

## EVALUATING THE POTENTIAL OF ORGANIC FOLIAR SPRAYS ON GROWTH AND YIELD OF BRINJAL (*Solanum melongena* L.) UNDER INTEGRATED PLANT NUTRIENT MANAGEMENT

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### Abstract

The current agricultural system relies heavily on chemical fertilizers, yet excessive use leads to significant environmental and health issues. While a complete shift to organic fertilizers isn't entirely feasible, Integrated Plant Nutrient Management (IPNM) provides a balanced and sustainable alternative to reduce reliance on inorganic fertilizers while maintaining productivity. In this background, this research study examined the combined effect of two organic foliar sprays namely, Azolla and Banana pseudo-stem formulations with reduced inorganic or organic fertilizers levels on brinjal (*Solanum melongena* L.) growth and yield. The research was conducted at the Regional Agricultural Research and Development Centre, Kilinochchi. Brinjal growth and yield were assessed with four replicates and six treatments namely; T1-100% inorganic fertilizer (Department Recommendation – DR), T2-100% organic (cattle manure – CM), T3-50% DR + Azolla formulation (AF), T4-50% DR + Banana pseudo-stem formulation (BF), T5-50% CM + AF, and T6-50% CM + BF in Randomized Complete Block Design (RCBD). AF and BF were applied as foliar sprays at 650 L/ha, with all other practices following Department of Agriculture (DOA) guidelines. Plant height, leaf length, and width to estimate leaf area index (LAI), and yield were recorded and analyzed using ANOVA, with mean separation by Duncan's Multiple Range Test (DMRT). Results showed that T1 (100% DR) had the highest plant height, though T3 (50% DR + AF) was not significantly different. T3 had the highest LAI however there was no significant difference between T1. With regards to yield, T1 (100% DR) recorded the highest yield across four pickings, while T6 (50% CM + BF) had the lowest yield. However, yield differences between T1 and T3 were not significant. T3 (50% DR + AF) performed comparably to T1 (100% DR) in all parameters. These findings indicate that the Azolla formulation can be a viable organic fertilizer alternative, potentially reducing reliance on chemical fertilizers without compromising crop yield.

**Keywords:** Azolla formulation, Banana Pseudo-Stem, Integrated Plant Nutrient Management (IPNM), Organic Foliar Sprays, Sustainable Agriculture

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