

to the 24th. Many of our best growers prefer to be late in planting and have good soil conditions, and they claim that the vines do just as well as early plantings.

**DISTANCES APART IN PLANTING.** The distance apart in planting a vineyard, or the amount of feeding space to be allotted to each vine, depends almost wholly on the kind of soil, and to some extent on the method of pruning. In rich, deep clays—in fact, in all deep, heavy soils—the space required by vines is much less than in sandy or lighter soils. In light, sandy soils it is recommended to plant your vines 10 feet apart each way, *i.e.*, the rows will be 10 feet apart and the vines 10 feet apart in the rows. This gives adequate room for the development of the vine.

In the heavier type of soils some of the growers recommend the rows to be 10 feet apart and the vines 9 feet apart in the row. This is a good conservative distance, and, for the average fruit grower, is perhaps more adaptable. In instances, however, where a grower has land which by some outstanding feature is peculiarly adapted to the production of grapes, such as would probably be situated at the foot of the mountain, and the grower has made up his mind to give some special attention to this vineyard, it might even be advisable to plant his rows 10 feet apart and have the vines 7 or 8 feet apart in the row. With this close planting it would be possible to get the most out of the vineyard, but at the same time a great deal more attention would have to be given to the pruning.

One of the best grape growers in the Winona section said that he thought it would be a very good plan to set out a vineyard closer and to remove the intermediate vines after a period of five to six years, thereby increasing the yield per acre up to the time of removal, which would considerably lessen the cost of establishing a vineyard.

This method, however, could be practised only where the vines were planted 9 to 10 feet apart in the row, and when vines could be purchased at 2½c. apiece. It is a question whether it would be advisable to recommend it, as the grower would find it very hard to remove the intermediate vines, and if they were left too long a lot of injury might be done to the vines which would eventually form the permanent vineyard.

**KIND OF VINE TO PLANT AND ITS PREPARATION.** Nearly all the fruit growers buy their vines from the nurserymen, and very few, if any, grow their own. The nurserymen gather the wood from the vineyards as soon as they are pruned, and make the cuttings from the good, thrifty wood with sound buds. The base of the cutting is clipped off just below the bud, and the end just an inch or so above the third bud. This gives three buds to a cutting, and the cutting is about one foot long. These cuttings are tied in bundles of from 100 to 300 in a bundle and layered in the soil, standing on end with the buds turned upside down. This is done to stimulate the callousing and formation of roots. In the late spring, when the soil is in good shape, a deep furrow is made, and the cuttings are set in this furrow from three to five inches apart, in rows four to six feet apart. These cuttings are cultivated and kept free of weeds, and make an excellent growth. Those cuttings that have made