

EVALUATION OF AN INNOVATIVE ORGANIC FERTILIZER ON GROWTH AND YIELD OF CURRY CHILLI (*Capsicum frutescens* L.)

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ABSTRACT

A study was conducted to formulate a low-cost organic fertilizer by using different nutrient sources and to assess the potential use of the formulated organic fertilizer (FOF) on growth and yield of Curry Chilli (*Capsicum frutescens* L.). The organic fertilizer was formulated based on nutrient content of dry powders *Spirulina* (Sp), *Azolla* (Az) Palmyrah leaf (Pl), Coconut leaf (Cl) and Banana pseudo-stem (Bp). A pot experiment was conducted to find the response of different fertilizer combinations 100% inorganic (T2-NPK-0.9,1.01,0.58 g/pot), 50% inorganic (T3), 100% organic (cattle manure-T4-135g/pot), 50% organic (cattle manure - T5), 50% inorganic + 67.5 g FOF (T6) and 50% organic + 67.5 g FOF (T7) and a control (no fertilizer - T1) on growth and yield of Curry Chilli in Complete Randomized Design with four replicates. Plant height, biomass yield, fruit yield at first picking and plant nutrient uptake were recorded. The recorded data were statistically analysed by using ANOVA and mean separation by DMRT. Nutrient content of organic sources namely, potassium (19.56ppm) phosphorous (6.17ppm), nitrogen (115.03ppm) and carbon (832.50ppm) were significantly higher in Bp, Bp, Sp and Pl respectively, than other sources. T7 (50% organic + FOF) recorded the highest values in height (51.63 cm), nitrogen (2.0 g/plant), phosphorous (1.77 g/plant), and potassium (44.5 g/plant) uptake, dry biomass yield (42.30 g/plant) and fruit yield at first picking (40 g/plant), however, significant differences were observed only in dry biomass yield and NPK uptake between T7 and T2. Considering height, biomass yield, fruit yield and nutrient uptake, substituting 50% of organic or inorganic fertilizer with FOF, the performance of Curry Chilli was either equal or higher than 100% organic or inorganic treatments. Results therefore indicate that FOF has potential as an organic fertilizer.

Keywords: *Azolla*, *curry chili*, *FOF*, *pot experiment*, *Spirulina*