



Tropentag, September 17-19, 2018, Ghent

“Global food security and food safety:
The role of universities”

Response of a Traditional Sweetpotato (*Ipomoea batatas* [L]) Variety to Fertilisation in Leyte, Philippines

LUZ ASIO¹, NEMESIO TAMAYO², NENITA DELA CRUZ³

¹Visayas State University, Dept. of Agronomy, Philippines

²Central Luzon State University, Dept. of Crop Science, Philippines

³Central Luzon State University, Dept. of Soil Science, Philippines

Abstract

In the Philippines, very few agronomic studies have been done on traditional sweetpotato varieties despite the fact that these are very popular by local consumers. This study evaluated the response of a traditional variety (var. Siete Flores) to NPK fertilisation. Three separate N, P and K fertilisation experiments were laid out arranged in RCBD with 3 replications. The N experiment had 7 levels: 0 (no N), 40, 80, 120, 160, 200, 240 kg ha⁻¹ N while there were 6 levels for the P experiment: 0 (no P), 20, 40, 60, 80, 120 kg ha⁻¹ P₂O₅ and 9 levels for the K experiment: 0 (no K), 30, 60, 90, 120, 160, 200, 240, 280 kg ha⁻¹ K₂O. Results revealed that application of different rates of N, P₂O₅ and K₂O significantly increased the dry matter yield, weight of marketable and non-marketable roots, and total root yield. Regardless of fertilisation, the traditional variety had low harvest index of < 20% (0.20) indicating its low yielding characteristic. The study found that 30% of the maximum yield of the crop was supplied by the inherent soil N, 50% by the inherent soil P and 60% by the inherent soil K. It proved that inherent soil fertility considerably affects the yield of sweetpotato thus, use of blanket fertiliser recommendations as is currently practised in the Philippines, could result in either under or over fertilisation. Optimum rates of NPK application for the soil used were 118, 38 and 90 kg ha⁻¹ of N, P₂O₅ and K₂O. NPK fertilisation did not significantly influence the nutritional quality of sweet potato (crude protein, total carbohydrates and crude fiber). Average crude fiber was 20% indicating that this variety can be promoted as a health food.

Keywords: Fertilisation, Philippines, sweetpotato, traditional variety, tropical rootcrops