

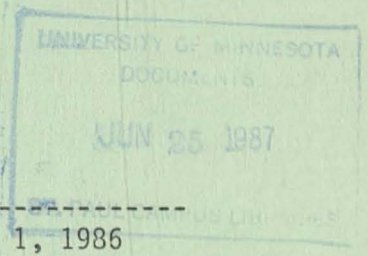
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PLANT PEST Newsletter

MINNESOTA EXTENSION SERVICE

UNIVERSITY OF MINNESOTA



PPST15

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Extension Plant Pathology

SOYBEANS -- Leaf diseases to watch for include: downy mildew, powdery mildew, and bacterial blight. The most common leaf symptom is due to bacterial blight, and the least common is downy mildew. Powdery mildew in 1985 was widespread and, in several locations, severe. It has not been seen or reported as yet in 1986. The first report of powdery mildew in 1985 was early August.

Stem death or whole plant symptoms due to *Phytophthora* root rot are very common, as is plant loss due to *Rhizoctonia* root rot. The disease fungus overwinters in the soil and is favored by cool, wet conditions following planting. Control was mostly through avoidance and resistance. With today's rotations and varieties, one cannot depend on this as much as in the past. Rotations are shorter and new races of the fungus overcome Race 1 resistance. The new disease control method, seed treatment or soil application of Ridomil, shows much promise.

Watch for 1986 results. Crop rotation will reduce disease severity but not eliminate it. Growing resistant-multirace resistant varieties in well-drained sites with the fungicide is the best method of disease prevention.

The typical reddish-brown outer cortical decay of the stem base and older roots is responsible for plant death. Loss of roots and the ability to transport water result in plants wilting and drying up. The root rot phase is most damaging in wet, poorly-drained soils. Some plants may have been able to maintain limited growth with wet, cool conditions, but now following the hot period, plant death is seen. Usually the roots are high on the stem, and those plants with soil placed around the stem survive best.

Symptoms of soybean cyst nematode (SCN) are also common in areas known to have the SCN problem. Two new county locations in 1985 were Dodge and Mower. Soybean growers in Nicollet and Watonwan should also watch for SCN symptoms as low levels of SCN were recorded in these counties.

Seed infection in 1985 by Phomopsis was very common. Above average rainfall in August and September will favor this problem again. Pod infection occurs at R7-yellow pod stage. Details on testing for infection and treatments for seed growers are available. Details will appear in the next PPN issue.

Ward C. Stienstra
Extension Plant Pathologist

CROP CONSULTANTS -- Nematode identification course for professional consultants will be held December 29, 1986 - January 9, 1987 at Clemson University. Contact: Department of Plant Pathology, Clemson University, 118 Long Hall, Clemson, SC 29631, for details (Telephone: 803-656-3450).

SUGAR BEETS -- *Cercospora* leaf spot has been previously reported. Some growers are concerned over the appearance of the leaf spot on beet leaves shortly after fungicide application. What is being observed is the development of the disease symptom, resulting from infection occurring prior to the application of a fungicide. The production of spores may be inhibited in these situations, resulting in confusion when trying to identify the leaf spot.

Root Rot -- Tap root-tip rot is still developing in the field. The excessively wet conditions favor this disease. Wilting plants, usually in wet soil, are the first symptoms. Symptoms on the root may include lack of tap root, dark to black areas of discoloration and rooting of parts of the root, excessive hair roots at suture, and dead plants.

Next year to avoid crop loss, rotate to better-drained fields. Avoid poorly-drained fields and fields with a history of root rot.

POTATOES -- Black leg is beginning to appear. This bacterial disease may come along on the seed potato, may be picked up by the plant from the soil, or may be carried to the plant by insects. Some typical black leg lesions have been observed 5 inches or more above the soil line. It is expected that the source of such infection is infected insect feeding.

SPRING WHEAT -- In many areas, it appears that the adult plant resistance is still holding in Marshall and Wheaton. The leaf rust pustles on the flag leaf are small and considered to be a resistant type.

If you observe stem rust on any spring wheat varieties (dark red pustles), I would like to have a specimen. Include variety name and approximate location. Mail to Howard L. Bissonnette, Department of Plant Pathology, University of Minnesota, 1991 Buford Circle, St. Paul, MN 55108.

Howard L. Bissonnette
Extension Plant Pathologist

DRY EDIBLE BEANS -- Earlier this year, many fields had brown spot which was apparent as dark brown spots on the leaves with a pale yellow halo around the lesion. These lesions have a tendency to shothole and leave the plant appearing tattered. The new growth in these fields appears normal, and not much loss is expected from this disease this year.

The wet conditions found in many dry bean fields could encourage white mold and rust, especially in fields with a heavy canopy. Fields with a white mold history can be sprayed with Benlate or Topsin M. Use label rates and spray once or twice, starting at 100% bloom for best control. These applications are expensive but can save a field from considerable loss if used correctly. Coverage of the plant under the canopy is important as these systemic fungicides only move up in the plant.

Rust in fields can be sprayed with Bravo or Dithane M-22. Rust must be sprayed early (at the first sign of disease). Good coverage is again important as these fungicides are protectants. The next four weeks are very critical as a rust epidemic in a field can cause considerable harm if allowed to develop. Spray at very first sign of disease and again every 7 days, a total of 2 or 3 times.

EXTENSION ENTOMOLOGY

WHITE GRUBS IN LAWNS -- We are receiving reports that large (1-1/2 inch) white grubs are being found damaging lawns. These are in the third and final year of their life cycle. Next spring the grubs will pupate, emerge as adults, mate, and lay eggs. There is no guarantee that the same areas infested now will be reinfested next year.

Chemical control of the large third-year grubs is generally ineffective and not suggested. Evaluate the damaged turf to determine whether reseeding/sodding or fertilization would be the best approach for renewing the turf this fall.

White grubs in lawns are best controlled in lawns when first (1/4 inch) or second (1/2 inch) year grubs are found at a density of 3-5 per square foot. See AG-FO-1008 (1986), Controlling Lawn and Turf Insects, for more detail.

Mark E. Ascerno
Extension Entomology

UPDATE ON CARPENTER ANTS -- Carpenter ants have been the most frequent inquiry to the Dial-U Insect and Plant Information Clinic over the last three years. In 1986, they are still one of the most asked-about pests. A recent telephone survey conducted in the Twin Cities indicates that people consider carpenter ants an important house-infesting pest. However, despite their importance, there are still aspects of their identification and biology that remain unknown, making carpenter ant infestations complicated to identify and control.

When people think of carpenter ants, they traditionally envision large, black ants. However, this is not always the case. We have been seeing carpenter ants that are small, by normal carpenter ant standards (under 1/4 inch long), and reddish-brown and black, or all black in color. We have not had an opportunity to make a species identification yet, but we do seem to be running across them more often. To complicate the situation, there is a black ant that nests in the soil, that occasionally forages inside homes for food, and that is about 1/4 inch long. This ant can be easily confused with carpenter ants if it is not examined carefully. Care should be taken when identifying ants, especially if it could potentially be a carpenter ant.

Winged ants present another problem in ant identification. The identification keys are written only for the major workers. (Major workers are large-sized workers that primarily do the foraging and defending of the nest.) If the winged ants are very large (over 1/2 inch), we can postulate that they are carpenter ants. However, when we receive dark-colored, moderate-sized winged ants, we can not be sure that they are or are not carpenter ants. A person might be tempted to assume that they are, but there is too much uncertainty to be sure. It is better to look for major workers to identify or other evidence of carpenter ants before committing yourself one way or another.

Another issue that is confusing is the subject of carpenter ants nesting in homes. When people see carpenter ants in the home, the first assumption is that a colony is nesting there. But this is not necessarily true. They could be foraging workers from an outside colony looking for food in the home. There are many circumstances to

consider when determining whether this is true or not, such as what times of the year have the ants been seen, how many are sited, have other signs of carpenter ants been noticed, have any winged ants ever been seen, etc. The answers to these questions can help in determining the location(s) of the nest (inside or outside) and the size and age of the colony. However, it still may not be enough. Questions on carpenter ants and their control should be directed to someone who has background and experience in that area. Dial-U Insect and Plant Information is one source for this information.

Jeffrey D. Hahn
Extension Educator, Entomology
Dial-U Insect and Plant and Information Clinic

ALFALFA INSECTS -- POTATO LEAFHOPPER (PL) damage symptoms are now visible in more alfalfa fields, and over a wider area than last week; and high numbers of PL, often including many young nymphs, are still being found in many of the fields being scouted. As reported last week, most new seedings that have not yet been treated have populations of PL that exceed the threshold and are now showing damage. However, in some cases, the high rainfall lately has left the ground too soft to take machinery on the fields, thus postponing needed sprays, and, in other cases, postponing harvest.

In the far southeast counties, 63% of the fields scouted one week ago (July 24 -- just too late to be reported last week) were found to have infestations that would economically justify treatment, with up to 30 PL/sweep in the most heavily infested field. At that stage, in that area, the population was still mostly adults, but young nymphs may have hatched out since then. Damage was just starting to show on scattered fields in that area then.

In the Scott, LeSueur, Rice, Dakota, and Goodhue area, numbers are also still high, with 67-75% of about 60 fields scouted during this past week needing treatment. As before, new seedings had highest infestations and most damage, with numbers up to 14 PL/sweep, and 50-60% of those were nymphs.

North and west of the Twin Cities, PL populations on established alfalfa seem to be declining slightly, as more of those fields that needed treatment are treated. Most PL on established alfalfa there are adults now. By contrast, the new seedings are still showing high numbers -- though not as high as in the southeast, with 1 1/2 - 2 1/2 PL/sweep on stubble -- and more nymphs than on established alfalfa.

There have been some questions about whether all the rain would control the leafhoppers or mean that they were not damaging to the plants. In general the answer to both questions appears to be a qualified "No." Some instances have been reported where there were high populations of nymphs on alfalfa stubble when a severe rainstorm passed through, and low numbers afterwards, so some rain mortality does occur. But once

there is much canopy there to shelter the leafhoppers, they mostly seem to survive rain very well. The adults do not seem to be affected, perhaps because most tend to fly out of fields when cut and return when there is some regrowth. Thus, rain cannot be relied on to have controlled the problem.

When the alfalfa has ample moisture, sun, high temperatures, and nutrients enabling it to grow at maximum speed, it is possible that PL damage may take a little longer to show up, because the plants are growing faster than the leafhoppers can damage them. However, if there are enough leafhoppers causing damage, this can interfere with the ability of the plant to grow, even with such ideal conditions. PL block the phloem tubes in the plant, stopping it from moving the products it forms in the leaves by photosynthesis to the other parts of the plant to make new growth. Thus, although the rain may have some effect on the damage potential of PL, it certainly does not remove the problem, as we can see by all the fields showing damage symptoms now. Dr. Ted Radcliffe and students have just begun a study this season looking at how the moisture status of alfalfa influences damage by PL; so in a year or two, we should have more details of the fine tuning of this interaction.

In some fields fairly high numbers of ALFALFA CATERPILLAR (4/sweep) have been reported, but there was no significant damage from them. The threshold (in other states, Minnesota doesn't have a local one) is much higher. Although there are a range in sizes of larvae, most were in the last stage, and so doing their maximum feeding already. With the ideal conditions for alfalfa growth, defoliating insects such as this probably have somewhat less effect than usual.

Penny Ives
Extension Entomologist

SUNFLOWER MOTH -- They averaged 5 adults per plant on plots at Lamberton on July 25. This is the highest count we have ever seen. Damage may not be too important, however, as the migrants arrived early in relationship to bloom.

BANDED SUNFLOWER MOTH -- As we indicated last week, numbers are quite low. In examining the most highly infested fields, we do not feel treatment will pay in oil highbreds. Confection and seed production fields will need treatment in many cases.

VARIEGATED CUTWORM -- We had reports of a treatment for this insect in potato this week. The action level would be 10% defoliation. The grower believed these to damage tubers and wished to prevent that from occurring. There is little, if any, potential for this insect to damage tubers. Judgment for control should therefore be based on defoliation.

David M. Noetzel
Extension Entomology

EUROPEAN CORN BORER -- Adult emergence is well under way in southern Minnesota, as indicated by rising light trap captures. Where locally abundant, moths should be apparent in action sites, at field edges, and in the fields. Three to five days after emergence, females are ready to begin laying eggs. Later this week, egg masses will appear where moths are locally abundant. Scouting for second generation larvae and egg masses should be initiated this week and extend for the next 3 - 4 weeks. Longer maturity highbreds and later planted fields that are silking and pollinating are most attractive for egg laying. The best zone of the plant to examine contains the leaves and leaf sheaths at the ear, 2 nodes above and 2 nodes below the ear.

Treatment is recommended when 50% or more of the plants have egg masses or larvae in the leaf axils. Alternatively, use the economic threshold with values of .035 to .045 for yield loss and .50 for insecticide effectiveness. Be wary. Larvae can quickly enter the ear and will no longer be controlled by an insecticide. For these reasons, economical control of second generation European corn borer is more difficult to achieve than with first-year generation.

Liquid formulations generally provide slightly better control than granules because of larval position near midplant. Do not expect more than 60% control. Note: Ambush and Pounce cannot be applied after brown silks are present.

In northern Minnesota, most infestations have matured to the point where economical control is no longer possible.

BLACKLIGHT TRAP CAPTURES -- The following table summarizes light-trap captures of important moth pests from July 23 to July 29.

District	Location	Average Nightly Captures			
		Armyworm		European corn borer	
			<u>high</u>		<u>high</u>
SC	Blue Earth	3.0	7	52.0	111
C	Glencoe	1.0	3	34.0	47
NW	Hallack	trace	1	0.0	0
SW	Heron Lake	1.0	2	8.0	19
SW	Lamberton	2.0	5	4.0	10
SC	LeSueur	18.0	53	329.0	462
SC	Montgomery	13.0	21	26.0	53
WC	Morris	9.0	15	2.0	4
C	Olivia	8.0	20	7.0	25
SE	Olmsted	4.0	7	21.0	30
NW	Ottertail	2.0	4	2.0	6
NW	Polk	3.0	9	trace	1
SC	Sleepy Eye	1.0	3	21.0	28
SC	Waseca	8.0	14	151.0	283
SW	Worthington	9.0	15	62.0	70

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 22-28, 1986.

HOST

DIAGNOSIS

Raspberry

Spur Blight & Anthracnose

The symptoms of cankers on canes are very evident now. Both produce purplish cankers on canes, but anthracnose cankers then turn ashen gray in the center. Continue with fungicide applications if the weather is wet. After harvest, prune out infected old and new canes. Prune only during dry weather, preferably when the plants will remain dry for several days. Fungicides labelled for control include benomyl, captan, dyrene, lime sulfur, sulfur, and zineb. See AG-FS-1152.

Strawberry Root Weevil

We continue to receive many calls.

Cicadas

This is an insect that is more often heard than seen. The adult makes a distinctive high pitched sound that people do not always recognize. The immature nymph spends its life underground on plant roots. The adult, about 1-2 inches in length, is stout bodied with large, clear wings.

Other

Other insect inquiries that did not predominate over the rest but still are worth mentioning include honeysuckle witches' broom aphid, bronze birch borer, post birch leafminer damage, aphids in gardens, and apple maggots.

Turf

Weed Control

Crabgrass and nutsedge are the two main weed problems in home lawns this time of year. Crabgrass is too tough for post-emergents to control easily. Catch clippings to reduce seed drop, then use pre-emergent herbicide early next May.

Basagran is best for nutsedge, a perennial, but is not available in small, "homeowner" quantities. Lawn services can spray for nutsedge in urban and suburban areas.

Trees & Shrubs

Excess Moisture

Many varieties of trees and shrubs are showing symptoms of high soil moisture content from the repeated, heavy rainfalls we've experienced this season. Symptoms may include yellowing or chlorotic leaves, premature leaf drop, or leaves that turn dark brown or black, then die.

Jill Pokorny
Plant Pathology

Jeff Hahn
Entomology

Deb Brown
Horticulture

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