



Research Paper

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Effect of organic sources of nitrogen on growth and yield of bhendi [*Abelmoschus esculentus* (L.) Moench.]

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ABSTRACT : Bhendi or okra [*Abelmoschus esculentus* (L.) Moench.] is an important vegetable crop grown for its green tender fruits, which are used as a vegetable in a variety of ways. It is rich in vitamins, calcium, potassium and other minerals. The mature okra seed is a good source of oil and protein. Okra seeds are also used as a non-caffeinated substitute for coffee. Okra is said to be of economic importance because of its nutritional value that has the potential to improve food security. Besides, being a short duration hardy vegetable crop, it can fit well into any cropping system. Considering the nutritional and medicinal importance as well as its versatility, augmenting the production without any compromise on quality becomes important. Hence, the present study was focused on integrating organic and inorganic sources of nitrogen on improving growth and yield of bhendi. The experiment consisted of ten different treatments involving various combinations of urea, FYM and vermicompost. The supply of 50 per cent of nitrogen through urea and the remaining either through farm yard manure or vermicompost had recorded better growth and yield parameters in bhendi. However, considering the benefit cost ratio, the use of FYM was found superior to vermicompost as it had shown a B:C ratio of 3.13.

KEY WORDS : Bhendi, Balanced nutrition, Dry matter, FYM, Organic, Vermicompost

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Vegetables being a protective food play a major role in enriching the diet. Bhendi [*Abelmoschus esculentus* (L.) Moench.] commonly known as lady's finger is one of the popular tropical vegetables grown on a commercial scale through out India. The productivity of bhendi in India is 9.27 t ha⁻¹ against the world average of 6.2 t ha⁻¹ (Shanmuhasundaram, 2004). Being a crop of nutritive and medicinal importance, the need for maintaining quality in addition to increased yield assumes significance. Bhendi being a short duration crop, its growth, yield and quality are largely influenced by the application of fertilizers (Somkumar *et al.*, 1997). No single source of fertiliser being capable of supplying all the required nutrients in a balanced proportion, integration of organic and inorganic sources of nutrients gains importance. Though the essentiality of using farm yard manure had already been well established the shortage of labour, nitrogen immobilization, presence of weed seeds and pathogens necessitates the search for alternate and enriched form of organic sources. Vermicastings being a rich source of

macro and micro nutrients, vitamins, enzymes, antibiotics, growth hormones and micro flora (Kale *et al.*, 1987), the present study was taken up in bhendi to know the effect of FYM and vermicompost on growth and yield of bhendi.

RESEARCH METHODS

The experiment was conducted at the Horticulture farm of the Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal, located along the East Coast at the tail end of the river Cauvery. Bhendi variety Arka Anamika was selected for the study. The soil of the experimental plot was sandy clay loam in texture with an organic carbon content of 0.42 per cent and taxonomically grouped as *Vertic Ustropept*. The experiment was laid out in Randomized Block Design with three replications and a net plot size of 3.6 x 1.8 m was maintained. The experiment consisted of ten different treatments involving different combinations of urea, FYM and vermicompost as detailed below.