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Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants, and Extension Personnel

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Defoliating Caterpillars:

Each year, some homeowners (in Kansas) have anxious moments after they discover that their trees have been completely stripped of their leaves (Figure 1). A common response is that the trees were completely normal the day before, and that caterpillars must have moved in overnight and caused the defoliation. In actuality, moths deposited eggs at least 5-6 weeks prior. Thus the caterpillars had been present and feeding for an extended period of time. They had gone unnoticed due to their small sizes and inability to cause substantial ntial/noticeable damage. However, just as a snowball rolling down a mountain is small at the beginning of its journey but rapidly increases in size the closer it gets to the bottom of the mountain, the voracious appetites of increasingly larger larvae results in the snowball effect of rapid (seemingly overnight) defoliation.

Figure 1

At the time people notice the defoliated tree, caterpillars are often observed crawling down and out of trees and wandering about (Figure 2). While some of the larvae may be searching for additional food, most will have completed their feeding phase. These matured larvae are in search of secluded sites in which they will pupate.

Figure 2

Two commonly encountered caterpillar species are “cousins” yellow-necked caterpillars and walnut caterpillars. While the “parent moths” (Family: Notodontidae) may appear identical at first/casual glance they are definitely separable based on the outer border of

their forewings. The border for the yellow-necked caterpillar moth is distinctly scalloped (Figure 3) whereas that of the walnut caterpillar moth is smooth/rounded (Figure 4).

Figure 3

Figure 4

The larvae of each are rather hairy. Yellow-necked caterpillars have a distinctive "yellow to yellowish- range prothoracic shield behind their head capsule (Figure 5). They tend to be gregarious, and often "arch" when disturbed (Figure 6). Yellow-necked caterpillars feed on a wide array of tree hosts including crabapple, apple, peach, maple, elm, oak, locust, walnut and hickory.

Figure 5

Figure 6

Walnut caterpillars have a more restricted host range: primarily walnut, pecan and hickory. Young larvae have a reddish appearance (Figure 7). As they mature, they take on an overall grey coloration which contrasts their excessively long white hairs. Walnut caterpillars forage separately on trees. However at each molt, they form clusters (Figure 7) on the tree trunk or large branches, leaving behind a mass of shed skins (Figure 8) after they depart to resume their feeding activities. Walnut caterpillar defoliations (Figure 9) can have an eventual adverse effect on nut production.

Figure 7

Figure 8

Figure 9

Rosy maple moths (Figure 10 - Female left, Male right) are members of the family Saturniidae which includes the more showy and familiar cecropia, polyphemus and luna moths. Most commonly, rosy maple moths deposit their eggs (Figure 11). The larvae of rosy maple moths are commonly known as green-striped mapleworms (Figure 12).

Figure 10

Figure 11

Figure 12

As startling as the migrating masses of larvae and leafless trees may be, little can be done at this stage of the game: they have run their cycle, and the damage is done. However, trees are tough and resilient. Especially at this time of year, trees rapidly put out new flushes of leaves. A week after defoliation, new leaf growth is evident (Figure 13), and two and 3 weeks later (Figures 14 and 15, respectively), full foliar regrowth has been completed.

Figure 13

Figure 14

Figure 15

This refoliation process is amply evident when viewed from a distance (Figures 16 and 17).

Figure 16

Figure 17

Robert Bauernfeind

Corn Rootworms:

Cornfields examined last week represented a wide range of growth. Looked at fields from the four-leaf stage all the way up to one field that was almost at the pre-tassel stage. One field of about six-leaf stage corn had been planted 60 days prior but the cool spring had really retarded growth. This field was planted with treated seed but had some wireworm damage. Please remember, if you used insecticide treated seed, that these seed treatments have worked relatively well in field trials against most soil-inhabiting insect pests, but residual

Wireworm Damage

activity can only be expected to last 21-28 days. Thus, the timing is critical as to when the insects are actively feeding on the young plants in relation to planting.

Rootworm larvae examined by Dr. Wilde from his insecticide research plots in North Central Kansas were mostly 2nd instars. This means the most feeding, i.e. damage, can be expected over the next 10-14 days. As these root systems are pruned secondary root growth will occur, especially as rootworms stop feeding and start pupating. However, during this time frame, as brace roots are eaten away, any storms or windy conditions may cause plants to blow over resulting in lodging or, as the plant tries to recover, goose-necking. Sometimes plants lodge later simply due to the weight of the ear, if roots have been badly damaged.

Rootworm larvae

Data from a four-year study conducted in Republic County, on Western Corn Rootworm adult emergence:

	1998	1999	2000	2001
1st Adult	Jun. 29	Jun. 25	Jun. 22	Jun. 29
Last Adult	Aug. 6	Aug. 10	Jul. 25	Jul. 24
Peak Emergence	Jul. 2-13	Jul. 6-16	Jul. 6-13	Jul. 10-17

From this data you can see that, even though we've experienced a relatively cool spring, the rootworms are still on track to start emerging as adults the last of June or first of July in central Kansas.

Jeff Whitworth

The following samples were submitted to the Insect Diagnostic Laboratory for the week of June 9 through June 13, 2003:

6-9-2003, Republic County: Elm Calligrapha larvae on tree
6-9-2003, Republic County: Leafhoppers on Elm Tree.
6-9-2003, McPherson County: Aphids/Whiteflies on Birch
6-9-2003, Pawnee County: Ladybird Beetle pupa on Pine.
6-9-2003, Pawnee County: Pine Needle Sheathminor/Mites on tree.
6-9-2003, Riley County: Four-lined Plant Bugs on Spearmint.

6-10-2003, Rooks County: Winged Termites from home.
6-10-2003, Nemaha County: Aphids on Elm.
6-10-2003, Pratt County: Indian Meal Moth in home.
6-10-2003, Pratt County: Yellow Ants under home.
6-11-2003, Riley County: Jumping Leaf Galls on Oak.
6-11-2003, Wilson County: Harlequin Bug nymphs on Horseradish.
6-11-2003, Riley County: Wood Roaches, Strawberry Root Weevils
6-12-2003, Riley County: Wolf Spider in home.
6-12-2003, Ellsworth County: Scarab Beetle grubs, Leaf Beetle on crop.
6-12-2003, Montgomery County: Various arthropods from home.
6-12-2003, Osage County: Lone Star Tick nymph off person.
6-12-2003, Geary County: Rice Root Aphid on Wheat.
6-12-2003, Mitchell County: Black Mound Ants from yard.
6-13-2003, Ottawa County: Eriophyids, Aphids from trees.
6-13-2003, Labette County: Redbud Leaffolder on tree.
6-13-2003, Shawnee County: Noxious Oak Gall on Burr Oak.

If there are any questions regarding these samples or about the identification of any arthropod please contact the Insect Diagnostician (Bobby Brown) at 785-532-4739 or bbrown@oznet.ksu.edu .

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Sincerely,

Jeff Whitworth	Robert Bauernfeind	Bobby Brown
Extension Specialist	Extension Specialist	Entomology Diagnostician
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