

Effect of different sources of nitrogen on reproductive growth, yield and quality of okra [*Abelmoschus esculentus* (L.) Moench] cv. ARKAANAMIKA

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SUMMARY

The reproductive growth parameters viz., days to flowering initiation, days to 50% flowering, number of days required from fruit set to harvesting of fruits and number of fruits per plant have been significantly influenced by different sources of nitrogen. The okra plant given with the treatment 100% N through neem cake recorded significantly earlier initiation of flowering and 50% flowering (46.34 days and 48.00 days), respectively also recorded significantly lowest number of days (4.34 days) in treatment 100% N through neem cake from fruit set to harvesting of fruit. The maximum number of pods per plant (13.28) was observed in application of 100% N through neem cake. As regards to the yield parameters, the treatment 100% N through neem cake recorded significantly maximum weight and length (17.55 g and 17.68 cm, respectively) of okra fruit. The yield per plant (217.09 g) and highest yield (126.57 q/ha) was maximum with treatment 100% N through neem cake. The quality parameters like determination of vitamin C, keeping quality at room temperature and dry matter accumulation. The significantly highest Vit. C (16.23 mg/100 g) was recorded in treatment 100% N through neem cake which was significantly superior than all other treatments. The maximum dry matter and keeping quality in days was recorded in treatment 100% N through poultry manure (90.32 g and 11.32 days), respectively.

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Amongst the different vegetables, okra [*Abelmoschus esculentus* (L.) Moench] has a prominent position due to its wide adaptability and high nutritive as well as medicinal value. It is a good source of vitamin A, B and also contain vitamin C. It is rich in protein, iodine, calcium, potassium and other mineral matters. Okra is said to be very useful against genitourinary disorders, spermatorrhoea and chronic dysentery (Nadkarni, 1972). Continuous and unbalanced use of chemical fertilizers are leading to decrease in nutrient uptake efficiency of plants resulting in decrease in crop yield (Maurya and Beniwal, 2003). It also leads to decrease in soil fertility, biological activity, changes in physical structure of soil. Warade *et al.*, 1995 stated that continuous application of inorganic fertilizers deteriorate the soil and cause the soil problems. Mineral fertilizers decrease both the biological activity and aggregate stability. Continuous application of high

amount of only inorganic fertilizers had deliterous effects leading to decline in productivity due to limitation of one or more micronutrients (Nambiar and Abrol, 1989). Cost of chemical fertilizers are hampering our way to produce more per unit area, more over their excessive use has also resulted in serious damage to soil and human health too. Therefore, the present studies were undertaken, to decide proper combination of organic manure and inorganic fertilizers for better yield and quality of okra variety Arka Anamika.

MATERIALS AND METHODS

The field experiment was conducted at Department of Horticulture, Marathwada Agricultural University, Parbhani with variety Arka Anamika in monsoon 2008-09. The experiment was laid out in simple Randomized Block Design with three replications and seven treatments. In this investigation the crop was applied with following nutrient sources T₁ (100% N through RDF), T₂ (100% N through sheep manure), T₃ (100% N through FYM), T₄ (100% N through vermicompost), T₅ (100% N through poultry manure), T₆ (100% N through neem cake), T₇ (control- without any fertilizer). Observations were recorded and statistically analyzed as per method given by Panse and Sukhatme (1967).

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