

Crop response of swamp taro to organic sources of nitrogen in lower gangetic plains

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Abstract. Swamp taro (*Colocasia esculenta* L. Schott) is a wet land minor edible aroid grown in flooded or swampy situation. The crop is grown on a small scale particularly in irrigated lowlands or low-lying ditches of eastern India. The crop being a long duration (8 to 10 months) depletes major plant nutrients particularly nitrogen from the soil. Therefore, the field experiments were under taken to study the nitrogen requirement through organic and inorganic sources in alluvial soil of Lower Gangetic Plains (23.5°N latitude and 89°E longitude and 9.75m above mean sea level) of West Bengal, India during 2001 and 2002. The treatments comprised of different organic and inorganic combinations of 25, 50, 75 % of normal dose of nitrogen (200 kg ha⁻¹) taking mustard cake, neem cake, poultry manure as organic sources and urea as an inorganic source. The stolons (edible part) that initiated from basal sucker corms were harvested periodically at 15-day intervals after attaining suitable marketable length (80 to 100 cm) throughout the stolon bearing period (April to October). Observations on stolon production and yield attributes revealed that inorganic nitrogen source significantly increased stolon production (27.3 tha⁻¹) by 38 to 67 % whereas organic nitrogen sources like mustard cake, neem cake, poultry manure increased the yield (19.7 to 24.3 tha⁻¹) by 21 to 49 % over non fertilized crop (16.3 tha⁻¹). Increased proportions (75 %) of inorganic N source along with organic N source (25 %) recorded the maximum stolon production (25.2 tha⁻¹). Interaction effect of N source and its combination was found significant and 50% mustard cake + 50% urea recorded the highest stolon yield of 27.6 t ha⁻¹. The stolon length, stolon number basal girth and plant height were significantly influenced by the N source and its combinations.