



A Young Foster Seedling Grape. No. 2

This grape is also in a twelve inch pot. It is carrying seven well filled bunches of fruit. This is a more satisfactory method of training than that shown in the first illustration.

requirements of the grape at different stages of its growth. During the first two months leaf growth is required, and the use of a nitrogenous manure, such as Ammonium Sulphate, is beneficial. Nitrate of Soda is not quite so safe to use, especially in the case of vines growing in pots. Ammonium Sulphate is best applied in solution at the rate of a quarter of an ounce to each gallon of water, twice a week. With vines growing in a border, the application is somewhat stronger as watering is not so frequent as is the case with pot-grown vines.

When the fruit clusters appear, the tips of the laterals are usually nipped off, leaving two leaves beyond the fruit cluster. During the flowering period, and while the fruit is setting, feeding is generally withheld, though some growers, with marked success, use a little Muriate of Potash (KCl.) at this time. With hard-wooded plants in pots, Muriate of Potash should be used with care. When the fruit has set and is about the size of small garden peas, sufficient leaf and wood growth should have been obtained and the further use of nitrogenous manures is apt to be harmful to the full maturity of the fruit.

The bunches of fruit at this period are thinned by means of fine-pointed scissors. The smaller berries are removed and the remainder are thinned in tiers so that each berry will have room to develop to its full size, and the whole bunch ultimately develop the form of a symmetrical cone hanging point downwards. At this time the energies of the

vine are engaged in the development and maturing of the fruit, and the feeding of phosphates and potash in available form will quickly show beneficial results. When the fruit begins to color the proportion of potash may be slightly increased.

PRECAUTIONS.

A careful watch should be kept for any appearance of red spider. This dangerous pest can generally be controlled by syringing and maintaining a humid atmosphere.

The Sod Mulch vs. Cultivation

AN interesting controversy is now engaging the attention of apple growers across the line. A few months ago a bulletin was issued by the Geneva Experiment Station giving the results of sod vs. cultivation on the Hitchings' orchard of western New York State. In this orchard the trees in sod came out ahead of those under cultivation. The bulletin explains at length the exceptional conditions that made the sod mulch method a success in that particular case. Later an article appeared in *The Country Gentleman* dealing with the advantages of the sod mulch, particularly for hilly land.

In the article mentioned reference was made to the work of the Ohio Experiment Station to solve the problem of successful orcharding on the hills of southeastern Ohio. There the great difficulty is to prevent the land from washing. The sod mulch system proved to be the solution. The manner in which one particular orchard was treated is summarized in the following paragraph.

"From those hills the humus had been farmed out and in summer the land dried out as hard as a board. The soil was so poor that cover crops would not grow. Some trees had not made any growth in fifteen years. In 1910 the trees were mulched with straw and in 1911 each tree got five pounds of nitrate of soda and five pounds of acid phosphate. They made one and a half feet of growth. In 1912 and 1913 one thousand pounds per acre of a mixture of two parts nitrate of soda, two parts acid phosphate and one part of muriate of potash was applied. Another orchard was mulched with straw but received no fertilizer. It yielded only one-fifth the crop of the fertilized orchard. But straw was expensive so the land was allowed to go to grass which was then cut and allowed to lie on the ground. This was effective at the same cost as straw at six dollars a ton."

Continuing, the writer of the article states: "The experimenter in the case of the Hitchings' orchard says in his bulletin that the grass mulch trees were hungry. On the other hand he gave the

When using commercial fertilizers it is well to remember that underfeeding is a far safer course than liberal feeding, as an unduly heavy application may prove fatal. Lastly, certain varieties are very subject to Sun-scald and in this instance the variety "Lady Down Seedling" may be particularly mentioned. When any evidence of scalding appears on the berries, the shading should be increased, if this can be done without unduly hindering other vines in the same house.

cultivated trees nitrogen in the form of clover which he plowed under. He didn't even up the race by giving the mulch trees some of the nitrogen they needed. Nor did he try any legume as a form of grass mulch; he let it go at orchard grass. There are many legumes that would be suitable.

"Available plant food is the vital thing; cultivation is a detail, not a fundamental. Available plant food may come at times without cultivation and by easier and cheaper methods. Cultivation is merely one way of feeding the tree. Give a tree plenty to eat and it will do lots of things—carry apples through moderate freezing for instance, and also weather surprising drought.

"On sandy soils the mulch system might be a failure and in dry farming areas cultivation is a necessity. But the sod mulch has many advantages. Mr. Hitchings manages the tillage end of one hundred acres of apples easier than he



- Black Hamburg Grapes. No. 3

This vine is carrying only four bunches. In weight of fruit they will probably equal the nine Alicante clusters. In quality they will far surpass them in flavor, size and appearance.