

PRACTICAL POINTERS ON BUDDING AND GRAFTING AVOCADOS

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In regard to budding the avocado it is necessary to be able to select the budwood properly and to have the stock in good condition to receive and adopt the buds. Budwood is in best condition in February and March, but at that date it is too early to expect the bark on the stock to be ready. Budwood may then be cut in February, the ends dipped in hot parawax, and it then should be kept in a cool place covered by sand or any material which can be kept constantly damp, but extremes of dampness or of dryness must be avoided. As soon as the sap in the stock to be used has risen so that the bark thereon will slip easily, the buds should be inserted in the usual way and should be carefully bound with either raffia, cloth strip, or string; personally I prefer a soft cotton cord, 32 strand. If the bud is inserted in a quick-growing stock, this wrapping should be loosed and retied at the end of two weeks.

Some varieties grow easily even under adverse conditions, and some are quite difficult to propagate. Sometimes the shield adheres¹ to the stock, but the germinal point or eye fails to start, and in this case it may be induced to do better by girdling the limb a few inches above the inserted bud, and the stock should be cut back as soon as the bud is firmly attached, the binding being gradually loosed but not removed till the bud has started and grown somewhat. As soon as the shoot from the bud has grown so that it may be affected by the wind it should be tied to the stock by soft string and the stock should be gradually cut back to force it to adopt the growth from the bud as the means it must resort to obtain the carbon from the air with which to supply the root and trunk with the means of growth. Finally, when the bud has grown so that its adoption is evident, the stock should be cut off with a slanting cut just above the junction, this cut covered with wax and the tree staked. I have found that it is helpful to cut from the stock a small twig, and that this sharpened end used to open the cut for the bud prevents this latter from being roughened. I also have been of late covering the bud after tying with a light coat of parawax, sufficiently warm to soak into the wrapping but not hot enough to hurt the eye of the bud, which in sprouting pushes the wax off easily. The only objection that I know to using budwood, which has been kept for some time, is that the petiole drops off and the bud is more difficult to insert. So as to partially obviate this trouble, I cut the top of the bud square and the cut in the stock to fit, and with the side of the knife gently push the bud into place.

The budwood, after July 1st, is generally very good, and budding may continue during the summer. Buds, however, had better be inserted on the north side of the stock and be shaded. The percentage of loss will be heavy —especially in very hot and dry weather. Sometimes budding can be successful in October or November, at which date

the buds may start before cold weather sets in. The buds made during the latter part of the autumn often remain dormant till March or April, and then, after the stock has been severely cut back to start them, the eyes drop out, and it is some time before the stock is again in good condition for another attempt. The theory that the lower buds on a budstick are inhibited is, in my experience, generally correct. Where budwood is scarce, it is my practice to nip the growing end and to watch the result carefully. When it is seen that the younger buds are ready they are cut off and used and the rest is allowed to remain on the tree until it shows that the buds thereon are ready for use.

After April 15th grafting scions become scarce, and my practice is then to carefully cut off all the new growth and to wait till fresh buds form on the stubbed end of the old wood. For grafting, the scions may be cut in February, and for top working trees it is the best season to do the work. Scions may be used as small as a pencil and from that size to half an inch or more in diameter. Care must be exercised to have at least two good dormant eyes on the end to be exposed, and if straight wood can be gotten, it is preferable. The part of the stock tree should be selected from a limb or trunk, from one and one-half inches to six inches in diameter, and it should be sawed off at right angles. A rather fine tooth rip-saw should be used and a slot should be cut along the length of the limb from four to six inches deep. A wedge of hardwood should be made tapering rather sharply at its lower end and having a length of some eight inches, while the part to be used in opening the saw-cut should not be much more than a half an inch wide on its face. A piece of cloth should then be run back and forth through the saw-cut to clear it of the dust, the wedge should be inserted far enough to accommodate the scions, which should be cut with a very sharp knife in a wedge shape with the side which is to be on the outside a shade thicker than that which will be near the center. The outer edge of the two scions should correspond as nearly as possible to the cambium, or inner bark, of the stock, and when this is done the wedge is to be removed by working it back and forth so that the two sides of the saw-cut will grasp and hold the scions, which should project only as far as necessary to give the dormant buds space; from half an inch up to two and a half inches are proper length, and the total length of the scion from three to six inches.

The whole end of the sawed-off stock should then be wrapped tightly with strong muslin and a coat of parawax or other paraffin sufficiently hot only to soak the bandage should be applied all over the end. In covering the face of the sawed-off limb I have of late only used three or four thicknesses of muslin soaked in the same paraffin, leaving the opening between the two scions unfilled. Formerly I filled this space with paper or leaves, but this process left an objectionable wad of foreign matter, which weakened the junction of the scion with the stock and caused some loss even after the scion had grown for a year. I have not followed my new plan long enough to be absolutely sure that it is the best.

A soft brush must be used with the hot wax to cover the whole wrapping, the ends and the ends of the scions, thus hermetically sealing the wounds in both stock and scions, and a shield should be tied so as to protect it from the direct rays of the sun; for this I have found half of a paper hardware sack serviceable. The graft must be watched; when it starts to grow the paper sack may be removed or retied over the bandage and the sprouts of the original stock below the graft must be almost or entirely removed, as it

grows out and the growth from the scions carefully tied to stakes. Often only one of the scions lives; in this case, I make a diagonal cut through the stock to remove the dead one, carefully cutting out the dead wood of the stock and covering the wound with any kind of grafting wax. The reason why I prefer paraffin is that it does not attract the sun's rays as any dark colored wax has a tendency to do. In making the saw-cut along the length of the stock, it is better to avoid the center pith, and in a large limb I have made with success two cuts an inch on each side of the center. While I have made tip and side grafts grow, I have found the above mentioned mode preferable in most cases.

The researches into pollination by Dr. Stout make much grafting into large trees necessary.