



PLANT PEST Newsletter

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APPLES

APPLE SCAB, CEDAR APPLE RUST AND FIRE BLIGHT should soon be on trees. Carefully scouting is required as very few lesions can be the beginning of a new disease epidemic. Last year few leaves were infected and the overwinter inoculum should be low, however, only a

few spore releases are needed to get the diseases moving. Scout now for lesion development and evidence of spore production of scab and rust. Fire blight symptoms can also be expected to be found at this time.

—Ward C. Stienstra
Extension Plant Pathologist

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

CORN

EUROPEAN CORN BORER—Night temperatures and dew formation play key roles in regulating flight, mating, and egg laying activities of the European corn borer. Dew formation triggers these activities while low nightly temperatures stops them. Flight activity ceases when nightly temperatures drop below 50° to 55°F. Cool temperatures thus limit movement of adults to action sites, where mating and drinking of water essential for egg formation take place, and from these action sites to corn fields, where eggs are laid. Females normally mature 2-3 days before mating and 1-2 nights later are ready to lay eggs. Females generally seek out taller, more mature corn fields to lay one to two egg masses per night.

Unseasonably cool nights during the last week have dampened flight, mating, and egg laying activity. Light trap captures are up from last week with one trap reaching up to 86 on June 6. Flight activity should pick up this week as nightly temperatures warm and adult emergence approaches its peak. Fortunately for us, corn planting and development have lagged behind normal. This leaves most fields with a high level of resistance to European corn borer larvae.

—Kenneth R. Ostlie
Extension Entomologist

GRASSHOPPERS

REGULATION DEVELOPMENT—Commissioner Jim Nichols of the Minnesota Department of Agriculture announced at Morris, MN on Monday, 12 June that 109 townships in 19 counties in western Minnesota are “grasshopper control zones.” The complete list of townships was attached to the Commissioner’s announcement (see page 57). Listing of townships is the first step required by the new grasshopper control law.

Having the township listed by the Commissioner as a grasshopper control zone permits 2 major actions. First, the Commissioner through the weed inspectors (county weed inspector and township officers) can require any piece of land which has grasshopper populations that are, or can imminently, damage adjacent cropland to have control applied. If that land owner refuses, the Commissioner (or the designated agent) can require the grasshopper source treated within 5 days and levy applications costs through the county tax system against the land owner. Regulation requires proper forms to be signed by the agent of the Commissioner and notification of the land owner.

The second major provision of the bill is that 50% matching money may be made available for the treatments necessary *within the designated control zones*. The matching money would come through funds in the bill (only \$75,000), through a county grasshopper control levy up to one dollar per person above the regular tax levy and additional federal or state emergency monies to be made available.

As of this newsletter only the \$75,000 is available. This practically means that there are no matching monies. However I would strongly urge all townships that are presently experiencing high grasshopper numbers in locations that are in either public lands such as roadsides, or in

land where adjacent crop producers cannot control them, to request inclusion as a grasshopper control zone. This can be accomplished by a request to Commissioner Nichols from the township board officers. There is no minimum size limit to the area infested within the township if that source of grasshoppers is damaging adjacent crops.

In any case there are just enormous numbers of grasshopper nymphs often localized to a given piece of CRP land in almost every western Minnesota county from Kittson to Rock and in many counties adjacent to those border counties. I believe major crop damage will continue with an early peak of crop damage when these nymphs become adults (10 days-2 weeks plus). The second major point when damage will become noticeable is when small grain begins to ripen. This event, at least as present grasshopper nymphal numbers indicate, will be overwhelming.

INSECTICIDES—As part of Commissioner Nichols announcement on Monday, June 12 he indicated that Asana XL (.66E) has received a Sec. 18 crisis exemption for use at a dosage of 0.015-0.03 lbs AI/acre (2.9 - 5.6 fl oz/acre) on all small grains and CRP. This label addition now adds to the pasture, rangeland, and cropland sites where Asana XL can now be used for grasshopper control. As we indicated earlier this is perhaps our most environmentally benign material except for high fish toxicity. It is especially competitively priced as well. This Sec. 18 crisis exemption expires June 25 unless otherwise notified.

BIOLOGY—Redlegged grasshoppers have begun to hatch and will probably continue to do so for perhaps 6 weeks.

We still see first stage twostriped grasshoppers in the Crookston area so that hatch is not yet complete.

I feel that organized roadside spraying could begin now as could the treating of permanent sites where twostriped

grasshoppers are the dominant species. If you observed hatch 1-2 or more weeks ago these are most probably twostriped grasshopper egg locations.

—Dave Noetzel
Extension Entomologist

LIST OF GRASSHOPPER INFESTED TOWNSHIPS—Based on Minnesota Department of Agriculture field surveys the following townships are confirmed as having grasshopper infestations heavy enough to cause economic loss to farmers. The Minnesota Department of Agriculture will continue to survey townships or specific areas within townships for inclusion to this list.

Big Stone Co. Townships: Akron, Browns Valley, Prior, Toqua (4).

Chippewa Co. Townships: Big Bend, Kragero, Sparta, Tunsberg (4).

Clay Co. Townships: Alliance, Elmwood, Felton, Flowing, Georgetown, Glyndon, Hagen, Holy Cross, Kragnes, Kurtz, Moland, Moorhead, Morken, Oakport, Viding (15).

Grant Co. Townships: Delaware, Elbow Lake, Gorton, Lawrence, Logan, Macsville, North Ottawa, Roseville (8).

Kittson Co. Townships: Clow, Granville, Hallock, Hazelton, Hill, N. Red River, St. Vincent, S. Red River, Tegner, Teien, Thompson (11).

Lac Qui Parle Co. Townships: Freeland, Garfield, Manfred, Mehurin (4).

Lincoln Co. Townships: Ash Lake, Hansonville, Lake Stay (3).

Lyon Co. Townships: Grandview, Vallery (2).

Marshall Co. Townships: Alma, Augsburg, Bigwoods, Bloomer, Comstock, Foldahl, Oak Park, Parker, Vega, Wanger, Warrenton, Wright (12).

Norman Co. Townships: Anthony, Good Hope, Halstad, Hegne, Hendrum, Lee, Mary, Shelly (8).

Polk Co. Townships: Belgium, Brandt, Brislet, Helgeland, Higdem, Parnell (6).

Red Lake Co. Townships: Gervais, Louisville, Red Lake Falls (3).

Roseau Co. Townships: Dewcy, Lind, Polonia (3).

Stevens Co. Townships: Baker, Darnen, Donnelly, Eldorado, Everglade, Horton, Pepperton, Scott, Stevens, Swan Lake, Synnes (11).

Swift Co. Townships: Fairfield, Hagbert (2).

Traverse Co. Townships: Arthur, Clifton, Croke, Dollymount, Folsom, Lake Valley, Leonardsville, Monson, Parnell, Redpath, Tara, Taylor, Tintah, Walls, Windsor (15).

Wilkin Co. Townships: Champion, Connelly, Manston, Mitchell, Nordick, Roberts (6).

Yellow Medicine Co. Townships: Florida, Fortier (2).

—Dharma Sreenivasam
Minnesota Department of Agriculture

SOYBEAN

SEEDCORN MAGGOT—Seedcorn maggots attack germinating soybean seeds causing several types of damage. Seeds may be so riddled by tunneling that the embryo is killed and the seed rots. Tunneling through the cotyledon may kill the growing point. Plants with this type of damage will emerge but development is delayed while buds at the base of the cotyledons develop into branches. Tunneling may injure only the cotyledons with no impact on development or yield. Finally, maggots may tunnel along the hypocotyl (the underground portion of the stem) leaving a brown discoloration. This type of tunneling may be severe enough to kill the plant. Usually damage ceases when the plants emerge and the hypocotyl toughens. The end result of seedcorn maggot activity is reduced stand.

No rescue treatments are possible or effective. The seedcorn maggot life cycle is very fast, from egg to adult fly takes only three to four weeks. By the time the farmer notices stand loss, damage is usually near completion. The only decision is whether to replant or to leave the stand alone. If the farmer replants, a planter-box seed treatment containing diazinon or lindane or a slurry seed treatment of Lorsban 50SL is recommended to protect the seeds from another attack by the next seedcorn maggot generation.

—Kenneth R. Ostlie
Extension Entomologist

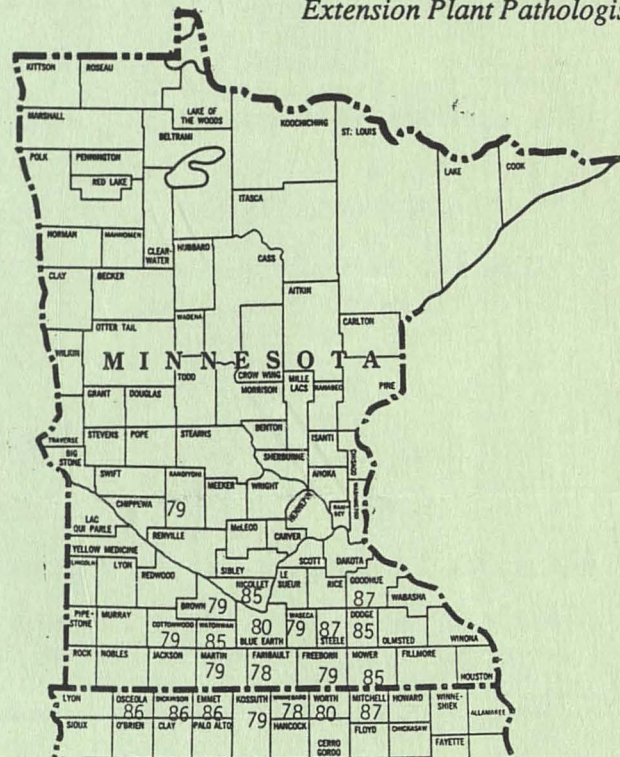
SOYBEAN SEEDLING PROBLEMS—The wide range of soils and weather conditions where soybeans are planted makes it very difficult to list the important seedling diseases. At this time few samples have arrived at my office. The calls have mostly dealt with failure of seeds to emerge well and the cause is often poorly understood. Dry conditions and deep planting can increase the frequency of poor stands and uneven stands. A case of planter error, slipping chain drive was reported also. Since the conditions are so variable it is not a good idea to generalize about the potential/real problems. You will have to do some diagnostic work.

The following summary of symptoms will help determine if disease is the problem: 1) Phytophthora on seedlings is recognized by a yellowing of the seedling and then a wilt and rot of the entire plant. Roots if still recognizable are poorly developed and dark. Older plants will show the discoloration moving up the stem. If the field received a 1 inch rain following planting that left the soil wet for 2 days, I suspect Phytophthora Root Rot. 2) Pythium usually causes a pre-emergence rot of the seed and developing seedling that is soft and watery. Cool temperatures (50-59 degrees) wet soils are most favorable to this disease. 3) Rhizoctonia is a post-emergence problem that is recognized by the dry stringy brown rot of the hypocotyl. Crusted soil conditions, herbicide injury and deep planting all favor this problem. The difficult question is what came first. Any delay in germination and emergence will favor the Rhizoctonia attack. 4) Fusarium is another problem of

seedlings. Infection is on the roots and the damage may be slight or complete. Cool weather and moisture stress or drying winds can increase this problem.

The Minnesota growers should be concerned about Phytophthora and also watch for the symptoms of Cyst Nematode. As of 1988 only 4 counties below Minnesota in Iowa have not been confirmed as having the Soybean Cyst Nematode. In Minnesota we know the SCN is in 15 counties. Is it present in yours?

—Ward C. Stienstra
Extension Plant Pathologist



SAMPLE INFORMATION

Samples can be sent to the Plant Disease Clinic for processing for a fee of \$15.00 per sample. Positive identification of the SCN will involve examination of the cysts and a larval count. Please follow these sampling guidelines:

- 1) Limit the number of acres represented in a single composite sample. Ten acres is the maximum, but the smaller the number of acres the more reliable the sample will be.
- 2) Using a soil tube or shovel, take samples at random in the problem areas. Samples should be taken to a depth of 6-8 inches from within the rows. With a soil tube collect 10-15 cores, or with a shovel take 1/4 cup of soil from near the shovel tip at several locations. In either case, the composite sample should be about 2 pints of soil.
- 3) Collect the soil samples in plastic bags to reduce drying. Label each bag with appropriate information (see below). Avoid storing the samples in the sun and ship as soon as possible.

- 4) Please indicate the following information:
 - a) Name, address, and telephone number.
 - b) County, and nearest town where samples collected.
 - c) Estimated acreage of sampled area.
 - d) Cropping history of sampled area.
 - e) Current crop in sampled area.
- 5) Send samples, background information and payment to:

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

—Jill D. Pokorny
 Director, Plant Disease Clinic

VEGETABLES

COLORADO POTATO BEETLE (CPB)—Up to two adult CPB adults per plant have been observed in the Red River Valley. Egg laying is under way but we did not observe any egg hatch as of today (15 June). Hatch will certainly begin the week of 19 June. We did see edges of a couple of fields

where individual plants had 80% defoliation by adult beetles. Control programs should avoid treating adult beetles (“hard-shells”) in order to lessen the possibility of more rapidly developing resistance.

—Dave Noetzel
 Extension Entomologist

MISCELLANEOUS

BIRCH LEAFMINER—The first mines of *second* generation Birch Leafminer are now apparent in the Twin Cities. Many have aborted (40%) but others are continuing to develop.

Although we should not be recommending routine treatment for second generation, Orthene/MSR/Cygon applied within the next 5-7 days should significantly reduce second generation.

—Mark E. Ascerno
 Extension Entomologist

BLACKLIGHT TRAP CAPTURES—The following table summarizes the captures made last week. June 7-13, 1989.

District	Location	Nightly captured			
		European corn borer		Armyworm	
		Average	High	Average	High
NW	Crookston	—	—	1	3
WC	Fergus Falls	—	—	1	2
C	Glencoe	2	5	4	9
C	Olivia	T	1	2	5
SW	Lamberton	—	—	1	3
SW	Worthington	7	11	2	4
SW	S. Lamberton	1	6	2	3
SC	Blue Earth	20	86	16	28
SC	LeSueur	1	6	3	8
		1	3	4	11
SC	Brown	T	1	—	—
SC	Clarks Grove	5	16	12	44
SC	Waseca	3	11	6	13
SC	Caledonia	10	34	14	30
SE	Randolph	—	—	—	—
SE	Mieselle	—	—	—	—
SE	Goodhue	—	—	—	—

—Kenneth R. Ostlie
 Extension Entomologist

PLANT DISEASE CLINIC

WHEAT STREAK MOSAIC VIRUS—Wheat Streak Mosaic Virus has now been verified to be present in McLeod County.

—Jill D. Pokorny
 Director, Plant Disease Clinic

DIAL U HIGHLIGHTS

Post birch leafminer damage—Questions continue about birch trees that “suddenly turned brown.” Birch trees with over 40% damage from the first generation should be treated for the second generation which should arrive the last week of June or 1st week of July. Acephate (Orthene) should be applied when the mines first appear. A plant health specialist can also apply Meta-Systox-R2 using the Kiornitz soil injection system.

Apples look-out! In response to last year’s absence, fungal diseases are very common on apple trees this year. Actually, weather is the primary factor affecting disease development. Cool wet conditions promote cedar-apple rust, apple scab, frog-eye leaf spot and continued development of black rot cankers. As the weather warms fire blight may become a problem. Samples received at the clinic have severe rust and leaf spot symptoms. It is too late to spray for cedar-apple rust on apples. For more information refer to *The Home Fruit Spray Guide*, AG-MI-0675.

DIAL U HIGHLIGHTS/Continued

Horticulture—We continue to get calls on drought-stressed trees that leafed out poorly. Most common trees mentioned: birch, oak and maple.

We've also had reports of honeysuckle hedges that overwintered poorly and are only partially leafed this spring. Most have been attacked for several years by the honeysuckle witches' broom aphid, which weakened them and left them more vulnerable to injury.

This has been a good spring for lawn repairs, but we could find ourselves in the midst of extremely hot, dry weather any day now. Seed only small, easily managed areas. Continue to water newly seeded or sodded areas frequently.

Aphids have been occurring on a variety of trees and shrubs, such as elms, poplars, roses, mockoranges, and viburnum. Recently, we have been receiving an increasing number of calls about ladybugs (ladybird beetles), one of many natural enemies of aphids. The adults are easily recognized but the larvae, often orange and blue and shaped like an alligator, are

not. When ladybugs and other aphid enemies are present, do not spray with insecticides as this will kill all insects. Allow the aphid enemies to reduce aphid numbers. A hard spray of water can be used to dislodge and kill aphids without harming the aphid's enemies.

Rose black spot—Black spot is starting to spot up the lower leaves on susceptible roses. Infected leaves should be removed and fungicides applied on a regular basis. Many fungicides are labeled for use on rose black spot. See *Rose Diseases*, AS-FS-1163, for more information.

Other common calls include plant identification, construction damage to trees, drought-damaged evergreens, anthracnose, oak wilt, verticillium wilt, caterpillar defoliators, carpenter ants and plant bugs.

Jeffrey Hahn
Entomology

Cynthia Ash
Plant Pathology

Deborah Brown
Horticulture

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