



This publication is a joint effort of the New York State Horticultural Society, Cornell University's New York State Agricultural Experiment Station at Geneva, and the New York State Apple Research and Development Program

IMPROVED FRESH FRUIT QUALITY OF GOOSEBERRIES AND RED CURRANTS WITH THE CORDON TRAINING SYSTEM

Steven A. McKay, Extension Educator, Cornell Cooperative Extension, Hudson, NY

Cordon training of Ribes plants whose fruit is intended for the fresh market is standard practice for growers in Holland. The practice has also been popular in England for hobby and display gardens (with some differences from the Dutch system) but, the basic idea of cordon systems is that one to three trunks (vertical cordons) per plant are grown and tied vertically to stakes. Pruning removes old and excess wood in order to renew the fruiting structures of the plant. Plants are opened up to provide better access to fruit, and better ventilation, light, and spray penetration. Quality and size of fruit is improved, and labor for picking is reduced.

Red Currants

In Holland, red currants are planted about 1/2 meter apart. Three branches are selected as cordons and trained up bamboo stakes spaced at the center of the plant and about fifteen centimeters on each side. The cordons are encouraged to grow to a height of five to six feet. A spare branch is left at the base of the plant each year as an insurance measure in case any of the cordons die and needs replacement. During the same year, right after fruiting, the 1-year-old branches that have borne fruit are removed. Very small branches and misplaced or crowding branches are removed; leaving medium sized branches that will bear fruit the next season. In this manner, a plant is completely renewed (except the cordon) on an annual basis. One additional and beneficial pruning step during the growing season could be to head the most vigorously growing lateral branches to keep them shorter and more fruitful.

In England, semi-permanent branches are selected evenly spaced along the cordon. In late June each year, poorly placed and crowding branches are removed leaving five to seven bud branches for the rest of the growing season. The five bud branches are shortened to two bud fruiting spurs during the dormant season pruning.

As the production of fresh gooseberries and currants increases, growers will need to pay closer attention to fruit quality.

Cordon training systems have been proven to produce the highest quality fruit in Europe, and to make it easier to harvest fruit, especially thorny gooseberries.



Mature cordon-trained red currants in a Dutch greenhouse for early fruit production.



Medium-sized one-year branches are spaced radially around the cordon.



Well-formed strigs of red currants from cordon trained plants



One year red currants being established

Gooseberries

Gooseberries can be very difficult to harvest if they are of a thorny variety. Cordon training offers the advantage of opening up the plant and leaving the fruit accessible. In Holland, a single branch is selected and trained up a stake to a height of five to six feet. Only new, well-spaced, medium-sized branches are left at the end of the growing season. (An alternative to drilling is to use commercial wire clips since holes can weaken posts making them more susceptible to breakage, bending in wind, or rusting. The clips available through orchard supply houses.) The posts could be spaced six to eight feet apart, with a number fourteen or twelve wire passed through the holes at the top of the stakes. At each end of the trellis, a conduit anchor post can be driven in, the wire attached through a hole drilled near the top of the small branches, and branches that bore fruit, are removed. In England, cordoned gooseberries are trained in the same manner they train cordoned red currants.



Young cordon-trained Dutch gooseberry plants.



Heavy crop of gooseberries on cordon trained plant.



Cordon-trained, spur-pruned gooseberries in England.



Harvesting cordon trained gooseberries.

Trellising System

Conduit used for training apples to the vertical axis system work well for a Ribes trellis. Ideally, posts would be about two plus meters long with about thirty centimeters pounded into the ground, and a hole drilled about four centimeters from the top. (An alternative to drilling is to use commercial wire clips since holes can weaken posts making them more susceptible to breakage or bending in wind or rusting. The clips available through orchard supply houses.) The posts could be spaced six to eight feet apart, with a number fourteen or twelve wire passed through the holes at the top of the stakes. At each end of the trellis, a conduit anchor post can be driven in, and the wire attached through a hole drilled near the top of the post. Six-foot bamboo posts are then spaced as needed along the wire, pushed into the ground a couple of inches, and tied at the top. Green horticultural tape can be used to tie trunks to the posts. Bamboo poles are susceptible to degradation, and when in contact with the soil, can rot out a lot faster. I have tried running two wires along the row, with the bottom wire about a foot off the ground, and the second wire a few inches below the top of the post (and at a distance from the bottom wire that allows a four to five foot bamboo pole to fit between the wires). The bamboo is attached to the two wires, and is kept off the ground. As the plants grow up the posts, they are tied on with tie-tape.



One-year branches chosen to be left on cordon after harvest. All of the wood that fruited this year has been removed.



Replacement wood for new trunks is maintained at the base of the plant.



Large, quality red currants produced on cordon-trained plants.



Large, quality gooseberries from cordon-trained plants.

Fertilizer

A very critical observation was made in a commercial planting in Germantown, NY. Red currant plants (one year old) started out the season green and vigorous, but after about a month of growing began to show yellowing and a lack of vigor. Fifty pounds of actual nitrogen per acre were applied (injected through the irrigation system) in May of two consecutive years. When no significant change in vigor or yellowing occurred, this was followed up with two additional 50 pound applications, one in June and one in July. The plants greened up and put on 1-2 feet of nicely branched, new shoot growth. No branching occurred in the first year. The approach for the first year was to be conservative with fertilizer. Young cordon-trained Dutch gooseberry plants. Replacement wood for new trunks is maintained at the base of the plant. applications because a soil test on the site showed that nutrients were plentiful. If the plants were to be grown as bushes for mechanical harvesting, this approach might have been useful as a way to check excess plant vigor. Mistakenly, it was thought that restricting growth to a few branches would invigorate them sufficiently. But this was not the case. In a consultation with Adri Van Eck, he stressed that a heavy fertilization program in the first years when plants are established is important. It is also important not to set fruit during the first one to two growing seasons as the plants become established.

Pest Control

In a plot with some new cordons at Hudson, NY, there was a minor problem with currant aphids at the beginning of the season. We hoped that natural predators would control the infestation. By August, a combination of aphids and leaf spot had defoliated the plants. This seriously stunted the plants in that season and the following growing season. The demonstration was a good illustration of the benefit of good pest control in the early years of cordon establishment when rapid, healthy growth is needed.

Conversion of Bushes to Cordons

Bushes can easily be converted to cordons by selecting three young to medium-aged branches (one in the case of gooseberries) to become cordons. If spacing is too wide between plants, cuttings can be taken and stuck between older plants (best done Sept.15-Oct. 15 in the Northeast US) to develop new plants. Older plants will become adapted within one growing season.

Advantages and Disadvantages Summarized

Advantages:

- Plants are opened up for better air circulation, spray coverage, and harvesting.
- Fruit quality is improved in terms of size, color, and lack of rubbing and puncture injury.
- Pruning is simplified over bush systems because one can easily see what to cut.
- The plant's cordon or support system does not constantly need to be renewed as with the bush system. (The trunk, or cordon, is relatively permanent, while branches in bush plants are renewed every three to five years.)

Disadvantages:

- The system is more costly to establish.
- Cordons can die out and need replacement.

This work was sponsored by a research grant from NE SARE. This article is based on observations made while in Europe on visits between 2002 and 2004, and on much appreciated discussions with Adri van Eck, DLV in Holland, and Jim Arbury, AHS Wisley Gardens in England.

(Reprinted with permission from: [New York Fruit Quarterly](#), Vol. 13, No. 2, Summer 2005)

