

Choosing the Right Cherry Training System: Spindle vs. Bush

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Choosing the right training system is just as important as choosing the right cherry variety or rootstock. The training system not only affects precocity and productivity of the tree but also fruit quality and ultimately monetary returns. For these reasons the proper training system choice should be a very important decision for all growers.

Both the Vogel Spindle and Spanish Bush systems will allow for the development of a “pedestrian orchard”. A pedestrian orchard is defined as an orchard where two-thirds of the crop can be harvested from the ground, without the use of tall ladders (Fig. 1).



Fig. 1 Spain harvest: Pedestrian orchards, such as this Spanish Bush orchard, allow for fast and efficient harvest and are much safer for workers.

with large trees. In addition, injuries are significantly reduced as tall ladders are eliminated from the orchard.

Due to labor shortages, many growers believe that the workforce of the future will not be as highly skilled as today’s employees. For this reason, training systems need to be uncomplicated so that instructions for training and pruning can be easily communicated and implemented. The Vogel Spindle is an example of this type of a system. With a few simple instructions inexperienced workers can train and prune trees with confidence.

The Spanish Bush is more of an art based system that takes some experience to master. However, there is a modification of the Spanish Bush, developed by Mr. Kym Green of Australia, called the KGB that simplifies pruning, enabling even inexperienced employees to learn quickly.

Harvesting fruit from the ground greatly enhances worker productivity. In a study that I conducted in The Dalles, Oregon pickers were able to harvest 100 pounds (45 kg.) per hour when picking fruit in traditional orchards off of tall ladders. Productivity, however, increased to 171 pounds (77.5 kg.) per hour in pedestrian orchards allowing pickers to make more money and growers to harvest their crop with fewer pickers. As labor shortages become more acute, growers with pedestrian orchards will find orchard workers more readily than their neighbors

The true Spanish Bush was developed in the Ebro Valley of Spain where it is grown on a mahaleb rootstock selection called Sante Lucia 64. Even though this is not a dwarfing rootstock the combination of poor soils and a multi-leader system combines to maintain an ultimate height of only 8 feet (2.4 m). On more productive soils it is best to use a semi-dwarfing rootstock such as Gisela 6 to help control tree height.



Fig. 2 A tree trained to the true Spanish Bush system will have 8-10 permanent upright leaders. Fruit is produced on weak laterals that are renewable.

Early training consists of numerous headings, which unfortunately, retards precocity. At maturity the tree consists of typically 8-10 permanent leaders that are more or less vertical (Fig. 2). Fruit is grown off of weak laterals that are renovated and rotated out on a five year alternation. To obtain more information on this system, an illustrated guide, called Cherry Training Systems: Selection and Development can be found at <http://extension.oregonstate.edu>.

The KGB modification differs from the true Spanish Bush system in that all branches, including upright leaders, are renewable. With the modification, two to four of the upright leaders are cut back to a 12-15 inch (30-38 cm) stub each year and allowed to regrow (Fig. 3). This helps to reduce the crop, an important feature with productive rootstocks, and allows for the renewal of old spurs. Additional pruning consists of reducing branching at the top of the tree to a single shoot, thereby encouraging good light penetration. If trees are grown on productive rootstocks such as the Gisela series, or if trees are self-fertile, it is a good idea to head all new shoots each year by tipping each branch, thereby removing 1/3 of the new growth.

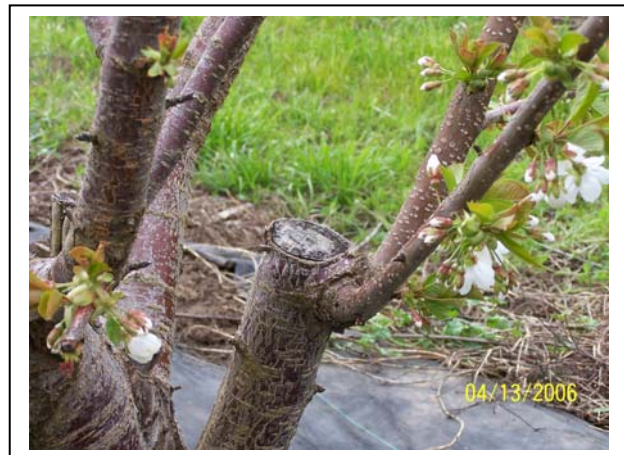


Fig. 3 Two to four upright leaders are stubbed back each year and regrown in the KGB modification of the Spanish Bush system.

The Vogel Spindle was developed in the Franconia region of Germany by Mr. Tobias Vogel. Dwarfing or semi-dwarfing rootstocks will help to limit maximum height to 10 – 12 ft (3 – 3.7 m). Lateral branches are bent to a horizontal angle in the establishment years rather than pruned, so the system is highly precocious. With this system it is often possible to get commercial yields in the 3rd leaf. Due to the productive nature of the system there is a tendency for trees to overset. For this reason it is important to tip all new growth as described above and begin branch renewal by the third leaf. All branches are renewable, even basal branches. About 1/5 of the lateral branches emanating from the trunk, should be renewed each year by stubbing branches back to a 6 – 12 inch stub in



Fig. 4 Older lateral branches are stubbed back on Vogel Spindle trees in order to reduce the crop load and renew old spurs.

order to eliminate old spurs and help to reduce crop loads (Fig. 4). The above referenced publication also provides a good discussion of the Vogel Spindle.

Choosing the right system depends, to a great extent, on the variety chosen. Varieties of low productivity, such as ‘Tieton’ or ‘Regina’ should be matched with a dwarfing or semi-dwarfing rootstock such as Gisela 5, 6 or 12 and grown on a Vogel Spindle system. The productive nature of this system will increase the productivity of these shy bearers and substantially increase yields.

If you choose to grow a variety of intermediate productivity such as ‘Benton’, ‘Bing’, ‘Attika’, ‘Selah’ or ‘Skeena’ there is a much wider selection of rootstocks and systems to choose from. Depending on the ultimate goals of your orchard these varieties can be grown on either a full size rootstock such as mazzard, mahaleb or Colt or one of the dwarfing or semi-dwarfing rootstocks. With these varieties, training system choices are also broader, allowing a choice between the Vogel Spindle, Spanish Bush or KGB.

Finally, productive varieties such as ‘Chelan’, ‘Lapins’ or ‘Sweetheart’ are most easily grown on non-productive rootstocks such as mazzard, mahaleb or Colt. Although it is possible to grow high quality fruit of these varieties on a productive rootstock there is a need to pay close attention to detail or over-production can easily occur. Similarly, these varieties can be grown with the Vogel Spindle system, however, the Spanish Bush or KGB systems more easily limits crop load, with its many heading cuts, and provides for easier crop management.