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**Abstract:** The uninterrupted and unproportionate use of chemical fertilizers over a longer period of time has resulted in deterioration of soil health, stagnation in productivity and insecurity of quality food. The food security in terms of production totals is meaningless if the agricultural resource base that produces the grains itself is threatened. Organic recycling and organic farming would serve the dual purpose of minimizing pollution and utilizing manures from wastes for increasing the soil productivity. Organically grown food is expected to fetch higher price and this can offset any loss due to lower yield and provide lucrative business in the world market. Area under scented rice has increased many fold owing to its remunerative price in international market, but its average productivity is very low (2.42 t/ha). Thus there is urgent need to increase the productivity of high value scented rice through organic nutrient management to earn more foreign exchange for the country. Export of basmati rice (1.16 mt) has earned maximum foreign exchange to the tune of Rs. 3043 crores. Keeping this points in view, a field experiment was conducted at Birsa Agricultural University Farm, Ranchi during Kharif seasons of 2004 and 2005, on sandy loam soil (Silt 21%, clay 19.6%), acidic in reaction (6.1), medium in available nitrogen (280 kg/ha), phosphorus (24 kg/ha) and potassium (200 kg/ha) to find out suitable organic nutrient management of scented rice for higher growth, productivity, nutrient utilization, soil health and profitability. Ten treatments consisting different combinations of nutrient as well as inorganic alone viz. (i) absolute control (ii) Recommended dose of fertilizer (100:50:25 kg NPK/ha) (iii) Green manuring @ 10 t/ha (iv) Green manuring @ 5t/ha + paddy straw @ 10 t/ha (v) Green manuring @ 5t/ha + FYM @ 10t/ha (vi) Karanj cake @ 2.5 t/ha (vii) Vermicompost @ 2.5 t/ha (viii) Green manuring @ 5 t/ha + FYM @ 5t/ha + BGA @ 10 kg/ha (ix) Green manuring @ 5 t/ha + BGA @ 10 kg/ha + Azotobactor @ 500gm/ha (x) Green manuring @ 5 t/ha + PSB @ 5 kg/ha were laid out in randomized block design and replicated four times. Pooled analysis of two years data revealed that scented rice Birsamati grown with 100:50:25 kg NPK/ha through inorganic fertilizer produced maximum grain (39.39 q/ha) and straw yield (55.5q/ha), net return (39557 Rs/ha) and benefit: cost ratio (3.62), owing to higher yield attributing character. Among various organic sources, application of green manuring @ 5t/ha + FYM @ 10 t/ha to scented rice Birsamati produced maximum grain yield (32.84 q/ha), straw yield (43.59 q/ha), biomass production rate (105.97 kg/ha/day) and grain production rate (62.23 kg/ha/day) owing to high yield attributing characters like productive tillers (289.5/m<sup>2</sup>), panicle length (24.45 cm), panicle weight (2.51g), grains/panicle (88) and thousand grain weight (22.12g). Scented rice Birsamati fertilized with green manuring @ 5t/ha + FYM @ 10t/ha also produced maximum dry matter (1337.5 g/m<sup>2</sup>) at maturity and its partitioning into grain owing to higher leaf area index and crop growth rate. Similarly application of green manuring @ 5t/ha + FYM @ 10 t/ha to scented rice Birsamati also removed maximum nutrient of 64.07, 11.78 and 73.03 kg NPK/ha respectively. However maximum available nitrogen (277 kg/ha) and minimum nitrogen loss (3 kg/ha) was recorded from plot receiving green manuring @ 5t/ha + BGA @ 10 kg/ha + Azotobactor@ 500gm/ha. Similarly maximum available phosphorus (24.7 kg/ha) and maximum gain in soil phosphorus (0.7 kg/ha) was recorded from the plot receiving Karanj cake @ 2.5 t/ha. However, maximum available potash (202 kg/ha) and maximum gain in soil potassium (2.0 kg/ha) was recorded from the plot receiving green manuring @ 5 t/ha + paddy straw @ 10 t/ha. Integration of green manuring @ 5 t/ha + FYM @ 10 t/ha to scented rice Birsamati recorded maximum net return (35, 975 Rs/ha). Benefit: Cost ratio (2.61) and monetary productivity (411.5 Rs/ha/day) compared to rest of the organic treatment. Hence, on the basis of above findings, growing of scented rice Birsamati either with recommended dose of fertilizer (100:50:25 kg NPK/ha) through inorganic fertilizer or integration of green manuring @ 5 t/ha + FYM @ 10 t/ha is found to be most appropriate nutrient management system for higher productivity profitability, nutrient utilization and sustaining soil health.

**Description:** ORGANIC NUTRIENT MANAGEMENT FOR SUSTAINABLE PRODUCTIVITY OF SCENTED RICE

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