

Research Note

A NEW METHOD FOR RAPID MULTIPLICATION OF COCOYAM (XANTHOSOMA SPP) VEGETATIVE MATERIAL

The scarcity of vegetative seed material represents a problem in the establishment of cocoyam plantings. Usually seed material is obtained from the mother corms produced at harvest time. The traditional method of preparing the seed consists of dividing the corm into several pieces, each of about 125 g, cut in such a manner as to include from one to several buds per piece. After being cut, pieces are set apart until planting time. This method of producing seed material is inefficient, time consuming and costly, but more important, seeds obtained may carry the inoculum of the fungus responsible for the "mal seco" disease.

As an alternative a new method of producing seed material which eliminates some of the disadvantages of the traditional method has been assayed and proved successful in our experiments.

The method consists of obtaining single bud plugs from the mother corm by excision with the help of a cork borer and a grafting knife. With this simple procedure, approximately 20 single-bud seed pieces can be obtained from a normal 500-g corm. Each piece measures approximately 1.5 cm in diameter and 1.0 in length and weighs approximately 4.5 g.

After removal, seed pieces are immediately submerged for 10 min in a 10%

commercial Clorox solution and, after drying, treated with fungicides. They are left for curing in shade for 1 or 2 days, after which time they can be germinated or kept in a proper environment for future use.

In our experiments seed pieces were germinated in standard 48-hole propagation flats filled with Pro-Mix mixture, one seed piece per hole. Flats were placed in a shaded greenhouse and kept moist at all times. Seed sprouting (germination) occurred within a week. Resulting plants grew fast and within 6 to 8 weeks they reached around 20 cm in height showing at least two functional leaves. At this stage they were considered ready for field planting.

The single bud method of cocoyam propagation offers some advantages which make it recommendable for extensive use. First, field tests have shown that seed material is relatively free from the fungus causing the "mal seco" disease. Secondly, the quantity of seed pieces per corm obtained is increased about 5 times. In addition, the seed pieces obtained are small and can be handled by standard seed bed and greenhouse procedures. Corm yields obtained with the single bud cocoyam propagation method are similar to those obtained with the traditional method as shown below:

Propagation method	Corm weight kg/acre	Marketable cormels/acre	Marketable yield kg/acre
Single-bud	14,102.60	34,122	6,370.65
Traditional	14,229.60	38,232	6,406.95

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