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THE PRUNING OF GRAPE VINES

Adapted from an article by the late H. K. JOHNS, formerly Viticulturist, Department of Agriculture

In the intelligent pruning of the grape vine, many factors have to be taken into consideration—the age, size and condition of the plant; the location, soil and climate in which it is growing; the variety—in short, all the features of its environment and the principles governing its life.

The grape vine is perhaps the most responsive of all fruit-bearing plants to skilful pruning which is undertaken to achieve one or more of the following results:

(a) To modify the shape or habit of the plant in order to facilitate cultivation, spraying and harvesting of the grape crop.
(b) To influence the size, quality and quantity of the fruit.
(c) To remove, renew and promote or retard the growth of portions of the plant.

TIME OF PRUNING

The time for pruning depends on the season's conditions. The only safe rule is that vines may be pruned as soon as they are dormant. If pruned too soon, the plants will be weakened and new growth will commence too early; then, if a frost is recorded, the young growth will be destroyed, with loss of fruitful shoots. Early pruning will cause the vines to start early growth in the spring, while late pruning will considerably delay the shooting of the buds. Generally, in this State, pruning commences in the month of June and is completed by the end of August.

THE PARTS OF THE VINE

As a knowledge of the parts of the vine is essential to a discussion on pruning methods, the beginner is advised to study Figs. 1 and 2, together with their captions.

PRUNING SYSTEMS

There are two distinct methods of pruning—spur pruning and rod pruning—and the two methods are applied individually or in combination according to the variety and habit of growth of the vine.

A rule worth remembering is that all vines bear fruit on the new wood but—with most varieties—bearing wood only grows from wood of the previous year's growth.

Vigorous growths sometimes appear on old wood such as the trunk or main arms of the vine. These are known as "water-shoots" and, as they do not usually produce fruit in their first season it is a safe rule for the amateur pruner to remove them. Water-shoots should only be left when it is desired to improve the shape of the vine by developing new arms.

Spurs.

A spur is a fruit-bearing cane that is cut back usually to two clear buds. The number of spurs to be left on a vine is a matter for the judgment of the pruner, as he must consider the variety and the vigour of the individual vine.

The strongest and most mature canes should be chosen as spurs which should be from four to eight inches apart. On no account should spurs be left in clusters.

If too many spurs are left on the vine the tendency will be for it to carry too many bunches of grapes. In this case the bunches and the berries may be too small. The art of good pruning lies in the ability to assess the vigour of the vine, and then to cut it back to a size which permits it to produce the maximum quantity of high-quality fruit without impairing its growth.
Fig. 1.—A 10-year-old Gordo Blanco Muscatel, grown in the Swan Valley, before pruning. 1.—Main trunk or body of the vine; 2.—Crown, formed at suitable commercial height for trellising; 3.—Main arms and permanent branches which are of mature wood several years old; 4.—Secondary arms arising from main arms and permanent branches; 5.—Canes of seasonal growth; 6.—Laterals growing from canes as seasonal secondary shoots; 7.—Water shoots which have grown from main trunk.

Fig. 2.—The same vine after pruning, showing: 1.—Main trunk; 2.—Crown; 3.—Main arms; 4.—Secondary arms; 5.—Spurs.

The system adopted in the pruning of the Gordo Blanco Muscatel is termed spur pruning along the main arms or cords, the spurs being pruned to one clear bud. Swan Valley growers usually shorten back the spur to the basal bud with the object of lightening the crop and improving the quality. This variety of vine is a prolific bearer.
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Fig. 3.—Water shoots growing from the main stem or body of the vine. These should be cut off by the pruner.

Fig. 4.—Suckers which shoot from below ground level. The earth should be removed and the suckers cleanly removed. They are of no value and rob the parent stock.
Fig. 5.—A vine trained on the Goblet or Gooseberry bush system, before pruning. This is the simplest and cheapest method of training grape vines and is popular in most commercial vineyards, as this method facilitates cultivation.

If more than two buds are left on a spur, the lower ones may not develop and the result is an increase in the size of the head and the length of the secondary arms. This places the leaves and grapes farther away from the main centre of the vine and increases the risk of damage during cultivation.

In pruning, the cut should be made midway along the internodes or space between two buds. If made too close to the bud, the top bud may be injured or dried out.

The following varieties may be spur pruned to produce and keep up the quality of the fruit—Gordo Blanco, Frontignac, Red Muscatel, Muscat Hamburg, Muscat Alexandria, Madresfield Court, Black Muscat, Canon Hall Muscat, Wortley Hall, Red and Black Malaga, Santa Paula, Gros Colman, Sweet Water, Grand Turk, Trebbiano, Valencia, Doradillo, Chasselas, Black Hamburg, Red Prince, Red May, Aramon, Grenache, Reisling, Matara, Malbec, Burgundy, Pedro, Ximenes, Blue Imperial, Zante Currants, Early Madeline.

Fig. 6.—The vine shown in Fig. 5 after pruning to the Basket-handle system which embodies spur and rod pruning in combination. The rods are interwoven. In the following season, they are removed and replaced by rods arising from the spurs.

Fig. 7.—A vine spur-pruned to the Goblet system. Last season's spurs are cut off just outside the inner canes which in turn are cut back to spurs carrying two distinct buds. The pruning is designed to create a regular system of spur renewal. As the vine becomes older and more vigorous, more spurs are left to increase the yielding capacity. The head of the vine is kept well-balanced, and in due course, the arms may be renewed as required.

Rods.

A rod is a fruit-bearing cane that is left much longer than a spur. It is usually cut to a length which allows it to retain from six to 14 buds.

In “rod and spur” pruning, the vine, after pruning, carries a certain number of long rods as well as the spurs pruned to two distinct buds. In the following prun-
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ing season the rods are removed and re­placed by new rods from canes which have grown from the spurs. The spurs should be nearer the trunk than the selected rods, so that the vine does not increase in size too rapidly.

The following varieties respond well to rod and spur pruning—Shiraz, Malbec, Cabernet, Pinot, Sultana, Black Prince, Ohanez (Almeria), Waltham Cross, Lady's Finger, Flame Tokay, Knight's Centennial, Black St. Peter, Grand Turk, and Purple Cornichon.

**PREPARATION OF CUTTINGS**

Vine cuttings for propagation may be prepared at any time after vines have become dormant, when cuttings can be selected from the parent plant. They should range from 12 to 18 inches in length.
Fig. 10.—Sultana vine before pruning. This variety yields heavily with long rod pruning and should always be made from young matured wood and preferably from medium-sized short-jointed wood growths arising from spurs or canes (rods) of previous season’s growth. To make cuttings, cut close below the lower bud, the cut to be square across, and leave about an inch of wood above the upper bud or eye.

Each cutting should preferably have the buds removed from the base end upwards, leaving the top two buds intact for production of growth. The reason for elimination of lower buds is to prevent the entry of fungous diseases or attacks by white ants which may result from the decomposing of the buds underground. Soon after the commencement of the rise of sap and following growth, callousing will heal over all cuts, resulting in the trunk under ground being clean and well barked throughout. Cuttings should be tied in convenient-sized bundles, all buds pointing the same way. The bundles should then be buried in trenches with butt end up and covered with about six inches of soil. Inverting the bundles causes the butts to callous while the tops remain dormant, and the cuttings are ready to throw out a rooting system soon after planting in nursery or permanent position. If, on the other hand, they are heeled in with buds upwards, they often commence growth prior to developing root growth to support them.

When the ground has become warm enough, or in the early spring—August—plant the cuttings in well, deeply worked soil. If in a nursery, set each cutting at such a depth that only the upper two buds are just above surface level, spacing them...
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about two to four inches apart with about three feet between rows. When selecting land for propagating cuttings, it is advisable, if possible, to have the sets in a position that can be irrigated with at least three or more waterings during the summer months. Also the soil should be well stirred with the hoe and cultivator to keep it mellow and as moist as possible. The principle involved is to create a good rooting and head growth the first year prior to planting in permanent position.

Only one of these buds is allowed to grow; all other young shoots are removed during early growth, preferably when not more than six inches long.

This concentrates all the vigour of the young plant upon the cane which is destined to become the main trunk or body of the vine.

Care must be taken to stake and tie this upright growth until it reaches the required height for the formation of the crown. This protects it from wind damage and assists in forming a straight trunk.

**TRAINING THE YOUNG VINE**

The rooted cuttings growing in the nursery are lifted and planted in the vineyards while they are still dormant. They will usually appear similar in shape and growth to the sketch (Fig. 13). In deep sand, early planting is advisable.

Before planting the young vine is root-pruned as shown in the sketch and the top portion is pruned to two distinct buds.
If the trunk does not reach sufficient height in the first year, it should be cut back to a spur with two distinct buds at the next pruning season.

Again only one shoot should be allowed to grow from it and this shoot should be tied vertically. Where high structures are being covered with trellised vines it may take several seasons to grow a shoot of the required length.

The length of the trunk determines the height of the fruit-bearing canes from the ground and this varies according to requirements and is governed by several factors.

In the vineyard with the vines trained on the Goblet or Gooseberry bush system (see Figs. 5 to 7) a suitable height is 10 to 18 inches from ground level to crown formation.

Vines with short trunks and low crown formations are liable to damage from frosts and the grapes are likely to be damaged by cultivating machines and to collect dust. Taller vines are an advantage when pruning and picking the fruit.

With vines trained and grown on trellises in the field, the trunk length is usually about two feet, varying according to the variety.

ROOT TREATMENT

Many vines grow horizontal roots running outward from the trunk just under the surface of the ground; other roots penetrate deeply and run almost straight down.

Roots which are near the surface of the ground usually suffer severely during hot weather which is the time when the vine is called upon to perform its heaviest task—the propagation of foliage and wood and the growth and ripening of its fruit.

Fig. 14.—A vine pruned after the first year in the vineyard. The most upright growth is selected and pruned to two distinct buds

When eventually the main shoot has grown to a height of nine or ten inches above the point where it is desired to form the crown, the terminal shoot is pinched off as shown by the X in Fig. 15. This promotes the growth of laterals which will subsequently form the main arms of the vine as indicated in the right-hand drawing, which shows the same vine after pruning.

Fig. 15.—At left is a vine showing growth after pruning as in Fig. 14. Although it was pruned to two buds, only one was allowed to grow; all other young shoots have been removed when not more than six inches long. When the shoot has grown to nine or ten inches above the height required for crown formation, the terminal is pinched off at point marked X. This causes laterals to grow out where desired to form main arms. At right, the vine is shown after pruning.
During their second and third year therefore, all young planted vines should be dug around to a depth of not less than six inches and all the roots in this depth of soil should be cut off close to the trunk.

This will tend to increase development of the deeper rooting system and will facilitate the deep cultivation which is necessary for the first ploughing during the winter months.

Care given to the young vines during their formative years will largely determine the profit and ease of working of the mature plants.

In this article, only the general principles of pruning have been given. No detailed instructions can be given which would apply to all vines in all soils, climates and localities, so that pruning methods must be modified to suit the individual requirements.

“The use of the grape as a food preceded the making of wine. Primitive man, who lived by the chase and on wild fruits, gathered and ate with relish the grapes of the wild vines long before he discovered that he could make a joyous beverage out of them. As time rolled on and life became more settled, he took in the grape vine from the wilderness and gave it cultivation. Then, perhaps, began the selection of the finest and best flavoured grapes, and presently the propagation of strains. Left to itself, deprived of man's ceaseless, thoughtful care, the grape vine would revert speedily, helplessly, to the status of its wild progenitor.” (Extract from “Wine Lands of the World.”)
You'll need—

- ¾ lb. currants
- 6 oz. short crust pastry
- 3 rounded tablespoons marmalade
- Juice of 1 lemon
- 1 beaten egg
- 1 cup cake crumbs

Currant and Marmalade Tart

Make a short crust pastry and line a 7-inch sandwich tin. Bake at 400 deg. F. for 12 minutes or until half cooked. Combine the currants, marmalade, lemon and cake crumbs. Add beaten egg. Pack into the pastry case. Return to the oven and cook until the pastry is cooked and lightly browned and the filling set. Cool and top with whipped cream or serve with boiled custard.