

Performance of sweet potato transplanting machine on mineral and bris soils

ABSTRACT

Sweet potato cultivation is labour intensive and needs mechanization to reduce labour and drudgery of the farmer in the planting operation. In this study, an imported doublerow planter developed for vegetable planting was modified and tested on mineral and bris soils. Preliminary results gave a field capacity of one hectare per eight hour day for mineral soil and 0.5 hectare for bris soil. Manual planting required 150 man-days per hectare. Based on the field tests, the modified planter performed satisfactorily as a sweet potato transplanting machine as it helped reduce the cost of operation, labour requirements and increase timeliness. However, its performance was adversely affected by soil moisture, which should be less than 21 % (dry basis) for mineral soil and more than 18 % (dry basis) for bris soil. The work rate on mineral soil was 0.12 ha/hr while on bris soil the work rate was 0.098 ha/hr. The planting cost using the machine was estimated to be RM 232.45/ha while the manual planting cost was about RM 960.00/ha. The modified transplanter without a fertilizer hopper cost about RM 14,000.

Keyword: Sweet potato; Transplanting machine; Mineral soils; Bris soils