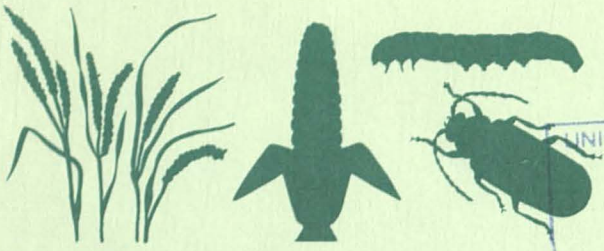

PLANT PEST Newsletter

MINNESOTA EXTENSION SERVICE UNIVERSITY OF MINNESOTA

PPST09 June 12, 1992

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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

CORN

EUROPEAN CORN BORER—The flight is well underway with several trap locations already exceeding 100 per night for a peak capture. Captures this high indicate the potential economic infestations in taller corn. The rapid growth of corn this week will put many fields above the 16-18" height where the field becomes attractive for oviposition. Scouting should begin in taller fields next week with some first instar larvae already reported from early-planted, protected sites.

BLACK CUTWORM—Fritz Breitenbach, IPM assistant specialist in Rochester reports black cutworm infestations reaching 7% cutting in corn near the Northfield and Cannon Falls area. Bryce Nelson, consultant in Mower Co. also reports the appearance of black cutworms in soybean. These larvae are the progeny of the only major flight of the season (May 9-11). Corn is rapidly outgrowing the cutworm's ability to cut and soybean is rapidly adding leaf area. The impact of this flight should be very minor.

Ken Ostlie
Extension Entomologist

POTATO

Colorado Potato Beetle (CPB)—Third stage larvae were observed at Big Lake so egg hatch is well along. Larval control, when appropriate, will have begun this week and will be generally necessary next week. Adult activity, although past the peak continues, with egg laying still in process. Cliff Watrin, Area IPM Agent suggest that the same insecticide does not perform equally well at all locations. Our current observations tend strongly to confirm this. Rotation of insecticides should be followed and those that perform very well should be used sparingly (like no more than two times this season).

Adult beetle activity is underway in the Wadena-Todd county area. Adult populations appear low. Egg laying is just beginning and there is no hatch at this time.

Adults are much more abundant in the Red River Valley and minor adult defoliation can be seen on enough adult damage however to justify control of the "hard shells" monitor, or have their consultants, check their fields. It looks to me as if larval controls will be necessary around the first week in July in the Red River Valley.

Dave Noetzel
Extension Entomologist

Potato Leafhopper (PLH)—I am seeing low numbers of adult potato leafhoppers in potato particularly in the Anoka Sands area. There is enough concern, and treating, already for the Colorado potato beetle that this may not be a problem. However growers who have not treated for CPB would be wise to sample for PLH.

Dave Noetzel
Extension Entomologist

SMALL GRAINS

Aphids in Small Grain—Aphid numbers remain extremely low. There is a lot of late planted small grain in northern counties. Although there are no aphids presently in these areas the later grain should be closely monitored for them.

Dave Noetzel
Extension Entomologist

True Army worm—I have picked up individual armyworm larvae at several locations that are 1/4" to 1/2" in length. I did not find any large numbers at any location that warrants immediate concern. However the presence even of low numbers of small larvae should again alert growers, agents and consultants to be watchful.

Dave Noetzel
Extension Entomologist

SOYBEAN

THISTLE CATERPILLARS ON THE LOOSE—One unusual beauty gracing the Minnesota skies in large numbers this spring was the painted lady butterfly. Migrating from northern Mexico, this butterfly has a large host range of over 100 plant species that includes thistles and crops such as soybean, sunflower, alfalfa and dry bean. With the common name thistle caterpillar, I'll let you guess its food preference. The distinctive larvae are easily recognized: How often do you encounter black larvae with long black spines and yellow spots along the side? The thistle caterpillar webs together leaves with silk and feeds within this "protected" site. Larval excrement, as small dark brown to black pellets, can be found in the feeding site.

Thistle caterpillar defoliation in Canada thistle is commonly observed now throughout Minnesota. Larvae are 3/4" - 1" with up to 80% of their defoliation potential remaining. As larvae complete defoliation of thistle, movement to other plants will occur. Already movement into soybean and corn have been reported. Fields at greatest risk are commonly located adjacent to CRP, pasture, roadsides, ditches, alfalfa, and other sites with thistles.

Soybean is commonly attacked in early vegetative stages, typically V2-V4. Research at Iowa State University by Poston and Pedigo (1976) and Hammond and Pedigo (1982) demonstrate that defoliation and leaf rolling can lead to yield loss, despite the resiliency of soybean. Defoliation is the primary cause for concern with yield losses detected when defoliation exceeded 35-40% of the canopy. The standard threshold given in extension literature is 1 larva per row foot.

Hammond and Pedigo studied soybean yield loss to simulated painted lady defoliation at V3-V4. In two of three years when drought conditions prevailed, larval densities of 2 (1976) and 5 (1977) per row foot produced detectable yield loss. In 1978 when above normal precipitation occurred, no loss was detected through 7 larvae per rowfoot. Clearly, soil moisture conditions and subsequent canopy development plays a big role in determining whether or not a given population will cause economic loss. Using the yield-loss relationship developed by Hammond and Pedigo for drought years, I used current soybean prices and control costs, to calculate an economic injury level of ca. 0.6 larvae per row-foot (30" inch row spacing) at V3-V4. No data exists for defoliation on younger plants.

Two situations are likely. **First,** migration into soybean as other host plants are defoliated. In this situation a perimeter application (1 spray boom) should be effective. There's no need to treat the entire field! Base the treatment decision on the number of larvae moving into the field and don't let significant areas exceed 40% defoliation. **Second,** a relatively uniform infestation may occur in soybean over a large field area. If soil moisture is limited in your area and plants are under drought stress, treat if populations exceed 1 per row-foot. If soil moisture is good and soybean growing well, the threshold should be higher. Unfortunately, research on this unusual pests has not adequately defined a threshold for this situation. Growers in this situation are likely to treat on the basis of defoliation than allow 2 or more larvae per row-foot.

Insecticides specifically labelled for thistle caterpillar include Sevin XLR Plus at 1.5 - 2 pints per acre or Pounce 3.2E at 4 oz per acre. Other insecticides are undoubtably effective but not specifically labelled. Research on insecticide performance is largely lacking.

POUNCE FOR THISTLE CATERPILLARS—FMC issued a Section 2(ee) label for Pounce 3.2E for thistle caterpillar on soybean. Pounce is already labelled for soybean so this label infers that FMC supports performance and this use pattern. The recommended rate is 4 fl oz per acre.

Ken Ostlie
Extension Entomologist

SOYBEAN CYST NEMATODE—Soybeans planted on 8 May were found on 10 June to have SCN-Females in the "white" reproductive stage. This is the earliest I've seen SCN on soybean roots. The soil type was a dark soil that was warm and dry. The soybean plants had no above ground symptoms, but when dug up the roots clearly exhibited the early cyst stage. Other sites with SCN, planted about the same time, had no SCN evidence visible on the roots. Growers and others should think about SCN when in soybean fields. This is the most damaging soybean disease in Minnesota. A hot and dry season will develop the symptoms above ground- stunting and lack of green color. Remember yields are reduced by 30 to 60 percent.

Seedling problems with soybeans continue, especially in the south western part of the state where seed did not emerge or just emerged and then died. The small rotted portion of the plant is not diagnostic, we can't tell what caused the problem.

In addition to seedling diseases, Pythium and Phytophthora, one should determine if the seed quality was good. The harvest conditions last fall may have lowered seed vigor and the ability of seed to emerge in cold wet conditions. Germination in warm conditions may be good, but seed with frost damage, purple seed stain or mechanical damage will not emerge as well as undamaged seed. The reports often indicate that a nearby field with the same variety performed well. This may due to differences in the seed vigor. A good germination score and vigor is needed when seed is under the stress of cold and wet conditions. Some seed did not have the needed energy to successfully emerge. A stress test or cold germination test is needed to show a seeds ability to perform under such conditions. New evidence is being developed showing that seed with a weak or damaged seed coat is less able to emerge. Such seeds often leak nutrients, which can stimulate soil pathogens, increasing the disease pressure and the lost nutrients reduce the seedling store of energy, decreasing the seedlings ability to emerge from soil.

Ward C. Stienstra
Extension Plant Pathologist

SUGARBEETS

Sugarbeet Root Maggot (SBRM)—Adult activity continues to be high where maggot damage was high last year. Egg laying is well under way and egg hatch has been reported in the Crookston area by Dr. Larry Smith of the Northwest Experiment Station. Growers employing applications of liquid insecticide (Lorsban or diazinon) for adult control began applications last week. These will undoubtedly continue for at least another week, and probably longer at some locations. Where maggot adult numbers are high there is still considerable adult activity post treatment.

Dave Noetzel
Extension Entomologist

MISCELLANEOUS

BLACK LIGHT CAPTURES AS OF 6/4/92—These data are gathered by the cooperative efforts of the Minnesota Department of Agriculture-Plant Industry Division, the University of Minnesota and private industry. Summary provided by Bruce Potter, Pest Survey Data Coordinator.

EUROPEAN CORN BORER

District	Location	+ Total	Aver.	High	Date/Max
C	Olivia	181.00	25.90	116.00	92/06/04
NW	Crookston	0.00	0.00	0.00	
SC	Le Sueur E	363.00	51.85	170.00	
SC	Le Sueur W	156.00	22.29	64.00	92/06/05
SC	Sleepy Eye1	103.00	34.33	87.00	92/06/06
SC	Sleepy Eye2	25.00	8.33	25.00	
SC	Waseca	29.00	4.14	15.00	92/06/10
SE	Calendonia	51.00	6.38	9.50	9/06/07 *-2
SE	Rosemount	182.00	26.00	86.00	92/06/07
SW	Lamberton	11.00	1.57	6.00	92/06/09
SW	Worthingtn	7.00	1.00	2.00	92/06/09
SW	Minneota	56.00	9.33	23.00	92/06/09
WC	Fergus Falls	10.00	2.50	8.00	92/06/09
WC	Morris	13.00	1.86	6.00	92/06/05+

ARMYWORM

C	Olivia	123.00	17.57	45.00	92/06/04
NW	Crookston	7.00	1.75	2.00	92/06/08
SC	Le Sueur E	100.00	14.29	42.00	9/06/04
SC	Le Sueur W	23.00	3.29	11.00	92/06/05
SC	Sleepy Eye1	34.00	11.33	16.00	92/06/06
SC	Sleepy Eye2	10.00	3.33	10.00	92/06/06
SC	Waseca	18.00	2.57	6.00	92/06/10
SE	Caledonia	40.00	5.00	9.00	92/06/05*-2
SE	Rosemount	0.00	0.00	0.00	
SW	Lamberton	0.00	0.00	0.00	
SW	Worthington	15.00	2.14	4.00	92/06/03
WC	Fergus Falls	109.00	27.25	56.00	92/06/08
WC	Morris	318.00	45.43	160.00	92/06/04

Grasshoppers—Finding: 50-250 grasshopper nymphs per square yard along field margins in 5 counties (Stevens, Traverse, Southern Wilkins, Ottertail, and Grant). Those areas continue to be dry. Use appropriate labelled materials.

Dharma Sreenivasam
Minnesota Department of Agriculture/Field Survey and
Dave Noetzel
Extension Entomologist

Thistle Caterpillar on Lupines—We received a lot of calls about the larval activity of this insect. Canada thistle is infested essentially statewide. Some growers and dealers are calling it "armyworm". I checked a severe infestation (3 larvae per plant) in lupine near Little Falls and had at least two other calls from lupine growers (the larvae in the Little Falls fields were about 3/4 in length (3rd or 4th stage larvae) so perhaps 80% of the feeding still remained. I suspect the most severely infested 8 acres will be devastated since there are no labeled insecticides.

Ken Ostlie
Extension Entomologist

PLANT DISEASE CLINIC

The Plant Disease Clinic staff is available to assist you in diagnosing your plant disease problems. When submitting samples to the clinic, please follow these guidelines:

1) Collect living plants which exhibit varying stages of decline. **Do not submit dead plants.**
2) Submit entire plants, including roots. Shake excess soil from roots, group plants together and wrap roots only in a plastic bag. **Do not** wrap stems and foliage in plastic. Wrap plants in newspaper and mail in large mailing envelope or cardboard box.
3) For virus testing only, wrap entire sample in plastic. It is important that these samples do not dry out during shipment.
4) Provide as much background information as possible including a description of symptoms and distribution within the field, weather conditions, chemicals applied and any other relevant facts. Sample submittal forms are available at county extension offices or at the clinic.

When submitting soil samples for soybean cyst nematode testing please follow the guidelines given below:

1) Using a soil probe or shovel, collect samples at random from **around** problem spots, not in the worst areas, and near field entrance points. Samples should be taken to a depth of 8-10 inches from within the rows. With a soil probe collect 10 cores, or with a shovel take 1/4 cup of soil from near the shovel tip at several locations. Combine the 10 subsamples as a composite sample. Each composite sample should be at least 2 pints of soil and represent no more than 1 acre.

   For predictive soil sampling to be representative, composite samples must be collected from several "good" and several "bad" areas within a given field. Label each sample good or bad and keep them separated.
2) Collect the soil samples in plastic bags, keep cool and ship as soon as possible. Please include county and township of field, cropping history, current crop and acreage sampled for each sample.

   Ship samples early in the week to ensure fast delivery. Send all samples to:

   Plant Disease Clinic
   495 Borlaug Hall
   1991 Upper Buford Circle
   University of Minnesota
   St. Paul, MN 55108

DIAL U

County Agents: Please Alert
Master Gardeners of the Following Items

REMINDER—Diagnostic forms must be completed if you want an ACCURATE diagnosis.

Willow problems galore!—Many willows have cankers and extensive dieback. Much of this damage may be related to severe environmental conditions in the past several years. Willows close to lakes or ponds appear to be most severely damaged. Several fungi are also involved. At this time, we recommend the removal of dead and cankered branches during dry weather and deep watering (do not get the leaves wet).

Apricot fruit drop—is a common problem this year. Many Sungold and Moongold trees looked like they were developing an abundant crop of apricots, but within the past week, 2/3rds to most of them have dropped, disappointing their owners who were looking forward to the first good crop of apricots in some years. (They flower so early that frost usually damages them.)

What happened this time? While any number of environmental stress factors can cause immature fruit to drop, we feel the problem was poor pollination. Apricots require cross-pollination; bees do the job when weather is mild and sunny. Unfortunately, when apricots bloomed late this April, it was cold and wet... bum weather for bees. Even though pollination did not occur, the little fruits began to expand. However, without pollination they were doomed never to reach maturity.

Perhaps people should plant apricots for their ornamental value—they're beautiful when they bloom— and think of it as a bonus any time they actually produce fruit.

Yellow-headed spruce sawfly larvae—We are receiving our first reports about these sawflies eating spruce needles. Yellow-headed spruce sawfly larvae are typically active from late May through mid July. They have reddish-yellow or brownish heads with olive green and light green stripes. They are about 3/4 inch long when mature. They prefer white, black, and blue spruce found in open areas like those found in ornamental plantings; they normally do not attack spruce in dense stands.

These sawflies can be very destructive because they first feed on new growth. Trees may be killed after three or four consecutive years of moderate to heavy feeding. If control is desired, spray a contact insecticide, such as acephate, malathion, or carbaryl, as soon as sawflies are seen; the smaller they are when treated, the less damage they can cause. See AG-FO-0865, *Insect pests of evergreens.*

Powdery Mildew—is making a strong appearance on lawns in shady, damp areas. Kentucky bluegrass varieties thrive in full sun but are less vigorous in shady areas and easily invaded by mildew fungi. For lightly shaded areas, Nugget, Glade, Touchdown, Birka, Ram I and Bensun Kentucky bluegrass perform

DIAL U/*Continued*

well. In densely shaded areas these bluegrass varieties should be mixed with creeping red fescue.

Lawns show signs of drifting towards summer dormancy—due to the dry weather in many parts of the state. Don't fertilize any lawn that's moisture-stressed. It's a good idea not to use weed-killers on them, either.

To prevent the lawn from going dormant, water thoroughly whenever walking on it leaves a series of footprints, usually weekly on most soils, twice weekly if soil is sandy and drains rapidly. Lawns that are accustomed to "fending for themselves" without frequent watering or fertilizing are usually most able to bounce back from summer dormancy in relatively good shape.

Wood roaches—are associated with wooded areas, living in rotted logs and under bark. Males are about 3/4 to 1 inch long, dark brown with a yellow margin along the edge of the wings behind the head. Males are capable of short flight. Females are smaller with shorter wings. Although these cockroaches may be found indoors, they are unable to breed and established themselves inside.

To help keep wood roaches out of homes, move firewood piles as far away from buildings as possible, remove old logs and other potential harborage, and keep tall grass cut. Also caulk and seal cracks and spaces around buildings to help exclude them. If desired, an insecticide, such as diazinon or chlorpyrifos, can be sprayed around the home to give additional control. Inside, kill roaches by hand.

See AG-FO-1003, *Cockroaches* (Note to County Extension Staff: If you are handing out this fact sheet to the public, there is a slight correction that should be made. On page 2 in the caption of Fig. 5, cross out the word 'twice'. That photo represents the actual size of woods roaches.).

June is good time to control wasp nests—seen around homes and in yards. Wasp nests are established but are still small. Spray nests with resmethrin or propoxur (Baygon) during the evening when the wasps are inactive. Apply directly into the entrance. Check the nest in the next couple of days to see if retreatment is necessary. See AG-FO-3732, *Are they wasps or bees*.

Other common calls—include pruning trees and shrubs, peony and rose buds that are slow to open, and, yes, what to do about crabgrass, carpenter ants, insect galls, and post birch leafminer damage.

Jeffrey Hahn
Entomology

Cynthia Ash
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Deborah Brown
Horticulture

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