Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants and Extension Personnel

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Alfalfa

Alfalfa Weevil

Alfalfa weevils are rapidly developing throughout the state, according to recent sampling and reports. The first larvae were detected last week (5 March) but, since we have experienced a significant warm spell, the egg and larval development has been readily apparent. All fields we sampled this week in central KS had 10-30% of the stems infested with 1st instar larvae. Most infested stems had multiple larvae simply because that is where the female weevil deposited a clutch of eggs last fall and now they are all hatching together. Treatment thresholds vary widely in alfalfa, depending upon the end use, but usually delaying application until there is 1 larva/2 stems (50% infestation) will be the most effective management tactic. This warm weather may condense weevil development by increasing it so quickly, so early that the infestation may not drag out over a 4-6 week period as it has in the past.

Have been getting questions about the use of chlorpyrifos, or products containing chlorpyrifos, relative to the legality of making a second application, if needed, per cutting. This question has arisen because of the early egg hatch and the potential length of time between this and swathing, which usually doesn't occur until at least late April. Hopefully, multiple applications won't be necessary but are allowed according to the label (and **always** read and have the label with you during application), if you feel a second application is necessary.

Wheat

Several wheat fields were sampled in central KS this week but have not found any aphids (either greenbugs or bird cherry-oat) yet.

Jeff Whitworth *Holly Davis*

Scale Crawlers: Be On The Look-Out!

Due to the un-seasonably warm weather we have been experiencing at this time of year it appears that enough heat units may have accumulated to initiate some insect activity. In addition, certain plant species are

exhibiting new growth. As such, it would be prudent to start scouting/monitoring for scale crawlers (and for some scale species, fertilized females). In fact, we have already received reports of Lecanium crawlers present in Wichita, KS. Most scale crawlers are small (<2.0 mm in length) and vary in color from red, light orange, to brown depending on the scale species. In addition, they may be difficult to observe especially on trees or shrubs with light-colored branches or bark as they tend to blend in whereas they may be more easily observed on plants with dark-colored bark or branches.

Scales, when feeding, may inject toxic saliva into plant tissues. In addition, feeding may create wounds that provide entry sites for plant pathogens. For most scale species, males eventually molt into very small, winged, gnat-like insects that live up to two weeks. Their sole function is to fertilize females (for soft scales). Hard scale females continue to molt and later lose their legs; remaining stationary (sessile) for the remainder of their life. In contrast, soft scale females retain their legs. Both hard and soft scale females will eventually die (or "kick-the-bucket") and their bodies form a protective covering over the eggs and for emerging crawlers.

One method recommended to detect the presence of scale crawlers is to randomly wrap double-sided sticky tape around branches or twigs, which will capture the crawlers as they migrate on plants. It is best to check the double-sided sticky tape either once or twice weekly. Once scale crawlers are present then you can implement any one (or all) of the following procedures: 1) use a forceful water spray twice weekly to quickly remove all scale crawlers from plants; 2) apply some type of contact insecticide such as potassium salts of fatty acids (insecticidal soap), petroleum or neem-based oils (horticultural oils), acephate (Orthene), or any of the pyrethroid-based insecticides (bifenthrin, cyfluthrin, and lambda-cyhalothrin); and/or 3) apply a systemic insecticide such as imidacloprid, dinotefuran, or thiamethoxam as a drench or granule to the soil if you are dealing with soft scale. This should be done prior to or as soon as new growth emerges. It is important to irrigate afterward (due to the lack of moisture it is recommend to irrigate plants before applying any systemic insecticide) in order to move the active ingredient into the root zone where it can be absorbed by the roots and then translocated to plant parts where the scale crawlers are feeding. Systemic insecticides are more effective against soft scales because they feed on plant fluids, which contain the active ingredient of the systemic insecticides that are being translocated through the plant vascular system. In general, systemic insecticides are "less effective" for managing or suppressing hard scales as these scales are not feeding exclusively on plant fluids.

When using forceful water sprays or applying contact insecticides be sure to thoroughly cover all plant parts, and make repeat or multiple applications for several weeks. Dealing with scales early in the growing season will alleviate having to deal with scale outbreaks later on in the season, which limits management options.

Raymond A. Cloyd

RECYCLING BY REACHING INTO THE OLD E-MAILBAG ---- A Tool For Helping To Determine The Onset of Eastern Tent Caterpillar And European Pine Sawfly Activities

Whether a winter has been mild or severe (and I am not sure how one categorizes "mild" versus "severe"), people have been asking, "What effect will the winter weather have had on insect activities this year?" (being 2012). In the first place, "insects" is a broad umbrella term. Rather, people need to concentrate on specific insects of concern. However, putting that aside, and addressing the broad category INSECTS, suffice it to say that insect species native to Kansas are adapted to survive Kansas winters regardless the severity of winter weather/conditions. That being said, the question becomes, "When will the current insect season begin?" And that usually is asked of various species of insects regarded as "Pests".

Being cold-blooded organisms, insect activities are regulated by temperatures, the usual broad assumption being that during periods of cool/cold weather, insects "shut down" until the return of warmer weather "awakens"/stimulates the resumption of further development. Insects overwinter in a variety of life stages, and so no one single statement applies to all. Generally speaking, by applying the concept of thermal units and accumulated Growing Day-Degrees, it is possible to approximate the initiation of current-season activities of certain pest species for which a range of accumulated GDD's have been standardized. Growing Degree-Days for a 24 hour period are determined by averaging daily high and low temperatures, and then subtracting a "threshold temperature". Because the development of many insects is limited below 50°F, 50°F is commonly used as the **base$_{50}$** temperature for GDD calculations.

Currently, as of March 15, accumulated thermal units/Growing Day-degrees for the 4 corners of the state, the center of the state, and Manhattan are:

	December 2011	January 2012	February 2012	March 1-14 2012	Total 2012
B. Springs southeast	**12**	**27.5**	**17.5**	**88**	**133**
Elkhart southwest	**0**	**4**	**7**	**48**	**59**
Hiawatha northeast	**.5**	**4**	**0**	**45**	**49**
St. Francis northwest	**.5**	**3**	**.5**	**22**	**25.5**
Ellsworth central	**0**	**0**	**6.5**	**46**	**52.5**
Manhattan	**0**	**1.5**	**1.5**	**51.5**	**54.5**

By looking at the accumulated GDD's at the different locations in Kansas, one would expect to see advanced development of insect activities in southeast Kansas Insect especially in comparison to the more northern reporting stations.

Two early-season "regulars" are Eastern tent caterpillars and the larvae of European Pine Sawfly. The cited accumulated GDD requirements for egg hatch of both species are 100 – 200. The following table documents egg hatch **in the Manhattan** area over a 10-year span. As a rule, ETC activities began (days) before EPS with the exception of 2008 and 2009.

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
ETC	March 20	March 26	March 21	March 29	March 30	March 16	March 28	March 23	March 31	March 23
EPS	April 1 (12)	April 1 (6)	March 26 (5)	March 30 (1)	April 2 (3)	March 23 (7)	March 16 **(-12)**	March 19 **(-4)**	April 7 (7)	April 3 (11)

As of Tuesday, March 13, the accumulated GDDs for Manhattan were 42.5. Of 12 ETC egg masses being observed, there had been no egg hatch. Yesterday (March 14) as observed over the noon hour, larvae had emerged from 5 of the 12. The fact that eggs have hatched well before reaching the cited 100-200 GDD guideline goes to illustrate that accumulated GDDs are not absolute values but merely general guidelines. Bear in mind that on numerous days when daily high temperatures were pleasantly/unseasonably high, evening temperatures dropped to levels which lowered daily averages below the **base$_{50}$** temperature for accumulating GDDs. But there was egg development occurring during the warmth of those days. This reinforces the importance of visual monitoring of events and not merely relying on GDD guidelines.

Currently, then, in the Manhattan area, eastern tent caterpillar are active, and their "tents" are still small and not easily observed. European pine sawfly larvae have not yet hatched. However, their eggs have swelled and extruded through ovipositional slits on needles. Egg hatch is likely to occur within a week.

EMERALD ASH BORER (EAB) ---- Status of Emerald Ash Borer Relative to Kansas

Very soon, personnel from USDA, APHIS, PPQ and the KDA will be erecting "sticky" purple prism traps for the ongoing EAB detection program in Kansas. Traps may become more evident/noticed due to the increased numbers being deployed in 2012. Whereas in each year between 2008 – 2011, 200 traps were set out, new protocol (established by the US Forest Service) has directed that 362 traps be deployed to coincide with predetermined needs to accommodate "wooded areas" in Kansas. Cited high risk sites include rest stops, campgrounds, forest debris dump sites, pallet remanufacturing sites, sawmills and nurseries.

It has been determined that EAB beetles are visually attracted to the purple color of the traps. Traps are also baited with an 80/20 percent mixture of Manuka oil and Phoebe oil, respectively. Serving as an olfactory attractant, these aromatic volatiles increase the efficiency of the trapping process. To date **in Kansas**, NO

EMERALD ASH BORER BEETLES HAVE BEEN CAPTURED THROUGH THE 2008 – 2011 TRAPPING SEASONS! Traps are situated high off the ground in ash trees (Figure 1).

Figure 1

The oft-asked question is, "How close to Kansas have EAB been detected?" The following map (Figure 2) provides "points closest to Kansas".

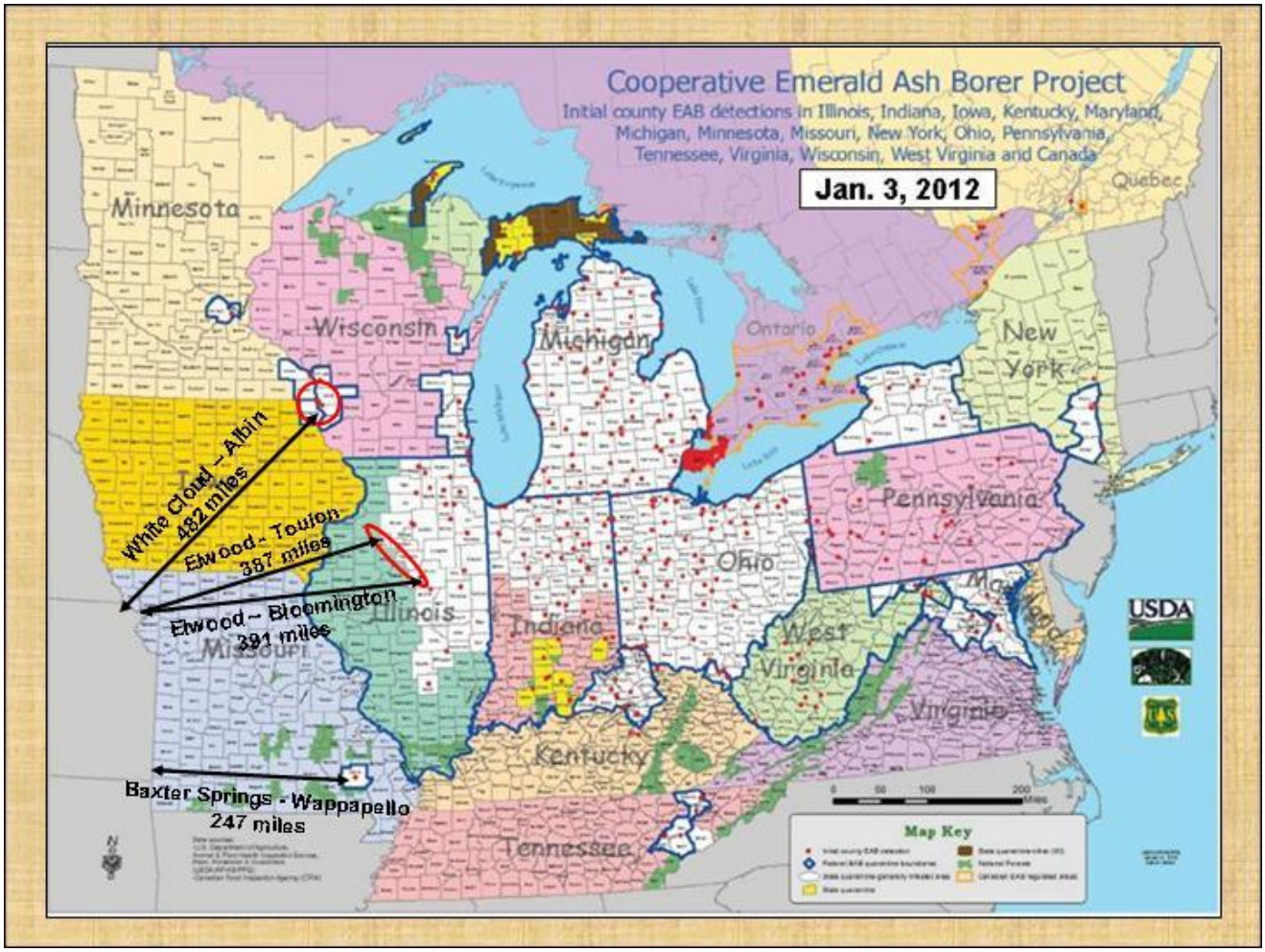

Figure 2

As seen by the map, EAB were detected at a camping site on Lake Wappapello, 247 miles east of Baxter Springs. [Current confirmed EAB infestations relative to northeast Kansas are more distant …. Bloomington and Toulon, IL, and Albin, IA].

One might next ask, "What about the natural expansion/spread from the Wappapello site to Baxter Springs?", to which there is no definitive answer, but which might be, "Never." In theory, beetles have no need to travel/seek out hosts beyond those adequate numbers immediately available to them (the Wappapello population remains in close proximity to the original site where they were first detected.) Only when the need arises to seek out a new host source might there be movement ---- and what is not to say that the next available host trees might be north, south and/or east ------ thus not bringing them any closer to Kansas then their current status. The more likely route-of-introduction (**if it is to happen**) will be through infested "firewood" transported into Kansas. In large part, then, this provides the rationale that EAB trapping be concentrated in the aforementioned high risk areas.

Kansans who hear about EAB and who are concerned for their ash trees need not be thinking/asking about applying insecticide treatments to protect their trees against EAB. Simply, again, because EAB do not pose a current threat, treatments are unnecessary. Even in states where EAB have been detected/are established,

preventative insecticide treatments are not necessarily/immediately required. The current statements pertaining to residents in states with established EAB is that trees could be "at risk" if trees are within a quarantined county, or if trees are outside a quarantined county but within 10-15 miles of a known EAB infestation. Furthermore, guidelines state that it is probably too early to begin applying insecticide treatments to trees beyond the aforementioned 15 mile limit. This, then, should alleviate concerns with regard to treating ash trees against EAB in Kansas.

Bob Bauernfeind

Report from the Kansas State University Insect Diagnostic Laboratory:

The following samples were submitted to the Insect Diagnostic Laboratory from March 1st to March 15th.

March 5 – Cowley County – Non-insect related decline/dieback
March 5 – Geary County – Carpenter worm collected outdoors
March 7 – Jackson County – European honey bee in gardens
March 7 – Jackson County – German cockroach nymph in home
March 7 – Nemaha County – Grasshopper nymphs in home
March 7 – Ellis County – Black carpenter ant
March 8 – Barton County – Carpenter worm and redheaded ash borer collected from dead ash
March 9 – Leavenworth County – Clover mite found around home
March 12 – Pawnee County – Chrysomelid beetles in home
March 12 – Colorado – Millipedes feeding on seed potatoes

If there are any questions regarding these samples or about the identification of any arthropod please contact the Insect Diagnostician at (785) 532-4739 or GotBugs@ksu.edu.

Holly Davis

Sincerely,

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