

Effect of organic manures in combination with fertilizers on yield in gundumalli (*Jasminum sambac* Ait.)

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Accepted : November, 2008

ABSTRACT

Malligai (*Jasminum sambac*) is one of the oldest commercial flower crop cultivated for its delightful fragrant flowers and are popular in the world for its perfume. Integrated Nutrient supply system has become an accepted strategy to bring about improvement in soil fertility and protecting the environment. In view of the increasing demand for fresh flowers and concrete, efforts are being made to increase the flower yield by adopting cultural practices. The present investigation was aimed to study the effect of integrated nutrient management on yield parameters in Malligai (*Jasminum sambac*). The experiment consists of thirteen treatment combinations which were conducted in Randomized Block Design with three replications. The treatment consists of application of various organic manures viz., farm yard manure (10 kg plant⁻¹) vermicompost (2.5 kg plant⁻¹) and neem cake (2 kg plant⁻¹) and were incorporated as basal application as per the treatment schedule along with two different levels of inorganic fertilizers viz., 75% (90:180:180 g plant⁻¹) and 100% (120:240:240 g plant⁻¹) of recommended dose. Foliar application of panchagavya at 3% was given before the commencement of flowering at 15 days intervals. Based on the present investigation, it was observed that application of FYM @ 10 kg along with 100 per cent recommended dose of inorganic fertilizers 120: 240: 240 g NPK and panchagavya 3 % bush⁻¹ registered the maximum values for yield and yield attributing characters.

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Key words : Malligai, Inorganic, Organic, Panchagavya, Vermicompost, Yield.

Jasmine (*Jasminum sambac*) is one of the most important commercial flower crops cultivated for fresh flower and for concrete extraction. Jasmines have an international demand now due to its adaptability to wide climatic conditions, geographical zones and seasons. Tamil Nadu is the leading producer of jasmine in the country with an annual production of 78,800 t from the cultivated area of 10,000 ha (Anon, 2006). Flower and buds are used for making garlands, bouquets, and veni, used for decorating hair of women and for religious offerings. They are also used for the production of perfumed hair oils and attars. The oil is used for perfuming expensive soaps and cosmetics, mouthwashes and dentifrices, both salts and tobacco. The flower and other parts of the plants also find use in medicine.

Integrated Nutrient Management (INM) is one of the most important components to obtain sustainable crop production. It associates available, accessible and affordable plant nutrients to increase soil fertility and plant nutrient supply to achieve a given level of crop production, through optimizing the benefits from all possible sources of plant nutrients. It implies the most efficient use and management of organic, inorganic sources of major nutrients to attain higher levels of crop productivity and to maintain the fertility of the soil. The integrated nutrient supply system has become an accepted strategy to bring

about improvement in soil fertility and protecting the environment. It involves the integral use of mineral fertilizer in combination with organic manure and microbial inoculants to sustain optimum yield, to maintain and improve the soil fertility (Abrol and Katyal, 1990). Hence, considering the above facts the present research has been carried out to evolve an ideal nutrient management for increasing the yield in Gundumalli.

MATERIALS AND METHODS

The present investigation was conducted in a farmer's field at C. Mutlur village, cuddalore district, Tamil nadu during 2005-2007. The plants of three years old already planted at a spacing of 1.25 m x 1.25 m was used for the present study. They were pruned uniformly at a height of 45 cm in vase form in the month of December before imposing the treatments. The soil of the experimental field was sandy clayey loam. The treatment consists of application of three different organic manures viz., farm yard manure (10 kg plant⁻¹) vermicompost (2.5 kg plant⁻¹) and neem cake (2 kg plant⁻¹) along with two different levels of inorganic fertilizers viz., 75% (90:180:180 g plant⁻¹) and 100% (120:240:240 g plant⁻¹) of recommended dose of inorganic fertilizers. The organic manures were incorporated as basal application as per the treatment schedule. The inorganic fertilizers were