield loss because of the disease is through crop rotation, destruction of old corn residue (tillage), hybrid selection and/or a timely fungicide application.



Heavy Gray Leaf Spot late in the growing season may promote stalk rots. Fields with a significant number of lesions above the ear should be monitored for standability as harvest approaches. Hybrids differ in their ability to resist Gray Leaf Spot. Contact your local FS Crop Specialist for information that will help select hybrids for the 2010 growing season.

Keep a watchful eye on two-spotted spider mite populations in areas that remain dry. Hot, dry weather provides a favorable environment for mite survival. Most infestations will first appear along fence rows or ditches. Infested plants take on a sand-blasted appearance. Heavy infestations are most easily found by shaking the plant over a sheet of paper. Watch the paper for tiny moving specks. An insecticide treatment is justified if injury is noticeable and the mites are present.

Scouting for light infestations of spider mites may be difficult when using the “knock onto paper” method of scouting. A hand lens with a magnification of 10x or more will allow close examination of the underside of soybean leaves. This permits the discovery of light adult spider mite infestations along with identification of young mites and unhatched eggs. Mite eggs appear as small, solitary specks, sometimes suspended within spider webbing on the leaf’s underside. The eggs are perfectly round and appear transparent.

Soybean Plant

Development. The soybean plant is now giving more emphasis to reproductive growth than to vegetative growth. Pod development and elongation are rapid. Pods will obtain most of their full size before soybean development begins. Flowering on the upper part of the plant will continue until the plant reaches its full height.

Watch for pod feeding

insects on the developing pods. Bean leaf beetles, grasshoppers, and green stink bugs are some of the pests that feed on soybean pods.

Bean leaf beetles come in many colors.

The easiest way to identify this soybean pest is by the black triangle directly behind the insect’s head. Regardless of the color or the presence or absence of spots, all bean leaf beetles have this black triangle.

The next generation of bean leaf beetles

will soon emerge in area soybean fields. Treatment is suggested when:

- Bloom to Pod Fill: Defoliation reaches 20% and there are 16 beetles per foot of row.
- Seed Maturation: When 10% of pods are damaged, leaves are green, and there are 10 or more beetles per foot of row.



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Populations continue to be above threshold levels in many fields.

Remember to scout all fields even though some may have been treated earlier this growing season.

Plan now for late-summer alfalfa seedlings. The optimum time to fall seed alfalfa is sometime in August. This should allow time for good stand establishment and should improve winter survival. Consider the following tips:

- Soil Test. The optimum soil pH is 6.5 to 7.0.
- Seed at 15 to 18 pounds per acre for pure stands.
- Avoid re-establishing alfalfa in a field with an existing stand that is over one growing season old. Destroy old stands and rotate to another crop for one growing season.
- Apply P and K fertilizer according to soil tests.
- Prepare a good seedbed (firm and level).
- Consider herbicide carryover potential. Alfalfa seedlings are especially sensitive to triazine herbicides.

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