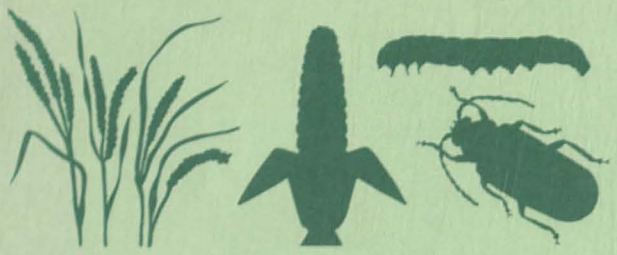


PLANT PEST Newsletter

MINNESOTA EXTENSION SERVICE UNIVERSITY OF MINNESOTA

PPST08 June 3, 1994

IN THIS ISSUE

ALFALFA

ALFALFA WEEVIL (AW) — AW larval populations gradually increased this past week at Rosemount to about 20/10 sweeps. This infestation appears to be one of the highest in the state. However, given the degree-day accumulations to date (see table) this still reflects only a modest infestation. Larval infestations still have time to continue to build before pupation, southern half of the state, however is now ready to harvest. Much of the alfalfa is now budding and first flowers were evident today (6-1-94). Bruce Christensen (Houston County), in cooperation with Neil Martin, has also documented a decline in Relative Feed Values (RFVs) during the past week. So for both top quality alfalfa *and* weevil control, harvest should be in full swing.

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

Alfalfa / continued

Degree-day watch:
Minnesota degree-day (heat-unit) summary for Alfalfa Weevil and European Corn Borer as of May 31, 1994.*

Location	Alfalfa (Base = 48° F)	E. Corn Borer (Base = 50° F)
Alexandria	*482*	*416*
Cambridge	*458*	*392*
Faribault	*502*	*433*
Mankato	*575*	*502*
Morris	*527*	*456*
Rochester	*503*	*433*
Rosemount	*576*	*496*
St. Cloud	*484*	*417*
Waseca	*549*	*476*
Winona	501	431
Comparative degree-day accumulations based on 30-year temperature average		
Faribault	*363*	*296*
Rochester	*342*	*276*
Rosemount	*313*	*253*
St. Cloud	*314*	*256*
Waseca	*345*	*280*

*Based on double-sinewave method.
Weekly temperature data provided by Dave Bartels, Department of Entomology.

— Bill Hutchison
Extension Entomologist

CORN

SCOUTING FOR EUROPEAN CORN BORER — During the next week, emergence of European corn borer moths will take off in southern Minnesota. Emerging females congregate in grassy action sites to mate, drink water necessary for optimal egg production and to develop eggs. Serious egg laying begins about four or five days after emergence. Each females is capable of laying two egg masses per night (ca. 20–25 eggs/mass) for ten nights.

Successful mating and egg laying is favored by calm evenings with dew and temperatures in the low 60° F range. This process is disrupted by temperatures below 60° F, wind, or lack of dew. Larvae hatch in four to six days, depending on temperature. Most of the mortality (typically over 90 percent) occurs in the first 24 hours after hatch as larvae move from egg masses on the underside of leaves into the corn whorl or as they attempt to disperse to adjacent plants by swinging on a silk thread or blowing in the wind.

Which fields should be scouted? Females are attracted to taller, earlier-planted fields (usually in mid-whorl stage). List the fields in order of planting and visit the earlier-planted fields first. Look for moths while walking through the grassy field border. Look for leaf feeding (pinholes in young leaves emerging from the whorl). If you find leaf feeding, search for larvae by unrolling the leaves and looking closely near sites of fresh feeding.

Be careful! Newly hatched larvae are about 1/8-inch long with a dark head capsule about the size of a dirt speck. If you don't find anything, it's probably too early. Return in about three days (if its warm) or five days (if its cool). If you find corn borers, scout the field. Evaluate other fields in order of planting. This approach can save a lot of scouting effort since even during outbreaks less than 50 percent of the fields in an area may have high populations from first generation.

Scouting should be discontinued in a field if the majority of larvae have begun tunneling, since insecticide are not effective against tunneling borers. The window from newly hatched larvae to tunneling third or fourth stage larvae is typically two weeks or less.

How is scouting done? The intent of scouting is to obtain a representative estimate of the borers in a field. Scout at least five locations per 40 acres, making sure that all areas of the field are represented. Think about topogra-

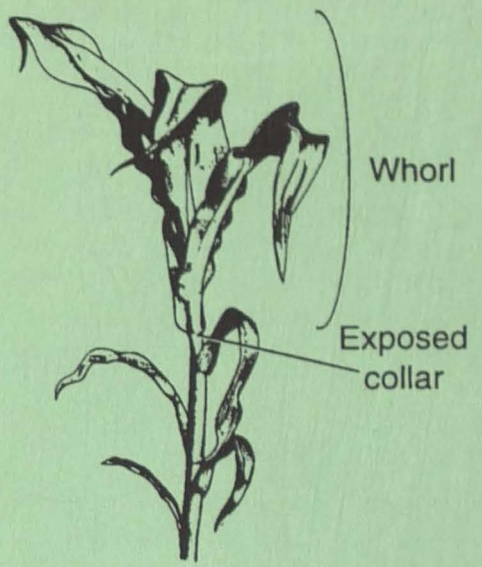
European corn borer Ostrinia nubilalis (Hübner)

Larval Instar	Body Length Range (mm)	Prothoracic Shield Width (mm)
1	1-2	0.3
2	3-4	0.4
3	5-10	0.7
4	12-16	1.0
5	19-25	1.7

Note: This larva is shown larger than life size.

(Illustration courtesy Iowa State University)

Where to look for young corn borers and leaf injury



(Illustration by Janet Nord, MES)

phy, hybrids, proximity to farm groves and grassy action sites. Avoid the field edge. At each location, examine 20 plants for leaf feeding. Choose at least two plants with leaf feeding for a larval count. Carefully, unroll the leaves and record the number of larvae. A more accurate sample involves randomly dissecting ten plants, with or without leaf feeding, for larvae at each location. This approach takes more time but avoids two sources of error; plants with leaf feeding and no larvae, or plants with larvae that don't show leaf feeding.

How does one decide if insecticide treatment will be profitable? A simple approach to the insecticide treatment decision can be obtained from fact sheet FS-5969, *A Quick Guide to European Corn Borer Management: Scouting and Decision-Making for First Generation.* Alternatively, use the following equations to estimate preventable loss.

Management Worksheet for First-Generation Corn Borer Control

_____ % of 100 Plants Infested x _____ average number of borers per infested plant = _____ borers per plant

_____ borers per plant x 5% yield loss per borer = _____ % yield loss

_____ % yield loss x _____ expected yield (bushels per acre) = _____ bushel per acre loss

_____ bushel per acre loss x $_____ price per bushel = $_____ loss per acre

$_____ loss per acre x _____ % Control = $_____ preventable loss per acre

$_____ preventable loss per acre – $_____ cost of control per acre = $_____ gain (+) or loss (–) per acre if treatment is applied

UPDATE ON STAND-LOSS PROBLEMS IN CORN—Insect infestations leading to serious stand loss in corn seem uncommon this year. With the exceptions of an isolated fields with sod webworm (reported near Hinckley by Marty Lovrien, Pioneer HiBreds) and black cutworm (reported near Round Lake by Jim Nesseth, Minnesota Extension Service, near Round Lake). For the most part, corn has outgrown stages were its especially susceptible to insect attack. Most of the native cutworms have finished their feeding. Stand loss from hop vine borer should be diminishing as the corn grows. Stalk borer activity will be increasing.

— Ken Ostlie
Extension Entomologist

SWEET CORN/EUROPEAN CORN BORER (ECB) — The first generation ECB moth flight, as predicted by our ECB model, did begin this past week at Rosemount. For most locations (see degree-day table) we should be between 10 percent to 20 percent emergence. Our forecast for peak 50 percent emergence ranges from June 8-9 at Rosemount and Waseca to June 14 at St. Cloud. As indicated in the degree-day table, we are about 1.5X warmer this year. Because of relatively high populations entering fall diapause, and favorable overwintering conditions, we are expecting an increase in moth emergence (over the past two years). However, final damage caused by first-generation ECB will also be dependent on the number of warm (>50° F), humid nights during the flight, that are most conducive to egg-lay.

— Bill Hutchison
Extension Entomologist

SEEDLING BLIGHTS AND ROOT ROTS — Conditions for fungal diseases of the seed and seedling roots were ideal this spring in south east and south central Minnesota. The early planting dates, followed by cool and then dry conditions have stressed the seedling plants. Some seed did not germinate and did not rot. This was due in part to the seed treatments and dry cool soils. Others germinated and then lost the primary root system (Radicle). The developing root was not protected by the fungicide and in the cool dry soils invasion by Rhizoctonia, Fusarium and Penicillium is possible. Soil temperature of less than 50° F is favorable for these fungi and the plant is growing slowly.

Fusarium is of concern as this can be the initial stage of stalk infection. Symptoms on primary roots in the seedling stage are small yellow to brown roots lesions that can turn brown and kill the root. Plant growth above ground is stunted, yellow and plants may even wilt. Often the secondary (Seminal) roots are able to develop before the plant dies and while the early season growth is uneven the stand remains fairly high. Shoot growth is very slow at 50° F and it may appear that stand is lost. You need to dig and check the condition of the seed or seedling plant before determining the stand is lost. Most often the plant will survive the loss of the primary root system and grow a nearly normal plant as the soil temperature warms and the secondary roots develop.

Plants from seeds planted deeper or plants under higher stress may be stunted and slower to develop. If soil moisture levels in the upper four inches remains low, root development is restricted and plant top growth suffers. Rain is needed soon in many areas to save seedling corn.

— Ward C. Stienstra
Extension Plant Pathologist

POTATO

POTATO LEAFHOPPER (PLH) — PLH numbers were as high as 2/10 sweeps at Rosemount, which follows a count of ca. 0.5/10 sweeps on May 24, following southerly jet stream flow May 20-22. Dave Hogg, in southern Wisconsin, also noted an increase in PLH on May 25. As always, the next regrowth and particularly new seedling alfalfa should be watched closely for PLH activity. Remember, the best sampling method for PLH is a 15-inch diameter sweep net. Refer to last week's newsletter for information on how to order sweepnets. I would advise calling the suppliers for recent updates on pricing.

— Bill Hutchison
Extension Entomologist

PESTICIDE NEWS

EBDC's (mancozeb, maneb, metiram) hearing — The USEPA has announced that it plans to hold a hearing concerning the request of Elf Atochem and Griffin Corporations to amend all product labels of mancozeb, maneb, and metiram, which were affected by the final EBDC Cancellation Order. Elf and Griffin have requested an amendment of these fungicide labels to allow the use of more than one EBDC active ingredient per season per crop. Currently these labels state, "If this product is used on a crop, no other product containing a different EBDC active ingredient may be used on the same crop during the same growing season." The proposed amendments would not

change current maximum allowable amount of EBDCs. For additional information, contact Ms. Amy Farrell, EPA Special Review Branch, Tel: 703-308-8054, Fax: 703-308-8041. (Source: *Reregistration Notification Network* Vol. 4, No. 6).

The 1994 Pesticide Reform Act — The Clinton Administration has recently proposed bills to amend the Federal Food, Drug and Cosmetic Act (FFDCA), and the Federal, Insecticide, Fungicide, and Rodenticide Act (FIFRA). These bills were sent to Congress in the first week of May. The 1984 amendments to FIFRA increased the requirements and costs to register pesticides. The 1988 amendment required that all pesticides registered before 1984 be reregistered by 1997 using the registration standards established after 1984. The proposed 1994 amendments may significantly affect the way pesticides are used in this country. The most important provisions include the following:

- Replacement of the Delaney Clause with a negligible risk standard. For pesticides found to induce cancer when ingested by humans and animals or pose a dietary risk, EPA will allow a zero tolerance unless the Agency finds on the basis of conservative methods (worst case scenarios for risk assessment) that the risk is negligible for all consumer exposures. The risk assessment must also consider exposure to children, infants and other sensitive groups of the population. The new risk standards will not be based entirely on cancer risk but also on other health risks. The new standard will provide a ten-fold margin of safety beyond the current 100-fold margin of safety. These new standards may result in cancellation of several pesticides.
- Companies in the United States will not be able to send canceled or suspended pesticides to other countries, unless the importing country's government specifically requests the pesticides. This restriction extends to pesticides that have been voluntarily withdrawn, or whose tolerances have been revoked or registrations denied. EPA would also have to inform the importing country about environmentally preferable alternatives to the pesticides.
- Several provisions would make it easier for EPA to cancel or suspend a pesticide.
- EPA would require to develop criteria for registration of reduced-risk pesticides.
- Two additional years for exclusive data rights for reduced-risk pesticides or pesticides with registrations for at least three minor uses. Conditional registration of biological pesticides would be easier, and priority may be given to registering pesticides currently being used under Section 18 of FIFRA.
- EPA will work closely with USDA to establish a national goal for adoption of integrated pest management (IPM), and to develop a system for evaluating agricultural pest control (chemical and nonchemical) demands.
- The risk assessment process will be revised to consider dietary risks from pesticides to children and infants. Tolerances will be evaluated every five years, and priority will be given to tolerance petitions for pesticides that pose less risk than currently registered pesticides. (Source: *Agrichemical and Environmental News*, Issue No. 99).

— Bh. Subramanyam, Coordinator
MN Pesticide Impact Assessment Program

CLINIC REPORTS

DIAL U

COUNTY AGENTS: Please Alert Master Gardeners to the Following Items

Ash plant bug damage. Damage is very noticeable now. It starts off as whitish, pinprick-like discolorations. If damage is heavy, areas of ash leaves can turn brown. Black specks found on the underside of the leaves is fecal material from the plant bugs. Ash plant bugs start off as bright red when they first hatch and later turn yellow. As adults, they are brown and yellow and about ¼-inch long. Ash plant bug damage is generally only cosmetic. Ash leaves dropping are an indication of ash anthracnose not ash plant bugs. Extension educators and master gardeners should also read the Dial-U brief entitled *Plant Bugs*.

Mosquito season is on. The first brood in the Twin Cities hatched over Memorial weekend. The weather has been drier compared to last year. As long as that continues, the mosquito nuisance should not be as severe as 1993. It is not practical to routinely treat mosquito harborage areas. The best bet for people to combat mosquitoes is to try to avoid being outside during times when mosquitoes are most prevalent (i.e. early morning and dusk), wear protec-

tive clothing when practical (such as long sleeves and pants) and use repellents such as DEET as a last resort. Be careful not to overapply repellents.

Roseslug sawflies. These flies were detected last week. They feed on the leaves of roses by skeletonizing (i.e. feeding on one layer of the leaves and leaving the veins). This can cause the leaves to appear to be transparent or lacey looking. Later the tissue turns brown, causing the shrub to appear to be dried out. Roseslugs are about ½-inch long with light green bodies when full grown. They first appear about mid-May and are active through June. In most cases, they cause no permanent harm to healthy, established roses. When control is desired, use insecticidal soap, acephate (Orthene), malathion, or carbaryl (Sevin). Extension educators and master gardeners, see the Dial-U brief entitled *Sawflies of Deciduous Trees and Shrubs*.

Blackheaded ash sawflies. These flies have been active on ash lately. They are cream colored caterpillar-like insects with black heads. They are about ¾-inch long when full grown. Their feeding is usually not heavy enough to injure healthy, mature ash. However, heavy infestations on very young and/or stressed trees could be damaging. When control is desired, use insecticidal soap, acephate (Orthene), malathion, or carbaryl (Sevin). Extension educators and master gardeners, see the Dial-U brief entitled *Sawflies of Deciduous Trees and Shrubs*.

Maple petiole borer. We have just started receiving a few calls of maples suddenly dropping a few leaves. This is caused by maple petiole borer, a type of sawfly. Sugar maples are most commonly affected but Norway maples can also be attacked. Part of the petiole remains attached to the leaf; the insect remains in the stem still attached to the tree. The petiole drops about ten days later. Once on the ground the borers burrow into the ground, pupate and remain there until next spring. Control is difficult and unnecessary. Only a small number of leaves are actually affected. Raking fallen leaves does not reduce next year's borer populations. No insecticides are recommended.

Apple scab. This scab is visible now on many ornamental crabapples as a fibrous brown moldy growth on the leaves accompanied by some yellowing. Early defoliation is just beginning on crabapples located on the St. Paul campus. It is too late to treat effectively this year.

Anthracnose. Anthracnose continues to develop on many green ash, oak and maple trees. Small spots and blotches are the typical symptoms and are often accompanied by defoliation. NOTE: Do not confuse ash plant bug feeding with anthracnose. Ash plant bug is a sucking insect and causes a very light stippled pattern over the leaf. Anthracnose causes purple to brown spots and blotches and tends to be worst in the lower and inner parts of the tree.

Rust diseases. These are abundant this spring. They are most easily noticed as bright orange lesions on buckthorn, currant, brambles, pine and jack-in-the-pulpit. The orange spores are easily dislodged onto your hands or clothing. Controls vary by host including removing the alternate host, preventative sprays, and plant destruction.

Trees in trouble. Tree troubles have been our most common horticultural call. Some have not leafed out at all, while others are leafing out sporadically or on the bottom or one side and not the other. We are speculating that abundant moisture last year may have interfered with the hardening off process, leaving even native trees more vulnerable to chilling injury during our bitterly cold winter. While roots were generally covered well with snow, stems and branches were exposed, and conductive tissue was damaged.

The real question now is what can be done with these problem trees. It's probably a wait and see situation. Where branches are brittle and no longer green beneath the bark, pruning or removal of the entire tree is in order. Where they're still flexible and green, sit tight and see what develops. You can always take them down later.

Water these trees if we go a week without heavy rainfall and temperatures are warm or hot. Fertilizer would probably just put more stress on them, and should not be attempted. They're not in trouble from lack of nutrients, but from winter injury.

Shrubs and hedges. Many shrubs and hedges are only sprouting from the base, also indicating chilling injury to the upper parts of the branches. Prune them back, water and fertilize them to encourage new growth.

Plant selection. We've had many calls on plant selection, and on where to find specific and sometimes unusual species. We often verify choices suggested at nurseries, checking on disease resistance, growth habit, *and particularly important,* cold-hardiness of the recommendations. We also try to match plants with soil types, so people don't try to plant trees that need well-drained soil on heavy, compact clay or vice-versa.

We make use of the Minnesota Landscape Arboretum's Anderson Library Sourcebook to find mail order nurseries that handle just about any plant that grows here.

Turfgrass. This remains a terribly popular subject. Calls about fertilizing, weed control, and seeding have dominated, but recently we've had a large number of calls on grass that has turned brown and dormant (we hope . . . as opposed to dead). Again, due to last year's abundant moisture, grass may not have developed good deep roots. So the minute it got hot, dry and windy, the grass turned brown. We are recommending regular deep watering to help lawns recover. (If the lawn was fertilized, our turf scientist says the large brown areas may be 'melting out' disease.)

Remember, it's not a good idea to fertilize or use herbicide on any lawns that are moisture stressed to begin with. There's every possibility it would cause them to grow worse. Our spell of hot weather is also a reminder that weed killers should be discontinued when temperatures reach the mid-80s.

Tulips. Don't transplant tulips yet. Wait till their foliage yellows or turns brown, then dig them up and replant them or store them in a dry, well-ventilated area for summer. If you dig them up, discard all small bulbs that are unlikely to bloom well. They're not worth the effort of planting, and will only disappoint you in the long run.

Tornado and wind damage. We have received calls about storm damage from the tornadoes and strong winds that blew through the Twin Cities area on Memorial Day. Strangely enough, most calls were about perennials such as hostas, with shredded leaves. Some trees were hit also, and should be trimmed immediately to remove hazardous branches. With the exception of oak trees, no pruning paint or wound dressing should be necessary.

Other calls. Common calls we've received include questions on carpenter ants and insect and mite galls.

— Cynthia Ash, Plant Pathology
— Deborah Brown, Horticulture
— Jeffrey Hahn, Entomology
— Julie Wermerskirchen, Wildlife

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