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Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants, and Extension Personnel

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To Treat Or Not To Treat ? That Is the Question:

As of this writing, tomorrow is the first day of summer. Fast forward to September and October — that time of year when people note severe damage (Figure 1) in their lawns caused by **annual grubs** (Figure 2). Now back track to the current time.



Figure 1
Grub damage



Figure 2
Grubs

Why the back and forth? People who have concerns about annual grubs need to act now in terms of applying a **systemic** preventative grub control treatment (i.e. either of two active ingredients — imidacloprid or halofenozide). Both of these AI's maintain residual effectiveness beyond that of traditional contact AI's such as carbaryl (Sevin) and trichlorfon (Dylox). Applied now, either imidacloprid or halofenozide must be watered into the soil where (in solution) they are taken into the plants via their root systems. Grubs feeding on root tissues thus ingest the AI's. Each has a different mode of action. Imidacloprid attacks the insect nervous system. Halofenozide (a growth regulator) disrupts development by accelerating the molting process of immature grubs.

The grubs are not yet present. However, flights of male and female "masked chafer" (Figure 3) have begun as determined by individuals captured in blacklight traps (Figure 4 and 5). Projecting forward, systemic insecticides applied now will have had adequate time for plant uptake, and be in place when grubs hatch from the soon-to-be-laid eggs (Figure 6).



Figure 3
"Masked chafer"



Figure 4
Standard trap



Figure 5
De-electrified "Zapper"



Figure 6
Eggs

One of the problems related to annual grubs is knowing where (in which lawn/turf area) they will occur in sufficient numbers to cause damage. Further complicating the situation is that within any turf setting, grub activities may only be confined to a small restricted area. Sampling to detect these pockets of grubs is impractical. Thus preventative treatments are applied to entire turf settings.

So, “To Treat Or Not To Treat?” The answer to this query depends upon individual expectations. There are high demands for “perfect turf” at different sport venues such as baseball/softball complexes, football fields, soccer surfaces, golf courses and park and recreational areas. High visibility lawns at private residences, apartment complexes, industrial parks and school/university grounds often are targeted for preventative treatments. Treatments are applied as “an insurance” against possible grub infestations. Whether or not grubs would have occurred (and required preventative treatments) at these specific sites is never known.

There will be another window of opportunity to apply preventative treatments — that being 30-40 days after the peak flight evening of masked chafers. By that time, essentially all eggs will have hatched, and during that treatment window, an estimated 90% of the grubs will be in their first or second instar developmental stages. Thus the grubs will be small enough so as not to have caused extensive feeding damage, and (additionally, due to their small size) be quite susceptible to the insecticides.

Two active ingredients are recommended for use: the aforementioned carbaryl and trichlorfon. Because these are short residual products, their application timing should coincide with the treatment window. The same scenario of sites-to-be-considered for preventative treatments (as was for the more costly imidacloprid and halofenozide products) applies to the less expensive contact insecticides. This topic will be revisited in a future newsletter (the beginning of August) when the treatment window has been determined upon the current-season chafer flight.

The bottom line is that **now through mid-July** is the application time for the systemic grubicide active ingredients halofenozide or imidacloprid, if their use is anticipated.

Bob Bauernfeind

Bagworm Update:

A check earlier today revealed bagworms in various early developmental stages. The larger bags (3/16 to 1/4 inch in length) are (now) easily detectable. The larvae are still relatively small and incapable of causing much feeding damage. The timing for single insecticide applications for bagworm control is fast approaching — the last week of June through the first week of July.

More important than what active ingredient is selected for use against bagworms, is the coverage of the spray treatment. People who hastily apply a light mist-like treatment accomplish little in terms of reducing overall bagworm populations. Although peripheral bagworms may be killed, the majority feeding in denser portions of trees and landscape plantings escape treatment. Therefore, utilize sufficient gallonages of insecticide mixtures, and direct sprays into dense foliage.

One of the natural controls for bagworms is hard driving rains which coincide with the time of egg hatch and small larval developmental stages. The recent rains of the first two weeks of June helped in some instances. Where certain cedar plantings were heavily infested with young bagworms prior to the rains, only few survived the torrential downpours. Yet at another site, bagworm numbers were unfazed — in this instance, the cedars lined the back of a warehouse which shielded them from the direct impact of the rain. So, one should not assume that the rains automatically wiped out bagworms. Each site/tree/planting must be inspected to ascertain the current status of bagworms in those individual situations.

People often see the bags of bagworms, but seldom see the actual worm inside. Bagworms are content to remain (for the most part) in their bags. About all that can be seen is their head (Figure 7) and thoracic segments (Figure 8) as they feed and crawl. These 4 segments are quite striking in color and pattern.



Figure 7
Exposed head



Figure 8
Exposed head and thoracic segments

The abdominal segments are seldom observed as they remain entirely in the bag. By cutting open a bag (Figure 9), the entirety of the larva can be observed. Overall, bagworm larvae are plump and stocky in appearance (Figure 10).



Figure 9
Opened bag



Figure 10
Bagworm larva

Extension Publications MF-3635, Annual White Grubs in Turf, and MF-728, Bagworms, are available through local County Extension Offices, or are electronically available/downloadable at: <http://www.entomology.ksu.edu/> Click on "Extension"

Bob Bauernfeind

Insecticide Update:

Two recent insecticide registrations have come to our attention. Valent has announced a supplemental label for the use of Orthene 90 S for insect control in soybeans and Bayer CropScience has received a label for Oberon 2 SC for use on cotton, corn and some vegetable crops.

The new supplemental label for Orthene 90 S targets grasshoppers, thrips, stinkbugs, bean leaf beetle, green cloverworm, soybean aphid and others. Rates vary from 0.28 to 1.1 lb of product per acre applied in 5 to 10 gals./A of spray by air or 10 to 50 gals./A of spray by ground with a 14 day preharvest interval. Supplemental label must be in the possession of the user at the time of application. Check with suppliers for copies of the new labeling.

Oberon is in a new class of chemicals with a unique mode of action for use on mites, whiteflies and psyllids. The use rate on corn is 5.7 to 8.5 fl. oz. per acre with a 30 day preharvest interval for grain. Product has good activity against both Banks and two spotted mites. Treatments should be applied when colonies first appear prior to leaf damage or discoloration. Timing is generally going to be prior to tasseling, but may vary depending on mite populations. Oberon performed well in our 2003 corn miticide trials: <http://www.oznet.ksu.edu/swao/Entomology/Reports2004/SRP927%20Trial%202.pdf> and http://www.oznet.ksu.edu/swao/Entomology/Reports2004/SRP927%20Post_Tassel.pdf

Phil Sloderbeck

Grain Protectants:

With harvest in full swing and with the phase-out of Reldan there have been more calls than usual on what should I use to treat grain going into storage. We have some information posted on our web site at: <http://www.oznet.ksu.edu/entomology/extension/InsectID/Stored%20Grain.html> and in our newly revised publication Management of Stored Grain Insects, Part III <http://www.oznet.ksu.edu/library/entml2/mf917.pdf>. A couple of the newer products are Storcide II (which contains chlorpyrifos-methyl and deltamethrin) and Diacon II (which contains the growth regulator methoprene). Storcide II is produced by Gustafson. For more information call 1-800-248-6907 or check out their web site at: http://www.gustafson.com/new/storcide_II.asp. Diacon II is distributed by IFC (Industrial Fumigant Company of Olathe, Kansas. Their phone number is 1-800-477-4432 and the web site is <http://www.indfumco.com/new/diacon.html>. The next question is: Where can I obtain these products? My first suggestion would be to contact your local elevators and see what they have available, noting that different elevators may be using or recommending different products. If elevators in your area do not carry these newer products you might encourage them to check with their suppliers to see if they could get these products or check with the companies listed above directly.

Phil Sloderbeck

THE WORST OF STABLE FLY POPULATIONS IN PASTURES IS ALMOST OVER:

Populations of stable flies in pastures this year have followed the typical dynamics that have been recorded in recent years, although relatively lower numbers this year. From 2001 to 2004, these populations have all peaked during a two-week period centered on June 3rd; this year, populations peaked around May 30th. The lower populations of stable flies can be perceived in the reduced feeding activity of stable flies on cattle. We have observed this year less bunching and leg stomping, and lower amount of time spent in water, typical defensive behaviors exhibited by cattle being attacked by stable flies.

The lower number of stable flies in pastures this year may have been caused by the lower rainfall we experienced earlier in the spring. These drier conditions would allow limited stable fly development at the winter feeding sites of round bales. Cattle waste high amounts of hay during winter feeding of round bales, which when mixed with manure become ideal larval habitats for stable flies during the following spring and summer. The rains we experienced recently (at least in eastern Kansas) might not result in increases of stable fly populations. As we have observed in recent years, pasture populations of stable flies should decline steadily from now on, which we believe is due to a decline in the suitability of the hay-manure medium as larval habitat.



Tub feeder



Wasted hay

Because there is no effective method for controlling stable flies in pastures, sanitation, the removal of larval developmental habitats remains the best method for the management of stable flies in pastures. To that effect, current research in the Department of Entomology evaluates the effect various methods of feeding the round bales have on the production of stable flies. In addition, various insecticides are being evaluated as larvicides for use at these hay feeding sites. Results of this research will be made available as soon as results are obtained, so producers can plan hay feeding activities during the next winter.



Pyramidal traps being used for assessing stable fly emergence from a round bale feeding site

Alberto B. Broce

Weekly Report from the Kansas State University Insect Diagnostic Laboratory:

The following samples were submitted to the Insect Diagnostic Laboratory from June 17 through June 22, 2005:

- 6-17-2005, Shawnee County: Ostracod Crustaceans in garden pond.
- 6-17-2005, Nemaha County: Cedar Sawfly on trees.
- 6-20-2005, Wilson County: Drugstore Beetles in kitchen.
- 6-20-2005, Ottawa County: Mealybugs, Spider Mites on cedar.
- 6-20-2005, Rooks County: Spider Mites on Juniper.
- 6-21-2005, Shawnee County: American Dog Tick off person.
- 6-21-2005, Butler County: Mite from outside of home.
- 6-21-2005, Jackson County: Shining Mold Beetle.
- 6-22-2005, Douglas County: Garden Fleahoppers in yard, garden, home.
- 6-22-2005, Rice County: Lynx Spider.

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 at bbrown@oznet.ksu.edu.

Bobby Brown

Brand names appearing in this publication are for product identification purposes only. No endorsement is intended, nor is criticism implied of similar products not mentioned.

Sincerely,

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