

## A REVIEW OF SEED YAM PRODUCTION BY THE MINISETT TECHNIQUE

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### SUMMARY

Seedyams constitute 33-50 per cent of the total outlay in yam production. The traditional method of producing seed yams involves cutting up one seed yam into four pieces (setts) each weighing 150 g. Each sett yields 600 g seed yams that cost ₦1.00 each. This means an outlay of ₦10.000 worth of seed yams to plant one hectare for ware yams. The minisett technique, developed by the National Root Crops Research Institute, Umudike by 1982 has been under field evaluation by Nigerian farmers in the last two years and is aimed at eliminating the constraint imposed by shortage and high cost of seed yams. This paper describes the technique, and reviews the major research efforts at Umudike that have led to the development of the technology. A profit of about ₦3000/ha or more can be realized by farmers who adopt the technique. The cost of producing seed yams is reduced from ₦60 k/kg to 20 k/kg. This technique if properly harnessed will revolutionise yam production in the World and offer farmers a reliable method of economic large scale production of seed yams.

### RESUME

*Les ignames de semences constituent 33 à 50 pour cent du coût total de la population d'igname. La méthode traditionnelle de production des ignames de semence comporte la fragmentation en quatre d'un tubercule, chaque fragment pesant 150 à 300 g. De chacun d'eux on récoltera environ une igname de semence de 600 g revenant à 1 naira. Il s'en suit une charge d'environ 10 000 nairas pour planter un hectare d'ignames commercialisables. La technique des minifragments, développée par l'Institut National de Recherche sur les cultures de tubercules (Umudike) testée en plein champ par des exploitants nigériens au cours des deux dernières années, vise à éliminer la contrainte imposée par*

la pénurie et le coût des ignames de semence. Cette publication décrit la technique et passe en revue les recherches principales qui l'ont engendrées. Les exploitants adoptant cette technique peuvent réaliser un profit d'environ 3000 Naira/ha et plus. Le coût de production des ignames de semences est réduit de deux tiers environ. Cette technique correctement aménagée révolutionnera la production mondiale d'igname et elle offre aux exploitants une méthode fiable de production économique d'igname de semence à grande échelle.

## INTRODUCTION

During the 1984 planting season, 500 g. seed yams cost up to one Naira (\$1.40) each in most local markets in Nigeria. This means an outlay, of N10,000 for seed materials to plant one hectare. Although other costs especially labour will be incurred in planting, staking, weeding and harvesting, it is seen that the cost of seed yams accounts for a disproportionate outlay in yam production. Cost of seed yam is put at more than 50 per cent of total production cost of ware yams in Nigeria. This high cost of seed is partly the reason why farmers cannot grow yams extensively in spite of high prices fetched by ware yams in the local markets.

The traditional method of producing seed yams involves cutting a seed yam into 4 pieces called setts. Each sett weighs 100-300 depending on location and tradition. The setts are then planted and seed yams weighing 200-1000 grams are produced. With this low multiplication ratio of 1:4, the number of seed yams produced is small. A "seed" yam production ratio (weight planted : weight harvested) ranging from 2.8 to 5.1 for cultivars of *D. rotundata* is normal. Other yam species except *D. alata* had even lower ratios. This low multiplication ratio in yam compares poorly with the grain crops. In maize (*Zea mays*) for instance, a seed planted may produce 2 cobs each having up to 200 seeds : a multiplication ratio of 1:400. The need therefore existed for a method of rapidly multiplying yam planting materials. The minisett technique was developed to fill this need.

The minisett technique involves - cutting a yam tuber into 2 cm thick quadrants weighing approximately 25 g and planting them after dusting with an insecticide/fungicide blend. A large number of investigations were carried out into the field handling of the small setts. This report is a review of findings in the agronomy of seed yam production by the minisett technique. It also attempts to indicate areas that need further investigation for full utilisation of this promising seed yam production technology.

## SPECIES RESPONSE TO THE MINISETT TECHNIQUE

OKOLI, IGBOKWE and NWOKOYE (1981) showed that *D. alata* yielded higher than *D. rotundata* cultivars when planted as