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### Eastern Tent Caterpillar

The 2002 Eastern tent caterpillar (ETC) activities are on the verge of occurrence. In fact, caterpillars began emerging (from one of a dozen egg masses under observation) Wednesday, March 20. While the current cool down has stopped further larval activities, the upcoming surge of warmer weather will push ETC activities into high gear. Wild cherry and sandhill plum are two of the favorite “countryside”/wild tree hosts of ETC.

Additional hosts include ash, birch, willow, maple oak, poplar cherry, peach and plum. By far, the most common “susceptible” ornamental tree favored by homeowners are the wide variety of colorful flowering crabs.

It may seem implausible that ETC would be active at a time when trees are devoid of current-year foliage. However, egg hatch coincides with the time that leaf buds begin to swell. Newly emerged ETC move to the tender buds which provide an ample food supply for the very tiny larvae. With warmer weather and an acceleration of bud development, leaves unfurl and rapidly expand.

Due to their small size and the minimal amount of feeding damage, ETC are rarely detected early in their early developmental stages. Perhaps the first detection of ETC is not even based on visual observations of the larvae or their feeding damage, but rather, a glistening sheen which draws an observer’s attention to a branch. And upon closer examination, a small silky white web mass will be noted in the fork of a twig/branch. ETC construct this web tent which provides them a shelter (a tent) into which they retreat while not out on their feeding forays. As larvae grow, their tent is enlarged to accommodate their increased size. A tent may contain several hundred larvae.

By mid-May, ETC will have completed their feeding and development. Mature larvae generally descend to the ground and wander about until they find a desirable site where they construct their cocoons, inside of which they pupate. Moths emerge a couple weeks later and mate, with the females then depositing their eggs in masses which encircle twigs. Larvae will hatch from the eggs in March of the following year.

Foliar feeding/damage is but a temporary situation. With fully developed ETC no longer feeding, coupled with new foliage produced from auxiliary buds, voids/defoliated areas will be “filled in” within a couple of weeks.

If ETC are detected early in their developmental cycles, and if control is deemed necessary, simply removing the web mass while larvae are “at home” will accomplish the task. People who are adverse to removing/touching the web mass with their fingers can use a pole or stick to dislodge/remove the tent. Pruning out the branch with the web mass is not advised because such removal, simply, is more destructive than any damage that caterpillars are capable of inflicting.

Concerning insecticidal sprays: it is not necessary to spray an entire tree. Because larvae often are housed in their tents, thrusting a sprayer nozzle into the web mass will facilitate direct contact of the insecticide onto the larvae. Or, only spray the foliage on the branch upon which larvae are actively foraging on. Various “synthetic chemicals” are registered for use against ETC. Included are products with the following active ingredients: acephate, carbaryl, cyfluthrin, deltamethrin, esfenvalerate, diazinon, malathion and permethrin. Products with a more “natural” origin include: azadirachtin, *Bacillus thuringiensis*, the spinosids and horticultural soaps.

### European Pine Sawfly

In the Manhattan area, the 2002 European pine sawfly activities began on Monday, April 1. This is 9 days later than for last year. However, with expected spring warmup, this delay does not have any earth shaking ramifications. Likely, by mid-May, the EPS will have run their course for this current spring.

European pine sawfly feeding activities occur early in the year prior to current-year needle growth. Therefore, “old” needles are those which

serve as the food source for European pine sawfly larvae. All pine species grown in Kansas serve as hosts for European pine sawfly larvae.

Unless people are actively monitoring for the presence of sawfly larvae, they go unnoticed during their first 3 weeks of development because (given their small size) they cause very little conspicuous feeding damage. Larvae are gregarious, feeding in clusters throughout their development. Newly emerged larvae (with shiny jet black head capsules) will encircle individual needles, feeding on the more tender epidermal tissue but leaving the needle midveins intact. The needle remains become dry, browned and twisted.

Only during their last developmental stages (end of April and beginning of May, when large larvae are sating their voracious appetites) do people notice the extensive feeding damage. Larvae move to the tips of needles and quickly consume them (in their entirety) before moving onto the next adjacent needle. After defoliating an entire branch, larvae move back down the “stripped” branch and over to the next “new” branch which they then proceed to strip.

Extensive feeding results in trees having a “naked” barren look. However, once sawfly larvae have terminated feeding activities (and formed the cocoons in which they pass the summer before pupating in the fall with adult emergence in the late fall), normal current-year needle production proceeds providing the trees a “puffy look” (terminal tufts of needles on the ends of needled branches).

European pine sawfly can be controlled with any number of products containing “natural” insecticidal materials. Azadirachtin, a bioinsecticide derivatived from neem trees, works as an insect growth regulator. Horticultural oils and horticultural soaps effectively control the soft-bodied sawfly larvae. However, with oils and soaps, what you spray is what you get. That is, once dried, oils and soaps do not provide residual control. Thus if initial spray treatment coverage was not thorough, an additional treatment might be necessary to “clean up” larvae that were untouched and have continued feeding. The rotenone and pyrethrin plant derivatives have very brief residual properties

Insecticides with the active ingredients acephate, malathion, carbaryl, esfenvalerate, rotenone and pyrethrin do have longer residual properties,

thus providing some extended control against European pine sawfly larvae. A possible drawback to these materials is that they are “wide spectrum”, killing not only the targeted pests, but also nontarget organisms including beneficial predator and parasite insect species. This is not to say that these products should not be used, but only to inform end-users of some product pros and cons.

### Cut and Burn Dead Pine Trees

Pine Wilt has become a highly visible, well known and often written about disease of (especially) scotch pines grown in eastern Kansas. Whether in Christmas tree plantations, windbreaks, or as landscape trees in parks and residential areas, diseased trees are readily identifiable by their dried reddish brown to straw brown appearance which especially stands out in stark contrast to adjacent green healthy pines.

Dead trees “are home” to pinewood nematodes, as well as the developing “pine sawyer beetles” within the trunks. When beetles emerge from the pupal stage, they remain in the pupal chamber while their exoskeletons harden. It is at this time that the pinewood nematodes move through the spiracular openings (breathing holes) into the beetle tracheal systems where they wait until the beetles emerge and feed on healthy pines. At that point in time, the nematodes exit the beetles and enter the healthy pine through the wounds caused by beetle feeding. Once in the tree, the pinewood nematodes “go about their business” in terms of developing and reproducing and causing infected trees to succumb to pine wilt disease.

The 100% elimination/eradication of pine wilt disease is not a realizable possibility. However, a degree of incident reduction (especially in localized areas/plantings) can be achieved by reducing local pocket populations of beetle vectors. Beetles which carry pinewood nematodes have a 4-5 week emergence period beginning (approximately) in mid-May. Thus if dead trees are cut and destroyed/burned by the end of April, the local beetle/vector population will have been eliminated well ahead of that time when they would have begun their emergence activities. Because beetles develop up and down the entire length of a tree trunk, trees should be cut off flush to the ground.

Sincerely,

Robert Bauernfeind  
Extension Specialist  
Horticultural Entomology