

**FRUIT GROWERS' LETTER**

By Leonard B. Hertz, Extension Horticulturist

May 1972

POLLINATION IN APPLE PLANTINGS

All apple varieties require cross-pollination for dependable fruit set. This means that to be productive, at least two varieties should be included in each apple planting to serve as a source of pollen for the other variety.

Cross-pollination is possible only when the varieties bloom at approximately the same time. The length of bloom is usually from 7 to 15 days, depending upon variety and weather. Consequently early bloomers are planted with early or mid-season bloomers and late bloomers with late or midseason bloomers.

The bloom season of Minnesota recommended apple varieties is as follows:

Early blooming

Mantet  
Oriole  
Duchess

Beacon  
Wealthy

Midseason blooming

Red Baron  
Cortland  
Jonathon  
Northwestern  
Honeygold

McIntosh  
Prairie Spy  
Connell Red

Fireside

Late blooming

Red Delicious  
Golden Delicious

Haralson  
Regent

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Varieties which tend to bear every other year, such as Wealthy, are usually not reliable pollinators. In their "off" years, they fail to bloom, and consequently there is no suitable pollen supply to cross-pollinate annual-bearing varieties. As a result, the annual varieties bear every other year. Varieties which require a long time to "come into bearing" are also unreliable pollen sources.

Red sports of a variety, such as Connell Red (red sport of Fireside) or Red Haralson (red sport of Haralson) will not effectively pollinate either the parent variety or the other red sports of that variety.

The arrangement of trees for an adequate source of pollen can be variable. However, no block of apples should be only a single variety. All trees should be within 100 feet of the pollinator tree. The extra expense of harvesting odd pollinating trees is such that it is more practical to have solid rows of each apple variety. Two, three, or four rows of the main variety are followed by one, two, three, or four rows of the pollinating variety. At least every fifth row should be a pollinator. At the outside edge, only two rows of a variety should be planted. An example of Regent and Haralson might be: Re Re Ha Ha Ha Ha Re Re Re Re Ha Ha Ha Ha Re Re.

Wind does not carry pollen from one apple tree to another. Consequently, bees are indispensable in an orchard. Plan on using one good hive per acre. It is not necessary to distribute the hives evenly throughout the orchard. As many as 20 hives can be put in one location. Put them in when the earliest variety is in bloom and remove them at petal-fall.

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A word of caution, bees prefer dandelion flowers to apple flowers and will often "work dandelions" without contacting the apple blossoms. If necessary, use an herbicide spray to control dandelions.

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BUYERS LED ASTRAY BY BUG SELLERS

Some opportunists are cashing in on current interest in biological control of insects at the expense of well meaning but unwitting consumers, according to University of Minnesota extension entomologist John Lofgren.

Increased interest in controlling insects by nonchemical means has come with the emphasis on environmental protection. Nature is at work at all times through parasites, predators, and diseases and frequently holds pest population below economic levels.

Some of these biological factors have been identified and manipulated to increase their influence on specific pest populations. An example of this is the use of a bacterium *Bacillus thuringiensis* (Berlinder) against several species of caterpillars, such as the European corn borer.

Lofgren says that most advertisements for ladybird beetles, praying mantids and other predators and parasites contain misleading claims not based on fact. "There is no good evidence to show that releasing these insects in a field or garden pays off in effective pest control in Minnesota," he adds.

"It's strange that manufacturers of chemical pesticides must back up their advertising claims with data from sound research," Lofgren says. "Although the chemical manufacturers are closely regulated, it appears that peddlers of biological controls are not being regulated and the consumer is being victimized by some unscrupulous firms," the University entomologist says.

"A few years ago a similar situation arose with light traps which were being advertised and sold for the control of insects, when, in fact, they have very limited usefulness in a few very specific situations. People should investigate thoroughly before investing in these kinds of impressive-sounding but unsound practices. Evidently it's a case of 'buyer beware' in the field of biological control of insects," Lofgren says.

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INTERESTING BUT A LITTLE IMPRACTICAL:

BOOK BY CALIFORNIA AUTHOR OFFERS

HOMEMADE REMEDIES FOR PEST CONTROL

The National Agricultural Chemicals Association Newsletter recently carried (with tongue in cheek) some pesticide control recommendations excerpted from the book, "Grow Your Own," written by Jeanie Darlington of Albany, California. They're homemade, handy and probably effective, but difficult to justify for commercial agriculture:

For example:

To control cutworms and similar pests Mrs. Darlington recommends a spray made of one strong onion, two hot peppers, and two cloves of garlic in water.

For sucking and chewing insects use a spray made of cigarette butts, marinated and left to stand in water overnight. Pour over the infected plants the following day.

For nematode control try common sugar mixed into the soil at the rate of 5 pounds per 100 pounds of soil (or about 100 tons per acre). !

For cabbage worm control Mrs. Darlington recommends wiping the cabbage butterfly eggs off the leaves with a wet facial tissue and then sprinkling the moist leaves with ashes.

She has other remedies for other insects. We don't quarrel with the effectiveness of the materials (though we've not tried them) but the time and labor and available supplies on a per acre basis for commercial agriculture could leave something to be desired!

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From IAI National Apple News, December 1971

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#### SPRAYING, DUSTING SAFETY SUGGESTIONS

1. Always read the label before using sprays or dusts. Note warning and cautions each time before opening the containers. Do not spray over streams, rivers, ponds, or lakes.
2. Keep sprays and dusts out of the reach of children, pets and irresponsible people. They should be stored outside of the home and away from food and feed.
3. Always store sprays and dusts in original containers and keep them tightly closed. Never keep them in anything but the original container.
4. Never smoke while spraying or dusting.
5. Avoid inhaling sprays or dusts. When directed on the label, wear protective clothing and masks.
6. Do not spill sprays or dusts on the skin or clothing. If they are spilled, remove contaminated clothing immediately and wash thoroughly.
7. Wash hands and face and change to clean clothing after spraying or dusting. Also wash clothing each day before reuse.
8. Cover food and water containers when treating around livestock or pet areas. Do not contaminate fish ponds.
9. Use separate equipment for applying hormone-type herbicides in order to avoid accidental injury to susceptible plants.
10. Always dispose of empty containers so that they pose no hazard to humans, animals, or valuable plants.
11. Observe label directions and cautions to keep residues on edible portions of plants within the limits permitted by law.



12. If symptoms of illness occur during or shortly after spraying or dusting, call a physician or get the patient to a hospital immediately.
13. When working long periods of time--six hours or more in any one day--use power driven filter type respirators to avoid lung damage.

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From The Goodfruit Grower, April 1972

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### INSECT TRAPS

A number of inquiries have been received about the use of insect traps (often called sex attractants kits or Pheromone insect traps) for "control" of insect pests of tree fruit. These inquiries have come from both commercial producers and home gardeners.

It must be emphasized that, at present, the insect traps are useful only for detec-tion and monitoring insect pests. The information gathered then helps to determine when and if sprays are needed. The traps themselves do not control insect pests. For the present, use one trap for every five acres. Later the grower may want to increase or decrease the acreage monitored by the trap.

Pheromones and monitoring traps are currently available for codling moth (apple worm) and leaf rollers.

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### DWARF ROOTSTOCKS

The MM series of apple rootstocks have a number of advantages over the EM series. They were developed for resistance to wooly aphid as a first prerequisite when selections were made that gave some vigor and size controlling influence along with early bearing. They generally have better anchorage than the EM series and with less suckering.

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### MINNESOTA FRUIT GROWERS ASSOCIATION HOST FOR THE ANNUAL MINNESOTA-WISCONSIN SUMMER ORCHARD TOUR

The annual Minnesota-Wisconsin summer orchard tour will be held this year at the Horticultural Research Center of the University of Minnesota, Tuesday, August 1, 1972. It has been several years since the Minnesota and Wisconsin growers have visited Minnesota's only fruit research station, so plan now to set the day aside. A sunny, dry day along with a friendly atmosphere is guaranteed. See you in August.

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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.