

ABSTRACT

Agronomic and post harvest studies on the production of export grade dasheen (*Colocasia esculenta* (L.) Schott var *esculenta*) corms.

Gregory Carlson Robin

Recommendations for seasonal production of export grade dasheen corms in Dominica are unavailable. Consequently studies examining the effects of planting depths of 20, 25 and 30cm and spacings of 55x55, 65x65 and 75x75 cm in a 3x3 factorial arrangement; on growth, yield and other corm characteristics such as shape and scarring were conducted in the wet and dry seasons. Post-harvest studies were also conducted to examine the effects of age on maturity, shelf-life and corm palatability. The studies were conducted in Grand Bay, on soils characterised as plastic sticky clay loam without a silica pan; average annual rainfall is approximately 2400mm; and in the Wet Area on soils characterised as sandy clay loams, average annual rainfall was approximately 5300mm.

Results showed that comparable average weight per plant (946g and 995g) and mean yields per hectare (12.9t and 14.1t) were obtained in Grand Bay and the Wet Area, respectively; during the wet season. Export grade corm yields were 3.6t/ha in Grand Bay and 5.7t/ha in the Wet Area. In the dry season, average weight per plant of 913g and mean yield per hectare of 12.3t were obtained in the Wet Area. These were superior to average weight per plant and mean yields of 645g and 7.9t respectively obtained in Grand Bay. Export grade corm yields during the dry season was 0.7t/ha in Grand Bay and 7.4t/ha in Wet Area. Generally corm shape was oval in the Wet Area

and irregular ("Dumb-Bell") shape in Grand Bay. In Grand Bay spacing treatments seem to be the major factor influencing yield and other corm characteristics, whereas in the Wet Area both spacing and depth treatments affected yield. Highly significant correlations were obtained between suckering and scarring. Leaf area at 0.5 and 1.0 months before harvest during the wet and dry seasons respectively was the best predictor of yield.

Post harvest studies indicated that shelf-life increased with increasing corm age. Generally the same trend was observed with corm weight and size. These characteristics are normally the most important for export; however when combined with shape, palatability and nutrition factors, corms of premium quality were exported. Corm harvest in Grand Bay and Wet Area was most appropriate at 9 and 10 months respectively.

The important findings and the practical implications of the two studies are documented; suggestions are proposed for future work.

Special thanks are due to Mr. Lennox Daisley, and all the professional and support staff of the CARDI Unit in Dominica for their full support.

Finally thanks are due to CARDI, the Canada Training Awards Project, the Agricultural Research and Extension Project and the Ministry of Agriculture in Dominica for providing the necessary resources to conduct this study.