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PLANT PEST Newsletter

MINNESOTA EXTENSION SERVICE

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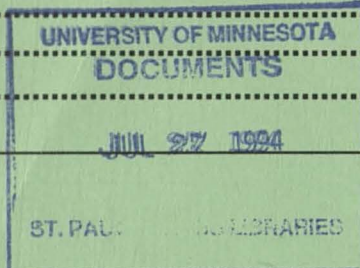
PPST15

July 22, 1994

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ALFALFA

DEGREE-DAY WATCH—Degree-day accumulations for European corn borer in Minnesota, as of July 19, 1994*

Location	Degree-days (>50°F)
Alexandria	1290
Cambridge	1216
Faribault	1329
Mankato	1442
Olivia	1435
Rochester	1315
Rosemount	1452
St. Cloud	1244
Waseca	1446
Winona	1370
Comparative degree-day accumulations based on 30-yr. temp avg:	
Faribault	1217
Rochester	1165
Rosemount	1110
St. Cloud	1098
Waseca	1186

**Based on double-sinewave method. Temperatures provided by Dave Bartels, Dept. of Entomology.*

Bill Hutchison
Extension Entomologist

For more information regarding the Plant Pest Newsletter
contact Extension Plant Pathology at 612-625-6290

CORN

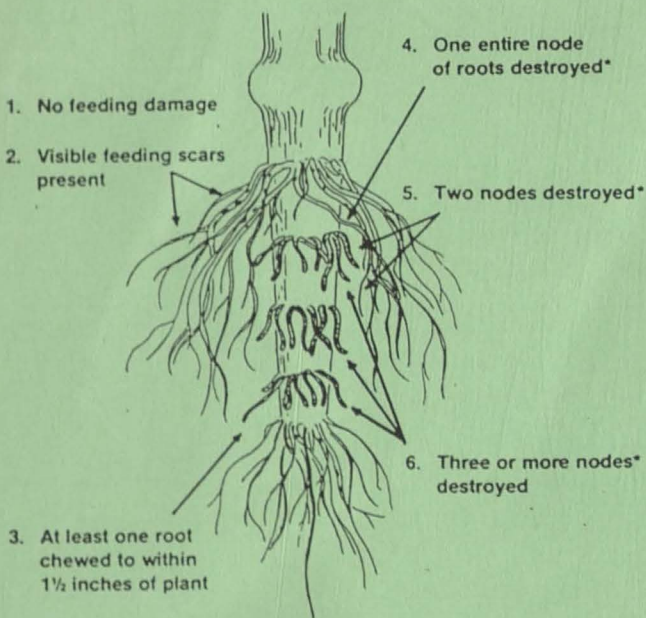
LODGING, CORN ROOTWORM INJURY, AND SOIL INSECTICIDE PERFORMANCE

The last two weeks have brought a number of reports of lodging attributed to corn rootworm feeding. Don't automatically assume lodging is the result of corn rootworm feeding. Only two key ingredients are required for lodging: moist soil and wind. Beyond these ingredients, many factors affecting root system development can increase susceptibility to lodging. Besides corn rootworms, these factors include: hybrid root system characteristics, herbicides (e.g., Treflan, Prowl, 2,4-D), compaction, excessive spring moisture leading to shallow root systems, root rots or nematodes, failure of brace roots to develop properly (=rootless corn), cultivator blight, etc.

Lodging itself does not implicate either corn rootworms or soil insecticide failure. The only way to diagnose the contributing factors to lodging is to dig up affected plants, wash the roots thoroughly, and examine for signs of corn rootworm feeding. The following figure illustrates how corn rootworm feeding is rated. A rating of 3 or more is required before corn susceptibility to lodging increases.

Roots from lodged fields that I've examined illustrate a broad range of factors, including compaction, herbicide stunting of newly developing brace roots due to Prowl, and corn rootworm feeding. Because of the extremely early planting dates on some fields, compared to root system and corn rootworm development, some soil insecticide performance problems are likely. Before implicating soil insecticides, however, make sure root injury rates above a 3. For further information, please request a copy of *Diagnosing corn rootworm injury to corn roots* through your county office or by calling me at (612) 624-7436.

Diagram of Root Injury Ratings



Courtesy of Iowa State University

* It is not necessary for all pruned roots to originate from the same node, just that the number of roots pruned is equivalent to a full node.

Ken Ostlie
Extension Entomologist

SWEET CORN—European corn borer (ECB) moth catches at most locations are still low, indicating we are still between the first and 2nd generation flights. (See Ken Ostlie's article, last week, regarding exceptions to this trend). According to our degree-day (heat-unit) model, the 2nd flight should begin at approx. 1550 degree-days (°Ds), with a major spike in moth flights at 1630°D's. Based on forecasts for selected sites, and historical 30-yr temp. files, the 2nd flight (1550 °D's) is anticipated to begin 7/24, 7/29, 7/30, and 8/3 for Faribault, Mankato, Rochester, Waseca and St. Cloud, respectively. However, as noted in the degree-day table, temperatures have been above normal this year, indicating that the second flight could begin before the forecasted dates. Light-trap catches will soon confirm the onset of the 2nd flight, at which time sweet corn fields should be monitored for ECB. Any fields in the pre-tassel (green-tassel) to early-silk stages will be attractive for ECB egg-lay. Current action thresholds for these plant growth stages are conservative—i.e., 4-6% of the plants with egg masses.

The timing of the first insecticide application is most critical for ECB control, and has the largest impact on % marketable ears at harvest. Also, based on previous research, the only materials that should be used for 2nd generation ECB in sweet corn include:

	Product/ac	lb. AI/ac
Ambush 2E	9.6 fl. oz	0.15
Pounce 3.2E	6.0 fl. oz	0.15
PennCap-M 2MF	2-3 pt.	0.5 - 0.75
*Dipel ES	2 pt. Product/ac	@ 0.05 lb AI/ac (tank-mix)
	+ Pounce or Ambush	

*Dipel ES is a *Bacillus thuringiensis* (bacterium) formulation.

I do not recommend that Asana XL 0.66E (esfenvalerate) be used for ECB. This material, at the current max. labeled rate (0.05 lb. AI) does not provide consistent control.

If corn earworm (CEW) is the **only** pest of concern, then Asana is a good choice. Likewise, PennCap-M should only be used if ECB is the primary pest, as this material does not provide consistent control of CEW. Only the permethrin products (Ambush or Pounce) provide consistent control of both pests. The Dipel ES + permethrin tank-mix has provided consistent control in aerial tests of both pests, when CEW populations are low to moderate. This treatment can be used in areas where aquatic toxicity concerns exist (i.e., application in vicinity of waterways). **B.t.** is a naturally occurring, soil-borne bacterium that is highly selective for lepidopteran (moth, butterfly) larvae, with very low toxicity to beneficial insects, fish and mammals.

To date, we have observed only sporadic CEW flights. The typical major flush of CEW moths does not occur until about Aug. 25th (\pm 3 days), when mass migrations of CEW blow in from southern states (probably Texas). I will keep you posted on when major increases in CEW trap catches occur.

Bill Hutchison
Extension Entomologist

CLINIC REPORTS

DIAL U

County Agents: Please Alert Master Gardeners of the Following Items

Is It Edible? We're starting to get samples of wild fruit from people who want to know if it's edible or not. We're also getting some unusual edibility calls such as those on carrot tops or radish leaves. While technically, radish leaves may not be poisonous, this is not necessarily the same thing as calling them "edible". The concept of edibility carries with it the notion of taste and flavor, not just that something won't make you physically sick or kill you.

Daylily yellowing: We received a daylily sample that was representative of what has been happening to quite a few of them. They started to grow normally, then began turning yellow and brown. An examination of the roots showed them to be firm and light colored, not rotted at all. After talking to a commercial grower, we've concluded that it was latent winter injury. Others with the same symptoms went on to recover and bloom normally.

Killing woody brush and weeds: Besides poison ivy, we've had requests for killing and eliminating sumac, lilac, and other spreading woody plants. It's particularly vexing when a poplar must come down for some reason, and little suckers start popping up all over the place (including your neighbor's yard). Use a brush killer containing triclopyr on newly cut stumps and suckers. Sometimes it takes years to get rid of them, but eventually the herbicide will be drawn far enough into the roots to prevent further sprouting.

Remember, wait till temperatures cool in late August or September before attempting weed control for herbaceous (non-woody) weeds in your lawn.

Grass in Shade: Even when you maintain adequate fertility and water regularly, you probably will have trouble keeping grass growing in a heavily shaded lawn. Typically the grass is very thin and sparse, allowing moss and creeping charlie to move in easily. (They're both better adapted to shade than even the most shade-tolerant grasses available.)

You can overseed these lawns annually, but it's probably smarter to do what you can to eliminate the grass. It's doubtful you'll be able to keep it looking nice. Build a deck or patio, cover large areas with shade-loving groundcovers (if you don't have to walk on them), or lay several inches of woodchips or shredded bark for a woodlands look.

Bumble bees: We are just beginning to receive a number of bumble bee questions. Bumble bees nest in the ground, using old mouse burrows, in cavities in buildings and similar locations. People have been reported finding bumble bees in the ground under foundations, sidewalks, patios, and steps and indoors in buildings. Like wasps, bumble bees are annual insects; nests only survive until heavy frosts kill them.

Tolerate bumble bee nests found in the ground away from human activity. If the nest is too close to tolerate, first try pouring a soapy water mixture directly into the nest opening. If that doesn't work, you can use an insecticidal dust, such as chlorpyrifos. Also a liquid concentrate, such as carbaryl (e.g. Sevin), can be mixed with water and poured down the nest entrance. Be sure you use a product that is cleared for use in lawns or soil.

If the bumble bee nest is in a building, you can spray an aerosol insecticide, such as resmethrin or propoxur (e.g. Baygon), into the nest opening. You can also drill small (about 1/8 inch) holes and 'puff' in a small amount of insecticidal dust, such as bendiocarb or chlorpyrifos. Use a plastic container with a tube tip, such as a ketchup bottle, to do this. When nests are hidden in voids, dusts should work better than aerosol sprays.

Strawberry root weevils: Earlier (PPST 12), we discussed nuisance weevils and noted the most common one, the strawberry root weevil, had not been seen yet. Well they have now! We have received several samples and calls in the last couple of days. Adult strawberry weevils are about 1/4 inch long with dark brown or black heads and bodies and reddish brown legs. Some people think they look like wood ticks. Once inside, these weevils are often found on walls and around sinks, basins, tubs, and other sources of moisture. These weevils are harmless to people and do not destroy property. They do not reproduce indoors and are only a temporary problem, living just a few days inside.

These insects are difficult to predict when they will have an outbreak year. Recently strawberry root weevils were very abundant during 1988-1989; moderately abundant during 1983 and 1986-1987, and average or below average abundance during 1984-1985 and 1990-1993. It's too early to predict how abundant they will be this season (though I'll be bold and predict at least a moderately abundant year). Regardless of how many we see, there have already been large numbers reported in a couple of localized sites so far. See PPST 12 and the Dial-U brief entitled *Home-Invading Weevils* for more information, especially about control.

Yellowjackets: We are starting to get a lot of questions about yellowjacket nests discovered in and around homes. This season is shaping up to a 'good' year for yellowjackets due to the warm spring we experienced earlier. It will be much more difficult to control yellowjackets later in the fall so now would be a good time to take another look around the house for nests. Watch also for sites where nests are not visible but yellowjackets appear to fly in and out of a common point. Control of nests are the same as with bumble bees (see above). See FO-3732, *Are They Wasps or Bees?*

Caterpillars on pansies: With media attention recently focused on gypsy moths, we have received inquiries about suspicious insects people think might be gypsy moth caterpillars. One of the more interesting descriptions concerned bright

DIAL U/Continued

colored, hairy caterpillars on pansies. Although we were confident they were not gypsy moths, we also could not identify them over the phone. Because we had gotten about half dozen calls about this, we encouraged samples. We finally received several specimens which we identified, based on color plates in *A Field Guide to the Butterflies of North America East of the Great Plains* (by A. B. Klots), as variegated fritillary butterflies. This caterpillar grows to be about 1 1/2 inches long. It has a reddish orange head and body with rows of white spots and black spines. There is a pair of long tufts of hair near the head. In addition to pansies, variegated fritillaries have also been found on johnny jump-ups. The literatures also reports them eating stonecrop (*Sedum*) and purslane. This insect is usually not considered to be a pest; large numbers can be handpicked or sprayed with insecticidal soap.

Voles: are more commonly known as meadow or field mice. They feed on plants, snails, insect and animal remains, seeds, tubers, bulbs and rhizomes. They also eat bark, especially in the winter. Vole activity is easily identified by tunnels and nests right at the ground level. To protect young trees and seedlings, use 1/4 inch hardware cloth cylinders buried about 6 inches and standing at least 24 inches above ground. Wrapping the trunks of trees is also good damage prevention. Eliminate weeds and litter, and keep lawns closely mowed to avoid providing food and cover for voles. Rodenticides are legal, but be sure to follow all instructions closely and keep away from pets and children.

Other common questions include: fertilizing, transplanting, caring for apple trees; insect/mite galls, carpenter ants
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