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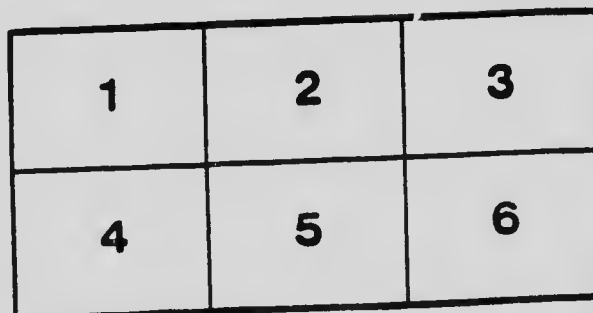
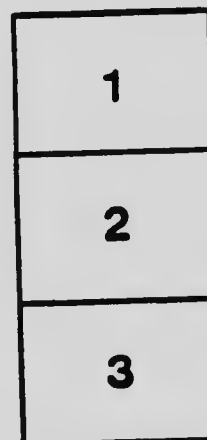
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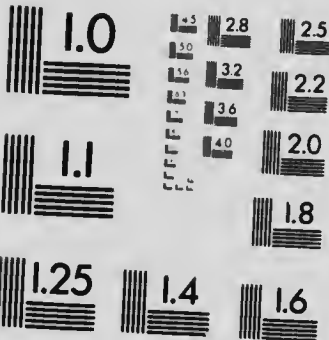
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GROWING GRAPES FOR HOME USE

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EXHIBIT ⁷⁷ N CIRCULAR No. 11

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GROWING GRAPES FOR HOME USE

In many parts of Canada where the summers are warm enough to ripen grapes but where the winters are too cold for them unless the vines are protected, grapes can be grown quite successfully for home use if the varieties best suited for such conditions are planted and if the special care which is required is given them. It is in the hope of inducing many persons to grow at least a few vines of this delicious fruit, who have not yet done so, that this circular is published.

Grapes do best in warm soil in the colder parts of Canada, and the vines should be planted where they will get full sunlight and, except in the districts where grapes are grown commercially and where there is usually a long enough season to ripen them thoroughly, the vines should be situated where they will have as high a temperature about them as possible, hence the south side of a building or wall is a good place in the coldest parts where growing grapes is attempted. Vines should be from nine to ten feet apart for best results and they may be planted in either spring or autumn. A two-year-old vine is best unless the one-year-old vine is very well rooted.

Outside the districts where grapes are grown commercially it is usually necessary to protect the vines in winter from the extreme cold or sudden and great changes of temperature, hence they must be covered with soil. Because of this a system of training and pruning is required which will permit of covering the vines with the least labour, and the following method is that followed at the Central Experimental Farm with much success for many years, although in some situations the fruit ripens sooner when the vines are grown under the Fan System.

When a young vine is planted it is cut back to near the ground, only two or three buds being left. If the vine is planted in the fall, sufficient soil should be put over it to prevent the cane being exposed during the winter. The vine should be planted a little deeper than it was in the nursery from which it came. After making the first season's growth it is cut back to one stem, which should be left only from six to nine inches in length when covered by soil just before winter sets in. It is important not to take the soil off in the spring until it is almost the time when the last frost is usually expected, as the shoots of grapes are very tender and a light frost will injure them and later on when the vines have reached bearing age the crop for the current season may be ruined by uncovering too soon. It is safer to leave the soil on until there begins to be danger of the buds or new growth being broken off when removing the soil. Two canes only are allowed to grow during the second season, and when long enough they should be tied to the lowest wire, which should be from 18 to 24 inches from the ground, and in this system the closer the canes spring from the ground the better. In the autumn these two canes are bent down and covered with soil as before, the entire vine being protected.

In the spring of the third season the canes or arms, as they are now called, are spread out in opposite directions and tied to the lower wires and three new wires should now be added each 18 inches apart. This year there will be canes grown upwards from the buds along the outstretched arms and a little fruit may set. The fruit on grape vines is borne near the base of the growing shoot which springs from the wood made in the previous year, hence it is desirable to prune the vine in such a way that strong shoots will be produced. During this third season laterals or side shoots should be pinched out and most of the upright shoots tied to the wires with raffia or some other soft material. As the ripening of the fruit will depend greatly on the amount of sunshine which the bunches of grapes receive, it is important to have the shoots well distributed and reduced in number sufficiently so that the fruit will get abundant sunlight.

In the autumn of the third year, just before winter sets in, the canes which have grown upright from the two arms should be cut back to near the arms, leaving only one bud on each cane in addition to the bud at the base of the cane. The two arms should, at the same time, be cut back so that there will be little more than forty buds

left altogether from which fruiting wood will grow the fourth season, but the amount of wood left will vary with the earliness, productiveness, and vigour of the variety. A medium crop of well ripened grapes is better than a large crop of unripe ones. It is best to not cover the vine until there is danger of the ground freezing up, as it is desirable to have the wood ripen up as well as possible. The vine is now in full bearing and each year is treated pretty much as in the fourth season, but it is found that if the arms are left permanently they will get stiff and are hard to bend down for covering, so that the best results are obtained by having the arms at least two years old but not more than four. In order to not run any danger of losing the crop, the arms may be renewed in alternate seasons by leaving a strong cane from the ground or near it each year for the purpose of renewal. The High Renewal System provides for renewing the arms each year by leaving two additional stubs on the main stem from which new canes grow to replace the arms, but in the colder parts of Canada the one-year-old wood alone is not safe as there is greater danger from winter killing and also, in covering, these one-year-old canes are more liable to break. In either event the crop would be lost.

It is necessary to go over the vines several times in the early part of the season to pinch out laterals, unnecessary shoots and suckers and to tie up the shoots which are left.

By this system of pruning the crop will be found borne along the lower part of the vine. The main object of the system is to have the two arms spring from near the ground so that there will be a minimum amount of labour in covering.

The system just described requires considerable labour, but one who tries to grow grapes in the colder parts of Canada must be prepared to give them the necessary attention.

As there are many who would like to grow grapes for home use in parts of Canada where it is not necessary to cover them, a few words in regard to other systems is required. The system by which grapes are grown in the easiest way is known as the Kniffin. For this system two wires only are required, the first being about 24 feet from the ground and the second 5 feet from the ground.

During the first year of growth and when the shoots are from 12 to 18 inches in length they are all removed except the strongest one. Before the next season's growth this should be cut back to two or three buds and as soon as the new growth is long enough two of the strongest shoots are tied to the wire, one of these being trained along the lower wire and the other carried up to the upper one. From these two canes there will be trained two arms for the lower wire and two for the upper, each pair being trained in opposite directions along the wires, these four arms being renewed each year.

The system thus consists in having two main canes or stems springing from near the ground and four arms, two from each stem. The arms are usually cut back so that there will remain from seven to eight buds on each arm or from 28 to 32 buds per vine. The advantage of this system is that very little summer pruning is required, the new growth falling over and little tying being necessary.

The Fan System is also popular where grapes do not have to be covered. From four to six arms come out more or less fan-shaped from a main stem, and the canes which grow from them are pruned back to stubs each year. Even where grapes have to be covered this is a good system, providing the arms are frequently renewed so as to make covering fairly easy, as if the arms are very old it is difficult to cover them without much labour.

There are several modifications of the systems mentioned, but the facts necessary to keep in mind are, first, that the fruit is borne on new shoots from the previous year's wood, and, second, that vines should be rigorously pruned and the fruiting wood reduced to a moderate number of buds both to encourage development of good wood again and to ensure fine bunches of well matured fruit. Where there are late spring frosts the importance of delaying uncovering the vines is again emphasized.

The following lists of varieties are recommended for home use for different climatic conditions and, in addition to these, some of the early ripening European varieties should be tried in the warmer sections.

Grapes for Home Use

VARIETIES RECOMMENDED

For districts where grapes are grown commercially, warmest districts:—

Black—Moore Early, Campbell Early, Worden, Concord, Wilder.

Red—Delaware, Brighton, Lindley, Agawam, Vergennes.

White—Winchell (Green Mountain), Niagara, Moore Diamond.

For districts where grapes usually ripen, but have to be covered in winter:—

Black—Early Daisy, Manito, Moore Early, Merrimac.

Red—Moyer, Delaware, Brighton, Lindley.

White—Winchell (Green Mountain), Moore Diamond.

For coldest districts where ripening is uncertain:—

Black—Beta, Early Daisy, Manito, Moore Early, Jewel, Peabody, Brant, Canada.

Red—Moyer.

White—Winchell (Green Mountain).

