AGRICULTURAL EXTENSION SERVICE • UNIVERSITY OF MINNESOTA

FRUIT GROWERS' LETTER

January 1979

STAKING APPLE TREES

Wire trellis systems and staking have not been widely accepted in Minnesota apple orchards. One reason is that they add to the total expense, both in material and labor. The desire to get early production and high yields, however, does create a problem as to what combination of rootstocks and cultivar (variety) to use. At present, with standard tops and a M. 26 rootstock some support of individual trees is necessary for a few years, at least if the trees are allowed to fruit during their third or fourth year. The M. 7 rootstock, although it does sucker readily, seldom requires staking. It seems to be the least hardy of all the dwarfing rootstocks in Minnesota. Both M. 106 and M. 111 are well-anchored (have good root systems) and productive rootstocks. Whereas M. 106 is early bearing, M. 111 is very slow to come to fruit. What are spur types on M. 26? It appears that these compact trees will not need as much staking as nonspur types, and they will stand well if not allowed to bear too heavily in their very early years.

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NEW FRUIT INTRODUCTIONS FROM THE MINNESOTA HORTICULTURE DEPARTMENT

Swenson Red Grape

This grape was developed in Minnesota from a cross of Minnesota 78 X Seibel 11803. It was introduced in 1978. The red berries are medium-large-sized and firm textured, resembling a European table grape. At full maturity, which is normally early September in east-central Minnesota, these grapes often obtain a sugar content of 22 percent with a fine flavor. The fruit clusters are medium-large-sized, and the vines are vigorous and productive but susceptible to mildew under wet conditions. The variety is at least as winter-hardy as Concord but not as hardy as Beta.

Edelweiss Grape

Edelweiss originated in Minnesota from a cross of Minnesota 78 X Ontario. It was introduced in 1978. The fruit is medium-sized, with sweet and pleasantly flavored green berries. It is early maturing and is suitable for planting where early maturity and cold hardiness are important. The vines are productive, vigorous, and disease resistant. They have survived without protection in the Twin Cities area and are considered much hardier than Swenson Red.

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State Fair Apple

State Fair is an early season apple, ripening about August 20, just before the Beacon apple. Its fruit quality is characterized by crisp, juicy, white flesh and a sprightly, moderately acid, pleasing flavor. The fruit is more durable than other early, hardy varieties such as Mantet and Oriole. Ripening is uniform and premature drop has not been a problem. The medium-sized fruits are round and smooth with an attractive bright red, glossy finish and 75 to 100 percent color. The trees have been cold hardy in central and western Minnesota. They grow vigorously on seedling rootstocks and have been most productive when grown on dwarfing rootstocks. This apple, however, is susceptible to both apple scap and fireblight. A normal spray program is required to prevent scab. Good pruring practices for control of fireblight are encouraged.

Sweet Sixteen Apple

Sweet Sixteen was selected from a cross of Minnesota 337 X Northern Spy. The fruit matures slightly earlier than McIntosh (September 25), thus providing broader diversity of varieties for this season. The medium-to-large-sized fruits are normally fully colored by both stripes and a solid wash of rosy red with an attractive, smooth finish. Its quality is characterized by a unique and pleasing flavor, combined with high sugar, moderate acid, and crisp, fine-textured flesh. The fruit also has good storage, handling, and culinary properties. The trees have been moderately resistant to fireblight and have not shown abnormal susceptibility to apple scab or cedar apple rust. Winter hardiness has been consistently good, and growth has been moderately vigorous and consistently productive on seedling rootstocks.

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STRAWBERRIES IN RAISED BEDS

An increasing number of strawberry growers are using raised beds as a method of producing strawberries. This procedure has several advantages. Well-managed raised beds give substantially higher yields. Root health is remarkably better because of the improved drainage in the root zone. Most strawberry roots are in the top 6 inches of the soil. Most growers are attempting to shape their beds about 6 inches high. This means that the roots of strawberries grown on raised beds are nearly all located in soil that is never saturated, even in fairly heavy, poorly drained soils. Growers are finding that they may need to level a field that has a dished area in which the raised beds could block the natural surface run-off.

Leaf diseases generally are less of a problem on raised beds because of the improved microclimate on top of the raised beds. Most of the raised beds I have seen in the Northeastern states have fairly narrow tops, only 10 to 12 inches. This places the fruit out at the edges of the row where it is exposed to sun and air for quick drying; thus, there is less trouble with fruit rots.

Plant density control is easier on raised beds, because so many of the runner plants hang down over the sides of the beds where they can be easily cut off with a coulter or burned off with a shielded paraquat spray. Growers getting the highest yields think that four or five plants per linear foot of row is optimum. This keeps the aisles free of growth and the berries up on top of the raised beds where they easily can be seen and picked. Pickers like the raised beds because they do not have to lean down quite so far. That 6 inches does make a difference.

Raised beds are not without problems. For most growers the biggest problem created by raised beds is weed control. Cultivation and hoeing are nearly impossible, so the grower must rely on other methods. Some of the most weed-free strawberry fields we have seen this year were on raised beds, however, and were accomplished with little hand labor. All of these weed-free fields were fumigated with either Methyl-bromide or Vorlex. Some growers who fumigated with Methyl-bromide fumigated only the rows. All used herbicides during the summer to control weeds.

Mulching raised beds is more difficult and requires more mulching material to provide adequate winter protection. This protection is needed in most locations, not so much against very low temperatures but against severe changes in temperature. Mulch does not "stay put" quite as well on raised beds, and at least one grower we know has used emulsified asphalt sprayed over the straw to hold it in place. This is similar to the way highway seedlings are handled. By spring the asphalt weathers enough to be removed easily with a tractor-mounted rake.

Any really knowledgeable strawberry grower knows that irrigation is most critical, since the raised beds dry much more rapidly than level ground. Also, it is obvious that any grower who has not yet achieved excellent weed control without raised beds should not give a second thought to raised beds, since they seriously limit weed control procedures. According to growers with raised beds, the potential production is so good and the challenges so great that it is hard to resist.
(From North American Strawberry Growers Association Newsletter, Autumn 1978).

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DEER -- AN ORCHARD PROBLEM

Deer populations are again increasing in many areas to such an extent that considerable damage often occurs on tree and berry fruit crops. In the winter deer cause damage by brousing on terminal or lateral growth of trees or grazing green and succulent berry and bush fruits.

Repellents do offer a method for reducing deer damage. Available repellents include:

1. Meat Meal Tankage. This byproduct of animal packing plants has been effective as a winter repellent. Place 2 to 3 ounces of tankage in cloth bags and hang on trees. (Small trees may require one bag and larger trees may require up to four bags.)

2. Creosote-Treated Felt Strips. Use felt weather stripping treated with creosote and hang on individual trees. One caution: Creosote is caustic to bark and foliage so some care should be taken.

3. Arasan 42-S. Brush or spray application: Add 1 quart of Rhoplex AC-33 or Latex 521R to 2 quarts of water. Mix thoroughly with 1 quart of Arasan 42-S. Caution: Mix only enough repellent for immediate use as the solids in the finished preparation settle after standing several days and are difficult to resuspend.

   Application of the repellent only to the terminal tips will provide sufficient protection to the trees. This method is more economical than treatment of the entire tree. Treat all terminal tips to a height of 6 feet above the expected snow line.

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APPLE VARIETY PRODUCTION

Apple varieties named in their order of production in the U.S. are Delicious, McIntosh, Golden Delicious, Rome Beauty, Jonathan, Winesap, York Imperial, and Stayman. These make up about 75 percent of U.S. apple production. If we would add five more--such as Northern Spy, Rhode Island Greening, Newtown, Gravenstein, and Cortland--we would have over 90 percent of the U.S. production. While it has been estimated that during the past 200 years more than 7000 apple varieties have been grown in the U.S., the list that could be assembled or named today would probably not be much over 1000 varieties.

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PROTECTING BERRY CROPS FROM BIRDS

Birds can cause extensive damage to fruit and vegetable plantings. They can be expecially troublesome in blueberries, cherries, strawberries, and raspberries.

Each of the following methods of control may have application to specific situations:

Noise scare devises. These include AV-Alarm, propane exploders, taped distress calls, and shell crackers. The best results are on starlings and blackbirds; there is little effect on robins. They are a noise problem in residential areas and are expensive.

Poisons are prohibited. Avitrol may be used only in commercial corn fields for starlings and blackbirds when applied by a certified aerial applicator.

Net coverings. They are effective and may be practical for small commercial plantings.

Trapping. Federal and state laws regulate taking (capturing or killing) all species except starlings, housesparrows, and certain pigeons. These three species can be taken without a federal or state permit when they threaten crops or livestock. All other birds, including songbirds (robins, orioles, etc.), are protected.

Chemical repellent. Mesurol (methiocarb) is now registered for use as a bird repellent on cherries. Hopefully it soon will be registered for use to repel birds on other fruit crops.

It aids in preventing feeding damage to ripening cherries by robins, starlings, grackles, sparrows, bluejays, finches, and cedar waxwings. The rate is 2-2/3 to 5-1/3 pounds of Mesurol 75W per acre depending on the size and density of the trees. Apply when the cherries first start to ripen. Do not apply within 7 days of harvest.

(From 1978 Proceedings, Illinois Small Fruit School)

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FUTURE MEETINGS

1. Green Holiday -- February 10, 1979. Earle Brown Center, St. Paul Campus, University of Minnesota.

2. Commercial Horticulture Week -- February 26 and 27, 1979. Earle Brown Center, St. Paul Campus, University of Minnesota.

3. Wisconsin-Minnesota Apple School -- March 7 and 8, 1979. Midway Motor Lodge, LaCrosse, Wisconsin.

4. Minnesota Berry School -- March 18 and 19, 1979. Earle Brown Center, St. Paul Campus, University of Minnesota.

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Sincerely,

Leonard B. Hertz

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