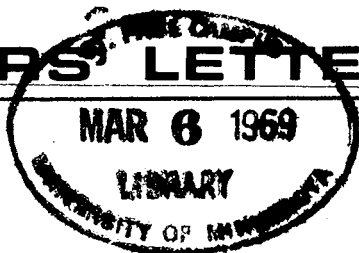
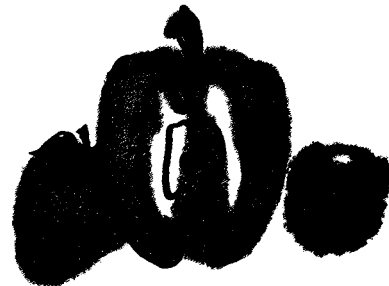


FRUIT GROWERS' LETTER



March 1969

USDA RECOMMENDS HYDROCOOLING APPLES IF REFRIGERATION IS INADEQUATE

In good commercial cold storages, apples are cooled to a core temperature of approximately 32° F. in 3 or 4 days. In many storages, however, such rapid cooling is not always attained because these storages lack sufficient refrigeration capacity. This is especially true in years when the weather at harvest time is warm and when the fruit is placed in the cold storage rooms faster than refrigeration equipment can remove the heat from it.

Results of research by plant pathologist Harold A. Schomer and mechanical engineer Glenn O. Patchen, both of USDA's Agricultural Research Center, Wenatchee, Washington, indicate that hydrocooling--submerging the fruit in a tank of water and crushed ice for a few hours can be used initially to remove most of the field heat.

Three varieties of apples--Red Delicious, Golden Delicious, and Winesap--were both hydrocooled and air cooled. The hydrocooled fruit and the fruit that was air cooled in 3 days and 7 days were comparable in quality and storage life expectancy. Red Delicious fruit cooled over 14-day and 28-day intervals were inferior at all examinations, and became mealy and unfit for consumption. Golden Delicious apples gradually lost their difference with extension of the storage season, so that after 7 months no significant differences were found. The Winesap apples that were slowly cooled softened more rapidly than the other lots but the softening was not sufficient to be objectionable to the taste panel. (Effects of Hydrocooling on The Dessert Quality and Storage Life of Apples in the Pacific Northwest--ARS 51-24, June 1968)

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CUSTOMER HARVESTING

Tennessee reports that custom harvesting of vegetables and fruits are increasing, and customers welcome the privilege and fun of pick-your-own harvesting.

The county by county survey shows that strawberries, peaches, apples, tomatoes, and sweet corn have increased most in customer harvesting during the past two years. Customers are now harvesting over one-third of the state's strawberry crop. For farmers having harvest problems, custom harvesting may be one answer. (USDA Horticulture Newsletter)

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

APPLE YIELDS A FUNCTION OF ORCHARD AGE

"Old apple orchards may not die but just fade away," according to the Economic Research Service survey made in the State of Washington which indicates that old age pares down tree productivity. Their study showed that "among the top four varieties grown commercially, yields rise rapidly between 5 and 20 years of age. After 20 years, yields begin to level off and top out until a tree reaches the ripe old age of 45. Then yields drop off sharply. Golden Delicious and Rome Beauties reach peak production at age 30; Red Delicious and Winesaps hit their prime at age 25. Growers can figure tree mortality rate at about one tree per acre per year for standard trees; two trees per year for semi-dwarf trees; and about nine trees per year for trellis-dwarf trees. Producers can normally expect about 15 percent more apples per acre from semi-dwarf trees and 35 percent more from trellis-dwarfs than they can from standard trees--depending, of course, on weather, orchard site, and managerial ability of the orchardist." (From National Cannery Association Newsletter, November 1968)

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TWO FRUIT SHORT COURSES IN MARCH

Commercial Tree Fruit Short Course is scheduled for Tuesday, March 11, at the Student Union, St. Paul Campus.

The all day session starts with registration and coffee at 9:30. Topics covered will include: High Density Planting--Are They Economically Feasible in Minnesota; Rootstocks and Scion Hardiness; and a panel discussion of High Density Orchards--Present and Future Uses for the Apple Industry of Minnesota. In the afternoon, Dr. R. M. Goodman, Head, Department of Plant Pathology, University of Missouri will discuss Fireblight-Practical Control Procedures.

This is an outstanding program, and all persons interested in the production of apples are invited. The registration fee is only \$3.00.

Commercial Small Fruit Short Course is scheduled for Monday, March 10, at the Student Union, St. Paul Campus. This one day session is designed especially for commercial strawberry and raspberry growers.

Since the short course is new this year, several topics were selected which concern pest control. These included weeds, disease, and insects. In addition, fertilizer needs and future breeding programs of the University of Minnesota will be discussed. Mr. Carol Johnson, prominent strawberry grower in the Becker area will relate his experiences with the U-Pick-Um methods of harvest.

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HERBICIDE REGISTRATIONS

The difficulties and complexities of herbicide registration were recently outlined at a recent conference in Washington. Several federal regulations concern Minnesota fruit producers. These include:

- (1) Individual herbicides are registered by the USDA for specific labeled uses. "When the user applies such a product according to label directions and crop damage occurs, the liability of the manufacturer is clearly established."
- (2) Likewise, "registered package mixes carry with them the same status and protection for the user as chemicals in the first category."
- (3) In the case where herbicides are registered for use together in a tank mix, but are formulated and packaged separately, the user is not necessarily protected when he uses the mixture. There has been considerable research performed prior to USDA registration for a tank mix, but protection for the user deteriorates when the registered use does not appear on the container label.
- (4) In cases where individually registered herbicides do not carry a registration for a tank mix: "The responsibility for applying these tank mixes lies with the user." (Agricultural Chemicals, January 1969)

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DATES OF COMING EVENTS

- 1. Small Fruit Short Course, St. Paul Campus, Monday, March 10, beginning at 9:00 a.m. in the Student Union.
- 2. Tree Fruit Short Course, St. Paul Campus, Tuesday, March 11, beginning at 9:30 a.m. in the Student Union.
- 3. Wisconsin Strawberry Growers Meeting, Black River Falls, Wisconsin, Jackson County Bank Building, March 7, 9:30 a.m. to 3:30 p.m.
- 4. Wisconsin Roadside Marketing Conference, March 6, at Quality Courts Motel, Madison, Wisconsin.

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NEWS BRIEFS
FROM THE HORTICULTURE DEPARTMENT

FIELD EVALUATION OF HERBICIDES IN TREE FRUITS -- The development of an orchard herbicide program and the assay of its effectiveness depends upon continued research. These studies are needed to define time, rate, and method of application of new and registered herbicides. In addition, the long-term usage effects, as well as phytotoxicity evaluations are required before recommendations can be made to the commercial orchardists.

In 1968, several herbicides were applied to a predominately grass vegetation growing under 3-year-old apple trees at Fruit Acres (La Crescent, Minnesota). Each treatment consisted of 4 trees, an area under each tree measuring 16 square feet was sprayed, using a total of 150 gallons of liquid per acre. The grass vegetation was 4 to 6 inches tall at the time the herbicides were applied (May 15; and the second application of paraquat was made on June 28).

Terbacil and the combination simazine plus paraquat gave season long control of the weedy grasses. No significant benefit was observed from the second application of paraquat or an application of Casaron. No tree injury was observed from any of the herbicides.

Herbicide	Rate, lb. active/acre	Number of paraquat applications	Weed Control (1=no control, 9=eradication)	
			8/13/68	10/3/68
simazine	4	--	1.7	3.8
simazine + paraquat	4 + 1	1	7.5	7.5
simazine + paraquat	4 + 1	2	7.8	7.0
paraquat	1	1	6.5	3.2
paraquat	1	2	6.0	4.0
Amizine	4.2	--	5.0	4.5
terbacil	4	--	7.2	8.8
casaron	6	--	2.2	1.0
Untreated	--	--	1.0	1.0

Additional studies are planned in 1969, using the most promising herbicides at reduced rates. (Leonard B. Hertz, horticulturist, University of Minnesota)

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Edited by Leonard B. Hertz, Extension Horticulturist
 Agricultural Extension Service
 University of Minnesota, St. Paul, Minnesota 55101
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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.

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