A Proven Apple Rootstock — EM VII

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East Malling VII is one of the original clones classified in England in 1912. Before that time it was known as 'None-such', and found mixed with 'Doucin' imported by an English nursery from France. It was grown and used in England for several years before it was designated as EM VII at East Malling.

EM VII is well liked by nurserymen because it is easy to reproduce in propagation beds, and grows well as lining-out budding stock. It has a fiberous spreading root system. However, tree anchorage, especially with vigorous scion varieties, is not the best. Another disadvantage is its tendancy to "sucker" below the graft union. The degree of suckering varies with scion variety, soil condition and culture.

Better tree anchorage and less suckering can be had by growing vigorous lining-out stock and budding 14 to 16″ above ground. Such trees, planted 12″ deeper in the orchard, will stand without support and be nearly free of suckers.

Fig. 1. A free-standing 5-year old tree of McIntosh on EM VII showing compactness with maximum fruiting surface at this age.

EM VII produces a semi-dwarf tree with most varieties. However, with a precocious variety such as 'Jonathan', it could be classified as a dwarfing rootstock. Generally speaking, EM VII will produce an apple tree ½ as large as a standard tree.

Without doubt, EM VII has been more widely tested and used as a rootstock than any of the others released. The main reason for this is the fact that trees on this stock will initiate flowers early with most varieties and thus start to bear in the second and third year. Yield data is relative and is influenced by many factors. At East Lansing, yield from seven year old McIntosh/EM VII with 144 trees per acre was 718 bushels, and with 72 trees was 513 bushels/acre; and Northern Spy was 300 bushels and 169 bushels per acre at the same age and number of trees per acre. In a similar yield study with 72 trees per acre at Grand Rapids, Delicious on EM VII produced 1370 bushels, while the same variety on seedling rootstock (54 trees/acre) produced 393 bushels per acre during the first 9 years. This is an average of 19 bushels per tree for those on EM VII, and 8 bushels for those on seedling.

Tree Spacing

The size of trees budded on EM VII will vary from one variety to the next. An extreme example is Jonathan vs Delicious, the former giving a much smaller tree under same conditions. Using an average tree spacing for all commercial apple varieties, the following suggestions should be helpful: Low density—14 x 20 ft., 155 trees per acre; medium density—12 x 18 ft., 201 trees; and high density—8 x 16 ft., 339

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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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