

HOW WE PROPAGATE FRENCH LILACS AT THE WEDGE NURSERY

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I have read many interesting articles on propagation which were written by many of you present today and published in the *American Nurserymen*. They have stimulated our thinking — many of the ideas presented we have experimented with and some we have put into regular practice. One such fine article on lilac propagation by Mr Wells, spoke of 98 percent stands, which has certainly set a high goal to shoot at and has caused us to do some serious thinking and to run some additional tests. Stands of 91 percent have been the best we have been able to do in the past ten years and that only in two varieties in two different years. Our average of all varieties for a given year, including some rather poor propagating varieties, is considerably below that.

We, at the Wedge Nursery, located at Albert Lea, Minnesota which is 15 miles north of the Iowa border, have grown "own root" French lilac since 1902. In 1935 we jumped up our propagation, growing mainly for other nurseries under contract. My father, Robert C. Wedge, is mainly responsible for what success we have in propagating and assisting him is my sister and partner, Dorothy Wedge; our Nursery Superintendent Ervin Young, and myself.

We are now growing about 32 varieties of lilac, all but a few are listed in the 1953 list of "The 100 Best Lilacs for America." Many other varieties we have discontinued because of inferior quality or because it was a poor propagator.

During the past ten years and especially the last few we have made numerous tests using 500 to 1000 grafts under each test and comparing these stands with the stands under our usual procedure. The results have given very definite indications on some and have been confusing on others because they differ from year to year. We also have to remember that the varieties differ. That which is good for one variety may not be good for another. The white lilac varieties usually tend to start sooner than the dark varieties. Also they tend to continue growth in the field later in the summer. Some make a wonderful root system and have short canes, while other varieties have beautiful tops and poor root systems.

In brief our method is to bench graft the lilac scion on green ash piece roots. We use a whip graft and secure the graft with grafting thread. Grafts are packed in pine shavings in wooden apple boxes, stored in our regular nursery storage until Spring, and planted directly to rows in the field.

We have two sources for scion wood — a scion block where we cut back to short stubs every year and one year old plants in the field which we cut back anyway to eliminate single caned plants. The scion wood is cut after we finish putting stock in storage, usually after November 10. Quite often the ground is frozen and snow is on the ground. Our tests have shown that with later cutting, even in March, the results have

have been good and that scions cut in the field are almost as good as those from the scion block. Whips taken from the scion block are cut to make 2 to 4 scions per whip, while those taken from the one year block seldom make more than one scion. The buds on these scions are quite close and are harder to whittle with the knife.

The root stocks we use are green ash. We prefer one year old seedlings $\frac{1}{4}$ to $\frac{3}{8}$ inch caliper. They are usually straight, clean and without small fibrous roots. Our tests have shown two and three year old ash, both seedlings and transplants, work practically as well, but they do slow down our grafting time considerably, with more frequent knife sharpening required. The fibrous roots are especially in the way when winding the graft. The ash serves to feed the scion until it is able through its own roots to take care of itself. The root stock usually sloughs off. With only one variety, Mont. Blanc, does the ash root seem to persist to some extent. Both the ash root and ash suckers are easily detected from the lilac and can be removed. In our experimental tests we have grafted to both Villosa lilac roots and European Privet (*Ligustrum vulgare*), but the percentage of stands were well below those with ash. One important point in favor of green ash is that is cheaper to produce than either privet or Villosa lilac roots. Those of you living in other parts of the country where white ash is commonly grown may wonder whether they would make suitable root stocks. Personally, I do not know. My father is under the impression, from some experience he had before my time, that white ash is not as compatible as green ash.

The scion wood is cut to 6 inch lengths into a holder making sure there is a set of buds within $\frac{1}{2}$ inch of the top. Terminal buds are cut off to eliminate flower buds. Wood which is $\frac{1}{2}$ inch or over, as well as light immature wood, are discarded. One hundred scions are wrapped in a damp cloth until the men who do the actual grafting are ready for them later in the day.

The grafter slices the buttends of the scion and makes the back cut on $\frac{1}{2}$ or all the scions in the package. He takes a hand full of roots and lays them on his lap and proceeds to slice the root stock at the crown end, make the back cut, fit in a scion of approximate same caliper and making sure one side matches perfectly. One test made showed 20 percent better stand where both sides matched over only one side. The root is then cut off with a knife at a length of $3\frac{1}{2}$ inches or graft placed in a tray. We make as many cuts as we can, with sufficient caliper, out of each root. Our tests have shown the crown graft results in only a slightly better stand than the piece root and it is more apt to send up a sucker. The placing of the buds in respect to the cut seems to favor the lower bud opposite the splice which usually means slicing through one bud. We tried inverting the ash root, but the stand was only 13 percent.

The wrapper sets the tray before him and holding the scion in his hand with the union of the scion and root held firmly between his finger and thumb, makes two tight winds with the grafting thread at one end and two tight winds at the other end. We formerly prepared the grafting thread ourselves but now buy it from Chase Nursery, Chase,

Alabama Our tests have shown three winds — another wind in the middle — have made for better percentage in stands, which proves the importance of the graft being firmly bound. We have used grafting tape but felt you could not bind the graft tight enough. We also believe it prohibited roots from forming right where they are most apt to form first, thus prolonging the length of time before they do go on their own root. Our experiments has proven grafting thread percentage better than tape.

The grafts are then dipped tops down in a shallow pan of shellac to seal the pores of the fresh cut. Our test last summer of leaving 500 to two different varieties without shellac was not conclusive. One showed a decided advantage for shellacking while the other did not come up to regular check percentage.

We made another test on two varieties by dipping the whole scion, including the graft, in Wiltpruf. This proved almost a flop. Another experiment was to cover the splice with grafting wax. Three tests were made on this. One showed definite advantage, the other two no advantage and the labor required is considerable.

We place the grafts in wooden apple boxes in layers using moist pine shavings for packing material. Each box has a printed label, indicating the variety, tacked on each end. We like the apple boxes as a uniform and easy method of handling, especially in the field for planting. A few of the larger grocery stores save them for us. We have used shingle tow, moss and a mixture of the two. We have found all satisfactory but we prefer clean pine shavings. These shavings should be wet down and mixed at least 24 hours ahead of use in order that the moisture evens up. Excessive moisture will cause buds to start. Peat we consider questionable from tests made last summer but we should make a retest as the peat used may have held too much moisture. We have also tied the grafts in bundles, put in polyethylene sacks without packing material and kept in storage with very excellent results. But those in polyethylene sacks left in a warm room to callous spoiled by mildew.

Our usual procedure is to place the boxes of grafts in storage which we try to keep near freezing. The alternative is to leave the box in our grafting room or some other warm room for about 12 days to callous the splice, then move into storage. Three out of four tests showed definite increase in the percentage of stand. After another years test on best temperature and correct length of the period, this probably will be standard procedure with us.

Next we plant by hand behind a two row trencher on loam to sandy loam soil. One field in our rotation has a streak of heavier soil running through the middle. The lilac growing in this area has a much poorer root system and more ash root can be seen at digging time. The more sandy the soil the better the style of root system we seem to get. The field has been in a two-year program of soil building by sod cropping. The sod is plowed under in the fall and gone over with a Howard Rotovator just previous to planting. The rows are then packed with a heavy packer and if there is not sufficient moisture in the soil they are given a stream of water with a larger trailer tank, pulled by

tractor, watering two rows at a time. The rows are then cultivated. Then we sit back and pray for warm moist weather. We are not fortunate as yet to have an irrigation system for our big fields.

We plant our grafts so that only an inch of the top of the scion appears above ground. Our tests have shown this depth much better than buds just at the surface or buds two inches above surface.

It has been our policy to start planting lilac grafts as early in the spring as the ground would allow soil preparation and to plant the white varieties first as they are the first to start bud growth. Many times we find this early planting has been halted by a spell of cold, wet and even snowy, freezing weather. The results would be poorer on this early planting and much better on the later plantings. If we wait until later there would be too much bud growth before planting which would result in a poor stand. This is where controlled cold storage may be a big benefit in holding back the buds until soil temperatures are warmer. In the three experiments we made last year two out of three varieties made better stands when held in cold storage than those handled in our regular way. This will be standard procedure with us this year.

To sum it up, judging from our experience and experiments, the important things are.

1. Keep the scion wood and root stocks neither too wet nor too dry, but absolutely dormant.
2. Make a nice clean graft with scion and root matched as nearly as possible and firmly wrapped.
3. Callous in a warm room for about 12 days at 70 to 80 degrees fahrenheit.
4. Keep in a controlled cold storage 32 to 35 degrees F. to keep grafts dormant until planting time.
5. Do not plant until the ground is warm and in good condition and plant with top graft one inch above ground.

I have one bone of contention — which I would like to voice at this time. It has nothing to do with propagating methods though. I do not think the retail catalogues should list lilac varieties as double and single, maybe that goes for wholesale lists too. The average person will invariably pick a double if given a choice yet he would not be able to detect the difference unless he was within three feet of the bloom. If he could actually choose between two lilacs in bloom, being double or single would have very little bearing on his decision. The terms double and single should only be used as means of identification.

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PRESIDENT SCANLON: Thank you, Don Wedge. I am certain there will be questions for you to answer when we reach the discussion portion of this panel.

The next speaker is well known to our membership. Jack Siebenthaler, The Siebenthaler Co., Dayton, Ohio will discuss the rooting of cuttings of hybrid lilacs.

Mr. Jack Siebenthaler read his paper, entitled 'Propagation of Hybrid Lilacs from Cuttings.' (Applause).