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Dwarf Fruit Trees for the Home Orchard

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Dwarf fruit trees are well adapted to use in the home orchard. Their size makes it possible to have several trees in the space occupied by one standard tree. Furthermore, the dwarf trees can be used in the landscape plan as screens and hedges or as area dividers.

Compared with the large standard size trees, dwarf trees have the following advantages for the home orchardist:

1. Their small size makes them more convenient for spraying, fruit thinning, pruning and harvest.
2. The trees bear earlier than standard sized trees.
3. Their small size makes it possible to have a number of trees of varying maturity to give fruit over the entire season.
4. They are readily adapted into landscape plans.

The Root Dwarfs the Tree

Like all temperate zone fruit trees, dwarfs are propagated by grafting a desirable variety onto a rootstock. In the dwarf trees it's the rootstock that makes the tree smaller.

The dwarf fruit tree has been used in Europe for over a century. However, selection of rootstock began only after the commercial implications of dwarf trees became apparent. The rootstock restricts the growth of the variety grafted on it by some means not completely understood.

Dwarf fruit trees commercially available are apples, pears, peach, plum and apricot. All are produced by grafting a variety onto a dwarfing rootstock.

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Apple Trees Come in Many Sizes

Perhaps the most confusing aspect of dwarf apple trees is the variety of dwarfing rootstocks available. Trees may be labeled dwarf, but this has no meaning unless the rootstock is identified.

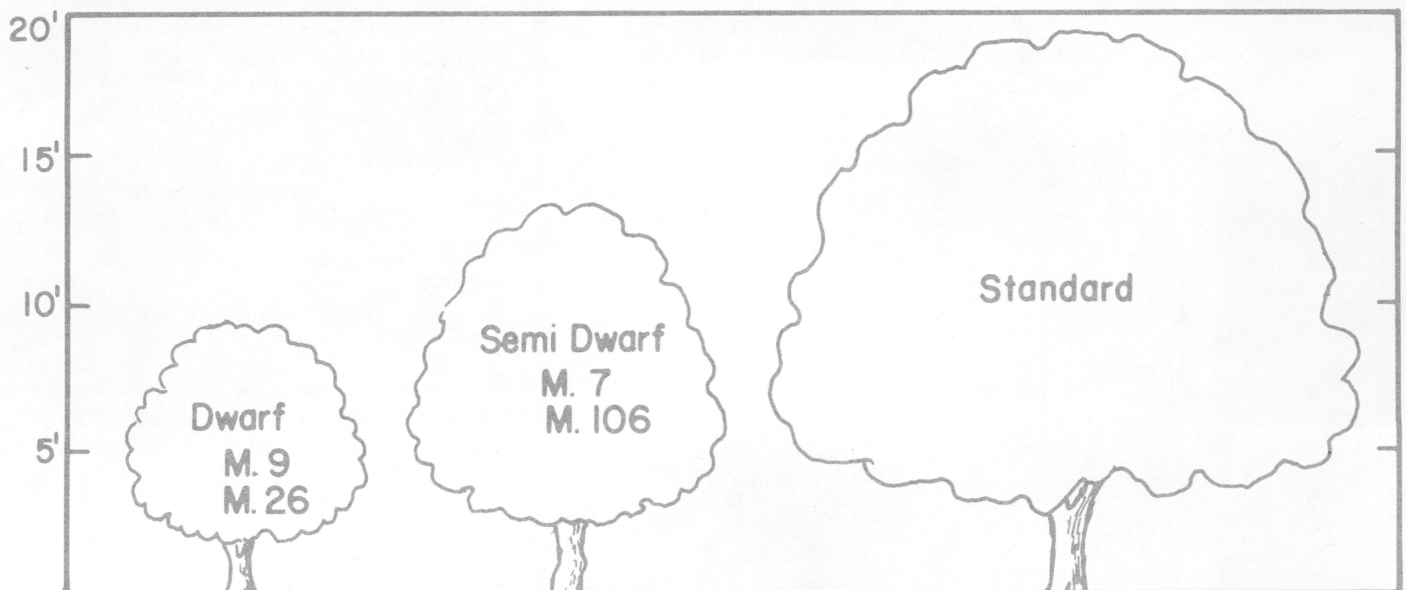
Developmental work on dwarf apple trees was done at the East Malling Experimental Station in England. Consequently the rootstock names bear the name or the Malling abbreviation "M." or "M.M." Individual roots are further identified by numbers. Some of the common rootstocks available and their approximate size are:

- M. 9 - Dwarf, about 1/4 standard size
- M. 26 - Somewhat larger than M. 9 but still quite dwarf
- M. 7 - Semi-dwarf, 1/3 to 1/2 standard size
- M.M. 106 - About the same size as M. 7
- M. 1, M. 2, M.M. 104 - Somewhat larger than M. 7 and M.M. 106. May grow to 2/3 to 3/4 standard size.

The dwarfs and semi-dwarfs are of primary interest to the home orchardist. These are becoming common in commercial orcharding also. The eventual size of the tree depends not only on the rootstock but also on the variety of apple grafted on the root, the soil, cultural practices, and the environment. Pruning is a dwarfing method by itself and when practiced properly aids in dwarfing the trees.

Some varieties grow more or less vigorously on a particular rootstock. Generally the new "spur-type" varieties are more dwarf. These, when combined with a dwarf rootstock will make a very dwarf tree.

Fig. 1. How large a tree? The rootstock will determine. Here is a comparative look at tree size of an apple variety grafted on various rootstock.



Order a Specific Rootstock

When ordering dwarf apple trees, specify the variety desired on the rootstock you want. You cannot be sure of what you are buying unless you know the rootstock. Generally speaking it pays to search out a reputable nursery that supplies commercial orchardists. They make it their business to know the rootstocks.

Planting Dwarf Apple Trees

Take special care in planting dwarf apple trees. Prepare a hole of adequate size to hold the roots and carefully spread out the roots in the hole. Make sure that the graft union is left 4 to 6 inches above the ground. Otherwise, the variety will root and a standard size tree will develop.

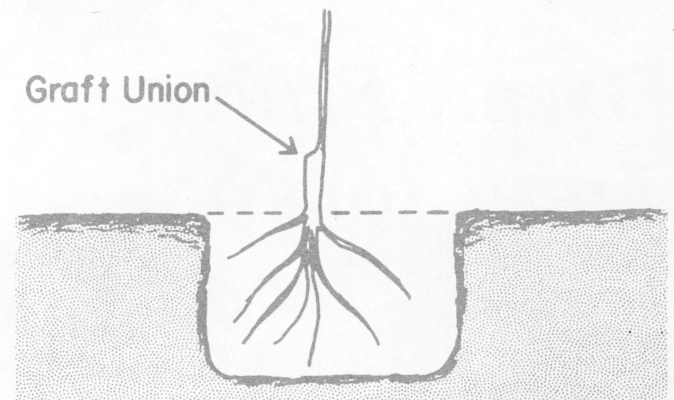


Fig. 2. Plant dwarf trees with the graft union 4 to 6 inches above the soil level to prevent the variety from rooting.

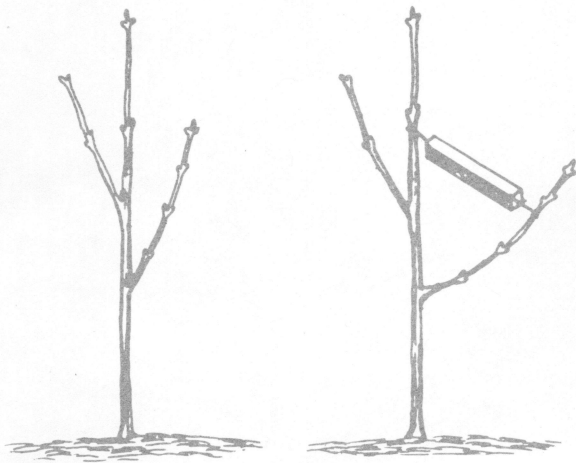


Fig. 3. Use spreaders to push branches into a horizontal position.

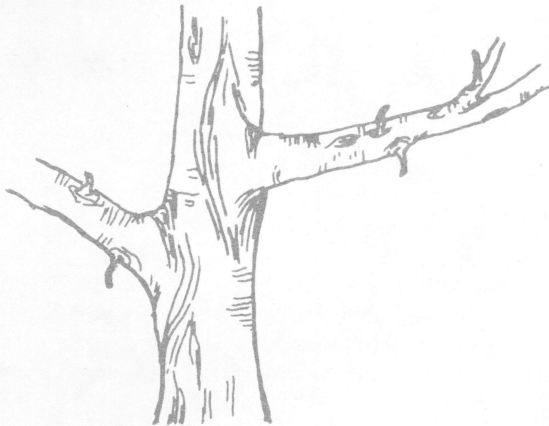


Fig. 4. Branches growing at a wide angle to the trunk are the strongest.

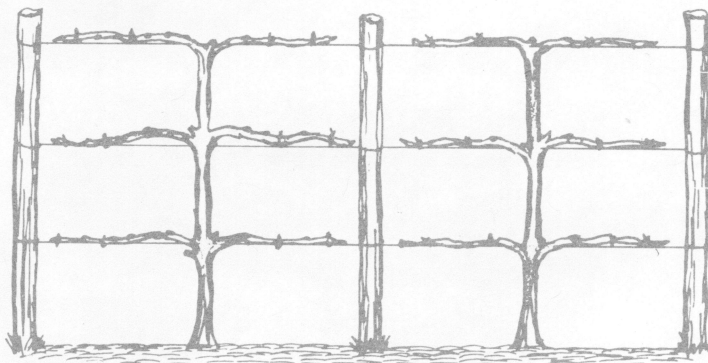


Fig. 5. Dwarf fruit trees can be trained on wires for support. This is called espalier training.

Cultural Practices for Dwarf Apples

Growing dwarf apple trees is not a great deal different from growing standard size trees. Spray for insect and disease control according to the recommendations of your county agricultural agent. Fertilize the tree according to tree size and the vigor of the tree. A rapidly growing one should have some nitrogen applied in the drip area.

Dwarf apple trees using the M. 9 or the M. 26 rootstocks must be supported either on a trellis or on a heavy metal stake or pipe driven well into the soil. Tie the tree securely to the trellis or to the stake. Use a soft material for tying to prevent damage to the tree. Check the ties frequently to make sure they are holding and that they are not too tight. Individual branches of the tree may be trained onto the wires of a trellis. This is a form of espalier training and is ornamental as well as being handy for thinning, harvesting and pruning.

Prune dwarf trees regularly. Considerable growth can be wasted if an unwanted branch is allowed to grow for a couple of years and then cut off. Actually it is better to think in terms of training the tree rather than pruning. If proper training is carried out, only minor pruning needs to be done each spring. Generally, dwarf apples should be trained to a central leader with many short scaffold branches extending nearly horizontally from the tree. When the scaffold branches have attained a desirable length they should be pushed or tied in a horizontal position to slow down their vegetative growth and bring them into bearing.

A training schedule for a dwarf apple tree might be as follows:

1. Prune tree to about 30 inches above the ground at planting.
2. Select 4 or 5 good branches between 12 and 30 inches above the ground.
3. Select 4 or 5 good branches 30 to 48 inches above the ground.
4. Select 4 or 5 branches 48 to 66 inches above the ground.
5. During the first years the leader (center stem) should be cut back to about 18 inches of new growth each year. When the tree is as tall as you want it, cut the leader back to about 2 inches of new growth each year.
6. Train the branches into the horizontal position by using spreaders or by tying them down with string. This should be done after the branches have reached a desirable length.
7. Prune the branches to the length you want them to be. The lower branches should be the longest with length graduate to the top to give a Christmas tree shape.
8. Train the tree every year. Do not neglect it for 2 or 3 years and then try to correct its growth pattern.
9. Do not let the tree bear too early. Blossoms should be removed until the branches are 3 years old.

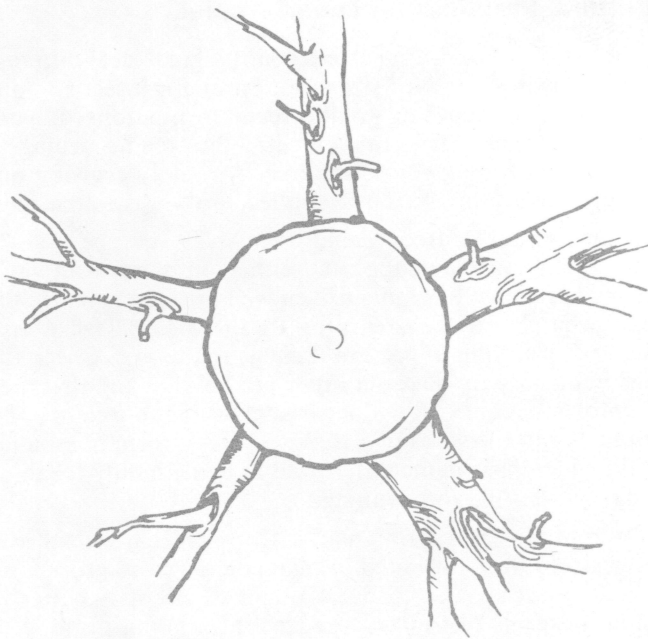


Fig. 6. When training a dwarf tree, select branches around the tree's trunk.

Apple Varieties

Red Delicious, Golden Delicious, Winesap, Jonathan, MacIntosh and Rome Beauty are generally available on dwarfing rootstock. Some of the less used varieties may be available from nurseries that specialize in propagating unusual varieties. If you have a favorite variety that is not available it may be necessary to graft it onto one of the available varieties. Your county extension agent or local nurseryman can help you locate grafting wood and recommend the correct procedures.

Dwarf Pears

Pears are also dwarfed by rootstocks. Only one size is generally available and this is the Quince A or Angers quince rootstock. These make small or full dwarf trees. Vigor is often difficult to maintain in dwarf pears and they must not bear for at least 3 years. Plan carefully for pollination of the pears. Bartlett, which is the common variety of summer pear, requires pollination by another variety. Anjou, Comice and Bose are good pollinators and produce good, long-keeping fruit.

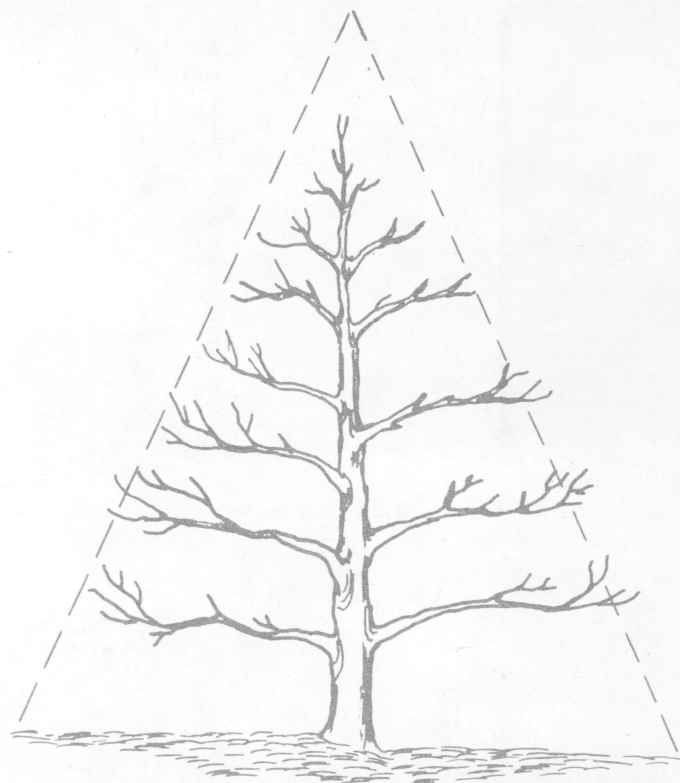


Fig. 7. Train the tree into a pyramidal shape for maximum exposure to the sun.

Other Dwarf Fruit Trees

Many nursery catalogues presently list dwarf peach, nectarine, plum and apricot trees. These are worth a try in the home orchard. However, the standard trees of these fruits are small by nature and are easily kept small by pruning and training.

Some natural dwarf pie cherry trees are available. No real dwarf sweet cherries are available as yet.

The popularity of dwarf trees has increased to the point where dwarf rootstocks are being studied for all fruits. The future is sure to bring better rootstocks, of smaller size for all of the fruit varieties.