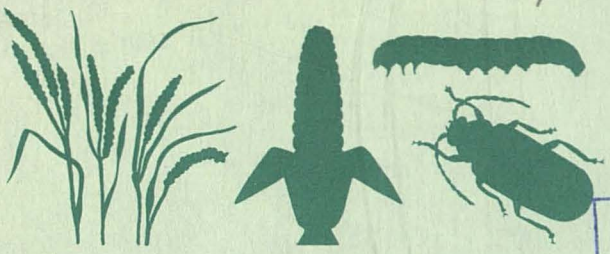

PLANT PEST Newsletter

MINNESOTA EXTENSION SERVICE UNIVERSITY OF MINNESOTA

PPST07 June 1, 1990

IN THIS ISSUE PAGE

ALFALFA

ALFALFA WEEVIL—There continues to be very little AW activity throughout the state. Many locations have now surpassed the 400 degree-day level, where young larvae (1st and 2nd instar) should be present in significant numbers (e.g., >10/40 sweeps).

To provide a comparison to the relatively light infestation we are experiencing this year, I have summarized data collected at Rosemount during 1989. Note that larval populations did not begin to show up in significant numbers until 409 DDs, with obviously high counts of 121/40 sweeps by 490 DDs (5/27). The larval population continued to increase until the last sample date (6/12), primarily

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

UNIVERSITY OF MINNESOTA, U.S. DEPARTMENT OF AGRICULTURE, AND COUNTIES COOPERATING

because of a lack of disease development. (Weevil populations will often crash prior to 700 DDs if environmental conditions are conducive to infection by fungal disease).

Alfalfa Weevil Data - 1989
(Rosemount, MN)

Sample date	DDs (>48°F)	Larvae/40 sweeps
5/7	193	0.70
5/15	284	0.83
5/22	409	12.0
5/27	490	121.0
5/29	521	97.0
5/31	543	251.0
6/5	620	557.0
6/12	720	722.0

In contrast to 1989, our most recent larval estimate at Rosemount (5/29) was only an average of 2 larvae/40 sweeps (about 525 DDs). In addition, our egg counts are also low this year, ranging from May 2 to May 25. 0.20 — 0.40 eggs/6-stem sample.

Given the light AW infestations thus far, in relation to the development of the alfalfa, it appears many people should be ready to harvest before weevils buildup. However, it is too early to predict what might develop after harvest and regrowth should continue to be monitored. Use the degree-day accumulations for each location in comparison to the 1989—Rosemount data to evaluate when significant weevil infestations might still develop or when the weevil season should be over for your area.

—Bill Hutchison, Extension Entomologist

ALFALFA WEEVIL DEGREE DAYS
(as of May 27, 1990)

West		Central		S. Central		S. East	
Alexandria	- 351	St. Cloud	- 378	Fairbault	- 410	Rosemount	- 498
Morris	- 443	Becker	- 426	Mankato	- 520	Redwing	- 504
Montevideo	- 446	Hutchinson	- 403	Waseca	- 448	Rochester	- 384
Willmar	- 387	Cambridge	- 391	Winnebago	- 418	Winona	- 494
Olivia	- 451	St. Paul	- 494			LaCrosse	- 500
						Caledonia	- 360

—Bill Hutchison, Extension Entomologist

CORN

CUTWORM INFESTATIONS AFTER ALFALFA— Dingy cutworm infestations of corn following alfalfa have been reported from C and WC Minnesota. Field histories of infested fields include both fall and spring tillage. The problem is probably more widespread this year because winter kill of alfalfa forced many farmers to put these fields into corn. A range of larval sizes from 1/2" to 1 1/4" can be found in these fields.

Leaf feeding in some fields approaches 100%. This level of leaf feeding can be alarming but will not result in yield loss. However, cutting at the soil surface has also been observed. This raises concerns about the potential for stand loss and delays in phenology. As long as the cutting remains at the soil surface, corn should recover. The growing point is unaffected since it is well below the soil surface until corn exhibits 6 to 8 leaves (growth stage V4-4 visible collars) according to Dale Hicks, extension agronomist. Phenology of cut plants should not be delayed. Hail studies that simulated plant cutoff at the 5-leaf stage (V3) did not affect silking, pollination or maturity. This information should reinforce the point that dingy cutworm infestations rarely result in economic stand loss. However, any soil moved over cut plants by rainfall or tillage (rotary hoe or drag) can prevent successful reemergence.

Watch infested fields closely for changes in cutting behavior. Treat if cutting reaches 3 to 6% and moves below the soil surface. Use higher thresholds for excellent stands

and larger larvae. Use the lower threshold for poor stands and small larvae.

To help answer uncertainties about whether or not to treat dingy infestations, an experiment has been established in Stearns County near Elrosa. Watch for the results later.

STALK BORERS—Marty Lovrien, a consultant from Northfield, reports stalk borers already attacking corn following grassy alfalfa. The small larvae (about 1/8") can be difficult to detect as they tunnel into corn stems and sever connections between the roots and growing point. Effective control of stalk borer requires having the insecticide down just before larvae migrate to corn. Once in a plant, larvae are not susceptible to insecticides until they move to another plant. Timing applications of Ambush, Asana, Lorsban, and Pounce can be extremely difficult. Often stalk borers initially attack the weedy grasses where their eggs were laid and later move into corn. Timing of this movement varies making successful insecticide applications extremely difficult. An Iowa study developed a predictive model for this movement with initial movement occurring at 1400 degree days, base 40°F. This model has not been tested in Minnesota. Mr. Lovrien's observations suggest caution in using the model and coupling it with keen observation for stalk borer damage to time insecticide applications.

BLACK CUTWORM UPDATE—No reports of leaf feeding or cutting from black cutworm infestations have been received yet. Leaf feeding from April 27-29 flights should be visible with cutting expected to begin this weekend or next week. Cutting from later flights, which began about May 8-9, should begin as early as June 9.

—Ken Ostlie, Extension Entomologist

GRASSHOPPERS

GRASSHOPPER INSECTICIDE REENTRY INTERVALS—Boy, did I step into a big, soft one with that summary of reentry intervals in the 18 May newsletter. After a couple of calls I checked additional labels and found that reentry intervals are not the same for the identical chemical as formulated by different companies. Following is a (partially?) corrected list.

Chemical	Reentry interval
Cygon 4E	4 days
Dimethoate 4E	0-4 days
Furadan	1 or 2 days (or 14 days for prolonged exposure)
Lorsban	1 day
Methyl parathion	
4 or 6E	2 days
Penncap-M	0-2 days
Ethyl parathion	3 days (small grain)
8E & 8 Aqua	6 days (corn)
Ethyl-methyl parathion mixtures	same as for ethyl

I guess the actual number of days for reentry may be less important than the fact that fields treated with these compounds should be posted as outlined by the Minnesota Department of Agriculture.

One interesting observation is that if we get into extensive treating with Furadan, which we could with the current Asana XL fiasco, the treated fields should probably have a 16-day reentry interval.

GRASSHOPPER EGG HATCH—We observed from 5 to 50 2-striped grasshopper nymphs in CRP near Olivia yesterday. Dharma Sreenivasam, of the Minnesota Department of Agriculture, indicates numbers similar in west central Minnesota and higher in the northwest. We are still very early in the hatch so at this point judgments as to roadside and CRP treatment are quite premature. Parenthetically control, except in crop, will be wasted at this time.

I do not know if the explosion in hopper numbers I expected in southwest Minnesota will materialize. The excellent rainfall has surely confused the prediction. However, I see nothing to change the outlook in west central or northwest Minnesota.

***NOSEMA LOCUSTAE* (SEMASPORE)**—From the calls I have received I guess it is time to comment on Semaspore, the commercial preparation of *Nosema locustae*, that is being advertised in the state.

First, its only acceptable selling point is that it is a biological alternative to insecticides for grasshopper control. It has **never** been tested under cropland conditions (corn, beans, sugar beet, small grain or CRP). Thus any claims currently being made are based totally on rangeland research.

GRASSHOPPERS/*Continued*

To give you a simple example of its rangeland efficacy, if you had 30 grasshoppers per square yard and you fed the recommended dosage, the very best report indicates 15 would become diseased and two would succumb at 5-6 weeks. If you started with 400 grasshoppers/sq yard, and fed the recommended dose, you would have 15 diseased hoppers and 2 dead at the end of 5 to 6 weeks. There is a study where 50% mortality of approximately 30 grasshoppers per sq yard occurred, but this would be only 15 dead/sq yard in a population of 400/sq yard.

We cannot, in good conscience, recommend something with this sort of performance. I will not agree that either state or federal matching monies will be permitted for use of the product on CRP or public land until it is adequately evaluated under our conditions. Furthermore, it is extremely likely that high grasshopper populations treated with Nosema will require an additional insecticide treatment. I would anticipate the landowner will have to pay completely for the Nosema treatment, but would obtain matching monies for the additional insecticide treatment.

Under no circumstances should extension agents recommend Semaspore for cropland (CRP, wheat, corn, etc.) or township supported programs (roadsides, parks, etc.)

—David M. Noetzel, Extension Entomologist

STORED GRAIN

EMERGENCE OF A NEW INSECT PEST IN MINNESOTA STORED GRAIN—For the last 5 years we have been noticing an increase in the incidence and abundance of a fungus beetle in corn, wheat, and barley stored on farms in Minnesota. The insect is called the squarenosed fungus beetle, *Lathridius (Enicmus) minutus* L, because of the square-shaped pronotum. The adults are dark brown to black with an oval abdomen, and vary in length from 1.2 to 2.4 mm. The larvae and adults of this insect feed and reproduce on a wide variety of molds. Because of their ability to feed and breed on a variety of molds, these insects can survive in the absence of any stored grain. These insects do not directly cause any grain damage, and feed only on molds growing on the kernels. Therefore, presence of these insects in grain is an indication that the grain is spoiling, and care must be taken to prevent further spoilage. According to the Federal Grain Standards, adults of this insect can be classified as "bran bugs," and presence of 5 to 15 adults per 1,000 g grain sample can result in the grain being discounted at the time of sale.

The squarenosed fungus beetle, can develop on molds at very low temperatures (10 to 15°C), and at these temperatures development from egg to adult takes about 9 to 10 weeks. At higher temperatures (25°C and above) egg to adult development takes about 25 to 30 days. A review of literature showed that these fungus beetles have been reported in stored wheat and barley in the United Kingdom and Canada. In Canada, adults of this insect are frequently encountered in wheat that is damp or heavily infected with molds. However, the number of adults captured in wheat in Canada are low; the maximum number ever reported was about 35 adults per trap per week. In some storage facilities in Minnesota we have captured more than 100 to 300 adultsper trap per day. In addition, all 19 facilities of stored corn sampled during 1990 indicated the presence of larvae and adults of this insect. Data collected on this insect since 1985 shows that this pest is common and abundant in corn and wheat compared with barley.

Since this insect is associated with molds, storing grain around 13-14% and the use of aeration may reduce insect incidence. Too little is known about this insect's biology, ecology, and behavior in stored grain to offer recommendations for effective control.

—Bh. Subramanyam, Assistant Extension Entomologist

MISCELLANEOUS

PLANT DISEASE CLINIC

Soybean Cyst Nematode (SCN)

We continue to process numerous samples weekly. No new county locations have been observed to date.

Egg, larvae and race identification testing is available.

For sample collection and fee information, please refer to PPST02, page 14 or call (612) 625-1275.

Tomato Spotted Wilt Virus (TSWV)

Greenhouse grown tomato and pepper samples tested positive for TSWV.

—Jill D. Pokorny, Director, Plant Disease Clinic

County Agents: Please Alert Master Gardeners of the Following Items

Red turnip beetles—Large numbers of these 1/4 inch, reddish, black-striped beetles have been reported (so far) in Anoka, Scott, Washington, Isanti, Kanabec, Sherburne, and Stearns counties. They normally feed on alyssum, cabbage, radishes, and turnips. They have also been reported on beans, cauliflowers, various flowers, lawns, and the sides of buildings. Handpick when practical. Treat desirable plants that are infested with these beetles with carbaryl (Sevin) but be sure that the plant is on the label. Beetles found on the sides of buildings should be a temporary problem and insecticidal control should only be considered as a last resort.

Fungi active in lawns—In addition to the patch disease problems mentioned in previous PPN's, powdery mildew has now appeared along with mushrooms and slime molds. Powdery mildew is a minor problem associated with shady areas. Fine fescue, not Kentucky blue grass, should be planted in shady areas.

Mushrooms are fungi which feed on organic material. During wet weather they form reproductive structures which we know as mushrooms. To prevent children and pets from accidentally ingesting them, rake up and dispose of mushrooms as they appear.

Slime molds are interesting fungi which actually move slowly over vegetation. They do not feed on the grass but excessive amounts may block sunlight resulting in yellowing. They can be removed from the grass by washing the area with a strong stream of water. For more information and color photographs refer to, *Lawn Diseases*, AG-FO-3386.

Sawflies on mugo pines—People with greenish 'worms' eating the needles of their mugo pines are describing sawfly larvae. When the larvae are very numerous and feeding mainly on new growth, serious injury can occur. If the sawflies are about 1/2 inch or less, control can prevent extensive feeding, but when they are nearly full grown, it is too late for effective treatment. Carbaryl (Sevin), acephate (Orthene), malathion, and diazinon are effective insecticides, if control is desired.

Winter injury—As predicted, warmer weather has accelerated the decline of shade trees that were damaged by last winter's freak conditions—thirty below zero temperatures with no snow on the ground for protection. Trees are not dying because of something that's happened in the past week or two...it all goes back to the drought (which weakened them) followed by last winter's weather.

We have received many calls about apple trees that bloomed and began leafing out, but now show leaves that shrivel and dry beginning at the tips of the branches. Roots simply can't meet the trees' demands, due to winter injury. Or, if the roots are OK, the conductive tissues in the trunk or branches may have been killed by the sudden cold.

We're receiving reports of soft maples that are loaded down with seed, but have very few leaves. The overabundance of seed indicates the trees have been under severe stress, and are 'making a last ditch effort' to ensure survival of the species by sending out zillions of seeds. We'll have to wait till the seeds mature and fall before finding out if the trees will leaf out decently. Spring rains may prove helpful.

Cutworms—We are beginning to receive complaints about cutworms cutting off stems of a variety of vegetables and flowers, including tomatoes, peppers, pumpkins, onions, hostas, marigolds, and peonies. For plants that have not been transplanted yet, place a cardboard collar around the stem so it is two inches above and below the soil. For plants already in the ground or plants started from seed, wrap them with aluminum foil to discourage cutworms. Also handpick those found in the soil or those found active above ground at night. Insecticide options include diazinon or Sevin applied to the plants' stem or Sevin bait sprinkled at the base of the plant. Granules, such as diazinon, can also be applied as a preplant treatment.

Other common calls include strawberry leaf spot, rust diseases, anthracnose on shade trees, shade tree decline, transplanting, lawn care, and rose care.

Jeffrey Hahn — *Entomology*
Deborah Brown — *Horticulture*
Cynthia Ash — *Plant Pathology*

Department of Plant Pathology
University of Minnesota
495 Borlaug Hall
St. Paul, MN 55108

MINNESOTA EXTENSION SERVICE
UNIVERSITY OF MINNESOTA
AGRICULTURE