

PROGRAM FOR GROWING CRABAPPLES

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Our original method for production of crabapples was by budding. This program was dropped for two reasons; first, we had to rely on school boys who had no experience in budding and, since we rarely got the same boys back 2 years in succession, this meant continuous teaching of budders year after year. The second reason was the percentage of "dog-legs" that we got from budded trees. Many of them seemed to grow straight out — then up; at best they were second-rate trees.

The poor stands from inexperienced budders and the percentage of "dog-legs", plus the fact that cutting off the understocks came at a time when we were very busy with other work, combined to make this a poor method of producing crabapples, so it was discontinued. Then for two seasons we bought crabapple whips from outside sources. This solved all of our problems except the "dog-legs," as our source budded their trees and we still had "dog-leg" trees.

We decided to go back to the old-fashioned method of whip grafting, using salaried personnel and doing the grafting when the weather was too bad to work outside. However this was not satisfactory because most of the men had other duties that kept interrupting the grafting. During this time the grafts were made and packed in sphagnum moss, sawdust, etc., then placed in cold storage until planting time. This necessitated going through them periodically, checking to see if they were too wet or too dry and throwing away the bad ones. It didn't take long to see we were fighting a losing battle.

After this we did what we should have done all along. We made the apple grafting the responsibility of the propagating department and developed the following program: As soon as we complete our juniper grafting — usually late January to mid-February, we make the apple grafts. We prepare whip grafts, wrapped with waxed string. The completed grafts are counted and put in 3x9x18 inch plastic poultry bags tied at the top. These are placed in wooden crates or cardboard boxes and put into cold storage until planting time. The natural condensation seems to provide the right amount of moisture to hold them until planting time. To check them, all we do is pick up a sack and look at it. This eliminated the laborious task of unpacking and repacking to see if the grafts were too dry to too wet and throwing away the bad ones. In the plastic bags they will keep for 3 months, if

necessary, without any loss and without excessive callus formation.

Our percentage of good trees jumped to 95% in the field. The only critical thing is that they must be planted deeply enough so that the graft union is well below the ground level. If it is allowed to dry out it is a dead graft. Our grafts are normally planted in the field the first week in March but any time in March will do. We use our regular planter and plant at our regular spacing.

Following this program we are able to get excellent stands and, as for growth, grafts planted in early to mid-March will give us whips that are from 2 to 5 ft, lightly branched; about 70% are 3 to 4 ft; about 17% are 2 to 3 ft; and 12% are 4 to 5 ft, if grown in good soil. These are good straight whips. However, there are always exceptions. For instance, last year was an exceptional year almost all over the United States; it began to rain excessively in Tennessee in late October and continued into the spring. We were unable to complete our regular field plantings until June. Due to these adverse weather conditions we were not able to adhere to our time table. We had completed our juniper grafting earlier than usual and optimistically went ahead with our apple grafting. This was completed in January but we were unable to plant them until May 10; consequently our percentage of live trees dropped to 75 to 80%. This reduction in percentage of live grafts, we think, was caused by dry, windy weather immediately after planting. The loss of 60 days growing time reduced the growth of our trees in proportion and our heaviest ones were only 3 to 4 ft in height. I have often wondered what the results would have been if they had been packed in wood shavings or sawdust and held from January until May.

Now, which is more economical, budding or grafting? Usually budding is the cheaper method of producing most fruit and some ornamental trees but I am firmly convinced that, in crabapple production, grafting is the most economical method. The actual labor cost of the grafting operation is about 2-1/2 cents; the cost of plastic, \$7.50 per thousand; the cost of wrapping twine, \$2.00 for a 6 inch tube that will wrap 2000 to 2500 grafts; add the cost of the roots and the total cost comes to about 5 cents per graft. Balance this against the cost of budding, budding strips, suckering costs, the number of plants too crooked to be usable, plus land rent for 1 to 2 years before transplanting, the transplanting costs, and you can make your own cost comparison.

The grafting method has worked out exceedingly well for us. It is true that northern growers with a shorter growing season can not plant their grafts as early as we normally do and therefore could not get the growth that we get in a normal season. We be-

lieve this is the best method of producing crabapples in our area and we are going to stick with it.

MODERATOR ZONDAG: I'm sure there are many questions but because we are running late we will continue with the program and if there is time at the end of the program we will handle questions then. Our next speaker is Wayne Mezitt, who will tell us about his methods of grafting unusual shapes and forms.

GRAFTING TO OBTAIN UNUSUAL SHAPES AND FORMS

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INTRODUCTION

The types of plants I graft are usually dwarf or weeping cultivars of the various species on which they are grafted as rootstocks. The unusual shapes and forms are the result of the subsequent growth of the grafted plant. Most of the plants are top-grafted, from 1 to 6 ft. high although some are grafted in tiers, using side grafts, depending upon the effect desired. Most propagators are familiar with simple top-grafting techniques. Those who have toured nurseries have undoubtedly seen *Cotoneaster* cultivars, *Acer palmatum* 'Dissectum,' and *Syringa velutina* (s. *palibiniana*) as well as other plants grafted on standard rootstocks. My report is an extension of these procedures, drawing from my experience over the past few years.

REASONS FOR GRAFTING

An important reason for top-grafting is to provide interesting and unusual plants for use in landscaping. Such plants become more important as the people who use plants become more sophisticated and look for something different. Also most of these are slow growing and require very little maintenance. Their relatively small size allows them to be planted in pots or tubs and moved whenever desired.

Another reason is to create "mature" specimens faster than by conventional techniques. A 5 or 6 yr old *Chamaecyparis obtusa* 'nana Gracilis' that is created by multi-grafting to a 3 ft tall understock would take 25 years or more to grow from a conventional graft or cuttings.