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CORN

Stalk Strength Reminder
By Paul Vincelli

Corn fields in the many areas that experienced wet, overcast, soggy weather since the last issue of *Kentucky Pest News* for the most part remain unharvested. Weather conditions generally, and the widespread occurrence of southern corn rust, conspire to make this a season with increased risk for stalk rots. Be sure to scout fields for stalk strength. Scouting will help you select fields for harvest based on how strong the stalks are. Harvest those with the weakest stalks first, before they blow down from a strong gust.

The easiest way to check for lodging potential is to walk through the field and, at about chest height, push the plants about 8-12 inches from vertical. A stalk that bends and fails to spring back is prone to lodging. If 10-15% of the stalks in a field exhibit lodging potential, the field should be scheduled for early harvest.

Storing Diplodia Ear Rot-Affected Corn
By Paul Vincelli

Diplodia ear rot (DER) is being reported rather widely this year. Questions have arisen about storage of DER-affected corn. The fungus that causes DER won't develop further if moisture content is below the normal target of 15.5%. However, rotted kernels are damaged kernels, and since the grain integrity is compromised, other fungi more tolerant of low moisture will have an easier time growing. Our agricultural engineers recommend drying damaged corn an extra 0.5 to 1.0 point of moisture for better storability and cooling it as quickly as possible. Producers should make sure to keep that grain well aerated and dry, and market it sooner rather than later.

Fortunately, there are no known mycotoxins produced by the strains of the DER fungus found in North America. In addition to several recent *Kentucky Pest News* articles on this subject, more information on this disease is available in a UK Extension publication available at http://www.ca.uky.edu/agc/pubs/ppa/ppa43/ppa43.pdf.

Bt Corn Refuge Requirement Confusion
By Ric Bessin

There may be considerable confusion regarding refuge requirements in 2010 for Bt corn. In the past in Kentucky all we need to understand was that the minimum refuge size needed to 20% of the total corn acreage. If there was a Bt toxin to control corn rootworm, then the refuge needed to be within the same field or immediately adjacent to the Bt field.

Immediately adjacent to means that a fence, ditch, or road is all that separates the refuge from the Bt field. Bt corn that only had toxins to control corn borers and other Lepidoptera must have the refuge within ½ mile, but a ¼ is preferred.

This has become a bit more complicated with the approval of SmartStax corn. The minimum refuge size for SmartStax is different, it is only 5% of total corn acreage (in cotton producing areas it increases to 20%). Where the possible confusion lies is that the refuge size for all other Bt corn technologies stays the same, only the SmartStax will have the reduced refuge size of 5%. The table below outlines the refuge requirements for the various Bt technologies on the market, corn grown in Kentucky would use the corn belt minimum refuge sizes. The reason why there is a reduced refuge with SmartStax is that we use multiple independent toxins to control the key insect pests. This is a new strategy for resistance management that the other Bt technologies don't have.

	Minimum Refuge		Proximity to
	Corn Belt	Cotton Areas	Bt Field
YieldGard CB	20%	50%	Within 1/4 to 1/2 mile
YieldGard RW	20%	20%	Within or adjacent to
YieldGard Plus	20%	50%	Within or adjacent to
YieldGard VT	20%	20%	Within or adjacent to
YieldGard VT3	20%	50%	Within or adjacent to
YieldGard VT3 Pro	20%	20%	Within or adjacent to
SmartStax	5%	20%	Within or adjacent to
Herculex I	20%	50%	Within 1/4 to 1/2 mile
Herculex RW	20%	20%	Within or adjacent to
Herculex Xtra	20%	50%	Within or adjacent to
Agrisure CB	20%	50%	Within 1/4 to 1/2 mile
Agrisure RW	20%	20%	Within or adjacent to
Agrisure CB/RW	20%	50%	Within or adjacent to

There are two other types of Bt corn that are still in the regulatory process with approvals pending. This includes AcreMax and Viptera. These again may have different refuge requirements, particularly the AcreMax.

While the reason for planting a refuge is to maintain a population of Bt- susceptible corn borers, growers should still manage those refuges to avoid serious losses. When using a 20 or 5 % (Smartstax only) refuge with Bt corn plantings, growers may consider spraying for corn borers if scouting indicates it is an economic problem.

SHADE TREES & ORNAMENTALS

Flowering Crabapples Blooming Now?

By John Hartman

Kentucky flowering crabapples bloom reliably in spring, providing an attractive display. In fall, crabapples are enjoyed for their colorful fruit.

Figure 1. Out-of-season blooms of flowering crabapple on leafless branches.

Many Kentucky growers and homeowners noticed this year that many of their flowering crabapple leaves fell in spring and summer leaving foliage less dense than normal. And now, some of those crabapples are displaying new blooms in September (Figures 1 & 2) causing homeowners to pose questions to Extension Agents about these out-of-season crabapple flowers.

Figure 2. Flowering crabapple with September fruit and newly appearing flowers.

Apple scab, caused by the fungus *Venturia inaequalis*, was more severe this year than usual. During spring and early summer crabapple trees were exposed to extremely rainy conditions with long periods of leaf wetness which favored scab infection. Scab-infected crabapple leaves turn yellow and drop from the tree within weeks of the onset of disease. Thus, by midsummer, many crabapples were left practically defoliated (Figure 3). The old-fashioned highly susceptible crabapple cultivars such as 'Almey', 'Eleyi', and 'Hopa' were especially affected. Many of the moderately susceptible crabapples were also defoliated.

Figure 3. Mid-summer defoliation of flowering crabapple.

Homeowners may want to know why crapples are blooming now, and if this will affect their tree in other ways. It is possible that extensive loss of leaves in mid-season could have been similar to autumn leaf drop and might have caused parts of the tree to become physiologically dormant, similar to winter. Normally, after winter dormancy the tree puts out new blooms. September crabapple blooms and new leaf growth tend to be sparse and scattered throughout the tree (Figures 4 &5), so apparently not all flower buds are opening now. As for spring bloom next year, expect fewer flowers because defoliated trees set fewer flower buds and some buds have already been expended. Depending on when first killing frost occurs, some of the new shoot growth accompanying the fall blooms may not be fully hardened off and could be damaged by cold.

Figure 4. Flowering crabapple tree with scattered blooms in September.

Figure 5. Close-up of fall blooms also showing some new leaves.

Crabapple scab normally does not kill crabapples, but annual defoliation could weaken the trees, making them susceptible to other problems. Homeowners can help improve the health of their flowering crabapples by doing the following:

- While trees are dormant, rake up and destroy or chop up old, infected, fallen leaves where the fungus overwinters.
- On mature landscape trees, thin out crabapple foliage by pruning selected branches to allow improved ventilation and sunlight penetration.
- Ambitious homeowners or those hiring professional arborists may want to consider application of fungicides in spring. To prevent primary infections, apply fungicides when the first green shoot tips are showing in early spring before flowers open and repeat 3 or 4 times at two-week intervals. Fungicide choices for homeowners include protectants containing ingredients such as mancozeb, chlorothalonil, captan, or sulfur. Eradicant fungicides containing thiophanate-methyl, or myclobutanil are also available.
- Any new crabapple plantings should be done with disease-resistant cultivars.

INSECT TRAP COUNTS
September 3-18

Location	Princeton, KY	Lexington, KY
Black cutworm	0	7
Armyworm	3	17
Corn earworm	2	3
European corn borer	1	2
Southwestern corn borer	0	0
Fall armyworm	50	45

September 18-25

Location	Princeton, KY	Lexington, KY
Black cutworm	12	0
Armyworm	17	23
Corn earworm	231	30
European corn borer	0	0
Southwestern corn borer	0	0
Fall armyworm	67	35

Graphs of insect trap counts for the 2009 season are available on the IPM web **site** at - http://www.uky.edu/Ag/IPM/ipm.htm.
View trap counts for Fulton County, Kentucky at - http://ces2.ca.uky.edu/fulton/InsectTraps

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