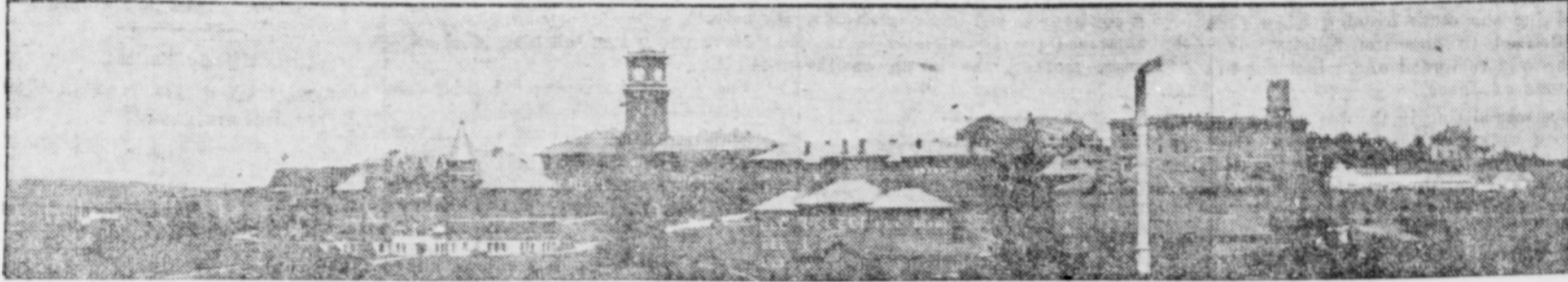


# Washington State College is the Friend of the Farmer

Bulletins and News Notes From the Staff at Pullman.



View of Washington Agricultural College, Pullman, Washington, the Sole Aim of Which Is to Aid Agriculturists.

## PRUNE GROWING IN SOUTHWESTERN WASHINGTON.

By O. M. Moles, Horticulturist.

**T**HIS bulletin discusses the cause of the frequent failure of the prune crop in a few localities in Southwestern Washington and suggests some changes in orchard management for the improvement of these conditions. There are many orchards that have each year produced medium heavy crops of good fruit; but each year there are many orchards that produce little or no fruit. The crop failures of any one year are usually prevalent in some particular localities; and only on rare occasions are the fruitless or barren orchards surrounded by productive ones. It is common to find one part of the orchard more productive than other parts. This uneven production is most noticeable in orchards bearing a light crop, and these orchards have increased in number in the last few years.

The crop conditions during 1912 and 1913 have been studied very closely. A survey of the soil and orchard conditions and a study of the weather records seem to justify some conclusions that may be helpful to the prune growers of the region. This bulletin is only a preliminary report and may be followed by others based on more definite experimental data.

### The Italian Prune.

The Italian prune has been planted in greater quantity than all other varieties. The other varieties have not proved to be its equal in vigor of tree, productiveness, size and quality of fruit. It grows and fruits best on a deep loam or clay loam soil. The tree is vigorous and hardy, but is liable to show weakness in resistance to disease and insect attacks when grown on soil to which it is not adapted. This weakness is also often indicated by the loss of crop during inclement weather. The tree has a strong tendency to produce more twigs and small branches than it can continue in growth. It is subject to over-production of fruit also and will not thin its fruit by dropping the surplus or overload like some other varieties of prunes. This over production of fruit and wood weakens the entire tree. It blossoms about the middle of the plum blossoming season.

### The French Prune.

The French prune was planted to some extent about twelve to eighteen years ago. The tree is vigorous and productive. It is less popular than the Italian because of the small size of its fruit, and because of its disfavor in the market. There are very few localities, if any, where this variety should be planted in commercial orchards in Clarke County.

### The Sugar Plum.

A few trees of the sugar plum have been planted in several orchards. The trees bear young and heavily. The fruit is of good size and appearance, but does not dry so well as the Italian variety and is often severely criticised on that account. Until it has been better tested and its value more fully proven, it can not be recommended for commercial planting.

The blossoms, leaves and fruit of the prunes are frost tender and escape severe injury when frosts occur, only by the existence of an especially favorable condition of the soil and air preceding and immediately following the frost. Plants that are vigorous are most able to resist unfavorable weather conditions.

### Soil.

The orchards of Clarke County have been planted on every variety of soil available. One extreme type is represented by the heavy loam and clay soils with deep clay subsoil. This is common

along the edge of the plateau running north from Vancouver. Another type is represented by thin, light, gravelly soil, usually underlaid with coarse, open gravel subsoil. This is found in the central part of the county. All slopes and exposures of soil have been planted and a remarkable number of the plantings have been profitable. The heavy and medium deep soils have a good water holding capacity and are generally well adapted to orchard production. The lightest soils are not capable of carrying a heavy stand of fruiting trees throughout the summer, and could probably be made more profitable if devoted to other crops.

### Planting.

The trees are usually set about 18 to 22 feet apart each way and grown to the largest size possible while young. In many orchards the trees are too close and the tops are crowded and the roots cannot obtain sufficient plant food to keep the trees in full vigor. Overcrowding lowers the productive capacity and shortens the life of the tree. Cutting out some of the trees in some of the orchards would be beneficial, but in very few cases are the planting plans satisfactory for such work.

### Pruning.

The pruning systems adopted by the different growers vary from that of careful, systematic shaping of the tree top, to the other extreme of entire neglect. The frame work of the tree should consist of three to five large branches so distributed as to make a well balanced tree top. These large branches should send out smaller ones near the base, and higher up should gradually divide into a large number of limbs. The fruiting wood should be well distributed from center to circumference of the top. As the trees advance in age the fruiting wood will be farther from the trunk. The normal tendency is to form a dense canopy of twigs and foliage around the outside of the top and shade to death all twigs inside. This has not been appreciated by many growers, and they have attempted to do all necessary pruning by cutting out a few large limbs. The small branches become very thick and the foliage so dense that direct sunlight can not reach the inner part of the tree. The twigs become weak, slender and pendant in form and a large number of them die each year.

### An Annual Operation.

Pruning should be an annual operation and should be considered as one of the cultural lines of work to be continued throughout the life of the orchard. The height of the trunk is largely a matter of personal preference, but there seems to be a strong tendency to go to the extreme and have the trunks five feet or more in height. A trunk three feet tall will ordinarily be satisfactory for the development of good trees. The young trees should be cut back each year until they have reached bearing age. This will develop large, stocky trunks and branches and with the new growth properly thinned the best formed trees can be developed. The frame work of the tree must be so arranged that the fruiting wood of the bearing tree will be evenly distributed throughout the entire space that the top of the tree occupies. The top should be so thinned that some of the direct rays of the sun will reach the center of the tree or even the ground beneath.

Heavy and light pruning are relative terms and are used arbitrarily. Pruning may be said to be heavy when it causes the trees to send up a large number of water sprouts and is too severe for vigorous trees that are fruiting regularly, but it is often the best that can be given old or weak trees that are pro-

ducing light crops of small fruit. Pruning is usually described as light when only the very weak or dead twigs and the crossing and interfering branches are removed.

### Tillage.

The most common practice of tillage is that of plowing the land in the spring with a turning plow and immediately working it down into a fine level condition and continuing clean shallow tillage through the summer. The best practice, and one commonly followed by many of the successful prune growers is to follow the above system of spring and early summer tillage, and in late summer to seed the orchard down to vetch. This crop grows on the land during the fall, winter and early spring, and after it has developed a good mat of green material it is plowed under late in April or early May. Clean tillage is then continued as in the previous season. Some growers make the mistake of plowing before a good crop is developed to plow under, and fail to obtain the most possible fertilizing value from the crop. The opposite tendency is to let the cover crop stand until it has taken from the soil a part of the moisture that should be saved for the use of the trees. The aim should be to let the vetch develop to the largest size possible without robbing the soil of moisture that will be greatly needed by the trees before the close of the season.

The system of tillage generally is quite good, but comparatively few of the orchards are so managed that the soil fertility is maintained or improved from year to year. The soil fertility should be improved as the orchards grow older. The trees are larger and are capable of bearing more fruit. The orchards on the poorest soil have been failing in crop production most frequently, the trees making less growth, the leaves being smaller and showing a greater tendency to curl and expose the under side, giving the tree a light gray appearance when seen from a distance. Some of this soil is so impoverished that it will not produce a good crop of vetch or weeds and grass. The fertility of such soils must be increased before the trees can be expected to produce satisfactory crops. The application of decaying vegetation in the form of barnyard manure will be the best and surest method where this material is available. The application of commercial fertilizers in sufficient quantity to give a cover crop a good vigorous start in the fall and early spring would probably be of value. The limited tests that have been made indicate that nitrate of soda or some form of nitrogen fertilizer will give best results.

### Orchard Conditions.

The orchards vary greatly in vigor and regularity of crop production, and these two qualities seem to be so closely related that the second is in direct proportion to the first. A few orchards located on good soil that is especially subject to late spring frosts have repeatedly failed to produce good crops. Land in such locations should be devoted to other crops. The orchards on thin, light soil need all the help in improving the fertility of the land that can be given. The trees on this soil also require more careful pruning and thinning of the crop. One or two crop failures have disheartened the owners, orchards have been neglected to their permanent injury and some made entirely worthless. The poor or unprofitable orchards should be improved by adopting a better system of tillage, fertilizing, pruning and spraying or should be cut out at once. Orchards never improve by neglect.

In Nuremberg, Germany, 800 Workmen are employed in making lead soldiers and lead toys.

## PREPARING FRUIT EXHIBITS.

**I**N a short time now, states R. J. Barnett, Pomologist of the Washington Agricultural Station at Pullman, an interesting part of the fruit grower's mail will consist of the premium lists issued by the various fair associations. A careful study of these will prove of value to all, but more especially to prospective exhibitors, as a thorough knowledge of the entry requirements and premium classes is necessary in making up a successful exhibit.

Fruit fit to be taken to the fair must have been well grown. It is possible for a poorly cared for orchard to produce a winning plate, but it is a rare thing, and, when it comes to the larger box classes, practically impossible. Well grown fruit has been properly sprayed, cultivated, pruned, thinned and harvested.

Too great emphasis is usually put on the matter of size by both the management of the fair and the entrant. The abnormal, whether it be an apple the size of a pumpkin or a five-legged calf is of interest, but should never be made even an important feature and could well be left out entirely.

Fruit for exhibit should be selected from a large quantity and in good day light, should show the proper form, size and color for the variety and the individuals should be uniform in the above characteristics. It should not be necessary to say that show fruit must be wholly free from injury or blemish of any kind, not even a limb rub or broken stem.

If the fair is placing emphasis on the commercial side of the fruit industry, pack becomes important and should have careful study, especially when the fruit is apples or pears.

Proper packing presupposes correct grading, which should have been done in good light and with a large quantity of fruit at hand. It is the custom to give equal value to bulge, alignment, height of ends, compactness and attractiveness. In a commercial way, however, the amount of bulge and the compactness are more important than the other features. Most of the packed apples which win prizes have been put up by expert packers.

For the earlier shows the peaches, plums, grapes and other soft fruits should be made more important parts of the exhibits and the requirements of perfection for them more rigidly enforced. With them condition, including freedom from blemishes and the physical condition of the fruit, is of primary importance and must be carefully considered in choosing the show fruit. Oversize in this class is nearly always accompanied by defect of other kinds and what the exhibit might gain for being quite large is likely to be lost because of split stone, cracked skin or similar defects.

District displays are of value for advertising purposes and prove one of the most attractive features of many fairs. The whole district should join in preparing them, under the direction of a committee, and each contribute according to his ability.

The experiment station of the Washington State College has now in press a popular bulletin treating much more fully of this subject. This bulletin will be sent to those applying for it.

### No Excuse for Cholera.

If it were not for hog cholera pork raisers would be living in the lap of luxury. The time will come when there will be no more excuse for hog cholera than for the human cholera that until a century or so ago periodically devastated Europe and America. Both are essentially fifth diseases.