Sweet cherry production in the U.S. has changed little over the last 100 years. Most growers use standard, non-precocious rootstocks and prune to an open vase style system. In contrast, new cherry orchards in western Europe are trained to allow for fast, easy harvest without the use of tall ladders.

The driving force behind these changes in Europe is the high price of labor. Growers must pay pickers by the hour to harvest the crop, and this keeps productivity extremely low.

For example, the average European worker, picking from a tall ladder, harvests an average of only 22 pounds of cherries per hour, compared to 75 pounds per hour for a picker in Oregon who is paid by the pound. European growers double the productivity of their pickers when trees are trained so that harvest can be accomplished without tall ladders.

Due to increased concerns over future labor shortages and the need to pick larger quantities of fruit with fewer pickers, some training systems used in Europe may be of interest to American orchardists as well. In addition, eliminating tall ladders from orchards reduces the risk of accidents and liability expenses. Finally, several of these systems, when coupled with a precocious rootstock, greatly increase the potential for high, early returns.

**ITALIAN CHERRIES GROWN ON TRELLIS**

Italian cherry growers, located near Modena in northern Italy, commonly utilize the Palmate or the Drapeau Marchand system. Both systems employ a three-wire trellis. Colt, a non-precocious, full-size rootstock, is the preferred stock among growers from this region.

In the Marchand system, plant trees and roots at a 45° angle, thereby reducing the vigor of the tree. As the leader grows, tie it to the wires at the same 45° angle. Laterals are tied at 90° from the leader.

The Palmate system is similar to this system in that the branches are tied at the same angle, but the tree is planted upright, rather than at an angle. Maintain trees at 15 feet in height. The lower portion of the tree can be harvested from the ground, while tree tops are harvested from a moving platform that drives down the row.

These systems work well on level ground, but harvesting from a movable platform limits their use on hills. If the overall height of the planting could be reduced with the use of dwarfing rootstocks so that platform harvest could be eliminated, these systems may have greater potential for U.S. orchardists.

**SPANISH BUSH FEATURES SMALL TREES**

One of the most interesting systems developed in Europe is the Spanish Bush system, grown in the Ebro Valley of northern Spain. Due to the poor soils of this region, dwarfing rootstocks are not needed to maintain an 8-foot tree height. Small trees allow the majority of the fruit to be harvested from the ground, without tall ladders.
Trees are typically planted on a 6 x 12-foot spacing. Once buds break, head the trees approximately 12 inches above the ground. Branches will form very low to the ground. When these have grown approximately 24 inches, head them back to 12 inches. Repeat this heading process a second time. The important point is to wait until branches are at least 24 inches long before heading, so that regrowth is vigorous.

These heading cuts establish the tree frame. Use thinning cuts to maintain light penetration to the tree center. To help reduce vigor and encourage precocity, make these cuts in the summer. After fruiting begins, a process of branch renewal starts. Cut older, bearing branches back to 8-inch stubs so that replacement branches can grow from these stubs. All bearing branches are renewed in a four-year cycle. At maturity, trees are topped and hedged in late summer to maintain an 8-foot height.

In more vigorous soils, the use of a dwarfing, precocious rootstock may be advisable. In the Pacific Northwest, consider the use of Gisela 5, 6, or 12.

**CENTRAL LEADER IN GERMANY MIMICS WILD CHERRY TREES**

Using the growth pattern of a wild cherry tree as a guide, Extension Agent Tobias Vogel developed a central leader training system utilized by growers in the Franconia region of Germany. This system employs dwarfing rootstocks to provide early returns on relatively small trees. The Gisela 5 rootstock should work well for this system. When grown properly, a tree will not have to be pruned until it begins to bear.

After planting, head the tree 30 inches above the ground. Leave the uppermost bud just below the cut to form the central leader and remove the next three buds. Clothespins attached to the trunk will train the branches flat. As the branches grow, move the clothespins to the branch tip to keep it horizontal. The key to the success of this system is moderate, controlled growth. Do not use fertilizers in these establishment years. Only two feet of growth is desirable on the central leader each year. In the spring, leave the terminal bud of the leader and remove the next three buds. Train the branches as described above. Fruit should be produced by the third leaf.

A system of branch renewal takes place after harvest each year. Cut back older, baring branches to 8 inches and a new branch will grow from this stub. Do not allow any branches to bear for more than four years. At maturity, control tree height by cutting the top back to weak laterals.