

POSTER SUMMARY

THE INTEGRATION OF SOYBEAN INTO SUGARCANE FARMING SYSTEMS: ENHANCING SOIL FERTILITY AND WEED CONTROL

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Abstract

The sugar industry is increasingly focused on sustainable farming practices that enhance productivity, while minimising the use of resources (González & Pérez 2020). This study investigates the integration of soybean (*Glycine max*) into sugarcane farming systems to improve the soil fertility, reduce herbicide use and manage weed pressure. A field trial was conducted at the Illovo Dwangwa Estate (Field No. 5132), with two treatment plots, namely: (1) soybean for biomass incorporation, and (2) a plot without soybean. A Randomised Complete Block Design (RCBD) with two treatments and four blocks was used. The results indicated that soybean incorporation increased the soil nitrogen by 27%, and it reduced weed infestation by 65%. This research suggests that integrating soybean into sugarcane farming systems offers significant agronomic benefits, with the potential for broader implementation in other regions.

Keywords: Sugarcane, soybean, soil fertility, weed suppression, integrated farming, crop diversification