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Content

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EFFECT OF INTEGRATED CROP MANAGEMENT PRACTICES ON YIELD AND ECONOMICS OF OKRA (*ABELMOSCHUS ESCULENTUS* (L). MOENCH) IN DAKSHINA KANNADA DISTRICT OF COASTAL KARNATAKA, INDIA

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Abstract: The present investigation was conducted in the different villages of Dakshina Kannada district in the Coastal Karnataka during 2021-22, 2022-23 and 2023-24. Total 30 front line demonstrations (FLD) were laid out on farmers' fields in the district. Front line demonstrations were conducted on Integrated Crop Management practices of okra with farmers' active participation to disseminate improved technologies to achieve production potential. The improved technology consisted of the foliar spray of Arka Vegetable special @ 2 g/lit., five Kg of AMC mixed with 500 Kg of FYM and applied near the root zone of standing crop, balanced use of fertilizer application, integrated pests, and disease management. Okra is a major vegetable crop of coastal Karnataka, but the productivity is very low in the district due to lack of knowledge and partial adoption of recommended package of practice by farmers. Results showed that average yield obtained were 14.98, 14.38 and 13.65 t/ha under demonstrated practice, whereas, in farmers practice 8.28, 8.54 and 7.98 t/ha during Rabi season 2021-22, 2022-23 and 2023-24, respectively. On an average technology gap of three years front line demonstration programme was 5.66 t/ha. The per cent increase in yield over check was 73.45 per cent. The extension gap recorded was 6.70, 5.84 and 5.67 t/ha 2021-22, 2022-23 and 2023-24, respectively. During the three years of front-line demonstration programme, an average of 28.30 per cent technology index was observed which showed the efficacy of good performance of technical interventions. The improved technology gave higher gross and net returns with a higher benefit-cost ratio compared to farmer's practices.

Keywords: B: C ratio, Okra, Front Line demonstration, Growth, Yield

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EFFECT OF BIO-ORGANICS AND SEED PRIMING ON GROWTH AND YIELD PARAMETERS OF PEARL MILLET UNDER SEMI- ARID CONDITION OF RAJASTHAN

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Abstract: A field experiment was conducted at Agronomy farm, RARI Durgapura, Jaipur, (Rajasthan) during *kharif* seasons of the 2022 and 2023 to study the Nitrogen and drought management in pearl millet through bio-organics practices grown on loamy sand soils of semi-arid condition of Rajasthan. All the treatments including bio-organics and seed priming had significant effect on soil properties, growth & yield of pearl millet. On pooled analysis, results showed that poultry manure + bio-mix (F_3) recorded significantly maximum values of growth parameters (plant height, dry matter accumulation and total number of tillers /plant) and yield (grain yield (3.07 tonnes/ha), stover yield (6.95 tonnes/ha) and biological yield (10.01 tonnes/ha) over control and was remained at par with vermicompost + bio-mix (F_2). Results showed that seed priming with abscisic acid @ 150 ppm (P_3) observed significantly higher values of growth parameters (plant height, dry matter accumulation and total number of tillers/plant) and yield (grain yield (2.90 tonnes/ha), stover yield (6.61 tonnes/ha) and biological yield (9.51 tonnes/ha) over control and was being equivalent with salicylic acid @ 200 ppm (P_2) on pooled data basis.

Keyword: Pearl millet, Bio-organics, Seed priming, Growth parameters, Yield

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NUTRITIONAL AND NON-NUTRITIONAL SCREENING OF *AZANZA GARCKEANA* FRUIT METHANOL EXTRACT

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Abstract: This study investigates the nutraceutical properties of *A. Garckeana* fruit extract. Standard procedure of the nutritional and non-nutritional composition of the extract was evaluated. The results showed that, the extract elicited a considerable percent of moisture, ash, fibre content, fat, nitrogen, protein, and carbohydrate contents. The fruit extract had stearic acid (36.5442 ug/ml) with the highest peak and Docosahexaenoic acid (0.0728 ug/ml) with the least peak. Also, amino acids had glutamate (14.67031 g/16gofN) as the highest peak and Docosahexaenoic acid (g/16gofN) as the least peak. Zinc content (0.893 ppm) is more abundant, ascorbic acid (vitamin C) (69.47 mg/kg) at an appreciable amount. The phytochemicals present include; alkaloids, flavonoids, tannins, saponins, phenol, glycosides, and oxalate, with saponins (72.82 %) the highest quantity and oxalate (10 mg/100g) the least quantity.2, 2-Diphenyl-1-1-picrylhydrazyl (DPPH), ferric reducing antioxidant capacity, and total antioxidant capacity of the extract had scavenging effect when compared with the standards.In conclusion, this study validated the nutraceutical uses of *A. garckeana*fruit extract.

Keywords*:* Nutritional, Non-nutritional, *Azanza garckeana*, Methanol Extract

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Abstract: The present investigation was carried out at Sattankulam taluk, Thoothukudi district of Tamil Nadu, India to study the effect of different organic amendments with recommended dose of fertilizers on growth and yield of watermelon and physic-chemical properties of *Theri* soil (red sand dunes) during the year 2019 and 2020. The experiment was laid out in Randomized Block Design with Factorial concept (FRBD). In all there were three factors as organic amendments with 6 treatment combinations for each factor, which were assigned at random in each plots with three replications. The recommended dose of fertilizers in treatments was two levels as 75 and 100 per cent. Among the treatment combinations, the tank silt application @ 100 t ha^{-1} with 100 per cent recommended fertilizer as 200:100:100 kg of NPK ha^{-1} through fertigation at 7 days interval (A1N5) produced maximum number of branches (10.67), longest vine (362.0 cm), number of fruits $plant^{-1}$ (2.57), weight of fruit (5.27 kg), fruit yield (68.77 t ha^{-1}), maximum content of total soluble solid (10.94%), ascorbic acid (8.07 mg $100g^{-1}$) and improved the physic-chemical properties *viz.*, particle density (2.45 Mgm^{-3}), bulk density (1.31 Mg m^{-3}), per cent pore space (48.33%), pH (6.58), EC (0.35 dSm^{-1}) and organic carbon content (0.52%). The application of FYM @ 20 t ha^{-1} (A3) which recorded the higher net return (₹1,55,355) and benefit:cost ratio (2.33).

Keywords: Organic Amendments, Soil properties, *Theri* land, Yield, Watermelon

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EFFECT OF FOLIAR APPLICATION OF NANO N, ZN AND CU APPLICATION ON GROWTH AND YIELD OF FINGER MILLET [*ELEUSINE CORACANA* (L.) GAERTN]

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Abstract: Nano nitrogen, zinc, and copper treatments significantly influenced attributes such as plant height, number of effective tillers, panicle length, and the number of grains per panicle compared to the control. The results showed that treatment T_8 (100% PK + 50% N + 2 sprays of nano N @ 4 ml per liter of water + Cu @2 ml per liter of water + Zn @ 2 ml per liter of water at 25 & 50 DAS) produced the highest grain yield (2020.74 Kg ha^{-1}), significantly outperforming other treatments. This was followed by treatment T_6 (100% PK + 50% N + 2 sprays of nano N @ 4 ml per liter of water + Zn @ 2 ml per liter of water at 25 & 50 DAS) with a yield of (1800.74 Kg ha^{-1}), which was at par with treatment T_7 (100% PK + 50% N + 2 sprays of nano N @ 4 ml per liter of water + Cu @ 2 ml per liter of water at 25 & 50 DAS) yielding (1794.41 Kg ha^{-1}). These treatments were closely followed by T_5, T_3, and T_4. Treatment T_8 also resulted in the tallest plant height (117.38 cm), the highest number of effective tillers (373.28 m^{-2}), the longest panicles (10.50 cm), and the greatest number of grains per panicle (1267.23). Additionally, T_8 had the highest B:Cratio (2.76:1) and net profit (52265.57 Rs ha^{-1}).

Keywords: finger millet, Nano nitrogen, Zinc, Copper