

13 APR 1935

J. T. Jardine, Director

LIBRARY

August, 1931.

Circular of Information 60.

SUGGESTIONS FOR BETTER REGALES

by

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and Agent, Bureau of Plant Industry.Some Characteristics of the Regale Lily:

The Regale lily is, according to Dr. David Griffiths, somewhat of a mixture; that is, it is a "species" which may be broken up into components. This explains why the appearance of individual plants is exceedingly variable in the acres of Regales now growing in Oregon, although these seedlings are derived from one original parent plant. These variations may relate to degrees of leaf color, to the time and quality of flowering, to the susceptibility to disease and to the susceptibility to frost injury. The leaf color variations are partly due to differences in natural vigor and partly to the weakening effect of virus diseases. Many individual plants appear to show far greater resistance to the Botrytis disease than do others. In some parts of Oregon where Regales are grown, the question of susceptibility to frost injury is a matter of paramount importance. Even a casual glance at a field of Regales suggests the possibility of selection with this point in mind. In order to minimize the variations which are pronounced in any planting of Regales and to produce a more uniform crop, the writer wishes to suggest the planting of a special seed plot in connection with each lily plantation. If this seed plot is selected from plants of a uniform type it will help to hold the seedlings to a uniform type and make for the production of a more uniform product. Such a practice is imperative for those growers who wish to obtain a significant wholesale and forcing trade.

Selection of Plants for the Seed Plot:

Selection can be made at any time, but the best time, of course, is during the flowering season. Selections made later, however, will be extremely helpful in that they will tend to eliminate those plants susceptible to the Botrytis disease, which spots and dries up the leaves of the Regales. It is important that the selections be made from relatively large fields and from plants not more than two years old. An ideal procedure is to begin selection before flowering time by tagging some 200 plants which have desirable color and leaf placement (see discussion below) and which have escaped frost injury. From observations on young Regales we believe that the frost injury factor is not merely a matter of the time the plants come up, but that there is an inherent resistance to cold in some plants. If 200 of these young plants are tagged with a ribbon or with some white tag, and these in turn are re-selected at flowering time for flower quality and placement, one will have selected for two important factors. For the purpose the writer has in mind, the number of plants left tagged at flowering time should be about 125. Towards the end of the growing season these 125 should be re-selected and narrowed down to about 100 plants. The re-selection is to eliminate those individuals which appear susceptible to the Botrytis blight. As a rule the longer the leaves remain green, the greater the probable resistance to this disease. When the bulbs from the

selected plants are dug, there is at that time a chance for the selection of bulbs, because those which tend to assume a strong wine color may be expected to yield stronger plants.

The one hundred selected one- to two-year-old plants (bulbs) should be planted in a favored location where there is abundant room for optimum plant growth. To carry out the idea here advanced, the bulbs should be planted one to two feet apart so they can be left undisturbed for a four or five-year period. In choosing the location for such a bed one may remember that the show or display value of such a planting is of considerable consequence. At the end of each year those plants which are off-type should be removed. If this procedure is followed, at the end of three or four years one would have a seed plot of only 50 large plants, or perhaps even less, by having selected continuously towards a similar type plant of even flowering time, etc., and one would have an abundant seed supply available. As to whether it would be better to self individuals which have been selected in the seed plot, or to cross pollinate, any suggestions here would be amiss since it is a point which should be experimentally tested by each grower. As a rule, however, cross pollination in such cases makes towards stronger individuals than self-pollination. Dr. Griffiths tells the writer that he believes cross pollination would be preferable in the case of Regales, if the grower has provided himself with selected seed plants such as is here suggested.

If the seeds from each plant, or better still from each flower, are bagged separately and subsequently planted as a group, we may find a means for the segregation of bulbs into groups, the forcing qualities of which may be uniform. County Agent, J. J. Inskeep, Oregon City, has recognized the need for such a procedure among his growers, since the wholesale forcing trade demands every possible uniformity in the bulbs they buy.

Selection of Leaf Characteristics:

Several factors, many of which are not understood, enter into the leaf color variations in Regales. The Regale, like other lilies, is susceptible to virus diseases, including a mosaic. It is suggested above that for the formation of an ideal seed plot the first selection of one- or two-year-olds be made early in the spring growing season. Those plants showing any mottle whatever or showing extreme curling of leaves accompanied by stem distortion should not be considered for seed plot purposes. During the latter part of the season, even at the time when flower selection is best, the virus disease symptoms are less prominent. There appears to be no definite connection between width of the leaves and the presence of a weakening virus, but there does appear to be a connection between virus diseases and the amount of curling and twisting in the leaves at flowering time. It is a matter of personal opinion as to whether the broad leaf or narrow leaf form is the more desirable. The eastern trade, however, prefers the broad leaf plants. It is suggested here that, regardless of whether the broad or narrow leaf form be chosen, preference be given to those plants in which the lower leaves are more or less rigid and inclined to extend straight out or even slightly upwards. These plants will show only a slight down curling of the upper leaves. On the other extreme, and from a disease standpoint certainly undesirable, are those plants in which the lower leaves are strongly curled down even in many cases tending to roll up and those in which the upper leaves may show a marked twisting as well as a strong inward curling.

The keynote of this circular is to advocate the selection of Regale plants for seed plot purposes. The buying of Regale seed, especially cheap seeds of unknown history, is not only unsatisfactory but actually dangerous for our purposes. The acreage has increased and the bulb has reached quantity production. Those growers who are able to offer a selected even product will soon be recognized by the wholesale buyers.