

Assessment of soil loss and nutrient depletion due to Cassava harvesting; A case study from low input traditional agriculture

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Abstract

Cassava is a major food crop for farmers and especially small holder farmers and cultivated under low input other than the irrigation. It is cultivated as mono crop or intercrop at early stage and cultivating throughout the year. It is harvested carefully because of cyanogenic glucosides and consumed within a day. Easy and un-damageable uprooting of the tuber mainly depends on soil moisture, texture and agronomic practices. The study was focused with the objectives of the assessment of soil loss due to the harvesting of cassava roots tubers under low input agriculture, and to estimate the amount of plant nutrients loss due to crop harvest for cassava. Also the observation was made the correlation between the soil loss and physical characters of the tubers, soil texture and agronomic practices. Average plant specific soil loss due to crop harvesting was 80.7g root⁻¹ and crop specific soil loss due to crop harvesting was 7.64 kg ha⁻¹ harvest⁻¹ loss in Valligamam area in Jaffna, Sri Lanka. Soil moisture content at harvesting time was a significant factor that explained the variations in the soil loss at cassava harvesting. Soil moisture has linear positive relationship with average plant specific soil loss due to crop harvesting. Soil nutrient loss during cassava harvesting by removal of adhering soil with root tuber was 1.15 kg of N, 1.99 kg of P and 2.91 kg of K ha⁻¹ harvest⁻¹. Application of fertilizer is important since considerable amount nutrient loss was observed due to soil loss due to crop harvest.

Keywords

Soil erosion, Soil loss, Cassava, Root crop, SLCH (Soil loss due to crop harvesting)

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