Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants and Extension Personnel

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Lilac or Ash Borer: Be Ready For This "Critter"

Now is the time (which is much earlier than usual) to be cognizant or aware of potential problems with the lilac/ash borer (*Podosesia syringae*), which attacks ash, lilac, and privet. Adults, which are typically active in mid to late April, are brown, clearwing moths that resemble paper wasps (Figure 1). Peak moth flight or activity usually occurs from May through June; however, we appear to be at least three weeks ahead in cumulative heat units so this may be earlier than usual. Adult females lay oval, tan eggs in cracks and crevices, or wounds at the base of plant stems. A single mated female lives about one week and can lay up to 400 eggs.

Eggs of lilac/ash borer hatch into cream-colored larvae (caterpillars) that are about 1-1/2 inches long when full-grown, with brown heads. Larvae cause plant injury by creating tunnels and feeding within the bark (cambium). In addition, larvae may bore further into the wood and feed within the sapwood and heartwood. This is the main reason why systemic insecticides are less effective against caterpillar borers compared to beetle borers. Feeding by the larvae restricts the flow of water and nutrients causing shoot or branch dieback. Lilac/ash borer typically feeds near the base of plant stems creating swollen areas or cracks at the base of plants and where major branches attach to the trunk. Evidence of larval feeding is the presence of light-colored sawdust below infected areas. Remember, caterpillar or clear-wing borers expel sawdust from cracks in the bark that accumulate at the base of infested trees and shrubs whereas beetle borers (particularly flat-headed borers) pack their tunneled galleries with sawdust-like frass. Lilac/ash borer overwinters as late-instar larvae located in feeding tunnels or galleries.

Lilac/ash borer larvae eventually partially tunnel out through the bark before pupating. Adult moths that emerge from the pupae are unable to chew, so it simply pushes out the thin layer of bark remaining. When an individual moth emerges, the brown pupa shell is usually left behind, protruding from the hole (Figures 2 and 3). Sometimes this is barely visible; however, the pupa case commonly extrudes out about 1/2 inches. Male moths emerge first followed by females later on. Adult moths are 1.0 inches in length, with a brown-colored body, and they are active fliers. In Kansas, there is usually one generation per year.

As with most wood-boring insects, the primary means of managing, regulating, or preventing problems with lilac/ash borer is to avoid undue "plant stress" via properly implementing cultural practices such as irrigation (watering), fertility, pruning, and mulching. Stressed plants are highly susceptible to attack by lilac/ash borer (Figure 4), more so than "healthy plants" (where is a "healthy plant" in Kansas?). For example, a two to three foot wide mulched area around the base of trees and shrubs helps alleviate injury from lawn mowers and weed-trimmers. In addition, avoid pruning plants in late spring through early summer (under usual weather conditions), which is when moths are present.

If necessary, pyrethroid-based insecticides such as permethrin (Astro) may be applied to the bark (at least up to six feet from the base) in order to prevent lilac/ash borer larvae from entering plants. Remember that clear-wing borer larvae crawl on the bark in search of entry points whereas flat-headed borer larvae do not crawl on the bark but chew directly through the bottom of the egg shell into the tree or shrub. Pheromone traps are available that capture adult males, which indicates that females will eventually be laying eggs. This helps in timing applications of insecticides. Be sure to check the traps two to three times per week and record the number of newly captured males. Apply insecticides one to two weeks after peak male capture. For more information regarding lilac/ash borer management contact your county or state extension specialist.

Raymond Cloyd

Wheat

There is still considerable concern regarding aphids in wheat. Many growers and consultants are wondering if adding an insecticide to a tank mix with a fungicide would be effective for controlling aphids. These aphids (mostly bird cherry-oat aphids but a few greenbugs and English grain aphids as well) are very susceptible to insecticides so they should be well controlled. The question is whether or not it is justified and will save you some yield. It takes many aphids (usually 20+ per tiller from boot to heading to actually reduce yield. Counts we took from Central KS averaged 1 aphid/ 2 tillers, and the fields were in the flag leaf stage. Growing conditions are great so with the low numbers of aphids and the plants growing well there is no need to treat wheat for aphids at this time. If you decide to tank mix an insecticide with your fungicide "just in case", make sure the two products you are considering are compatible and not phytotoxic.

Termites

Recent moisture events and warm weather have activated the termite swarming season. If you have winged ants or ant-like insects flying around your structure by the hundreds or thousands, it is a good idea to get them properly identified. Termites can do serious damage to wooden structures and ants can be a nuisance (See Photo). Please see extension publications on termites: http://www.ksre.ksu.edu/library/entml2/mf722.pdf

and/or ants: http://ksre.ksu.edu/library/entml2/MF2887.pdf

for identification and control information. If you are unsure of which insect you are dealing with, collect a few insects and contact your local extension office for help in getting them identified.

Compare these features to tell reproductive termites from ants

Termites
1. Antennae not elbowed
2. Two pairs of wings of equal length
3. Waist thick

Ants
1. Antennae elbowed
2. Two pairs of wings of unequal length
3. Waist thin

Alfalfa

Alfalfa weevil infestations are rapidly progressing to the pupal stage and adults are also becoming more common. Hopefully, larval feeding will be finished in the next week and we won't continue to see eggs hatch over the next 2-3 weeks as we have in most years. Remember, because of the huge infestations we have experienced, even if your insecticide application resulted in 95% control there still will be many adults produced. So, if weather conditions stay cool (below 85ºF) these adults may feed, especially when concentrated under the windrows, causing stem barking and delayed regrowth, resulting in yellow strips in the fields where the windrows were (See Photo).

Jeff Whitworth *Holly Davis*

So where are we regarding an early Spring?

There currently are many questions regarding our 2012 "warm" weather. Actually, questions began back in December (when we were extremely mild) and continued through January and February when the mild weather continued.

Three weeks ago in the 2012 Kansas Insect Newsletter #2, I summarized the accumulated Growing Day Degrees $Base_{50}$ through the second week of March. Actually to that point in time (despite the mild weather)

accumulated GDD_{50}s were not out of the ordinary. But what changed-the-name-of-the-game were the many record high temperatures experienced in various locations of Kansas. This resulted in excessive accumulated GDD_{50}s for just that 2-week period (in **red** Table 1).

Location	January	February	March 1 - 14	March 15-31	April 1-5	2012 Grand Total Through April 5	2011 Total Through April 7
Baxter Springs	27.5	17.5	88	**245.5**	**88.5**	**467**	**190.5**
Elkhart	4	7	48	**162.5**	**46**	**267.5**	**162.5**
Hiawatha	4	0	45	**247**	**74.5**	**370.5**	**99.5**
Saint Francis	3	.5	22	**98.5**	**28.5**	**152.5**	**106**
Ellsworth	0	6.5	46	**232.5**	**69**	**354**	**125.5**
Manhattan	1.5	1.5	51.5	**226**	**70.5**	**351**	**125**

Table 1

By adding additional **GDD_{50}s through the first 5 days of April**, the accumulated **2012 Grand Total** far exceeds that of **2011**. I do not know how to translate these numbers into weeks-ahead-of-average related to phenological events. But broadly speaking, 3-4 weeks seems to be the commonly-cited response.

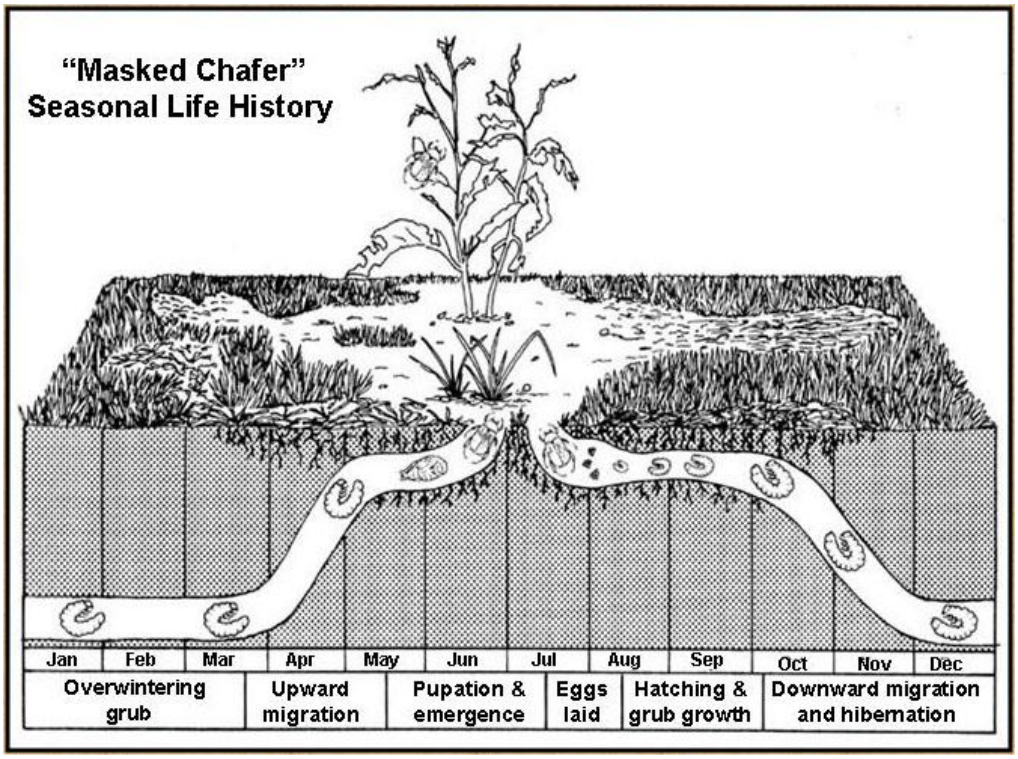
This may be a fair assessment based on what I have been observing for eastern tent caterpillar and European pine sawfly. Banking on normal/average temperatures, I stated (in issue #3 of this year's Kansas Insect Newsletter) that while the egg hatch of these two insect species was a little early, they probably would complete their feeding/damaging stages pretty much in accordance with the normal time frame ----- early to mid May. I now think that they are well ahead of schedule and should complete their feeding forays within 10-14 days ---- easily 3-4 weeks ahead of normal.

A last point to be made is that the onset/timing of early-season insect activities is not uniform across the state. This is illustrated when comparing accumulated GDD_{50}s in southeast Kansas against those in northwest Kansas. Especially for 2012, differences are especially strikingly graphic.

Question Regarding Grub Control In 2012

There have been recent inquires as to how the mild winter temperatures (December – February) and "summertime" March temperatures might influence 2012 grub control decisions. This relates to the use of the following alphabetically listed active ingredients (and respective systemic insecticide products): chloraniliprole (Acelepryn), clothinidin (Arena), imidacloprid (Merit) and thiamethoxan (Meridian). These insecticides are cited for their extended residual effectiveness.

In Kansas, the grubs of historical and primary concern are "annual" white grubs, which are the larvae of "masked chafer beetles". Substantial consumption of plant roots weakens turf. Major damage is attributed to third instar (developmental stage) grubs which ravenously consume roots to satisfy their ever-increasing nutritional requirements. Resultant visual damage (generally becoming evident in September) consists of thinned, wilted, yellowed and/or dead stands of turf. The following illustration depicts the seasonal life history of masked chafers.



The key to grub control is targeting/killing the less damaging 1st and 2nd instars which (given their smaller size) are most susceptible to insecticides. While different product labels specify that their products be applied early in the season (April and May), it is more prudent to apply materials at the initiation of beetle emergence and egg laying activities to provide sufficient/fresh concentrations of insecticide at the time needed to eliminate early

instar grubs. Thus, in Kansas, mid-June through July roughly corresponds to the seasonal appearance of beetles and subsequent egg production.

The initial introductory question stems from current reports of ongoing May/June beetle activities. Flights of early-season May/June beetle species (*Phyllophaga fusca, P.vehemens* and *P. congrua*) typically begin in early April. My earliest catch was April 5, 2003, with the latest being April 29, 1999. On average, flights begin in mid-April. Thus the fact that there already have been reports of activity at the end of March is not "extremely early".

Regarding masked chafers: only time will tell whether they emerge earlier-then-usual. Because the recommended timing of systemic insecticide applications hinges on the onset of masked chafer flights, at this point in time, I would wait for that event to occur. At that time, then, apply automatic preventative insecticide applications (if that is the chosen practice) as this will ensure adequate concentration of product to reduce populations of grubs while in their early developmental stages.

A Blast from the Past ------ Asparagus Beetles

While the introductory phrase refers to something that returns after a period of absence and which evokes fond memories of things past, how would that apply to asparagus beetles which might not be so welcomed. THE BLAST FROM THE PAST really refers to a cut-and-paste article from a previous newsletter ---- or better said, "Why re-invent the wheel?"

According to a local vegetable producer, the asparagus production season typically lasts for 6 weeks (beginning in early April). However, they began this year's harvest in mid-March. So asparagus beetle activities already have begun.

The asparagus beetle (Figure 1) measures ¼-inch in length. Their wing covers are bluish-black, and bordered by reddish-orange margins. Each wing possesses 3 yellowish to cream-colored square spots. The prothorax (area immediately behind the head) is reddish-orange.

Figure 1

Asparagus beetles overwinter beneath debris in and around gardens/asparagus beds. Initiation of their seasonal activities coincides with the appearance of the first asparagus spears poking through the ground. After mating (Figure 2), eggs are deposited "on end" in straight rows (Figures 3).

Figure 2

Figure 3

Within a week, larvae emerge and immediately begin feeding (Figure 4). Larvae develop rapidly. Mature 1/3-inch long plump soft-bodied "wrinkled" larvae are dull grey with black head capsules and legs (Figure 5).

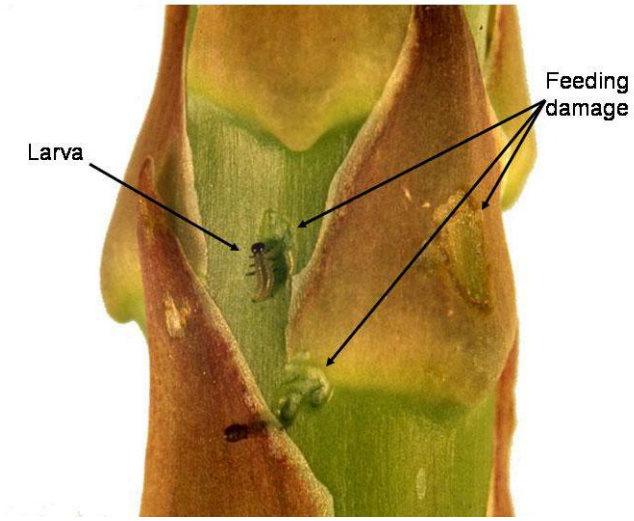


Figure 4

Figure 5

Larvae next burrow into the ground where they enter a 1-2 week pupation period. Newly emerged beetles repeat the cycle. In Kansas, asparagus beetles produce (certainly) 2 to (possibly) 3 generations per year. In response to cooler late-fall temperatures, beetles seek refuge in protected sites where they overwinter.

Two types of damage are attributable to the asparagus beetle: Decreased marketability of produce may be a result of the presence of eggs on spears (Figure 6) and/or visible feeding damage (Figure 7). For home use, spears that might not be considered "market quality" are still usable. Eggs can be removed with washing/rubbing and rinsing in water. And despite some gnaw marks, spears are perfectly edible.

Figure 6

Figure 7

During the asparagus production period, a couple of approaches can be used to counter asparagus beetle activities. A cultural practice would be harvesting spears regularly and cutting them off cleanly and deeply to deprive beetles access to egg-laying sites. Controlling asparagus beetles is also important when establishing new asparagus beds and after the completion of harvest when plants normally produce ferns (Figure 8). Failure to control asparagus beetles result in excessive defoliation (Figure 9) which will decrease the photosynthetic capacity of the plants to fully feed and build root reserves.

Figure 8

Figure 9

Insecticides play a role in home gardens. During the harvest period of asparagus spears, insecticides can be used against asparagus beetles if used in compliance with post-treatment harvest interval guidelines. And after the production period, insecticides can be used to protect asparagus ferns by targeting egg-laying adults and/or eliminating foliar-feeding larvae.

The oft-cited dilemma when selecting an insecticide is the multitude of products registered with the Kansas Department of Agriculture. Currently, 509 products are registered for use against asparagus beetles. Not all retail outlets market/sell the same line of products. It is up to the end-user to shop the shelves of local retail outlets to select a duly registered product. This requires that people **MUST READ PRODUCT LABELS!**

What about the **spotted asparagus beetle?** While similar in size, it is decidedly different in appearance (Figure 10), life cycle and importance as an asparagus pest.

Figure 10

Their initial appearance is later than that of the common asparagus beetle, and eggs are deposited after fern and berries (Figure 11) --- a time well after asparagus production has been completed and plants have been allowed to "fern out".

Figure 11

The larvae of spotted asparagus beetles bore into the berries and feed on the berry pulp, moving from berry to berry until they complete their development. After pupating in the soil, a second generation is produced in late summer.

Bob Bauernfeind

Sincerely,

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