

## FRUIT VARIETIES AND HORTICULTURAL DIGEST

trees per acre. The range could vary in high density plantings from a vigorous combination of Red Delicious/EM VII with 300 trees per acre to a much less vigorous combination of Jonathan/EM VII with 600 trees per acre. This again, will depend on amount of total management and "know-how" in handling above average number of trees per acre.

### Tree Support

Most of the trees budded on EM VII can be free-standing and do not need support, although a few trees may lean and even blow over, especially under a condition of clay loam with rain and wind. If such is the case, a single stake placed about 4" from the central tree leader will serve as support and as a tool for tying and spreading branches, using various plastic tie materials. The motto of the writer is: do not support trees on EM VII until there is a need. Instead, if trees lean occasionally, prune branches from the "top-heavy" side.

### Pruning

Trees on EM VII need to be trained well from the planting date to full fruiting. Later during the fruiting years, renew by heading back both

laterals and leaders to young fruiting wood. During the training period, select a moderate number of well formed branches (5 to 8 on central leader), but keep small "spur wood" in the center of the tree and outward. Varieties which tend to fruit on the leader when young, should be watched, and fruit removed from the leader until the tree has reached the desired height.

How much or how little to prune varies with the variety and age of the tree. Annual pruning and branch training is very important to keep the production coming and to expose the bearing surface to light, to promote good fruit size, color and quality.

EM VII is one of the proven rootstocks for apple varieties because it controls tree size, produces early, is productive, resistant to collar rot, and grows well in the nursery. As a growth controlling rootstock, EM VII should be used in orchards with a medium tree density. Varieties suitably propagated on this rootstock will grow well as free standing trees, trained to a "spindle bush," in the early years, and later formed into a hedge system of culture.

## Dessert Pears in Midwestern Gardens

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High quality dessert pear varieties are seldom grown by fruit gardeners of the Midwest. Some reasons that may account for this are lack of information on varieties, difficulty of obtaining choice varieties and suitable stocks from commercial sources, and the critical problems associated with fire blight susceptibility.

The finest dessert pears can be grown successfully, in home gardens at least, if the grower is prepared to

deal with the major problem of pear culture, fire blight. This disease is such a formidable challenge, that thorough control measures must be regarded as essential to successful pear culture.

Planning before planting should include not only the choice of varieties but the choice of rootstocks as well. Rootstock choice is important because of blight susceptibility, compatibility problems and problems of soil and cli-

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mate. All commercial pear stocks that have been adequately tested lack desirable characteristics to some degree and it will usually be necessary to compromise on selection.

Rootstocks may be classified in two general categories—standard and dwarfing. Seedlings of *Pyrus communis* L. are commonly used as standard stocks. Advantages of *P. communis* stocks are tolerance of wet or heavy textured soils, good compatibility with European pear varieties, and winter hardiness. The major disadvantage is their general susceptibility to fire blight. Blight susceptible, high quality dessert varieties propagated directly on *P. communis* stocks can not be recommended in the Midwest because of the high risk of losing both stock and scion from blight cankers on root or trunk. One standard stock system recommended is the *P. communis* root stock/Old Home body or framework stock/scion variety combination. In this system, the blight-resistant Old Home variety is propagated on seedling *P. communis* and is planted deeply to induce scion rooting of the Old Home. The desired scion variety is top-worked on scaffold branches of the Old Home as soon as the trees are large enough.

The only generally available commercial dwarfing stock is quince, usually Angers or EM quince A. Advantages of quince are dwarfing and precocious fruiting of the scion variety. Numerous disadvantages include blight susceptibility, sensitivity to wet soils, unreliable winter hardiness of the root system and incompatibilities with many scion varieties. This dwarfing stock can be provisionally recommended only if the pear gardener recognizes the serious deficiencies of quince stock, and feels that it is worth the effort needed to deal with the extra management problems.

Two systems of utilizing quince stocks are reasonably successful under optimum cultural conditions. The first

is similar to the recommended standard stock system. However, quince rootstock is substituted for *P. communis* root and is managed differently. The trees must not be set too deeply or the Old Home body stock will scion root, and the dwarfing effect of the quince root will be overcome by the developing Old Home root system. The trees should be grown in close-cut sod and mulched heavily with straw in the fall to prevent winter killing of the tender quince root. The mulch should be removed in early spring. A heavy, high-mowed grass sod offers some protection to the root system in winter but may compete too strongly for moisture and nutrients during the growing season.

The second system produces the surest and quickest results, but is the most laborious and demanding. The scion variety is propagated on quince stock via the double-budding compatibility bridge technique (a thin slice of Old Home bud shield minus the Old Home bud is placed between the bud shield of the scion variety and the quince stock) and grown in 12-in. diameter pots. The pots containing the trees are permanently plunged in the ground up to the bottom edge of the chime. Light fertilization and regular watering are necessary during the growing season. Preferably each year, but at least in alternate years, usually in late October or early November, the trees should be removed from the pots and the roots trimmed back and thinned prior to repotting in fresh soil mix. Before growth begins in the following spring the trees should be pruned enough to remove weak growth, keep the top in balance with the root system and maintain fruitful vigor. Heavy mulching with straw in early November is necessary to prevent cracking of pots and winterkilling of the quince root. The straw mulch should be removed in early April or before bloom. Fire blight is much less of a problem on

potted trees than on trees with unconfined roots, and even shy bearing sorts usually fruit precociously and heavily.

### **Suggested Dessert Varieties**

**'Bartlett'**—This British variety is the most widely grown pear in the world, appreciated everywhere and so well known that a description is hardly needed. The russet sports of Bartlett may be of interest to the pear gardener since many of them have superior quality—usually a somewhat richer and spicier flavor. Several have been propagated and the Nye russet selection is a good one. The red-fruited sports, although good pears, are slightly inferior to the parent variety in quality. Bartlett fruits early and heavily on standard or dwarfing rootstocks. It should be double worked on quince. Bartlett is quite susceptible to fire blight.

**'Beurre Giffard'**—Few early pears will meet the standards expected of a good dessert pear. Most early sorts are so ephemeral that the old adage "ripe at twelve; rotten at noon" may well have a ring of truth. Beurre Giffard is the earliest dessert pear (early August) of reasonably good quality. It is below medium in size, pyriform and the greenish-yellow skin may often have a dull red blush. Flesh is very juicy and smooth textured, though not highly flavored. It is less prone to blight than Bartlett and fruits well as a standard.

**'Beurre Superfin'**—A large, obovate-short pyriform, greenish-yellow pear with some russet and occasionally a faint blush. Harvested at the proper time, Beurre Superfin can be very good with a buttery, melting, very juicy flesh, and a rich, acidulous flavor. Time of harvest is critical, for if it is picked too late, internal breakdown around the core will occur, and the flesh will be "pasty," flat and worthless. It normally matures in early October, but there is considerable variability by year and stocks. It

fruits well as a standard, but is not as precocious as Bartlett. Beurre Superfin is probably the best acidulous pear available.

**'Dana Hovey'**—Although below medium in size (only slightly larger than Seckel), this is one of the richest, sweetest and most delightfully perfumed dessert pears. The fruits are obovate-pyriform, golden yellow with a light russet and mature in late October. It is somewhat like Seckel, but the flavor is different (Seckel has a spicy, honey-like flavor, while Dana Hovey has a perfumed sweetness); the season is later and the trees are more susceptible to blight. At its best, Dana Hovey is a pear for the connoisseur.

**'Doyenne du Comice'**—Because of its exquisite quality, Doyenne du Comice is generally rated as the world's finest dessert pear. The fruit is large to very large, obovate-pyriform, greenish-yellow with light russet, with occasionally a faint reddish blush. The flesh texture is buttery, melting but at the same time of firm consistency, fine grained and very juicy. The flavor is exquisitely rich, sweet and aromatic. It matures in mid-October. Doyenne Du Comice is somewhat slow to come into bearing, and seldom carries even a moderate crop on standard trees. This variety is ideal for growing on quince in pots (is compatible with quince and may be budded directly), as it bears heavily and consistently with fruit of magnificent quality and size. The ensemble of characteristics in proper proportion to make a fine dessert pear is found to the highest degree of development in Doyenne Du Comice. It is a pear for the connoisseur.

**'Duchesse de Bordeaux'**—Can claim little in the way of appearance because the fruits, though large, are dull, rough-skinned, scurfy-greenish with russet, roundish, apple-shaped and unattractive. Really good quality win-

ter dessert pears are difficult to find, but *Duchesse de Bordeaux*, when grown under optimum conditions, is one of the highest flavored sorts. The flesh is very juicy though somewhat firm in texture. It needs to hang on the tree as late as possible, and requires adequate moisture in late summer and fall, or quality will be only mediocre. It bears well as a standard or dwarf, but the fruits are easily blown off the trees by strong winds. *Duchesse de Bordeaux* is difficult to grow well, but is probably the highest flavored winter pear.

**'Gorham'**—A modern pear, bred at the New York State Agricultural Experiment Station, Geneva, New York, combines many of the desirable characteristics of its parents, Bartlett and Josephine de Malines. Fruits are yellow with a slight russet, less top-shaped and larger than Josephine de Malines. The flesh is smooth, fine, melting, and juicy with a sweet, vinous flavor. It matures nearly two weeks later than Bartlett. Some of the russet sports of Gorham have a slightly spicier and richer flavor than Gorham itself and may be of interest to pear fanciers. Gorham bears less heavily and precociously than Bartlett and is about equally subject to fire blight.

**'Josephine de Malines'** is a medium-sized, greenish-yellow to yellow, top-shaped winter pear of very good quality. The flesh is buttery, very juicy and sweet. This variety is one of the best quality winter dessert pears, and keeps well in storage until midwinter or later. The trees bear heavily as standards, and are less prone to blight than Bartlett.

**'Marie Louise'** varies from medium to large in size, is oblong-pyriform with a yellow, slightly russeted skin. The quality is very good with a buttery, very juicy, richly flavored flesh. It is somewhat variable in bearing and quite susceptible to blight. It matures

in early October. It should not be confused with *Marie Louise d'Uccle*.

**'Packham's Triumph'**—This Australian pear is a leading commercial sort (after Bartlett) in the Southern Hemisphere, and has attracted the attention of Northern Hemisphere growers only in the last decade or so. Packham's Triumph is above medium to large, obovate-pyriform but variable because of a bumpy, uneven appearance under some growing conditions. The flesh is very juicy, buttery, melting, and very good in quality. This variety fruits well as a standard and has the valuable and unusual trait in pears of being able to form fruiting spurs on shoots of the current season's growth. It is very susceptible to fire blight.

**'Ritson'** is an obscure Canadian variety, medium to below in size, obovate-pyriform, with russet over yellow skin color. The flesh is buttery, melting, fine grained, with a rich, very sweet flavor. Ritson, when well grown, has many features reminiscent of Dana Hovey, and is a high quality pear though sometimes erratic in quality from season to season. It matures at about the same time as Dana Hovey or slightly earlier (early to mid-October).

**'Seckel'** has long been known and cherished for its superb dessert quality. Many country people call Seckel "sugar pear" because of its rich, honey-sweet, aromatic, spicy flavor. Seckel is small and brownish-yellow with an occasional reddish blush. It matures between mid-September and early October. Seckel is slow to come into bearing, but once started, it bears heavy crops. Although Seckel has better blight resistance than Bartlett, standard blight control measures are recommended. It is for the connoisseur.

**'Thompson's'** is a somewhat obscure British pear variety little known in North America. The fruits are bright,

clear yellow, obovate-pyriform and medium-sized. It is of very good quality, sweet, buttery, and juicy and has an aromatic, rich flavor. The chief defect of Thompson's is the tendency, in some years, to develop granular areas around the core and a slight astringency in the flesh. It matures in the first week of October. Thompson's is superb when well grown.

'Winter Nelis' fruits are medium to below in size, short obovate-pyriform, yellow-green with russet and not particularly attractive. The flesh is buttery, very juicy, melting with a sweet, aromatic flavor. Winter Nelis is very productive, but excess crops result in small-sized fruit and lowered quality. It fruits well as a standard, but the crooked, zig-zag growth is a problem for the gardener. It is less prone to blight than Bartlett. Winter Nelis is perhaps the best winter pear available.

**Other varieties:** Several other sorts possess sufficiently favorable attributes to deserve inclusion in a larger collection of dessert varieties. 'Beurre Bosc' is an elongate-pyriform, russet, late fall variety that can be quite good. It is very susceptible to internal breakdown around the core if harvest is delayed too long past maturity. 'Beurre Dumont' is a large, high quality winter or late fall variety that has

a tendency to bear erratically. 'Beierschmitt', in season with Bartlett, is rather similar, but less perfumed in flavor and less susceptible to blight. 'Belle Lucrative', an old high quality fall variety, can be quite good, but tends to run somewhat small in size. 'Eldorado', a new variety from the West coast, is large, and quite good, although at times erratic in quality. It has not been sufficiently tested for the Midwest. 'Sirrène', a recent variety from New York, has high quality, is very sweet and deserves wide trial. 'Thornley', a little known West coast variety, has high quality, but is somewhat small. Two unnamed Geneva Station seedlings made available through the New York State Fruit Testing Association may be of interest: 'New York 2480', from a Beurre Giffard X Bartlett cross, is a very refreshing, smooth-textured, early pear with an unusually long ripening period; 'New York 10274', from a Bartlett X Doyenne du Comice cross, is a high quality fall variety that is productive and large. 'Magness', a Seckel seedling X Doyenne du Comice cross from the United States Department of Agriculture pear breeding program at Beltsville, has high quality and is the only pear on the list with a reasonably good resistance to fire blight. Magness is pollen sterile and requires a pollinator variety.

**North American Apples: Varieties, Rootstocks, Outlook.** 1970. W. H. Upshall, Editor. Michigan State University Press. 197 pages. \$8.50.

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In a chapter entitled, Varieties of Yesteryear, A. P. French gives us a brief history and description of a number of old North American apple varieties which have either fallen by the

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Emery Wilcox provides facts and figures, skillfully tracing apple variety trends in the United States and Canada during the past 27 years.

The major portion of "North American Apples" consists of a series of chapters dealing with the seven currently leading apple varieties in North America, Delicious, McIntosh, Golden Delicious, Rome Beauty, Jonathan, Winesap, and York Imperial; and one of the lesser varieties, Northern Spy.