A NEW METHOD OF YAM PROPAGATION

B.N. Okigbo and D.G. Ibe*

SUMMARY

A new method of yam propagation to establish two or three stands from a single sett is described. Preliminary experiments indicate that the yields of tubers from the milked setts often exceeded yields from control setts, especially in *Dioscorea rotundata* (cv. Abi and cv. Aga) and in *D. Alata.*

RESUME

Une nouvelle technique de propagation d'igname pour faire germer deux ou trois plants á partir d'une seule bouture a été exposée. Les premiers essais révèlent que les rendements en tubercules fournis par ces plants dépassent souvent les rendements des boutures-témoins, surtout avec *Dioscorea rotundata* (cv. Abi et cv. Aga) et *D. alata.*

RESUMEN

Se describe un nuevo método de propagación de ñame para establecer dos o tres lotes de producción a partir de una sola 'estaca' de propagación. La experiencia preliminar indica que el rendimiento de tubérculos de las 'estacas' de las que se obtuvo material de propagación continuamente, a menudo sobrepasó el de las 'estacas' testigo. Lo anterior se observó especialmente en *Dioscorea rotundata* (cv. Abi y cv. Aga) y en *D. alata.*

INTRODUCTION

Haynes *et al.*[1], reviewing the importance of physiological studies in the agronomy of yams, reported experiments carried out by Chapman which showed that yams respond better to nitrogen applied at 3 months after planting than either at planting or later than 3 months after planting. Ineffectiveness of early nitrogen application was explained as being due to the flush of mineralization of nitrogen at the onset of the rains. The possibility that the tubers themselves might supply all the nitrogen necessary for early growth was not considered. It has also been observed that sometimes tubers of *Dioscorea rotundata* develop fresh tubers directly from old yam setts which fail to develop shoots and also that yam vines with well developed roots often continue to grow, though at a reduced rate when tubers are accidentally or otherwise removed if there is little damage to the roots. Further, when tubers of mature yam plants, especially those of *Dioscorea alata* and *D. cayenensis* are topped or 'milked', new shoots may develop from the yam head at the base of the old mature vine.

All these observations indicate physiological inter-relationship between shoot and the tuber growth and that detaching shoot and parent tuber at any given stage of development of the yam plant may adversely, or perhaps with advantage, affect the subsequent development in either portion. Hence we postulated that perhaps fertilizers applied to young growing yams with shoots and tubers separated might be effective in promoting yield from the shoot-derived plant while at the same time the old sett could be used to establish another yam plant. Higher aggregate yield might result in this way from a given quantity of available setts. The experiments describe an attempt to test this idea.

MATERIALS AND METHODS

1972 preliminary and observational experiment

In 1972 in the Faculty of Agricultural Sciences farm, 20 yam tubers of almost the same size from each of three yam species, *D. alata, D. Rotundata,* and *D. cayenensis* were planted in March 1 metre apart on 1 metre ridge in each plot. Six weeks later 10 of the 20 setts of each yam species were detached carefully from the growing plants and replanted on ridges in another plot at the same spacing as at first planting. At the same time, 10 new setts of each of the above species were planted on an adjacent ridge in the same plot

*B.N. Okigbo, International Institute of Tropical Agriculture, Ibadan, Nigeria.
D.G. Ibe, University of Nigeria, Nsukka, Nigeria.