

Follow-Up Work In The Vineyard

By DAVID W. HULET, '25

Follow-Up Work is as Essential as Pruning and Training if the Vineyard is to be Kept in a Healthy, Prolific Condition; and if High Quality Fruit is to be Expected

HIGH quality fruit is next in importance to planting the proper variety of grapes. High quality is shown by well formed bunches with large berries having uniform color, and with high sugar content. Quality and heavy production are the goals of the commercial grape grower, and are only attained through constant and scientific care of the vineyard.

The grower has such problems to meet as irrigation, cultivation, intercropping, summer pruning, insect and disease control, fertilization, and proper ripening of the grapes.

Frequency and amount of irrigation depends largely upon the character of the soil. It is commonly known that a heavy soil requires a longer application in order that the water may penetrate to the necessary depth. Old vines require, for best results, a penetration of six feet or over; for this, the furrow method is satisfactory if the water is allowed to run slowly. If alkali begins to show in too great an abundance, it can be washed down by using the flood method.

The amount and time of irrigation materially influences the size and quality of the fruit, vine growth, and the time of ripening. Recent experiments carried on at the Mesa Farm



A CLEAN, WELL CULTIVATED VINEYARD

have shown that irrigation at the time of blossoming causes considerable shattering of the young bunches. In general, it is better to fill the soil with water during the winter and early summer, so that it will not be necessary to irrigate during the ripening season.

After blossoming time, the vineyard should be irrigated regularly until the berries reach normal size and begin to sugar. After the grapes are picked, irrigate moderately until the first of September. Do not irrigate again until after the

leaves have fallen; this will allow for the maturing of wood, and will also retard new vine growth. Apply one or two irrigations during the winter—this, of course, will depend on the condition of the soil at that time. Begin regular irrigations early in February.

Cultivation is an important aid to penetration, as it breaks up the tight surface layer which forms after water is applied. It also assists in the proper aeration of the soil; and in addition to these benefits, it serves for a control of weeds and grass. On tight soils it is an advantage to run a subsoiler between the rows about every three years. During the winter the vineyard should be plowed to a depth of about six inches, thus breaking up the ground thoroughly and cutting off the surface roots of the vines.

Grape vines will stand a certain amount of intercropping, but it is rarely advisable except, perhaps, when the vineyard is young, and the grower is in need of a cash crop to assist in carrying on the project. Melons, beans, sweet potatoes and Irish potatoes are satisfactory intercrops. Cover crops may be grown during the winter to supply organic matter to the soil. Low growing varieties of vetches and Dwarf Gray Sugar garden peas are very good. The cover crop should be disked in the following spring, and clean cultivation practiced during the summer.

Summer pruning consists of dis-



A WELL DEVELOPED VINE THAT HAS BEEN KEPT FREE FROM SUCKERS AND WATER SPROUTS

budding, pinching back, and removing suckers and water sprouts. This work should be carefully attended to in the early part of the growing season, because all young, succulent growth derives its nourishment largely from the older parts of the vine, and results in a direct loss if shoots are permitted to grow, and are then cut off. The productive part of the vine needs the whole food supply if the best results are to be obtained. To remove shoots after they have grown fifteen or twenty inches seriously injures the vine; the best practice is to leave them on until the vines are pruned in the winter.

One of the most serious insect pests in the Southwest is the grape leaf-hopper. This insect feeds on the epidermis of the leaves, and may even defoliate the plant in many instances. Dusting with nicodust or calcium cyanide is a partial means of control. The grape leaf skeletonizer is another serious pest in some sections. They usually begin in one corner of the field on a single plant, and from there spread to all parts of the vineyard, devouring all foliage on their way. If the grower would use a poison spray as soon as the pest is located in the vineyard, and before they have time to spread, he would have a very good chance of stopping them before they could do serious damage. A lead arsenate spray may be used for this purpose.

Fertilization has not yet become a serious problem in Arizona. However, it is a good plan to keep up the fertility of the soil. Barnyard manure supplies both organic matter and fertilizing elements. Manure is best applied by placing it in trenches between the rows and then covering it over with soil. Alfalfa straw and bean straw are both valuable additions to the soil when plowed under. Commercial fertilizers have not yet been used to any great extent in Arizona.

Grape growers in Arizona are producing mostly early table varieties. This is because the Arizona crop can be placed on the market at a time when competition from other states is at a minimum. Some Arizona growers have yielded to the temptation which the early season prices offer, and have placed their fruit on the market before the sugar content had reached a high enough per cent. This has not only resulted in a loss

to them, but it has depressed the market for those who sell after them. If a strong demand is to be created for early grapes, it must be fostered by placing only high quality fruit on the market.

The minimum sugar content for picking grapes should be 17%, and it is much better to have the percentage of sugar even higher than that. Grapes are conveniently tested by the use of saccharometer, and the percentage of sugar accurately determined. Each grower of early grapes should have one handy. As it has been previously pointed out, the vineyard should not be irrigated at the time of picking, but if it becomes necessary to do so, picking should be discontinued for several days. One irrigation at this time may reduce the sugar content as much as 5%.

Growers of early grapes in Arizona should realize that if they are to establish a profitable market for their product, it must be upon the basis of high quality. Careful attention to the best vineyard practices is a means by which this can be accomplished.

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