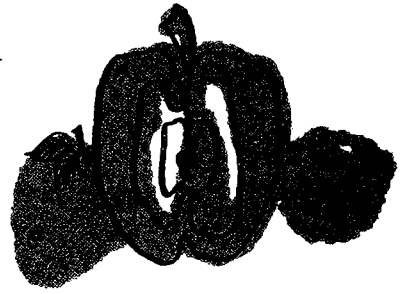


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AGRICULTURAL EXTENSION SERVICE

UNIVERSITY OF MINNESOTA

FRUIT GROWERS' LETTER



By Leonard B. Hertz, extension horticulturist

May 1974

MINNESOTA-WISCONSIN SUMMER ORCHARD TOUR

The annual Minnesota-Wisconsin summer orchard tour will be hosted this year by the apple growers of Minnesota. This gives us all a chance to see apples grown "Minnesota Style."

When: August 6, 1974 (Tuesday)

Host: Tom Aamodt, Stillwater Orchard, Stillwater, Minnesota and Art Jacobson, Pine Tree Orchard, White Bear Lake, Minnesota. (Both orchards are located east of the Twin Cities.)

Both orchards have standard and dwarf tree plantings and rather unique retail markets. Aamodt's apple cider enterprise is one of the best in our apple producing area.

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APPLE SCAB WAS A PROBLEM IN 1972

The apple scab fungus is found in all apple growing areas of Minnesota. If it is not controlled, both yield and quality of fruit are reduced.

The symptoms of apple scab include olive green to brown spots on both the under and upper surface of the apple leaves. The first fruit lesions are almost circular, olive green spots, often ruptured at the margin. Older lesions are darker, scabby, and often cracked.

The scab fungus overwinters in the diseased leaves on the orchard floor. At about bud break, the spores of the fungus will start infecting young apple leaves with the period of infection extending 3-5 weeks past petal fall.

An apple grower is dependent on chemical sprays to control apple scab. Fungicides for control of apple scab include:

Captan: Presently the most widely recommended and used fungicide for apple scab control. It gives excellent scab protection and "kickback" (hours from beginning of rain to time spray can be applied and control scab) of 18-24 hours.

Difolaton: A liquid formulation registered for apple scab control as a single application treatment (SAT). The single application is made at DORMANT to $\frac{1}{4}$ inch GREEN TIP and may control scab up to PETAL FALL. At PETAL FALL standard scab fungicides should be followed.

This archival publication may not reflect current scientific knowledge or recommendations.
Current information available from University of Minnesota Extension: <http://www.extension.umn.edu>.

Cyprex: Gives excellent control of apple scab but is not effective against rusts or summer diseases of apple. It has a "kickback" of 18-24 hours at the high rates, and good retention and redistribution. Cyprex will often russet Golden and Red Delicious.

Polyram: Is used for scab control in protective type sprays. It also controls cedar apple rust and several summer fruit diseases. Good fruit finish is reported. Its "kickback" is about the same as Captan.

Benlate: Although a relatively new apple scab fungicide, it has demonstrated that it will effectively control apple scab as well as certain other fruit diseases. As a foliar treatment it has provided systemic eradivative and protective action. Benlate will often russet Golden Delicious apples.

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CONTROLLING POCKET GOPHERS

Pocket gophers get their name from the fur-lined, pocket-like cheek pouches in which they carry food. They live in an underground burrow system, often a network of several hundred feet ranging in depth from a few inches to several feet. Several gophers may inhabit a single burrow system. Soil removed from newly made burrows is pushed into mounds on the surface, usually leaving a small horseshoe-like depression on one side of the mound, indicating the direction of the tunnel.

Some gophers may make 100 or more mounds in a season. Most mounds are made in late summer and fall when digging shallow burrows to get roots for winter. Roots are usually sorted in small chambers, often a few inches deep and containing a quart or two of food. Gophers are active in the winter. Breeding begins as frost leaves the ground and is completed in late spring. One or two litters of two to four young are born during this period. The young begin to move throughout the burrow system when about one month old. Due to various causes, juvenile mortality is very high. In late summer and early fall, many young gophers are forced to the surface and wander about searching for a home. They will invade any unused burrow systems.

Control--Control methods are more effective during the spring and fall when pocket gophers are most active. This activity can be noted by the presence of fresh mounds of dirt.

Traps and poisoned baits are the most practical methods of control. On small areas where a few animals are involved, trapping or hand baiting is effective. Over large and heavily infested areas, baiting with a burrow builder is more efficient.

Control By Trapping--To control the runway use a stout garden trowel or shovel. Scrape the dirt from a fresh mound until a round circle of fresh dirt is found plugging the lateral runway. Open the lateral and put one trap with the claws away from the opening. However it is usually better to dig down the lateral into the main runway and then place two traps back to back in the main runway. Secure the traps with a piece of flexible wire attached to a stake. The hole can be left either open or closed.

Control With Poisoned Bait--There are two toxicants registered for use in treating bait materials for the control of pocket gophers. They are strychnine at 0.25-0.6 percent, and Gophacide at 0.1-0.2 percent in the finished bait.

Two baiting methods are effective. One method involves dropping baits, by hand, into the underground runways. With the other method, a tractor-drawn machine called a "burrow builder" is used to make artificial burrows and automatically drop baits into them.

Burrow Builder--On large and heavily infested areas, use a burrow builder to make artificial burrows 20 feet apart across the field at the same depth as the natural burrows. Drop strychnine baits mechanically at 9- to 12-inch intervals in the artificial burrow. One to two pounds of this bait material will treat one acre. Use 1½ pounds of Gophacide treated grain bait per acre in burrows spaced at 20-foot intervals or one pound per acre in burrows spaced at 30-foot intervals.

Hand Baiting--Remove the earth plug from the lateral tunnel of a fresh mound of dirt. Insert a tablespoonful of strychnine treated bait into the main runway with a long handled spoon. Cover the opening to exclude light and loosen dirt. The main runway can also be located by probing with a stick or metal rod about 8-18 inches back from the plug mark in the mound. When the runway is found, enlarge the hole to put in the bait and cover as before. After 48 hours, scrape over mounds and re-treat those still active. One pound of strychnine bait material will treat 5 to 8 acres. Use Gophacide at the rate of 1½ pounds of treated grain per acre.

For extensive hand baiting, good probes can be made of 3/4 inch pipe welded to a blunt point and cut to 34 inches in length. A foot rest can be made 16 inches from the end. (Prepared by the United States Department of the Interior, Fish and Wildlife Service, Bureau of Sport Fisheries, and Wildlife, West Lafayette, Indiana 47906.)

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BEE SHORTAGE

A bee shortage for apple pollination this spring appears to be in the offing as a result of skyrocketing world honey prices. Beekeepers who normally rent their hives to orchardists may prefer to concentrate on making honey. Colonies may actually deteriorate while in the orchard, and a 30- to 50-pound loss in honey may occur. Orchardists who have a need for bees should be making plans now. Usually, one colony per acre is recommended. A strong colony is 4 to 6 frames of brood covered with bees, a laying queen, and some food reserves. Hives should be placed within the orchard about 200 yards apart, in groups of 4 to 8. Bees will seldom fly into an orchard.

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MINNESOTA STRAWBERRY CROP

The condition of strawberry plants as of May 20 appears to be directly associated with the severity of last winter's temperatures, quality of winter mulching, and the cool, wet spring.

It is increasingly evident that certain strawberry varieties suffered some degree of winter injury ranging from rather severe injury, with almost complete stand eradication, to just a few dead plants. (I have recently observed three plantings of Cyclone and one of Badgerglow severely injured.) On the other hand, plantings of Trumpeter, Badgerbelle, Redcoat, VeeStar, and Earlimore came through the winter with only a minimal amount of winter injury.

Cold temperature protection in the form of straw mulch certainly helped the strawberry plants to escape severe injury from both the cold temperatures in January (-30° to -35° F.) and the very cold temperatures in the early spring. Some plantings that were without straw mulch have had a significant reduction in stand as well as loss in strawberry fruit production.

The cold, wet spring weather has caused a reduction in strawberry plant growth. The flower buds have finally grown from the crown and flowering should appear within a few days. (Minnesota is at least 7 days and in some areas as much as 14 days later than normal.) It is doubtful that anyone will pick fruit by the 10th of June (normal in some areas), while some growers feel that the first pickings will be as late as June 20.

Strawberry bud damage from the late spring frosts is variable. Some early maturing varieties, which had experienced early plant growth are currently showing 40-50 percent bud mortality from frost. (Examine individual buds by cutting each bud in half. If the plant tissue inside the bud is brown to black, it is dead.) Although additional buds will develop, it is always sad to lose the "king berries" to early spring frosts.

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COMMON STRAWBERRY PEST PROBLEMS

Tarnished Plant Bug (Lygus Bug)

The adult is a flat bug; about $\frac{1}{4}$ inch long; brownish, marked with yellowish and black dashes; has brassy appearance. Adults overwinter in weeds, clover, and on other plants. Both adults and young feed on blossoms causing "button" or "nubbin" berries which take on a woody texture and fail to mature.

Tarnish plant bugs can be controlled with a mixture of malathion and methoxychlor, or Thiodan, applied in the bud stage of plant development (before blooms appear).

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STRAWBERRY FRUIT ROT

The most important disease of the fruit is a rot called gray mold or sometimes Botrytis. The infection may start where leaves or berries touch the ground or on injured areas of the blossoms and green fruit. The first symptoms appear on the fruit as light brown, rather soft spots. If moist conditions prevail, a gray powdery mass of spores appear over the surface of the fruit. If dry conditions prevail after infection, the berries may dry out and become tough. The gray mold fungus also attacks the flowers, resulting in a blossom blight. If cloudy, rainy weather persists during the bloom period, a great many blossoms can be infected and lost. Splashing rains and fruit pickers also spread the spores of this fungus, thus adding to the problem of producing quality fruit.

Trade names are sometimes used in this publication to clearly describe products. The use of a trade name does not imply endorsement by the Minnesota Agricultural Extension Service, nor does omission of other trade names imply nonapproval.

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