



PLANT PEST *Newsletter*

MINNESOTA EXTENSION SERVICE

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PLANT PEST NEWSLETTER SCHEDULE FOR 1990-91

PPST01 April 20, 1990	PPST09 June 15, 1990	PPST17 August 24, 1990
PPST02 April 27, 1990	PPST10 June 22, 1990	PPST18 September 7, 1990
PPST03 May 4, 1990	PPST11 June 29, 1990	PPST19 September 21, 1990
PPST04 May 11, 1990	PPST12 July 6, 1990	PPST20 October 19, 1990
PPST05 May 18, 1990	PPST13 July 13, 1990	PPST21 November 16, 1990
PPST06 May 25, 1990	PPST14 July 20, 1990	PPST22 December 21, 1990
PPST07 June 1, 1990	PPST15 July 27, 1990	PPST23 January 18, 1991
PPST08 June 8, 1990	PPST16 August 10, 1990	PPST24 February 15, 1991
		PPST25 March 15, 1991

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

RESPONSIBILITIES

EXTENSION AGRONOMY—WEED CONTROL

Department of Agronomy and Plant Genetics
1991 Upper Buford Circle
411 Borlaug Hall
University of Minnesota
St. Paul, MN 55108

<u>NAME</u>	<u>RESPONSIBILITY</u>
Beverly Durgan	Weeds and weed control—small grains; weed identification.
Jeff Gunsolus	Weeds and weed control—corn and soybeans
Roger Becker	Weeds and weed control—forages and pasture. Water quality issues relative to herbicides.

EXTENSION ENTOMOLOGY

Department of Entomology
219 Hodson Hall
1980 Folwell Ave.
St. Paul, MN 55108

Following are the responsibilities, rooms, and phone numbers of the Extension Entomologists. Requests for identification of noncrop insects should be addressed to Jeff Hahn or Mark Ascerno. Insects collected in crops should be sent to the appropriate specialist for identification.

<u>SPECIALIST</u>	<u>RESPONSIBILITY</u>	<u>OFFICE & PHONE</u>
Mark Ascerno (95% Extension)	Urban entomology, floriculture, nursery, shade trees, Christmas tree, turf & garden insects.	236 Hodson 624-9272
Basil Furgala (10% Extension)	Honey production & pollination.	530A Hodson 624-4798
Jeff Hahn (100% Extension)	Dial-U Insect & Plant Information Clinic (70%); home, tree, shrub, lawn and garden insects.	236 Hodson 624-4977
Phil Harein (95% Extension)	Insects associated with stored grain, food processing facilities and structural environments. Also pesticide impact assessment.	228 Hodson 624-3777
Bill Hutchison (40% Extension)	Vegetable (excluding potato) and forage crop insects.	424 Hodson 624-1767
Dave Noetzel (100% Extension)	Small grain, sunflower, alternative crops, insects of man & animal, insecticides and bees, and 4-H.	226 Hodson 624-9272
Ken Ostlie (60% Extension)	Field corn, soybean and edible dry bean insects. Crop pest management program.	232 Hodson 624-9272
Subi Subramanyam (100% Extension)	Pesticide impact assessment and stored grain pest management.	228 Hodson 624-9292

EXTENSION PLANT PATHOLOGY

Department of Plant Pathology
1991 Upper Buford Circle
495 Borlaug Hall
University of Minnesota
St. Paul, MN 55108
Phone: 625-6290

NAME

RESPONSIBILITY

Cynthia L. Ash	Dial U Plant Pathologist; diseases of shade trees woody ornamentals, home lawns and gardens.
Dean Herzfeld	Assistant Extension Specialist; Pesticide Applicator Training. Pesticide regulations.
David W. French	Professor. Deciduous tree diseases, oak wilt and Dutch elm disease.
Roger K. Jones	Extension Plant Pathologist. Potatoes, sugar beets and small grain diseases.
Richard A. Meronuck	Extension Plant Pathologist. Grain storage and mycotoxins, dry beans, Pesticide Applicator Training.
Frank L. Pflieger	Extension Plant Pathologist. Diseases of vegetable crops and floriculture plants (flowers).
Jill D. Pokorny	Director, Plant Disease Clinic. All commercial crops. 612-625-1275.
Ward Stienstra	Extension Plant Pathologist. Diseases of turf, corn, soybeans, forages, and fruits.

CORN

MONITORING THE 1990 BLACK CUTWORM MIGRATION—Black cutworm outbreaks in 1985 triggered interest in monitoring black cutworm migration. Black cutworm infestations do not routinely occur in Minnesota since they cannot survive Minnesota winters. The adult moths migrate north each Spring from overwintering sites in Texas and Mexico. Where they land is mainly a function of major weather systems. The extent of damage caused by the resulting larvae depends on the flight's timing compared to the progress of tillage and planting operations. All of this adds up to massive uncertainty about problems in any year. The overall risk of BCW infestation is so small that "insurance" treatments with soil insecticides rarely payoff. That same low risk makes routine scouting by farmers frustratingly unproductive. What's the answer? Monitoring BCW migrations!

The Minnesota Extension Service IPM program initiated a monitoring project in 1986 with the cooperation of farmers, county agents, crop consultants, vo-ag instructors and county agents. Flights are monitored with sticky traps baited with pheromone (a sex attractant to male BCW moths). The traps indicate flight arrivals. When combined with temperature information, it's possible to predict where potential infestations are likely to occur and when to scout for damage. The pilot project was successful in predicting a 1986 outbreak. Last year several massive flights were detected that raised our concerns about widespread infestations. Fortunately, a timely frost on May 5 "cleaned the slate".

What will 1990 bring? To keep on top the situation, over 95 cooperators in 43 counties will be monitoring pheromone traps and their findings will be summarized weekly. So far this Spring, no major flights have been detected.

SOIL INSECTS IN 1990—Last year brought a lot of surprises with soil insects. Projected black cutworm infestations didn't materialize. But farmers, consultants and agronomists out scouting for BCW found a wealth of other soil insect problems: wireworms, white grubs, sod webworms, other cutworms, and seedcorn maggots. What will 1990 bring?

Corn rootworms—Adult surveys by the MDA last summer indicated declines in SE and SC, slight increases in SW and NW, and stable populations in WC, C and EC Minnesota. A pattern of mild winters has been increasing the proportion of western corn rootworms throughout Minnesota, especially in the SE. This December may have changed the picture. Unusually cold temperatures with little snow cover may have translated into egg mortality, especially with the less winterhardy western corn rootworm. Fields where WCR predominated in 1989 and the population bordered the economic threshold of 1 beetle per plant should not need treatment in 1990.

CORN/Continued

1989 CORN ROOTWORM BEETLE SURVEY

District	Adult Beetles 1988	(#/plant) 1989	Proportion Northern:Western
NW	0.72	1.73	63:37
WC	1.89	2.07	94:06
C	1.51	1.46	90:10
EC	0.38*	1.91	82:18
SW	2.77	3.64	89:11
SC	4.38	2.40	92:08
SE	6.39	4.67	70:30

Data gathered by MDA-Plant Industry Division.

*Counts taken after peak population.

Wireworms & White Grubs—Increased problems with both of these insects was observed in 1989 but its impossible to tell if this portends an increase in 1990 problems, represents a normal cycle, or reflects a combination of conditions unlikely to be repeated in 1990. Both insects are typically considered problems in the 1-2 years following breakup of sod. Corn planted after pasture, long-term set aside, or severely neglected and grassy alfalfa stands has higher risk of stand loss. Because no rescue treatments are effective against either insect, the only management decision in higher risk situations is either to use a preventative treatment or suffer the consequences.

Damage from wireworms can be minimized with a two preventative treatments, 1) a soil insecticide (Counter 15G, Lorsban 15G, Thimet 20G, Force 1.5G, or Furadan 15G)

applied at planting or 2) the less expensive and occasionally less effective alternative, a planter-box seed treatment containing lindane (e.g. Agrox DL plus or Germate plus). Seed treatments with lindane only protect the seed and a small area of the coleoptile from wireworms. They do not protect established plants whose stems may be attacked just under the soil surface.

White grub preventative treatments are limited to a soil insecticide applied at planting (Counter 15G, Thimet 20G). Seed treatments are ineffective against white grubs.

When do you use preventative treatments? Wireworm and white grub problems are extremely difficult to predict. In fields with a history of wireworm or white grub problems treat only those areas that typically have the problem. In other situations if true white grubs are observed during tillage and exceed 1 per cubic foot, a soil insecticide is recommended. If wireworm problems may occur, a seed treatment provides the lowest cost, highest return option. A disturbing trend lately has been increased incidence of stand loss in corn/soybean rotations with no history of grass-control problems. Routine use of soil insecticides in first-year corn as an "insurance" against occasional, unpredictable soil insect problems is not recommended. These pest problems are spotty, rarely causing significant stand-loss over an entire field.

Does it make sense to spend \$1000 on soil insecticides for an 80 acre field when stand losses rarely occur and when they do, affect small areas (usually under 2-3 acres)? If the field has not had a history of problems, save the money. If standloss does occur in small areas, make a quick decision on whether or not to replant and use the money on the replant. Always use a soil insecticide in a replant situation to avoid a repeat of stand loss.

—Ken Ostlie
Extension Entomologist

GRASSHOPPER NEWS

I am not aware of any cropland grasshopper egg hatch as of April 19. Art Frame had a constituent report 4th stage nymphs, probably a rangeland species that wintered as a nymph. Temperatures are about five days ahead of normal so twostriped hatch should be in early May.

Until now environmental conditions have not changed enough to expect mortality changes in overwintering grasshopper eggs. Thus we are still proceeding on the assumption that we will have to deal with a severe hopper problem.

Our township officer training sessions went exceedingly well and are now complete. If the present amendments to the grasshopper law are passed, county meetings dealing with the

honey bee problem and the final version of the law may be required in every county with potential for insecticide use. We will let you know if they are needed and MDA will provide information packets for that.

I would like to compliment all of you on the organization of those township officer sessions. Without exception there was not a single miss in the entire process. Bravo! And extra special thanks to the Cluster Agents-Ag that were the key contact. All of you deserve extra pay for the superb job.

STATUS OF ASANA XL FOR GRASSHOPPER CONTROL IN CRP—The MDA has not heard from EPA yet on

our emergency request for the use of Asana XL on CRP and small grain. We understand that both North Dakota and South Dakota also have requests for this use. That should help everyone. I am still convinced Asana XL is safest for all wildlife sensitive sites except where fish and aquatic invertebrates are an issue. It is also most price competitive of the relatively safe insecticides. The question of post treatment interval for unlabeled root crops (eg. sugar beets) is also still open.

LORSBAN (2EE LABEL) ON SUGAR BEETS—Dow Elanco has indicated they have obtained a 2ee label for use of 4E Lorsban for hopper control in sugar beets. This makes its use unequivocally legal.

STATUS OF AMENDMENTS TO THE 1989 GRASS-HOPPER LAW—It is still a little early to be sure what will happen but we are fairly certain that funding for townships for the 1989 campaign is assured. Rather modest funding for 1990 is also present.

If the companion bills move to conference, the items which will be added are appeal processes for requirement to control and a system for collection if the township has to do the treating. A process for levying additional grasshopper control funding has been added.

There may be exemptions from control for certain sensitive lands such as Nature Conservancy sites. And the requirements relating to treatments that may provide a high risk to honey bees will be severely tightened. We will have to wait until next week to know more precisely what was finally achieved in the legislature.

—Dave Noetzel
Extension Entomologist

ATRAZINE USE AND SWITCHGRASS ESTABLISHMENT

In the February 16 issue I stated that all range and pasture uses will be dropped from all atrazine labels for the 1990 growing season. Ciba-Geigy has informed me that this restriction will not occur until 1991. Therefore, atrazine can be used for switchgrass establishment during the 1990 growing season. Read and follow all label restrictions for this use. I am sorry for any inconveniences or confusions, however many herbi-

cides labels are in a continuous state of change, therefore it is important to read all labels before use, even if you used the product last year.

As mentioned in the previous newsletter, atrazine will still be classified as a restricted use herbicide on September 1, 1990.

—Beverly R. Durgan
Extension Agronomist - Weed Control

WEED IDENTIFICATION

It is again time to begin thinking about weed identification. Accurate weed identification is important for effective, economical control and should be the first step in an effective weed control program. Local authorities, such as county agents, crop consultants, Vo-Ag teachers, or agricultural inspectors, can help with identifying most weed species. However, if there is a weed identification problem that cannot be solved locally, you can mail plant specimens to Bev Durgan, Extension Agronomist-Weed Control, 411 Borlaug Hall, University of Minnesota, St. Paul, MN 55108. I will identify them and give control recommendations as soon as possible. Please observe the following suggestions for preparing your weed samples so that I will have a good specimen to examine.

1. Do Not put weeds into plastic bags or wrap in plastic wrap.
2. Do put the weeds in a fold of paper towel or fold of newspaper.

Press overnight (under a heavy book, etc.), and mail them in the paper. Plants can be folded, if necessary, to accommodate the envelope.

3. Send in an identifiable portion of the weed, usually top growth with flowers and/or fruits, if available. If sending weed seedlings or vegetative plants, please send the entire plant, including the roots.

Roots are not normally needed for identification of older plants.

WEED IDENTIFICATION/Continued

4. Provide the following information on the weed to be identified or use the prepared Plant Identification forms available from the Agronomy Extension Office or your local county extension office:

- o Type of root system (tap root, fibrous root, rhizomes, etc.).
- o Does the plant have milky juice in the stem or leaves (yes or no)?
- o Where is the plant growing? (pasture, fence row, row-crop field, etc.)

- o Type of growth (erect, prostrate, viny, etc.).
- o Write on the outside of the envelope "Plant Identification Sample."
- o If you want weed control recommendations, please indicate the area where the weed is to be controlled. For example: roadside, pasture, corn, small grains, etc.

—Beverly R. Durgan
Extension Agronomist—Weed Control

SMALL GRAINS

Tiller herbicide from the Hoechst - Rousel Company has been approved under a Section 18 (Emergency Use Exemption) for postemergence foxtail (pigeongrass) control in hard red spring wheat for 1990. The Section 18 allows Tiller applications until July 15, 1990. The use rate for Tiller is as follows:

- 0.95 pts/A for green foxtail control
- 1.2 pts/A for yellow and green foxtail control
- 1.7 pts/A for fields with mixed populations of foxtails and wild oats

The Section 18 for Tiller is not for wild oat control, therefore Tiller cannot be used in fields for wild oat control only. However, if wild oats are present in the field, the higher rate is needed for control. **Do Not** apply Tiller to durum wheat, barley, oats or rye.

Tiller should be applied after spring wheat begins to tiller (4-5 leaf stage) but prior to jointing stage.

Tiller will control larger foxtail and can be applied later than other postemergence herbicides used for foxtail control in wheat. In University of Minnesota research Tiller has given good to excellent control of both yellow and green foxtail.

Do Not tank mix Tiller with any other pesticide, fertilizer or adjuvant. The addition of any broadleaf herbicide to Tiller can decrease the foxtail control of Tiller. Broadleaf herbicides can be applied 5 days before or after a Tiller application. Rainfall within 1 hour of application will result in a reduction in foxtail control.

Do Not apply more than one application of Tiller per season, or apply within 70 days of harvest.

Read the label for any additional restrictions or precautions.

—Beverly R. Durgan
Extension Agronomist—Weed Control

DIRECT SEEDING ALFALFA ESTABLISHMENT WEED CONTROL

Direct seeding of alfalfa (without companion crops) generally is best achieved with the use of a herbicide to control weeds. Clipping can be used to manage some broadleaf weed problems and low level infestations of annual grasses. Heavy weed pressures, especially grasses such as foxtail species, should be controlled with a herbicide if direct seeding.

For annual grass control in alfalfa establishment, only Balan and Eptam are labeled soil applied preplant incorporated and Poast is labeled postemergence. Balan and Eptam will provide some broadleaf suppression, Poast will not. Balan and Eptam

both provide similar broadleaf control with Balan being slightly more active on lambsquarters and pigweed, Eptam being much more active on mustards and velvetleaf. Eptam has more potential for alfalfa injury, (from which alfalfa usually recovers), and should **NOT** be used if any atrazine was used on the preceding crop. Apply Balan at 6 - 8 pts/A of the 1.5 EC or 2 - 2.5 lbs of the 60 DF formulations. Eptam may be applied at 2.25 pts/A for grass control only, or applied at 3.5 - 4.5 pts/A for additional broadleaf activity.

On erodible slopes, oats may be seeded with alfalfa and later

removed with Poast applied at .75 pt/A to "direct" seed without high soil loss potential. Poast is very effective on annual grasses at the 1 pt/A rate with excellent alfalfa crop tolerance. Read the label for specific use rates for various grass species and additive combinations. Poast will provide no broadleaf weed control.

Buctril and 2,4-DB control broadleaves postemergence in alfalfa. Buctril has caused injury in Minnesota in cases of stressed alfalfa seedlings caused by ANY factor such as air temperatures being too cold or too hot. The label just cautions against air temperatures exceeding 70°F after application. 2,4-DB has relatively good crop tolerance. Buctril (1 - 1.5 pts/A) will provide better control of smartweeds and wild buck-

wheat, 2,4-DB (2 - 6 pts/A of Butyrac 200) better control of pigweeds. Both will control lambsquarters. Mustards must be treated early to achieve control with either. Minnesota trials have shown the .25 pt rate of Buctril and the 3 pt rate of Butyrac 200 to be adequate for most situations.

Treflan is NOT labeled for alfalfa establishment. However, Treflan can be used for economical establishment of forage legumes on conservation reserve acres or set-aside programs, and, in the event of release of the acres in cases of drought, etc., can be fed to livestock without restrictions.

—Roger Becker
Extension Agronomist - Weed Control

MISCELLANEOUS

DIAL U HIGHLIGHTS

County Agents Please Alert Master Gardeners to the Following Items

Shade tree disease concerns are receiving most of our attention. Mechanical and chemical damage, along with environmental injury are responsible for most problems thus far. Evergreens have received the most injury. Cytospora canker and Rhizosphaera needlecast may be confused with abiotic (mechanical, chemical, and environmental) damage on spruce. If weather conditions this spring become cool and wet, leaf spotting diseases, such as anthracnose, apple scab and cedar-apple rust, will be abundant. Contact the Dial U Clinic for more information on these diseases.

Lawns—Although grass is just starting to green up in the Twin Cities area, callers are anxious to begin work on their lawns. We suspect this is partly because they see lawn care companies out applying fertilizer and pre-emergent herbicide. Really, it's still early for that, but the commercial applicators can't handle everyone at precisely the right time, so they start early, then come back with a second application later in June for those lawns that got the extra early treatment.

Grass should be fertilized when it's growing actively; just about the time it's ready to be mowed. Pre-emergent herbicides should be watered into the ground a couple weeks before crabgrass sprouts. Normally they should be applied in early to mid-May, depending on your location. These products must be watered into the ground in order to be effective.

We're also getting the annual requests for information on zoysia grass, a warm-season perennial that is poorly adapted to growth this far north. Even though it overwinters in our climate, it doesn't spread well, nor does it green up until temps

become quite warm in late May or June. Then it turns brown with the first frost. Stick with bluegrass/fescue/rye combinations.

Centipedes are easily identified by their many long, conspicuous legs, flattened body, and their ability to move quickly. They are active outside now, and some may find their way into homes. They feed on insects and spiders found indoors and often are associated with damp conditions. Control centipedes by sealing cracks and other obvious entry points around the foundation, drying damp areas with a fan or dehumidifier and killing centipedes by hand as they are found. An insecticide, such as chlorpyrifos, can be sprayed where centipedes are seen, although the effect is temporary. (see AG-FS-1023, Sowbugs, Millipedes, and Centipedes in the House).

Black knot—Newly noticed swollen areas on Prunus sp. (chokecherry, Mayday tree, cherry, and plum) should be removed several inches below the swollen area during dry periods this spring. The typical elongate black galls should have been removed during late winter pruning and then an application of lime sulphur applied. Dormant applications of lime sulphur must be applied before buds break to avoid plant damage.

Carpenter ants are commonly being seen now. When the start of ant activity coincides with the onset of warm weather, this means the nest is probably nearby, possibly in the home. Finding its exact location is often difficult. When the nest is found indoors, direct treatment of it is the best control. In cases where outdoor nests are near buildings, satellite nests may develop in homes. A perimeter spray is necessary to prevent the establishment of satellite nests. Another scenario is that

DIAL U/Continued

ants seen inside are just foraging for food and water and are nothing more than nuisances. Fortunately, carpenter ant damage occurs slowly and patience is advised in observing ant activity until the situation and nest location are more apparent. Then control can be more effective and efficient.

Cankers—Cankers are localized dead areas on woody tissues. They often originate as mechanical damage followed by the invasion of a plant pathogen. These areas are a different color than healthy bark and may appear sunken. Remove all cankers several inches below any indication of infection and destroy. Small cankers on the trunk or major limbs may be

excised. Improved plant health will often stop the spread of existing cankers.

Elm leaf beetles are 1/4 inch, oval-shaped beetles. When alive, they are yellow to green in color with dark green stripes. When dead, they often appear to be a uniform olive green or brown color. People are finding them in homes now, as a result of these beetles overwintering within the home last fall. These insects are harmless and do not reproduce indoors. The best control is physical removal, e.g., by hand or with a vacuum.

<i>Cynthia Ash</i>	<i>Deborah Brown</i>	<i>Jeffrey Hahn</i>
<i>Plant Pathology</i>	<i>Horticulture</i>	<i>Entomology</i>

The information given in this publication is for educational purposes only. References to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Minnesota Extension Service is implied.

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