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Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants, and Extension Personnel

Department of Entomology
239 West Waters Hall
K-State Research and Extension
Manhattan, KS 66506-4027

Tel: 785-532-5891

Fax: 785-532-6258



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Drain Flies, a.k.a. Moth Flies, in Indoor Animal Facilities:

Moth flies, drain flies, filter flies and sewage flies are some of the names given to a group of small, hairy flies that can become quite a nuisance in homes, sewage plants and animal facilities. These are flies about one-tenth inch long, with bodies and wings densely covered by long hairs which gives them a hairy or fuzzy appearance, thus the name 'moth' flies. Wings are held 'roof-like' over the flies' bodies. The immature or larval stage is seldom seen because they live in somewhat protected areas, in addition to the larvae being skinny and small. Mature larvae transform into pupae from which adults emerge; these live about two weeks.

Moth flies are associated with moist, highly organic habitats. In homes, their larvae can be found in the gelatinous film or slime that builds up in drain pipes (sinks and bathrooms), whereas outdoors they proliferate in sewage disposal beds, septic tanks, and moist compost, and less frequently, in potted plants, in bird baths, under air conditioners, and thick mulch. Over the years we have received reports of these flies becoming quite a nuisance, in addition to the above sites, in confined swine operations, where ideal habitats for larval development abound. Although they do not bite, moth flies can become a serious nuisance by their presence in large populations. In addition, the hairs and body fragments become part of the dust in confined premises, adding to the allergenic properties of this dust. Furthermore, moth flies may transmit pathogenic organisms from their larval developmental sites to areas occupied by humans and domesticated animals.

Moth flies are weak fliers, thus incapable of long distance dispersal; wind has been documented to carry them up to 300 ft. Thus, insecticide treatments of pyrethrins or resmethrin labeled for small flying insects can offer good control although temporary. However, the most effective control method is sanitation, that is, the reduction or elimination of larval developmental habitats. Whereas this practice might be easily applied in homes and some premises, the elimination of these habitats in animal operations is most difficult. Because of their small size, moth fly larvae require little substrate in which to develop; thus high numbers

may develop in the numerous microhabitats in indoor animal facilities, making it impossible to implement an effective sanitation program. Application of a larvicide such as Ravap EC onto accumulated animal wastes should afford control in these areas difficult to clean up.



Moth fly

Alberto Broce

Are these chigger, mosquito or itch mite bites?

In spring and summer, we handle numerous calls regarding “insect bites”, requesting information about how to protect ourselves and beloved ones from the attack of a myriad of insects, ticks and mites hungry for our blood: mosquitoes, biting flies, biting gnats, ticks and mites; and on how to alleviate the annoying symptoms associated with these bites. While it may appear as if all bites are created equally, in fact, almost every group of insects, ticks and mites posses differences in their mouthparts morphology and in how they use them in procuring a bloodmeal. Once the biting insect has found its victim, it still has to deal with the host’s defensive responses. Through natural selection the diameter of the mouthparts as been decreased to minimize the pain caused to the host, thus increasing the chances of obtaining a meal without causing defensive behaviors dangerous to the pest. There are basically two different methods of penetrating the host’s skin in search for blood: In the hypodermic needle approach, a thin ‘tube’ is inserted and with it a blood vessel is tapped; this is the typical mode of feeding of mosquitoes, biting lice, and fleas. In the scissors or axe approach, the mouthparts slash through the skin tissues, and the insect somehow laps or sips the blood that flows out; this type of feeding is typical of horse flies, black flies and stable flies.

Because of the itch mite bite outbreaks Midwesterners experienced last year, we have been getting numerous calls reporting the incidence of these bites again. Most often, the description of these bites has not matched those typical of the itch mites. Following are certain criteria one may use in determining the cause of some of the most common bites.

Itch Mites: “The characteristic, cutaneous lesion is a rosy-red wheal surmounted by a vesicle that rapidly becomes a pustule” (from Booth and Jones (1952)). The vesicle or pustule occurs 10 - 16 hours after mite exposure with a wheal diameter of roughly 0.6 cm (1/4 inch). Itching might be intense, but scratching is painful. Itching can lead to secondary skin infection. Bites persist for about 2 weeks, unless they become infected. These bites are found on areas of the body where clothing fits lose (neck, chest, face, arms), and

never under belt, bra, socks, typical sites for chigger bites. Bites are manifested some 16 hrs after the patient has been under or near oak trees (mainly pin oaks, red oaks, and black oaks). Itch mite bites are created as a reaction to the injection through a thin stylet of a saliva that contains a potent neurotoxin.

Chigger Bites: Typical bites are small, red welts without a pustule. As indicated above, typical sites for chigger bites are under belt, bra, socks, backs of knees, crotch, armpits; that is, areas where clotting fits tightly. Intense itching may lead to not painful scratching. Chiggers can be considered non-bloodsucking parasites; contrary to common belief, they do not burrow into the skin. Rather, they insert their mouthparts into the skin, usually in a hair follicle or a pore, and secrete a saliva that digests skin cells which are then ingested. In contrast with itch mite bites, chigger bites do not have to be associated with the presence of oak trees. Chigger bites may resemble flea bites (cat flea) in appearance and distribution on the body; differentiation of the two can be based on circumstances of exposure.

Mosquito Bites: Mosquitoes bites are more difficult to characterize as the reaction to their attack varies greatly with the patient. Bites can be swollen, reddened areas, without a pustule or vesicle. In contrast to itch mite and chigger bites, reaction to the feeding by mosquitoes can be in the matter of a few minutes or be delayed. Mosquito bites can be manifested on almost any part of the body, but most often they are where the skin is exposed; although, as experience will tell us, they can readily bite through light fabric. Mosquito bites would not be expected to occur under bra and belt, as well as on the armpits.

The bottom line, in trying to determine the cause of bites, one must consider as many factors as possible, such as the bite morphology and level of itching; but also, the habitat where exposure might have taken place (i.e., the circumstances of exposure). Have a bite-free summer!

Alberto Broce

Pesticide Search Tools:

Two pesticide search databases are available to Kansans. The first is the KSPIRS (the Kansas Pesticide Information Retrieval System) at <http://state.ceris.purdue.edu/doc/ks/stateks.html> which is hosted at Purdue University. The other is a Kelly Solutions database found at <http://www.kellysolutions.com/ks/>.

Both database systems contain information regarding the pesticides available to Kansans. The Kelly Solutions system will ask for an e-mail address login once during each visit to the site. Each site contains the same basic search information. Individual preference will be the main factor for choosing to use one over the other.

Sharon Dobesh

Bee Registrations Accepted on Sensitive Crops Website:

Locations of bee hives and bee yards are now being listed on the Project Good Neighbor website along side the sensitive crops registry. Project Good Neighbor is a voluntary communications tools for use by sensitive crop growers and pesticide applicators. This site, hosted by the Kansas Department of Agriculture Pesticide Program, focuses on off-target herbicide damage, particularly phenoxy herbicides, to nearby crops whether by drift or volitization.

Recently locations of beehives have been listed along side the sensitive crop sites because beehives are sensitive to many insecticides, which can cause devastating loses in hive populations. This results in reduced honey production and can result in contaminated honey as well. The hive products fit into the criteria of being listed on the site since they are a cash crop.

Registry information can be obtained at <http://www.ksda.gov/Default.aspx?tabid=72> . For questions, please contact Sharon Dobesh at sdobesh@oznet.ksu.edu or by phone at 785-532-4748.

Sharon Dobesh

API LIFE VAR Section 18:

As the summer months wind down, beekeepers begin preparing for the fall hive duties. Keep in mind the Section 18 for Api Life VAR has been renewed for 2005 and is an alternative to Apistan Strips or Check-Mite. Use of Api Life VAR was approved by the EPA to provide an alternative product to help prevent problems with varroa mite resistance to other available pesticide products.

The current Section 18 is set to expire December 1, 2005. Api Life VAR is an alternative control for suppression of varroa mites in honey bee hives. The active ingredients are Thymol, Eucalyptus oil, and L-Menthol.

Api Life VAR should not be used during honey flows, when surplus supers are installed, or during temperatures above 90-degrees F. Api Life VAR tablets should be removed from hives at least 30 days prior to harvesting honey.

For questions regarding the Section 18 on Api Life VAR, contact the Kansas Department of Agriculture at 785-296-3786, or Sharon Dobesh at sdobesh@oznet.ksu.edu .

Sharon Dobesh

Dursban End Use for Termite Treatments:

December 31, 2005 is the last day that any person can sell or apply a termite control product that contains chlorpyrifos (such as Dursban and Cyren) as a pre-construction treatment. All other uses of chlorpyrifos for

termite control have been banned since December 31, 2002. Currently no plan has been approved by the EPA to allow continued pre-construction use of these once common termiticide products. After Dec 31, 2005, pesticide dealers can no longer sell these product but may be able to return unsold products to the manufacturer. However, applicators should attempt to use up their existing inventory of product before the end of the year. Product that can not be properly used or returned may need to be disposed of as a hazardous waste. Old chlorpyrifos termiticide products that have labels that specifically allow uses other than for control of termites may be used as labeled for control of pests other than termites. -Gary Boutz, KDA Pesticide Program

Sharon Dobesh

Potato Leafhoppers:

Populations seem to be much more variable this year then the previous two years. Sampled seven alfalfa fields and only one exceeded treatment thresholds. However, 90% of those collected were adults which means, to me, that eggs are yet to hatch so fields may still be at risk.

Jeff Whitworth

Soybean Stem Borers:

Adults are mating, laying eggs, and larvae are already tunneling in stems. Thus, this pest continues to have a spread out lifecycle.

Jeff Whitworth

Japanese Beetles Adding to Soybean Defoliation:

While looking for reported low-level soybean aphid infestations, we encountered a number of Japanese beetle adults causing some defoliation damage to soybeans in one field near the northwestern edge of Topeka. Leaves of soybean plants damaged by adults take on a skeletonized appearance. Adult Japanese beetles have a characteristic metallic green head and neck-region (pronotum), plus a distinct reddish-bronze coloration to their wing covers. White hair tufts are visible on the abdomen, just under the wing covers. They sometimes cluster in large numbers. The larvae, called grubs, feed on below-ground plant parts, particularly the roots of grasses. As mentioned in last week's newsletter, there are a few localized infestations of this pest within the state. Fortunately, our populations in no way compare to those causing havoc in corn and soybeans in states farther to the east. Traps have collected thousands of beetles in as few as 6 hours in Illinois this year! Corn silks have been stripped in some areas within IL, limiting pollination, and soybean defoliation has sometimes reached economic levels in that part of the Midwest. Note that soybeans should be able to withstand around 20 percent defoliation during reproductive development stages before treatment becomes necessary. This introduced pest feeds on the foliage and fruit of ca. 350 plants.

After further investigation, this is no surprise because this field is less than a mile from a known infestation that the Kansas Department of Agriculture has been actively engaged in trapping and biocontrol efforts for several years. According to Bill Hilbert, KDA Area Specialist, the flight is about over for this year and populations in this area have decreased from the previous year or two.



Japanese Beetles



More Japanese Beetles

Randy Higgins

Soybean Aphids Verified in NE Kansas:

Thanks to reports from Crop Quest consultants, we have verified infestations of soybean aphid in NE Kansas during 2005. On Wednesday, we saw very slight populations in fields near Topeka in Shawnee County. How slight?: A single aphid was found in one field and very sparse colonies of 10 to 15 or so aphids were located in another. Reports indicated that populations had occasionally reached 25 aphids per plant for up to 3 or 4 weeks before we were notified.

The next morning we were directed to a field in Jefferson County, adjacent the Atchison County line. K-State Research and Extension Ag Agents David Hallauer, Ray Ladd, and I spent quite a bit of time in the field NE of Valley Falls, eventually locating the highest populations reported thus far this year. After walking over much of this 120-acre field (R3 – early pod developmental stage) and not finding a lot, we were impressed that the consultants had located infestations that could cause concern. It would have been easy to say that the aphids were not present or were present at inconsequential levels. The upper end of these infestations, for the most part, may have reached 400 - 500 aphids per plant but there were significant areas where relatively few or no aphids were present. Eventually, an occasional plant supporting possibly 850 to 1,000 soybean aphids was located. In some instances, a large number of cast skins were evident, signs that higher populations had been present on some plants several days previously. Many of the plants with heavier populations were being attended by ants. Beneficial insects were sometimes present, but the predators were not noticed in overwhelming densities. The greatest pest densities were observed in areas that were surrounded on a couple of sides by nearby wooded waterways. Although buckthorn (the overwintering host) may have been present in the woods, we were not able to confirm it was there. A few winged individuals were found – whether they were coming into the field or leaving it was not obvious since the winged aphids were not noticed on plants that had the densest populations.



Soybean Aphids



Soybean Aphid Infestations



Mixed colony of winged and wingless aphids



Cast skins indicating that many aphids had been present previously

The cooler weather that we have been experiencing the last few days may favor the aphids now, but weather projections are for a return to temperatures in the 90s. This species of aphid does not increase rapidly when temperatures exceed 95 degrees F.

This is a field to keep an eye on, but treatment is not yet recommended, particularly when the field as a whole was considered. Spot treatment might be beneficial in a few locations if aphids persist and increase and more rain falls to increase the yield potential for the crop.

Scouting reports from consultants indicated that populations of around 100 soybean aphids per plant were occasionally being detected near Tonganoxie on Thursday.

Randy Higgins

Weekly Report from the Kansas State University Insect Diagnostic Laboratory:

The following samples were submitted to the Insect Diagnostic Laboratory from July 15 through July 27, 2005:

- 7-15-2005, Graham County: Salt Marsh Caterpillar in yard.
- 7-15-2005, Sedgwick County: Booklice in home.
- 7-18-2005, Johnson County: American Dog Tick on person.
- 7-18-2005, Republic County: Crab Spider in home.
- 7-18-2005, Morton County: Ground Beetles on doors.
- 7-18-2005, Butler County: Pine Tip Moth damage to trees.
- 7-19-2005, Morris County: Winged Ants from home.
- 7-19-2005, Rice County: Spider Mites on oak.
- 7-19-2005, Graham County: Mite damage to Honeylocust trees.
- 7-20-2005, Kingman County: Citrus Planthopper, Poplar Petiolegall Aphids.
- 7-20-2005, Coffey County: Drugstore Beetles in kitchen pantry.
- 7-21-2005, Shawnee County: Possible mite damage to spruce.
- 7-22-2005, Douglas County: Ant pupae on side of house.
- 7-22-2005, Saline County: Lone Star Tick nymph on person.
- 7-25-2005, Riley County: Carpet Beetles in bag of seed.
- 7-25-2005, Reno County: Springtail, Phorid Fly from home.
- 7-25-2005, Leavenworth County: Picture Wing Fly larvae in mulch.
- 7-26-2005, Johnson County: Lightning Bug in spider webbing.
- 7-26-2005, Johnson County: Midges in medical laboratory.
- 7-27-2005, Shawnee County: Woolly Aphids on ash.
- 27-2005, Morris County: Whitefly on catalpa.
- 7-27-2005, Cheyenne County: Spider Mites on Snow on the Mountain.

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

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Sincerely,

Randall Higgins

Sharon Dobesh

Extension Specialist
Entomology (Crops)

Pesticide & IPM Coordinator

Jeff Whitworth
Extension Specialist
Entomology (Crops)

Bobby Brown
Entomology Diagnostician

Alberto Broce
Livestock Entomologist