



April 11, 2003, No. 2

## **Boxelder and Redshouldered Bugs**

A sure sign that springtime has arrived are boxelder bugs (BEBs) which are frequently observed as they scurry up and down the sides of homes, especially south exposures which receive the full brunt of the sun. Having passed the winter as adults (Figure 1, far right image) that were hidden away in various cracks and crevices, and under ground debris and leaf litter, BEBs congregate just prior to their mid-April migration back to their summer host trees. A close kin to BEBs are redshouldered bugs (RSBs) (Figure 2). Whereas BEBs are associated mainly with boxelder trees (especially female boxelder trees), RSBs are associated golden raintrees.



Figure 1



Figure 2

People have 2 current questions regarding these “cousins”: (1) “Can I eliminate them at this point in time before they migrate to their summer location?”; and/or (2) “Can I eliminate them at their summer site?” The crux of this question has to do with preventing BEBs/RSBs from becoming a nuisance again in the fall of the year.

While there are insecticides registered for use as perimeter treatments around houses as well as for treating BEBs on the ground and in trees, the success of the long term goal of reducing or eliminating fall migrants will likely be disappointing. Even if a person were able to kill 100% of the BEBs massing (on and around their house) prior to the spring migration, there are multitudes of BEBs from adjoining areas/properties which will initiate a current season’s BEB population buildup. And unlike salmon which return to the exact stream from whence they originated, BEB’s do not possess homing instincts, and therefore could randomly/by chance migrate back to homes sites where homeowners owner took springtime actions against BEBs.

Attempting to eliminate BEBs/RSBs at their summer feeding and breeding sites will also likely provide unsatisfactory results. The ground beneath host trees will be littered with seeds produced the previous year (Figure 3). This is the essential food source for first and second generation BEBs/RSBs which form clusters on the fallen seed (Figure 4). It would be difficult to remove this food source, especially those seeds which are protected by grass cover.



Figure 3



Figure 4

Given, then, that the food source cannot be eliminated, attempts might be undertaken to eliminate adult and nymphal BEBs/RSBs with insecticide treatments applied to trees and the ground. Again, the results are likely to be disappointing. BEBs/RSBs often seek cover/protection (Figure 5), and therefore insecticides may never contact the hidden population. Even if sprays are applied when BEBs/RSBs are more active (Figure 6), many more might still remain hidden and not directly exposed to the insecticides.



Figure 5



Figure 6

Similarly, applying insecticide treatments to trunks and branches to kill adults and nymphs (Figure 7) will only provide partial relief. The rough bark provides nooks and crannies in which RSBs/RSBs can escape insecticide treatments (8). Also, given that traditional homeowner spray equipment is not capable of delivering required volumes of insecticides to large trees (Figure 9), a large segment of the BEB/RSB population will remain “in tact”.



Figure 7



Figure 8



Figure 9

Lastly, even if a person were able to control his/her local BEB/RSB population, fall migrants from adjacent yards/areas would migrate back to properties/homes of those individuals who attempted control efforts, thus negating their successful control efforts. A note of hope: often times, people report that BEBs/RSBs did not/have not reappeared after a year in which they were prevalent. This is not

surprising because populations of many insects naturally fluctuate from year to year. Or possibly, their dispersal patterns are such that they migrate to different overwintering sites.

## **Termites**

Spring ushers in termite awareness season and we've received several calls in recent weeks regarding this pest. Homeowners usually become aware of a termite infestation either when the colony "swarms", or when, during remodeling, the mud tubes, workers, and/or damage are discovered.

Three types of termites occur in the U.S.: dampwood, drywood, and subterranean. However, in Kansas, the subterranean termites are the main cause of concern. These termites may establish colonies anywhere in soil that is conducive to providing the shelter and food necessary for their survival. This may be anywhere from 1-20 ft. below ground but must also provide adequate moisture. Moisture is provided somewhat by the termites own metabolic processes but mostly by diffusion from soil moisture. Thus, soil type plays an important role in termite survival. Soils with loosely-bound moisture, i.e. sandier soils, are usually more suited to termites than soils with more tightly-bound moisture, i.e. clay soils.

Termites are social insects with a caste system composed of winged reproductives (males and females) which make up the "swarms" often seen around homes. This swarming behavior generally occurs in April or May but has been seen as early as late February (swarming is weather dependent) and is utilized by a mature colony (usually at least 3 years old) to redistribute and colonize new habitats. These "swarmers" cannot fly well but mostly flutter for a short distance (wind currents may extend flight) and fall to the ground where they lose their wings and search for the nearest dark, protected site suitable for nesting. These reproductives then mate and begin excavating their new nest site. The majority of swarmers do not survive as they are very noticeable to birds and other predators and are easy prey, but also because many do not find suitable sites for nesting and simply perish. These swarms may consist of thousands of termites and if it occurs inside a home can be quite a nuisance. Even if the actual swarm is not observed, evidence of one maybe dead termites or dropped wings around windows or other light sources. When a pair of swarmers find a suitable nesting site the female (queen) begins laying eggs and as these nymphs hatch they help to excavate and consume wood thus increasing the size and activity of the colony. Queen termites are relatively long-lived, sometimes living over 20 years and laying over 60,000 eggs.

The soft bodied, cream colored worker is the destructive member of the termite caste. These are the ones often encountered during remodeling and are responsible for building the mud tubes in and to food sources. Dispersed within these tubes among the workers are the soldiers. Soldier termites have large, harder heads with

larger mandibles (jaws) and are responsible for colony protection. Sometimes during colony disturbances, soldier termites click their mandibles together to alert workers of potential danger, and this clicking is audible to humans.

Termites are really beneficial insects because they breakdown wood from dead and decaying trees and roots, returning many of these products to the soil. However, when termites discover wooden structures built by us they become pests. Any wood in contact with soil is vulnerable but termites can also construct mud tubes within cracks in concrete, cement blocks, bricks, and stone or over the exterior of foundations to reach a source of wood.

All wooden structures should be inspected at least annually for termites. Carefully examine all wood in contact with the ground. It is usually useful to tap the wood carefully with the tip of a small screwdriver or pocketknife. Damaged wood sounds hollow and the blade may even break through exposing the mud tubes or cream-colored workers themselves. Termites do not leave sawdust piles or other outward signs of their presence as other wood infesting insects do and their feeding follows the grain of the wood. Any cracks or crevices filled with mud should be probed for the presence of termites. Anytime you find mud where mud shouldn't be you should suspect termites.

If a termite infestation is discovered, and just because you have a termite swarm in your yard doesn't mean they're in your house, it is best to call a licensed pest control operator. Termites are easy to kill. They usually die quickly when they lose contact with their colony or exposed to light and dryness. But the colony is usually very difficult to kill and will continue actively searching for other avenues to attack your house, and there may be others already feeding that you don't discover. Thus, careful examination by a qualified inspector would be prudent.

There are several products on the market which provide effective protection when used properly by a licensed pest control professional. Termiticides (products registered specifically to control termites) can be used as a chemical barrier around all interior and exterior foundations. This is the traditional method of termite control and can be very effective when used by knowledgeable professionals. There are several newer management strategies utilizing baits impregnated with toxicants. These bait stations are placed around structures to be protected in termite conducive areas or adjacent to existing termite tubes, or both, and frequently are very effective at colony elimination as the workers carry the toxicant impregnated bait back to the colony. Baiting often reduces or eliminates soil impregnation with chemical termiticides. Either or both systems should be used judiciously and in conjunction with periodic inspections.

A common question concerns distinguishing between ants and termites. First, if you have mud tubes filled with cream-colored, maggot-like insects you probably have termites. Most confusion exists between termite reproductives and ants (ants

may also swarm). However, probably the two characteristics most homeowners can use (may need magnifying glass) to distinguish between ants and termites: 1) ants have elbowed antennae. This means if you look at the antennae projecting from the head and they have a decided angle (elbowed) they are not termites. Termite antennae extend forward from the head with no natural angle (not elbowed). 2) ants have a constriction between the thorax and abdomen (narrow waist). Termites are more cigar-shaped with no constricted or narrowed region. Ants are not usually found in proximity to termites.

If you have any questions or need additional information please call your local county agricultural extension agent.

### **Diagnostic Laboratory Report**

The Insect Diagnostic Laboratory received the following samples for the week of March 31- April 4, 2003:

3-31-2003, Riley County: Hackberry Nipplegall Makers from home. 3-31-2003, Atchinson County: Painted Hickory Borers from logs. 3-31-2003, Russell County: Drugstore Beetles from kitchen. 3-31-2003, Douglas County: Odorous House Ants in home. 4-1-2003, Shawnee County: Braconid wasp from home. 4-1-2003, Dickinson County: Lone Star Tick from person. 4-1-2003, Haskell County: Carpet Beetles from home. 4-3-2003, Norton County: Darkling Beetles from outside woodworking shop. 4-4-2003, Johnson County: Odorous House Ants from home. 4-4-2003, Coffey County: Winged Carpenter Ants from home. 4-4-2003, Pawnee County: Wood Roach from home.

Most of the samples were house- hold in nature and represent arthropods emerging from their overwintering states/sites in and around homes. The tick sample was submitted by a hospital. If you have questions about any of these sample submissions please contact the Insect Diagnostician at [bbrown@oznet.ksu.edu](mailto:bbrown@oznet.ksu.edu) or 785-532-4739.

Sincerely,

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