

Variability on growth and storage roots yield in cassava under three planting methods

ABSTRACT

The increasing importation of starch in Malaysia for poultry and bio-processing industries is a call for concern. The development and released of improved cassava genotype (Sri Pontian) in 2003 by the Malaysian Agricultural Research and Development (MARDI) was a good step to enhance cassava productivity. Sri Pontian was reported to show higher yield than those of Manihot Mardi 92 and Sri Medan (the popular table variety). Such claim has not been verify in East Malaysia. This research was carried out to verify the aforementioned claim by comparing selected yields attributes of Manihot Mardi 92, Sri Medan and Sri Pontian at Bintulu, Sarawak, East Malaysia. This study was conducted at experimental field of University Putra Malaysia Bintulu Campus Sarawak from July to December, 2011. The experimental design was a randomized complete block with three replications. The three varieties evaluated were: Manihot Mardi 92, Sri Medan and Sri Pontian. These varieties were planted on ridges with three planting methods: Vertical planting (forming 90° angle to the ridges), incline planting (forming 45-60° angle to the ridges) and horizontal planting (forming 180° to the ridges). Variations among the varieties were observed for number of shoots retained per plant, leaf longevity, leaf area index, number of storage roots formation and fresh storage roots yield. Significant interaction effect between variety and planting method was observed for all the variables tested, except for number of shoots retained per plant and number of storage roots per plant. All varieties showed similar number of shoots per plant regardless of planting method except for Sri Pontian which had lowest effect with respect to number of storage roots formation per plant in incline planting. Similarly, leaf longevity in Sri Pontian was the lowest regardless of planting method. Sri Medan showed the greatest leaf area index, number of storage roots formation per plant and fresh storage roots yield. The effect of Manihot Mardi 92 in terms of leaf area index, number of storage roots formation per plant and total storage roots yield in vertical planting was comparable to that of Sri Medan. Sri Pontian had the lowest storage roots yield. This study showed in East Malaysia, Sri Medan was identified as the best genotype with good agronomic attributes. This variety has the potential to increase cassava productivity over a wide range of environmental conditions.

Keyword: Cassava; Planting methods; Storage roots yield; Yield attributes; East Malaysia