PLANT PEST Newsletter

MINNESOTA EXTENSION SERVICE — UNIVERSITY OF MINNESOTA

PPST05 — May 13, 1994

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## ALFALFA

**ALFALFA STANDS CAME THROUGH THE WINTER IN MINNESOTA PRETTY WELL.** No winter injury has been observed on new seedings. However, some older stands are showing varying degrees of winter injury. Most observations of winter injury have come from southwest and northern Minnesota. Damage observed so far has occurred from water damage last fall, ice sheet formation during the winter, or cold exposure to new shoots generated from plants that broke dormancy during the winter. Most damage around St. Cloud is on hill tops, north or east facing slopes. This is an indication strong winds removed snow cover from these hill tops and sub zero temperatures ensued exposing plants to excessively cold temperatures.

Dig plants to determine if the degree of damage. Dead plants will have decaying roots, brown to yellow color of root, stringy texture to soft and spongy. If roots are white in color and firm and a few to several crown buds have elongated, plant survival is possible. If plants continue to growth through a 6-inch height recovery is possible. The recovery of injured plants will be improved by delaying the first harvest to 25 to 50% bloom. Farmers should dig plants before renovating fields. Some stands are not as bad as viewed from the road, or as viewed earlier.

*Neal P. Martin*
*Extension Agronomist—Forages*

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

**ALFALFA WEEVIL (AW)**—As of today (5/10/94 I have not observed any weevil activity in the Rosemount area (Dakota Co.), which is in agreement with the degree-day accumulations to date for all Minnesota locations (see table below). We do not recommend extensive scouting for AW until 300-400 degree-days have accumulated. For comparison, most locations are about 50 to 60 degree days ahead of the 30-yr normal. I currently have no explanation for the apparent heat wave we're experiencing at Rosemount.

Despite some cold days this winter, the snow cover and warm/dry days this spring should be conducive for AW adult survival and larval development, respectively. A rapid way to initially sample for AW is to use a sweep net to determine their presence-absence. If present in reasonable levels (e.g., 40/20 sweeps), then use the stem sampling method for making management decisions. To do so, collect 40-50 stems, at random, in 4-5 sections of a field and count the number of stems with obvious feeding damage. Treatment is not warranted unless 35-40% of the stems have feeding holes in the leaves.

Please refer to BU-0500, *Insecticide Suggestions to Control Insect Pests of Field Crops*, and FO-3516, *Alfalfa IPM, Sampling Alfalfa Insects*, for details on 1994 recommendations for insecticide use. In most years, a variety of beneficial insects (predators and parasites) and a fungus do a good job of keeping AW in check. The fungus, however, does best with high precipitation and humidity.

*Bill Hutchison*
*Extension Entomologist*

**Degree-day watch:** Beginning this week, the following table will be updated weekly to keep you informed of the development of Alfalfa weevil and European corn borer in Minnesota.

Minnesota Degree-day (heat-unit) Summary for Alfalfa Weevil & European Corn Borer
As of May 10, 1994*

| **Location** | **Alfalfa (Base = 48°F)** | **E. Corn Borer (Base = 50°F** |
|---|---|---|
| Cambridge | 148 | 119 |
| Faribault | 167 | 135 |
| Morris | 154 | 123 |
| Rochester | 177 | 144 |
| Rosemount | 230 | 189 |
| St. Cloud | 149 | 119 |
| Waseca | 173 | 155 |
| Winona | 187 | 153 |
| **Comparative Degree-day accumulations based on 30-yr. Temp. Avg.** | | |
| Rochester | 119 | 89 |
| Rosemount | 107 | 80 |
| St. Cloud | 107 | 80 |
| Waseca | 121 | 91 |

*Based on double-sinewave method; Forecaster software.
Weekly temperature data provided by Dave Bartels, Dept. of Entomology.

*Bill Hutchison*
*Extension Entomologist*

## CORN

**DIAGNOSING STAND LOSS FROM INSECTS**—Several insects may attack germinating and emerging corn. Occasionally, this stand loss may be severe enough to cause yield loss and the agony of making replant decisions. Scouting corn from emergence to 4-leaf can reduce your chance of discovering a nasty surprise at cultivation. Prompt detection of stand loss and diagnosis of its cause is critical to minimize stand loss, if possible, and identify available solutions. In this article, let's focus on detection strategies, signs, symptoms, and management recourses for insects attacking seeds and new roots.

If you've noticed injured plants or stand loss, take a closer look at the field. Focus your attention on these questions:

* **What kind of injury is leading to stand loss?** Be sure to examine the entire plant, including roots.

* **How common is it?** Take some counts of surviving and injured plants. You may even want to mark sections of row and count plants over a couple of days to determine if stand loss is still occurring.
* **Where is it occurring?** Field topography, soil type and past cropping history may be related to stand loss and provide valuable clues about the insect causing it.
* **Are any insect suspects or their signs present?** Look for insects that might be causing the stand loss in the soil near injured plants or adjacent "healthy" plants, and under nearby crop residue or dirt clods. Put the insects you find in alcohol to examine later or if seeking professional help in identifying the insect. Caterpillars should be dropped briefly into boiling water to fix their color and then placed in alcohol to preserve them.

Armed with this information, the list of suspects can be narrowed and management options identified.

*Ken Ostlie*
*Extension Entomologist*

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## INSECTS ATTACKING SEEDS

### SEEDCORN MAGGOT

**FEEDING** — Maggots tunnel into softened seed and along underground portion of stem.

**SYMPTOMS** — Poor emergence.Occasionally emerged plants die. Seeds rotting, possibly with tunnel holes visible. Emerged plants may have discolored feeding scar(s) on underground portion of stem. Damage to coleoptile may contribute to leaves unfurling below ground.

**DESCRIPTION** — Small, tapered, creamy-white legless maggots (<1/2" long) may be found feeding in the seed.Yellow-orange to brown pupal cases may be present nearby in the soil. A fast life cycle, usually less than one month, usually means symptoms are noted after larvae gone.

**SITE CONDITIONS** — Damage accentuated by cool, wet weather that delays germination. Adult flies attracted by partial burial of decaying organic matter (e.g., spring plowdown of green manure such as alfalfa or animal manure).

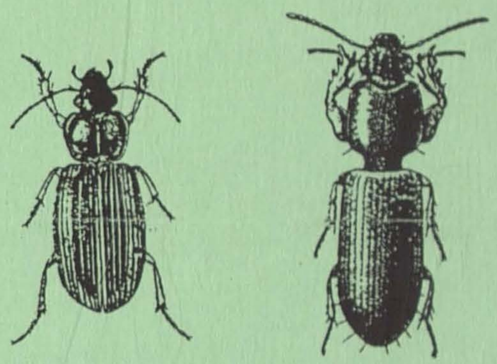
**MANAGEMENT** — No rescue options. A preventative seed treatment containing diazinon or chlorpyrifos (Lorsban) will protect the germinating seed. Soil insecticides used for corn rootworms also effective.

### SEEDCORN BEETLES

**FEEDING**— Beetles normally predaceous on other soil insects but attack seeds when cool weather slows prey activity. Chew out germinating seeds.

**SYMPTOMS** — Poor emergence and reduced stand. Seeds chewed out.

**DESCRIPTION** — Active, dark brown beetles (1/3") with light brown border stripes on wing covers or a constricted "neck".



**SITE CONDITIONS** — Can occur almost anywhere. Stand loss accentuated by prolonged cool, wet weather.

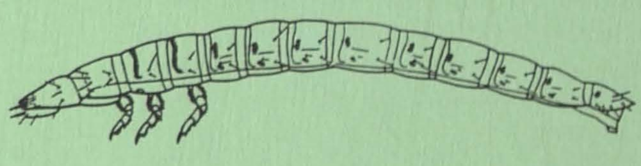
**MANAGEMENT** — No rescue options. Preventative solution is a seed treatment containing diazinon or chlorpyrifos. Some soil insecticides used for corn rootworm control also effective (see label).

### WIREWORMS

**FEEDING** — Larvae feed on germinating seeds and tunnel underground portions of stem.

**SYMPTOMS** — Poor stand with wilting or "dead heart" plants. Seeds or underground stems just above the seed may be tunneled. Tunnels just above secondary roots common on older plants.

**DESCRIPTION** — Yellow-brown, hard shelled, wire-like larvae (1/3 - 1 1/2") with pointed head and tail, three pairs of legs. Live two to five years in the soil.



### *CORN/Continued*

**SITE CONDITIONS** — Damage usually most severe in low-lying portions of fields. Typically associated with plowdown of sod but also attacks corn following soybean or small grain.

**MANAGEMENT** — No rescue options. Stand loss unpredictable and preventative soil insecticide treatments usually not cost effective unless the field has a previous history of wireworm problems. Soil insecticide protection strongly encouraged for wireworm replant situations. Seed treatments containing lindane effective against seed attack but will not protect emerged plants. Labelled soil insecticides effective but costlier.

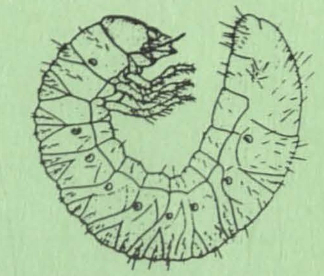
## INSECTS ATTACKING ROOTS

### WHITE GRUBS

**FEEDING** — Prune primary and secondary roots of emerging corn plants.

**SYMPTOMS** — Poor emergence plus stunting, wilting, and death of emerged plants. Older plants may exhibit various nutrient deficiency symptoms (nitrogen, phosphorous, potassium).

**DESCRIPTION** — C-shaped white to cream colored larva with brown head capsule and three pairs of legs. Top surface of abdomen with a transparent tip, revealing soil in gut. Typically a three year life cycle.



**SITE CONDITIONS** — Typically worse second year after plowdown of sod. May occur in routinely-tilled fields near cottonwood, poplar or willow trees. Grubs prefer sandy or "lighter" soils.

**MANAGEMENT** — No rescue options. Damage often unpredictable so preventative treatments with soil insecticides usually not cost-effective with the exception of repetitive trouble spots. Seed treatments not effective. Labeled soil insecticides strongly recommended for white grub replant situations.

*Ken Ostlie*
*Extension Entomologist*

**REQUEST FOR INFORMATION ON STAND-LOSS PROBLEMS**—Each Spring I try to locate one or more sites to research management options for insects causing stand loss. For teaching purposes, I am also interested in obtaining insect specimens for and taking photos of stand-loss problems in corn. If you encounter severe stand loss caused by insects, please leave a message at (612) 624-7436.

*Ken Ostlie*
*Extension Entomologist*

## VEGETABLES

**ASPARAGUS**—Common asparagus beetles (black with white markings) were cited by Curt Linge (Owatonna Canning) in fields near Hope, MN (southern MN). Beetles will start laying eggs soon. Check *1994 Commercial Vegetable Production Guide* (BU-1880) for management recommendations.

**CABBAGE/AMMO CORRECTION**—The table printed last week summarizing the new Ammo label included some confusion. For cabbage, it should read the maximum amount to be applied per season = 0.6 lb AI/acre. The correct rate range for flea beetles is 2.5 - 5.0 fl. oz./acre per application.

*Bill Hutchison*
*Extension Entomologist*

## PESTICIDE NEWS

**GRANULAR CARBOFURAN (FURADAN) STATUS:** The USEPA has proposed to deny the request from FMC Corporation to reinstate the use of granular carbofuran on CORN and SORGHUM. The final date for use on these crops is 9/1/94. EPA granted FMC's request for an extension of two years to be the phase-out period on RICE . On rice, carbofuran can be used until 9/1/97, because presently there are no viable alternatives. These three uses of granular carbofuran are being phased out according to the terms of an Agreement in Principle between FMC Corporation and EPA that concluded the Special Review of granular carbofuran in 1991. Written comments, identified by OPP-300000/48E, should be sent to the OPP Docket of EPA by 7/12/94. For additional information, contact Mr. Ed Cherry, FMC Corporation, Tel: 215-299-6647 or 202-956-5218. In EPA, contact Ms. Margaret Rice, Special Review Branch, Tel: 703-308-8039. Written comments should be sent to: OPP Docket, Public Response Section, Field Operations Division (7506C), EPA-Office of Pesticide Programs, 401 M Street SW, Washington, D. C. 20460. (Source: *Reregistration Notification Network*, Vol. 4, No. 5. *Federal Register* 59 [71]: 17530).

## TOLERANCES FOR 17 PESTICIDES REVOKED:

The USEPA has proposed the revocation of all tolerance, food additive, and feed additive regulations established for residues of 17 pesticides listed below. This action was initiated because the applicable registrations for these products have been canceled. The EPA is not recommending the establishment of action levels in place of these regulations. Written comments, identified by OPP-300328, should be sent to the Public Response Section of EPA by 6/13/94. The EPA requests that any adversely affected person/parties answer these questions:

1) are there any existing stocks of these chemicals?
2) if so, how much?
3) when will the stocks be depleted? and
4) how long would the commodities treated with these chemicals be in the channels of trade?

**Herbicides:** Barban (Carbyne); Bifenox (Modown); Dinitramine (Cobex); Dipropetryn (Sancap); Norea (Herban); Sulfallate (CDEC, Vegadex); TCA (Sodium trichloroacetate).

**Insecticides:** Chlorfenvinphos (Birlane); Crotoxyphos (Ciodrin); Famphur (Warbex); Flucythrinate (Cybolt, Pay-Off); Phenothiazine (Barfly); Pirimiphos-ethyl (Primicid).

**Fungicides/Plant Growth Regulators:** Cycloheximide (Acti-dione, Act-Aid); Tecnazene (Fusarex, TCNB).

**Bactericide/Fungicide:** Hexachlorophene (Nabac).

**Desiccant:** Merphos (Folex).

For additional information, contact Mr. Owen F. Beeder, EPA, Registration Division, Tel: 703-308-8351. Submit written comments to: Public Response Section, Field Operations Division (7506C), EPA-Office of Pesticide Programs, 401 M Street SW, Washington, D.C. 20460. (Source: *Reregistration Notification Network*, Vol. 4, No. 5. *Federal Register* 59 [72]: 17754).

**PESTICIDE RESIDUE TOLERANCES AND DELANEY CLAUSE:** The USEPA has published an updated list of commodities that have pesticide residue tolerances potentially affected by the Delaney Clause in Section 409 of the Federal Food, Drug and Cosmetic Act (FFDCA). This action has been taken because the Ninth Circuit Court of Appeals has ruled that the Delaney Clause bars tolerances for carcinogenic pesticides in processed food without regard to the degree of risk. This is an updated list of those commodities that have residue tolerances for the indicated pesticide, and whose tolerances will likely be revoked by the USEPA because of this new interpretation of the Delaney Clause. The registered uses causing these residues will be canceled if the relevant tolerances are revoked. This list was first published in February of 1993. This updated list includes three new pesticides and over 20 new combinations of pesticides and commodities.

**Acephate (orthene)** - soybeans (hulls, meal), food-handling establishments, cotton (hulls, meal of seed)

**Alachlor (Lasso)** - soybeans (hulls, meal), sunflower seed (meal), peanuts (meal)

**Asulam (Asulox)** - sugarcane (bagasse, molasses)

**Atrazine (AAtrex)** - sugarcane (bagasse, molasses)

**Benomyl (Benlate)** - soybeans (hulls), tomatoes (puree or catsup), apples (pomace), citrus (pulp), grapes (pomace, raisins, raisin waste), rice (bran, hulls)

**Captan (Orthocide)** - apples (dry pomace), grapes (raisins, raisin waste, juice, dry pomace), plums (prunes), tomatoes (dry pomace)

**Chlorothalonil (Bravo)** - potatoes (wet peel), soybeans (hulls)

**Dichlorvos (DDVP)** - food-handling establishments, packaged nonperishable food

**Dicofol (Kelthane)** - apples (dry pomace), citrus (oil), dried tea, grapes (dry pomace, raisins, raisin waste), plums (prunes)

**Diflubenzuron (Dimilin)** - soybeans (hulls, soapstock)

**Dimethipin (Harvard)** - cotton (seed hulls)

**Dimethoate (Cygon)** - apples (juice), citrus (oil, pulp)

**Ethylene oxide (ETO)** - whole groud spices

**Hexazinone (Velpar)** - alfalfa (meal), pineapple (bran, molasses), sugarcane (bagasse, molasses)

**Lindane** - tomatoes (dry pomace)

**Linuron (Lorox)** - potatoes (dry and wet peel, chips, dried granules)

**Mancozeb (Dithane M-45, Manzate 200)** - apples (dry pomace), barley (bran, flour, milled fractions), grapes (raisin, raisin waste), oats (bran, flour, milled fractions), rye (bran, flour, milled fractions), sugar beets (pulp), wheat (bran, flour, middlings, milled fractions)

**Maneb (Dithane M-22, Manzate)** - apples (dry pomace), grapes (raisin waste), sugar beets (pulp)

**Methidathion (Supracide)** - citrus (oil)

**Methomyl (Lannate)** - wheat (bran)

**Metiram (Polyram)** - apples (dry pomace), sugar beets (dry pomace)

**Metolachlor (Dual)** - peanuts (meal)

**Norflurazon (Evital)** - citrus (oil, pulp, molasses), grapes (raisin waste),

**Oxyfluorfen (Goal)** - apples (dry pomace), cotton (cottonseed oil), peppermint (oil), spearmint (oil), soybean (oil)

**PCNB (Terraclor)** - potatoes (dry and wet peel), tomatoes (dry pomace)

**Permethrin (Ambush)** - tomatoes (dry pomace)

**Phsomet (Imidan)** - citrus (oil), cotton (cottonseed oil)

**Propargite (Omite)** - apples (pomace), citrus (oil, pulp), figs (dried), grapes (raisins, raisin waste, dried pomace), plums (prunes), tea (dried tea)

**Propylene oxide** - cocoa, glace fruit, edible gums, processed nutmeat (except peanuts), prunes, processed spices, starch

**Simazine (Princep)** - sugarcane (bagasse, molasses, syrup), potable water

**Tetrachlorvinphos (Rabon)** - feed items

**Thiophanate-methyl (Topsin M)** - apples (pomace)

**Triademefon (Bayleton)** - apples (pomace), barley (milled fractions), grapes (pomace, raisin waste), pineapple (bran), wheat (milled fractions)

**Trifluralin (Treflan)** - peppermint (oil), potatoes (processed waste), spearmint (oil)

For additional information, contact Ms. Deborah J. Hartman/Mr. Bill Jordan, EPA—Office of Pesticide Programs, Tel: 703-305-7102. (Source: *Reregistration Notification Network,* Vol 4, No. 4. *Federal Register* 59 [61]: 14980).

**LINDANE NOT CLEARED FOR REREGISTRATION:** The USEPA has proposed to not initiate a Special Review on the insecticide, lindane. The USEPA notified registrants of the possibility of a new Special Review on lindane in 1985 based on a study which showed irreversible kidney effects in male rats. To date, lindane has not been cleared for reregistration. It is likely that lindane's usage may be severely restricted once its reregistration is complete. Written comments on this notice with reference to OPP-300000/10II should be sent to the Public Response Branch of EPA, Office of Pesticide Programs, 401 M Street SW, Washington, D. C. 20460 by 5/17/94. For additional information, contact Ms. Margaret Rice, EPA, Special Review Branch, Tel: 703-308-8039. (Source: *Reregistration Notification Network,* Vol 4, No. 4. *Federal Register* 59 [53]: 12916).

**TOLERANCES OF RONNEL (KORLAN, TROLENE) REVOKED:** The USEPA has revoked all tolerances for residues of the insecticide runnel as of 3/23/94. This action was taken because all registered uses of runnel were canceled by 1991. Runnel is used for livestock insect control, and producers should not use any runnel they may have on hand. The proposal for this action was noted in the Federal Register on 12/22/93, and the USEPA did not receive any public comment for this proposal. For additional information, contact Mr. Jeff Morris, EPA- Special Review Branch, Tel: 703-308-8029. (Source: *Reregistration Notification Network,* Vol 4, No. 4. *Federal Register* 59 [56]: 13658).

**EXEMPTION FROM EUPS FOR TESTING ARTHROPOD PHEROMONES:** The USEPA now allows testing of arthropod (insects and insect relatives) pheromones in solid matrix dispensers on 250 acres to proceed without an Experimental Use Permit (EUP), provided the total use does not exceed 150 grams active ingredient of pheromone(s) per acre per year. However, an EUP is required if pheromone testing is conducted on more than 250 acres of cropland. Previously, an EUP was required if phermones in solid matrix were tested on more than 10 acres of cropland. This new EPA policy is in keeping with EPA's commitment to reduce the use of higher-risk pesticides and provide incentives for the adoption of lower-risk pest management methods.

**DRIED HOPS IS NOW A RAW AGRICULTURAL COMMODITY:** The USEPA has recently changed its guidelines with respect to the classification of dried hops under the Federal Food, Drug and Cosmetic Act (FFDCA). Dried hops is now classified as a raw agricultural commodity (RAC) for regulatory purposes. Until this change, green hops were considered a RAC, and dried hops a processed food. This change had been sought for years by the hop industry, because green, undried hops are not a commodity and never leave the farm gate. Hops are dried so that they can be stored without spoiling, and only dried hops enter commercial markets. According to this reclassification, pesticide residue analysis data are not required on green hop samples. In addition, it will no longer be necessary to prepare food additive petitions for dried hops when attempting to register new pesticides on the crop. his reclassification may increase the number of pesticide product registrations for use on hops.

**BIOLOGICAL (BIORATIONAL) PESTICIDE REGISTRATION THROUGH IR-4:** In the biological pesticide area, the Inter-Regional (IR-4) program participates in research leading to the first registration by funding small and large scale efficacy trials, assisting researchers in obtaining experimental use permits, assisting in the development of EPA required safety and toxicology data, and preparing and submitting petitions to EPA to support the clearance of biological pesticides.

Biological pesticides include microbial (bacteria, fungi, nematodes, viruses, and protozoans) and biochemical pest control agents (insect pheromones, insect growth regulators, and plant growth regulators). Before IR-4 can support research and registration efforts on a biological pesticide, a researcher, an extension agent, a grower or grower organization must indicate a need by completing the IR-4 Biorational Request Form. The form requests information on the crop or ornamental species, the pest, and the proposed directions for use of the biological insecticide. IR-4 reviews the request against a set of guidelines that the IR-4 Technical Committee and scientists at the 1983 Biorational Workshop developed for selecting biorational projects.

IR-4 can fund or assist in the registration process if:

- There is a reasonably high potential for industrial production/commercialization and the need is in the public interest.
- There are sufficient data to document the potential for utility and efficacy.
- A potential registrant (company, a public agency, or an individual) is available to register the product.
- The formulation has a defined shelf life.
- Sufficient information is available on host range and pathogenicity.

For additional information, contact the MN IR-4 Coordinator, Dr. Bert T. Swanson, Department of Horticultural Science, Tel: 612-624-7432. (Source for all three items: *IR-4 Newsletter,* Vol 25, No. 1).

*Bh. Subramanyam, Coordinator*
*MN Pesticide Impact Assessment Program*
*Mike Tufte, Research Assistant*

## CLINIC REPORTS

### DIAL U

County Agents: Please Alert
Master Gardeners of the Following Items

**Lichens abundant on trees**—Lichens are perennial associations between fungi and green or blue-green algae which grow together to benefit each other. The fungus contributes moisture and nutrients, and the alga a carbohydrate supply. They many have a crusty or feathery/lacey look (some types have stalks) and are various shades of gray, yellow or green. When trees begin to decline and are more carefully observed, lichens are often seen for the first time and assumed to be the agent responsible for the decline. However, lichens are not plant pathogens; they simply exist on the surface of the bark. Interestingly enough, lichens are good indicators of air quality. Lichen populations are absent in centers of heavy industrial pollution and gradually increase with distance from those areas. The bottom line: If your tree has a problem, look for a cause other than lichens.

**Rhubarb: It seems someone has been telling folks in SW MN** that their rhubarb is poisonous because they had some frost after it was up. In fact, the leaves are always poisonous; the stalks, edible. As long as stalks look normal, not mushy or damaged, they are wholesome as a food product. Obviously, if they're frost-damaged they should be discarded. Rhubarb plants will continue to send up new stalks that are unaffected by earlier weather. (Remember to stop harvesting in early July to allow plants to store energy for next year's growth.)

**People in the metro area are complaining that many of their tulips and other spring flowering bulbs are not blooming this spring.** This seems to be true of some new bulbs planted last fall AND some older bulbs planted two or three years ago, though it certainly isn't true of all plantings. Last year's wet summer may have had something to do with the problem; also, the cold we received in February, AFTER our good snow cover melted down.

Tulips, particularly, tend to diminish over time in our climate. They generally have to be replaced after a few years. If you see that many bulbs are only sending up leaves, care for them as you normally would, then once the foliage has yellowed, dig the bulbs up. Sort through and keep only the largest that are likely to bloom again. Toss the rest and replace them with new bulbs next fall.

General care includes removing faded flowers to avoid seed production, fertilizing in spring while leaves are green and growing, and allowing the leaves to stay green and healthy as long as possible to store carbohydrates in the bulb for next year's growth. Don't tie them up or put a rubber band around them. They need exposure to the sun for photosynthesis.

**Calls on poison ivy control**—Poison ivy must be growing actively before you spray it or spot treat it most effectively with a brush killer containing triclopyr. (Actually, early autumn is a better time to work on it, but that won't help till next summer).

Because poison ivy has a woody root system, and may be quite old, you'll probably have to treat it several times. Keep in mind that all forms of the plant, whether live or dead, are dangerous. Dress appropriately when working on it, and never burn the plants. The fumes from burning poison ivy can cause problems, too.

**Apparently many people have black walnut trees on their property**, because one of our most common questions last week has been, 'What grows near a black walnut tree?' Unfortunately, there hasn't been a lot of research in this area, and publications on the subject do not always agree. Check the Dial U Brief notebook in county extension offices for a sheet with suggestions. Remember, too, that any large tree creates shade and is a real competitor for moisture and nutrients, all of which make it tough to grow plants nearby, never mind the fact that black walnut exudes juglone, a substance toxic to many other plants.

**Clover mites** have been common in homes this spring. Although they are no bigger than the head of a pin, they are easy to see because they are often bright red. Clover mites live in lawns where they feed on the sap of clover, grass and other plants. It is common for clover mites to migrate into homes during spring as the weather warms up. Due to their small size, it is not difficult for clover mites to enter homes through ground level windows, doors, or the foundation. Clover mites do not bite people or destroy property. They can stain materials if they are crushed.

The easiest control for clover mites found in your home is to vacuum them. You can also carefully wipe them up with a damp cloth (be careful not to crush them). You can try to prevent clover mites from entering your home by establishing a strip of clean, cultivated soil about 18 - 24 inches wide; they do not readily cross this barrier. Another option is to use an insecticide, such as chlorpyrifos or diazinon, around the exterior of the building. FS-1002, *Clover mites*.

**Larder beetles** are about 5/16th inch long, black with a brown band running across the body. Larder beetles overwinter as adults and start searching for food in spring. Their search can take them into homes, especially into kitchens, where they lay eggs near food. Larder beetles are scavengers feeding on cured meats, such as ham, cheese, dry dog and cat food, dead animals, and dead insects. Finding a few larder beetles does not automatically indicate an infestation. To prevent larder beetles from laying eggs in products, keep potential food in the refrigerator or stored in an insect-proof container with tightly fitting lid.

Finding consistent numbers of larder beetles may indicate they have found a food source. Remove and properly dispose of any infested food. It is often difficult to remove dead animals or insects when they are the source because they are often in voids or other inaccessible areas. There may not be much that can be done at that point. If this is an ongoing problem, take steps to prevent animals or insects from entering the building and thus being a food source eventually for larder beetles.

**Birch leafminers**—A few adults have been seen flying around birch trees in the Twin Cities recently. This means egg-laying will commence soon and early mines will probably first be found in central Minnesota the week of May 16. Birch in southern Minnesota may already be experiencing early mines while trees in northern Minnesota will probably not see early mines until late May. There is variability in an area and not all birch will be attacked at the same time. People should check individual trees for leafminer activity to determine when the insects first arrive. For more information, including control, see FS-6134, *Birch Leafminers.*

**Deer damage**—Discourage deer from gardens by barriers and repellents. Fences, although not 100% effective, can reduce the number of deer entering an area. Various fencing methods are available depending on the size and type of garden. Two types of repellents are available—one type is applied to the plant causing a bad taste, while the other is placed in the problem area and repels due to foul odor. Deer Away, made from putrescent egg solids is quite effective, as is Hinder, which is made from ammonium soaps. Thiram, a bitter tasting fungicide, is also effective. Some people have had success tying deodorant soap on the branches of trees near the area being browsed.

**Other common calls** include pruning shrubs and evergreens, weed control (bent grass, creeping charlie, creeping bellflower), spring fertilizing and carpenter ants (!) (see AG-FO-1015).

*Cynthia Ash*
*Plant Pathology*

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