Seed yam production using single node vine from plants in aeroponics

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Seed yam production using single node vine from plants in aeroponics

Norbert Maroya¹; Morufat Balogun¹ii; Beatrice Aighewi¹; P. Lava Kumar¹, Samson Ogboye¹ and Robert Asiedu¹

¹International Institute of Tropical Agriculture, PMB. 5320, Oyo Road Ibadan, Nigeria
²University of Ibadan, Department of Crop Protection and Environmental Biology, Ibadan, Nigeria

n.maroya@cgiar.org; Registration ID # 3362

1- Introduction

The Temporary Immersion Bioreactor System (TIBS) and the Aeroponics System (AS) are novel and effective technologies for seed yam production initiated by IITA under YIIFSWA Project. The effectiveness of these technologies was revealed through the quality and the quantity of yam planting materials (tubers, bulbils and vine cuttings) generated by TIBS plantlets in aeroponics. This poster is presenting some facts and figures of field performance of single node vine cuttings generated from TIBS plants in aeroponics.

2- Materials and Methods

One node vine cuttings generated from seven varieties growing in aeroponics (5 D. rotundata and 2 D. alata) were rooted in pot and transplanted in field under irrigation at the density of 0.75m X 0.25cm in row 10m. Each row was planted with 40 plantlets. Only poultry manure was applied at land preparation.

3- Results

An average of 300 one node cuttings is generated per plant in 4 months with 92% of well developed potted plantlets, transplanted in field. The results at harvest are summarized in table 27&3 with 87% of plants at harvest for TDr 95/19177 and 94% for TDa 98/01176. The tubers weight at harvest correspond to an average yield 16.8 t/ha par for D. rotundata and 18.5 t/ha for the D. alata. The average tuber weight after 5 months growth was 245g for TDr 95/19177 and 187g for TDa 98/01176 (less than 20% senescence).

4- Conclusion

The TIBS plantlets used as basic seed and directly planted in aeroponics are sources of important clean quantity of one node vine cuttings used to produce basic seed yam tuber weighing more than the 150g size recommended. The average number of tubers 52 and 77 per row corresponds to 69,000 and 103,000 tubers per hectare weighing at least 245g and 187 g respectively for TDr 95/19177 and TDa 98/01176.

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