

MN 2000 PPN 1986-16



# PLANT PEST Newsletter

MINNESOTA EXTENSION SERVICE

UNIVERSITY OF MINNESOTA

PPST16

August 8, 1986

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### Extension Plant Pathology

**FUNGICIDES** -- Benlate fungicide (DuPont) has recently received supplemental labeling for the control of Diplodia tip blight on Austrian and red pine. To use Benlate for this purpose, a supplemental label must be in the possession of the user at the time of application. Contact your DuPont agri-products sales representative or E.I. DuPont de Nemours & Co., Biochemicals Department, 5725 E. River Road, Chicago, IL 60631, for the label.

**SUGAR BEETS** -- Cercospora leaf spot has been observed in many areas. The amount of disease is relatively light. However, the effects of favorable infection periods during the last two weeks may soon appear as new infections.

In the Red River Valley, the daily infection values (2 days) have been averaging: East Grand Forks, 10-12 since July 22; Alvarado, 6-11 since July 22; Hendrum, 9-10 since July 22; Crookston (low), 0-7 since July 22; Campbell (low), 0-3 since July 22. The Cercospora leaf spot daily infection values are currently being put on Ag Net weekly by Dr. Art Lamey, North Dakota State University.

Disease control plans should be underway or ready to go in most areas.

Howard L. Bissonnette  
Extension Plant Pathologist

**SOYBEANS** -- The use of soybean foliar fungicides to increase yields and seed quality has been tried for several years. In tests at the

Rosemount Plant Pathology Farms, results are variable in the years tested. Fungicides will only increase yields if diseases are present. Diseases like Pod and Stem Blight, Septoria Brown Spot, Anthracnose, and Cercospora Leaf Blight are controlled by foliar fungicides. Yield increases are reported to be less when a single application is applied at R 6 growth stage. Two applications at R 3 and R 5 are reported to produce the better results. See table below.

Trade Name (Common Chemical Name) Manufacturer	Rate	Directions & Comments
Benlate 50WP (benomyl) DuPont	1/2-1 lb/A	2 applications: 1st when pods near top of plant are 1/2-1" in length, 2nd 14-21 days later. Do not apply within 35 days of harvest.
Bravo 500 (chlorothalonil) SDS Biotech Corp	2-3 1/2 pts/A or 1 1/2 - 2 3/4 pts/A	Use 2-3 1/2 pts/A for 2 applications: 1st when largest pods are 1-1 1/2", 2nd 14 days later.  Use 1 1/2 - 2 3/4 pts/A for 3 applications: 1st 1 week after first flowering and continue at 14-day intervals.  Bravo 500 may be tank mixed with Benlate 50WP for disease control on indeterminate soybeans.  Do not apply Bravo 500 within 6 weeks of harvest.
Mertect 340-F (thiabendazole) MSD AGVET (Merck & Co.)	6-10 fl oz/A	1st at late flowering to early pod set, 2nd 2 weeks later.  Do not apply within 21 days of harvest.  Do not tank mix with copper fungicides.
Topsin M 70WP Topsin M 4.5F (thiophanate-methyl) Pennwalt	1/2 - 1 lb/A 10/20 fl.oz/A	2 applications: 1st from full bloom to pods 1/8-1/4" in length, 2nd 14 to 21 days later.  For seed beans only: single application at high rate when beans form in the pod.

For all fungicides: DO NOT allow livestock to graze treated areas. DO NOT feed soybean hay or threshings from treated fields to livestock.

The increase in yield was not adequate to pay for the cost in three of the years, while in two years a 3- to 5-bushel increase was recorded.

The grain producer may consider foliar fungicides, and the seed producer should consider foliar fungicides. In 1985 the soybeans harvested late due to warm, wet weather were uniformly infected by Phomopsis. This fungus does reduce seed germination. Soybean seed growers who want to try for both yield and quality increases should apply at both R3 and 5, while increased seed quality can be achieved with a single application at R6 if the pod test indicates adequate disease infection exists. Pods should be removed from the middle of the plant. The pod should be full length and seed should be full size. At least 100 pods should be tested from each field (5 pods from 20 different locations). The use of a single spray is insurance to prevent the type of damage experienced last fall.

The pods to be tested should be placed dry in a clean paper sack. No moisture, or plastic or tightly-closed bags should be used. The samples can be delivered to the Department of Plant Pathology, University of Minnesota, 1991 Buford Circle, St. Paul, MN 55108, and further labeled: Attention -- G. Korb. The pods must be picked and delivered so the sample arrives in three days. We will test for Phomopsis and reply by telephone in 7 or 8 days whether or not fungicide application is recommended. Each sample costs \$6.00. This is a new service this year. The Pod Test procedure developed at Iowa will be used.

Fungicides to be effective must be applied properly. Aerial application is suggested. Five gallons of water per acre should be used. The aircraft should fly with a boom height of no more than 8 feet over the crop. Nozzles should be positioned to minimize drift and provide uniform application across the swath.

Ward C. Stienstra  
Extension Plant Pathologist

#### EXTENSION ENTOMOLOGY

ALFALFA INSECTS -- POTATO LEAFHOPPER (PL) numbers are still high in alfalfa across much of the southern half of the state; although in a few fields, the rapid regrowth due to rain seems to be keeping the leafhoppers below threshold. In the majority of fields being scouted, however, they are over threshold again this week.

Most PL being reported now are adults, although nymphs may still be prevalent in areas from which there were no reports this week. Because adult PL are so mobile, numbers may initially drop when a field is sprayed and then rise again quite soon as the field is reinfested by adults from elsewhere. With short-residual insecticides -- like Cygon and malathion -- such a return to fairly high numbers does not signify that the spray was ineffective. Instead it shows that either there is another source of PL nearby, or weather has been suitable for long-distance immigration. Sometimes, even with a short residual

insecticide, numbers will not rise again soon, because immigration is not occurring.

Reports vary on the prevalence of visible symptoms of PL damage, suggesting a fairly complex interaction between local weather, crop and soil conditions, and the likelihood that PL damage will be severe enough to cause visible damage. Also, there have been some reports of confusion between the leaf discoloration (sometimes yellowing) due to leaf spot diseases, and that due to PL. This is a very good year weatherwise for many diseases, and a closer look at individual plants -- rather than the whole field from a distance -- should be sufficient to show whether there is any chance some (or all) of the yellowing seen is due to diseases. If diseases are suspected, call your county agent, CPM area agent, or extension plant pathologist Dr. Ward Stienstra (625-6290) on campus.

The damage symptoms from another insect, PLANT BUGS (PB), are apparently also being confused with PL damage. PL do not cause puckering, distortion, and shriveling of leaves and growing tips and buds -- PB cause this sort of damage. The current best threshold we have for PB is 3/sweep, but no doubt there are interactions with plant health and water status there, too, so this can be considered a conservative ballpark estimate. Numbers of PB, both adults and nymphs, often change very rapidly both up and down, so control -- and assessing its effectiveness -- can be problematic. High numbers of PB are being reported sporadically this season.

POTATO LEAFHOPPERS ON POTATOES -- Some growers in the Hollandale area have commented on very satisfactory control of PL with Thiodan. However, there have been some inflated impressions of the prowess of this insecticide, which would be unwise for growers to rely on. In some cases, after Thiodan application, the fields have not had any further insect problems for three or more weeks.

Thiodan residuals do not last anywhere near as long as that; in fact, Thiodan has less residual than the synthetic pyrethroids, at average application rates of each. Furthermore, with all the rain causing rapid plant growth, any surface insecticide residues will be diluted on expanding leaves, and will be absent from new leaves that have grown since the spray. The lack of insect problems is simply an example that insect pressure on crops does vary in time and space, and complete protection is not always necessary.

Penny Ives  
Extension Entomologist

COLORADO POTATO BEETLE (CPB) -- Adults from the end of the first generation are now abundant in Red River Valley potato. First- through fourth-stage larvae of the second generation are present in many fields along with moderately abundant egg masses in some fields. Producers should continue to monitor fields, as there are fields which may require at least one more insecticide application for this insect. It is not of any practical importance to attempt control of adults CPB

unless they are excessively defoliating plants. In fact with the insecticide resistance levels we are recording, any treatment not needed to enhance yield levels should be avoided.

We have acceptable to outstanding CPB control with most labeled insecticides following 2 well-timed applications and without soil systemics in our Crookston and Grand Forks plots.

POTATO LEAFHOPPER -- We have noticeable numbers of adults of this insect in potato in all growing areas. The action levels are one adult per net sweep or 10 nymphs per 100 leaves. We did not observe hopperburn in commercial potato this week, but were in fields with economic PLH numbers. Be sure to monitor fields, however, as some fields have very low numbers of PLH and would not benefit from insecticide use.

CANOLA INSECTS -- Some of you have asked about defoliators, especially imported cabbageworm, in this crop. In looking at a large number of fields in northwestern Minnesota counties, there is virtually no defoliation of Canola other than from grasshoppers on field margins. We observed no pod injury and only minimal flea beetle damage on leaves. Many fields had adult (a white butterfly) cabbageworm in excess of 1 per sq yard. Most Canola is well-along in development and will not be subject to defoliator damage anymore this year.

David Noetzel  
Extension Entomologist

BLACKLIGHT TRAP CAPTURES -- The following table summarizes light-trap captures of important moth pests from July 30 to August 5.

District	Location	Average Nightly Captures			
		Armyworm		European corn borer	
			high		high
SC	Blue Earth	3.0	10	79.0	225
C	Glencoe	1.0	3	67.0	85
NW	Hallack	trace	1	0.0	0
SW	Heron Lake	0.0	0	5.0	3
SW	Lamberton	13.0	13	98.0	341
SC	LeSueur	5.0	12	200.0	394
SC	Montgomery	1.0	2	34.0	55
WC	Morris	3.0	6	3.0	10
C	Olivia	2.0	4	24.0	78
SE	Olmsted	3.0	6	9.0	25
NW	Ottertail	2.0	4	trace	1
NW	Polk	2.0	6	0.0	0
SC	Sleepy Eye	2.0	3	22.0	35
SC	Waseca	2.0	6	88.0	129
SW	Worthington	16.0	20	10.0	11

Data are obtained through the cooperative efforts of the Minnesota Department of Agriculture, the University of Minnesota and its Agricultural Experiment Station, and commercial and private cooperators.

Kenneth R. Ostlie  
Extension Entomologist

DIAL U WEEKLY SUMMARY REPORT -- The following table highlights clinic contacts of special interest for the week of July 28 - August 1, 1986.

<u>HOST</u>	<u>DIAGNOSIS</u>
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Various Ornamentals	Mites
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This has been a good year for mites, especially on some hardwood trees. Established, healthy trees can tolerate mite numbers this year. If trees are heavily infested in consecutive years, treatment with kelthane may be necessary.

Apple	Apple Maggot
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People have been noticing some of their apples have discolored sunken areas and pock marks. If you cut into the apple you'll find brown lines. This is from the apple maggot. The adults will continue to emerge throughout the summer. Spray 2 days after a rain of 1/2 inch or more or every 7-10 days (up to 7 days before harvest) to protect apples that are not yet infested. Carbaryl (Sevin) is effective for apple maggots. See AG-FS-1007.

Turf	Patch Diseases
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Reports of patch diseases in home lawns is on the increase. To date, the causal organism(s) has (have) not been verified; however, work is underway. The best approach to management is improvement of cultural conditions. Proper fertilization, removal of excess thatch, and adequate watering are important cultural factors. Reseeding problem spots with turfgrass varieties which have partial disease resistance can also help. Such varieties include Adelphi, Glade, Majestic, Parade, and Touchdown.

Turf	Renovation
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We are starting to get questions on lawn reseeding and renovation. Mid-August to September 10 is prime time for overseeding as well as for starting new lawns.

## Turf

## pH

Twin Cities lawn services are suggesting a fall application of sulfur. Our turf specialists say it shouldn't be necessary unless a soil test indicates sulfur deficiency or an extremely high pH. (Sulfur lowers the pH.) Sulfur might green up the lawn, but it is doubtful it would improve the health of the turf.

## Fruits/Vegetables      Failure To Set Fruit

We continue to get calls on fruits and vegetables such as apples, grapes, apricots, squash, melons, and cucumbers that flower but fail to produce fruit. Generally, it means pollination did not take place successfully when the flowers were receptive.

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Jill Pokorny  
Plant Pathology

Jeff Hahn  
Entomology

Deb Brown  
Horticulture

NOTE: From now on, the Plant Pest Newsletter will be published every two weeks, instead of weekly.

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Issued in furtherance of cooperative extension work in agriculture and home economics acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Patrick J. Borich, Dean and Director of Minnesota Extension Service, University of Minnesota, St. Paul, Minnesota 55108. The University of Minnesota, including the Minnesota Extension Service, is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, religion, color, sex, national origin, handicap, age, veteran status, or sexual orientation.

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