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Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants, and Extension Personnel

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BED BUGS RETURN

The bed bug *Cimex lectularius* Linnaeus has become a rare pest in the United States and Europe as a result of the improved insecticides and sanitation that occurred in the latter half of the 20th century. However, in the last few years there have been reports of bed bug infestations in motels and homes in 27 states. Our own diagnostic service has identified specimens from Colorado, New Jersey as well as Kansas. The reason for the bedbug reappearance is not clear; the most widely accepted theory is associated with increased international travel. In many countries bedbugs have been a continuous problem.

The bed bug belongs to the family Cimicidae which includes several other similar bugs including the bat bug, poultry bug and swallow bug. These bugs feed on the blood of people and warm-blooded animals such as bats, chickens, swallows and other domestic animals.



photo: Jeff Hahn

Bed bug adults are brown, wingless, 5.5 to 7.0 mm (1/4 and 3/8 inches) long with abdomens about 3.0 mm wide. The body is flat when not engorged with blood. When engorged, the body becomes elongated and swollen, and its color changes from brown to dull red. Bed bugs possess scent glands that produce a distinctive "sweet" odor.



Bed bug: photo from Clemson University website

Bed bug eggs are white and about 1/3-inch long. Under favorable conditions the female bed bug lays about 200 eggs at the rate of 3 or 4 per day. Eggs have a sticky coating and stick to objects where they are laid. It usually takes the eggs 6 to 17 days to hatch, and the newly emerged nymphs will start feeding immediately. A bed bug goes through five molts (shedding of its skin) before it reaches maturity. Development time varies significantly and depends on the availability of food and environmental conditions. Bed bugs may live for several weeks to several months without feeding. These insects usually hide during the day. Outdoor, they can be found in caves, tree holes, and nests. Indoor, bed bugs hide in cracks and crevices, under objects, in furniture, etc. The most common indoor infestations are found in mattresses, box springs and upholstered furniture. Bed bugs will also crawl into crevices such as those formed behind loose wallpaper, pictures, electrical switches, and socket plates. They come out to search for food (host blood) during the night and usually bite people during sleep. Bed bugs are not known to spread any diseases although their bites can be irritating and lead to significant blood loss in people living in heavily infested houses. The actual bite is not painful; the irritation and itching is caused by sensitivity reactions to substances that bed bugs inject during feeding.

If infestations are found, specimens should be sent to a specialist to determine exactly which species is involved, since control measures could vary depending on which species is present. Bat bugs and swallow bugs may signal other problems that need to be corrected rather than just treating for the bugs.

Household sanitation, finding and elimination of hiding places (sealing cracks and crevices, removal of paper and wood trash) are the best method to prevent and control bed bug infestations. For chemical insecticides labeled for the bed bug control see Table 1. Insecticide should not be applied directly to the mattress unless the label specifically gives directions for this use. For these insecticides, apply a light mist to the entire mattress to penetrate the seams, tufts, and folds. Allow the mattress to dry for several hours before use. Bed springs, slats, and bed frames; mattress tufts and seams; and cracks and crevices around doors, windows, and baseboards should be sprayed thoroughly but lightly. It may be impossible to penetrate all hiding places at once, therefore control may

not be immediate and bugs may be seen for several days after treatment. However, if bugs persist for 2 weeks or more, it is advisable to do a second treatment. For heavy infestations it is recommended that a professional pest control firm is contacted for consultation and/or treating the house.

Table 1. List of insecticides labeled to control bed bugs.

(Read and follow all labeled instructions carefully!). * These products are labeled for use by commercial applicators only.

Allethrin
Resmethrin - 0.3% spray
Pyrethrins
Advanced Garden -0.1% spray (cyfluthrin)
Delta Dust - 0.05% (deltamethrin)*
Suspend SC - 0.6% spray (deltamethrin)*
Drione Dust *
Flee/Dragnet FT-0.5% spray (permethrin)*
Tempo 2 0.05 - 0.1% spray (cyfluthrin)*
Tempo 0.1% dust (cyfluthrin)*
Tempo 20 WP (cyfluthrin)*

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Corn Earworms and Soybeans:

Corn earworms are serious pests of soybeans in many soybean-growing regions of the southeastern states. However, in KS, damage has been limited primarily to the southeastern part of the state, occurring from August through September. Larvae of corn earworms feed on leaves, stems, flowers, pods, and even seeds within the pods. Younger larvae are usually found on or within leaflets or flowers but their feeding is of little consequence as most damage is caused by the last instars (larger larvae). The larger larvae may be found anywhere on the plant and, if densities are high enough, may result in loss of foliage, flowers, or pods. The greatest yield loss will occur when large larvae occur at the same time as pods are maturing because they will then feed mostly on pods and seeds. Field monitoring is the accepted means of determining infestation levels as earworm populations vary greatly from field to field. Monitoring should begin from initial bloom and concentrate on small to medium size larvae (2nd, and 3rd instars) and results used to predict late-stage larval populations. Research indicates approximately 1/3 of these small to midsize larvae will not survive to maturity. Control measures should be initiated when an average of one small to midsize larva occurs per foot of row, but is usually most effective on midsize to large larvae (3rd and 4th instars) as they are most exposed at this time, but, hopefully, have not yet caused significant damage. A list of

insecticides labeled for corn earworm control on soybeans is available at your county extension office.

Jeff Whitworth

The following samples were submitted to the Insect Diagnostic Laboratory for the week of July 21 through July 25, 2003:

- 7-21-2003, Kingman County: Carpenter Ants in Catalpa Tree.
- 7-21-2003, Reno County: Carpenter Ants in home (porch).
- 7-22-2003, Lyon County: Elm Leaf Beetle larvae from tree.
- 7-23-2003, Shawnee County: Lone Star Tick off person.
- 7-23-2003, Rush County: Water Scavenger Beetle larva from horse tank.
- 7-23-2003, Wabaunsee County: Insect eggs on Petunia.
- 7-23-2003, Rooks County: Spider Mites on Columbine.
- 7-23-2003, Shawnee County: Chalcidoid wasps on maple.

If there are any questions regarding these samples or about the identification of any arthropod please contact the Insect Diagnostician (Bobby Brown) at 785-532-6154 or bbrown@oznet.ksu.edu .

Sincerely,

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