Pruning Beach Plums for Fruit Production

Fact Sheet FS1180

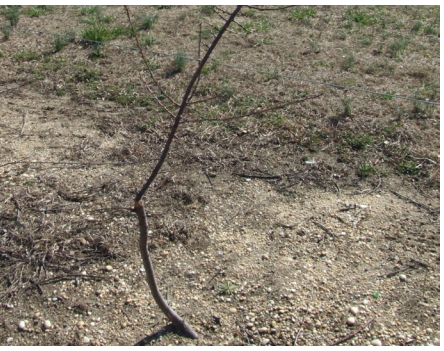

Figure 1. A young tree with lower branches recently removed & a central leader selected

Figure 2. A selected central leader and scaffold branches

Figure 3. Scaffold branches evenly distributed around the tree

Cooperative Extension

Jenny S. Carleo, Agricultural and Resource Management Agent, Cape May County
Warren C. Stiles, Professor of Pomology, Emeritus, Cornell University

Growth Form and Fruiting Habit

Beach plum (Prunus maritima) plants are extremely variable in growth habit. They may vary in size from a small woody, low-lying shrub with numerous shoots to a medium-sized tree with one or more distinct trunks. The fruit is borne on previous season terminal or lateral shoot growth and on short spurs on two-year and older wood. The multi-stemmed plants can be managed for fruit production. However, development and management of some type of tree form is usually more desirable for commercial fruit production.

Reasons for Pruning

The purpose of pruning is to assist in training and maintaining the tree in a size and shape that will assist in attaining consistent yields of high quality fruit. Several objectives that must be met in developing a pruning program include:

- Developing and maintaining tree size and shape
- Maximizing light penetration into the canopy
- Maintaining air-flow through the canopy
- Improving penetration and distribution of crop-protection materials
- Managing crop load
- Facilitating cultural practices and harvesting

Types of Pruning Cuts

There are two types of pruning cuts: 1) heading back, and 2) thinning out. A "heading back" cut is the removal of a portion of the shoot or branch, typically resulting in stimulation of more growth or branching close to the site of the cut. A "thinning out" cut is the removal of a whole shoot or branch back to its point of origin on a lateral, scaffold branch, or the trunk, or in some cases the ground.

Time of Pruning

Pruning during winter or early spring while the plant is in a dormant (non-growing) state results in the greatest stimulation of growth from the remaining buds. In general, most of the pruning required to promote new growth that is necessary in training young trees and in maintaining annual cropping is done at this time. Pruning during mid-summer results in the least amount of new growth and is most useful in removing excessively vigorous shoot growth, root suckers, and new shoots that develop below the lower scaffold limbs.

Developing and Maintaining Acceptable Tree Size and Shape

The two most commonly used tree forms are the central leader and some type of open-center. The central leader tree consists of a single main trunk with several lateral branches. The open-center tree consists of a short main trunk with three (usual) or more main branches on which the lateral branches are developed. After the desired tree shape has been established, the type and severity of pruning required to maintain tree size and productivity are similar.

RUTGERS
New Jersey Agricultural Experiment Station

Rutgers, The State University of New Jersey
88 Lipman Drive, New Brunswick, NJ 08901-8525
Phone: 848.932.5000

Developing a Central Leader

During the first year, a single dominant leader is selected and headed back at a height of 18″ – 30″, depending on vigor of the tree; if the tree is small or weak it may have to be headed back more severely to stimulate growth before training can begin. The heading cut should stimulate several buds near the cut to grow. The strongest of these buds should be selected to be the dominant leader and the others suppressed or removed. All branches below the heading cut should be removed when the heading cut is made.

In the second year, the topping of the previous year will have stimulated growth of several branches (Figure 1) from which 3 – 5 scaffold limbs can be selected. These scaffold branches should be evenly distributed around the tree (Figure 2). Scaffold limbs should be at least 8″ inches apart on the trunk and should not interfere with each other's growth in subsequent years. As the tree increases in height additional scaffold branches can be allowed to develop approximately 3 feet above the first tier. These should be arranged so as not to be directly above the lower scaffolds. The scaffold branches will serve as the main limbs on which fruiting wood will grow. Scaffold branches should be well spaced and positions to allow maximum light interception and carry a strong fruit load (Figure 3). Any branches that arise below 18″ should be removed since these are too low to the ground and should not be selected as scaffold limbs.

Maintenance Pruning of Central Leader Trees

In subsequent years, the focus should be on maintaining a conical form in which the higher scaffold branches are shorter than the lower ones. This will ensure that lower branches will not be shaded out, which would result in a misshapen tree that would be unsuitable for sustaining fruit production. Remember that removing one large branch from the tree is less invigorating than removing several small branches. Pruning decisions should concentrate on removal of excessively strong shoots and retention of more moderately vigorous wood. Excessively vigorous upright shoots should be removed in their entirety. Weak growth that is in a horizontal or growing downward is less productive and should be removed by more detailed pruning. Heading back horizontal limbs to more vigorous side branches may be necessary to stimulate more vigorous growth. It is usually necessary to use thinning out cuts to remove weak wood to improve light exposure and facilitate air movement within the canopy.

Light summer pruning with thinning out cuts to remove competing shoots is useful in ensuring dominance of the central leader. Root suckers, new shoots arising below the lower scaffold limbs, and extra shoots on the main trunk or branches that are not needed can be pruned off at any time that is convenient.

Managing Crop Load

Beach plums, like most fruit crops, tend to produce more fruit than the tree can support. When this is allowed to happen the trees exhibit an alternate bearing habit, with a heavy crop one year followed by a light crop or no crop the next year. With many crops, including other types of plums, it is necessary to reduce the amount of fruit on the tree during the heavy crop year in order to minimize this problem. Pruning off 25 to 30 percent of the fruiting wood is one method for reducing the crop load. Reducing the crop load by pruning also encourages the development of new shoots on which the next year's crop will be produced. The objective is to have a moderately heavy crop while also producing an adequate number of new shoots that are from 12 to 24 inches in length.

Improve Air-Flow and Facilitate Distribution of Crop-Protection Materials

High humidity resulting from limited air-flow within tree canopies can create an ideal environment for fungal diseases. Diseases must have an acceptable host and favorable environmental conditions in order to infect plant material. Pruning to improve air-flow not only helps to reduce the humidity but also allows for better distribution of crop-protection materials within the tree canopy.

Steps in Pruning Mature Trees

A systematic procedure for pruning consists of the following steps:

- Remove any dead, diseased or broken branches
- Remove excessively strong upright shoots
- Limit tree height by heading back to a lateral limb at the desired height
- Eliminate or shorten upper branches that shade lower ones
- Remove downward growing shoots and branches
- Remove weak wood throughout the canopy
- Remove unwanted shoot growth below and between scaffolds

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