

# Hormones Help Black Walnut Root Grafts

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POOR results followed earlier attempts at the Minnesota Fruit Breeding Farm to Propagate Black Walnut varieties by root grafting. Usually not more than 15 per cent of such grafts grew, so attention was directed more towards top-working in establishing new varieties. Within the past eight years some excellent new varieties, developed elsewhere, have been established at the Farm by top-working on young seedling trees. As several individuals wished to test these new varieties, attempts to propagate them by root grafting were made in 1951 and 1952. As synthetic hormones recently have become available, all grafts made in these two seasons were treated with the commercial product known as Hormodin No. 2.

As the grafts were made, a little of this dry powder was picked up on a finger tip and dusted lightly on tips of the cions and over the matched sides of the grafts. The unions then were made secure with grafting tape.

The grafts then were set in sawdust in large tubs with only the tip buds above the surface. The tubs then were placed in a cool greenhouse, held at about 65 degrees F. as it is known that Black Walnut grafts will not callus or unite well at temperatures below a daily mean of 55 degrees F.

In 1951, 16 grafts were made of each of the varieties, Allen, Cochrane, Huber and Myers, a total of 64 grafts. In 1952 from eight to 20 grafts were made of each of the varieties, Allen, Cochrane, Dubbels, Huber, Krause and Myers, a total of 100 grafts.

As the intention was to propagate these varieties for distribution in test plantings no checks were made. The seeding roots used in 1951 were in much better condition than those used in 1952, a fact which may account for the higher percentage of successful grafts made in 1951. However, the percentages of successful grafts in both seasons were so much higher than in earlier years that the results were highly interesting.

In 1951, of the 64 grafts made, all callused profusely at the unions and when lined out in the nursery 92 per cent had formed good unions and had begun to grow. At the end of the season 90 per cent were living when the young trees were dug and stored for winter.

Of the 100 grafts made in 1952, in spite of poor conditions of the seedling roots, 86 per cent callused profusely and had formed good unions when lined out in the nursery. At the end of the season 71 per cent of the grafted trees were living. Although several grafts failed, the degree of success was so much better than in earlier grafting that the results were of interest.

As the hormone treated grafts seem to have performed so much better than untreated grafts the study will be repeated in 1953 with check lots included for comparison with treated lots. Meanwhile, a number of propagated trees of these new varieties have been distributed for testing, or will be sent out in 1953.

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