

Response of soil and foliar application of organic nutrients on growth in onion (*Allium cepa* var. Aggrigatum) cv. GNANAMEDU LOCAL

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ABSTRACT

A pot culture experiment was carried out to study the influence of organic sources of nutrients on growth in onion. The treatments comprised of application of organic manures like FYM (1 kg), press mud (1kg), vermicompost (1kg), and VAM (10 g pot⁻¹) as basal application, whereas humic acid (0.2%), vermiwash (1:5 dilution) and panchagavya (3%) were given as foliar spray. Potting mixture was prepared in the ratio of 1:1 (comprising of sand and soil). Observations on growth parameters were recorded and statistically analysed. The results revealed that, the growth parameters were significantly influenced due to the application of soil and foliar application of organic nutrients. The highest plant height (54.43 cm), number of tillers (5.12), number of leaves per plant (17.77), leaf area (145.79 cm²) and dry matter production (9.43 g plant⁻¹) were recorded in the treatment that received VAM @ 10 g pot⁻¹ combined with humic acid 0.2% followed by the treatment tested with vermicompost @ 1kg pot⁻¹ combined with panchagavya @ 3% when compared to other treatments.

Key words : Onion, Farmyard manure, Vermicompost, Panchagavya, VAM, Humic acid

Onion belonging to the family alliaceae is an important vegetable cum condiment grown throughout the tropical and subtropical belt of the world. It is rich in vitamin A, thiamine and riboflavin. It also contains calcium 32 mg and protein 1.4 mg per 100 g of bulb (Aykroyd, 1963). The onion cultivar Gnanamedu grown in coastal areas of Cuddalore district, Tamil Nadu was used for the present study. It differs from other aggregatum onion by means of flowering and seed setting profusely in the coastal areas up to 5 km interior. Therefore, they are traditionally propagated through seeds and also through bulbs. Moreover this group is recognized for the highest number of bulb production, greater bulb size, besides dark colour and strong pungency. The organic farming practices assure balanced environment and quality food to our people. Organic farming is very much native to India and it is our contribution to the world. It includes the use of organic nutrient sources like compost, FYM, pressmud, biofertilizers, humic acid, panchagavya, vermiwash etc. Application of these organics remains the alternative choice for the production of residue free wholesome produce. In addition to the basal application, foliar feeding has also assumed greater importance in recent days. With this objective the present investigation was carried out to study the effect of various organic nutrients as soil and foliar application on growth attributes in onion.

MATERIALS AND METHODS

A pot culture experiment was carried out in the vegetable unit, Department of Horticulture, Faculty of Agriculture, Annamalai University during 2007. Onion cv. Gnanamedu Local was used for the experiment. The experiment was laid out in Completely Randomized Block Design with sixteen treatments and three replications. Organic nutrients like FYM(1kg), pressmud(1kg), vermicompost (1kg)VAM (10g pot⁻¹) were applied in the soil. The required quantity of organic manures were taken and mixed with garden soil and sand in the ratio of 1:1, whereas panchagavya (3%), humic acid (0.2%) and vermiwash (1:5 dilution) were given as foliar application once in 15 days intervals as three sprays. The cultural operations viz., watering, hand weeding and plant protection measures were carried out as per the requirement of the crop. The stored seed bulbs were planted at the rate of three bulbs per pot. The observations on plant height, number of tillers, number of leaves per plant, leaf area and crop dry matter production were recorded. The data were analysed statistically following the method suggested by Panse and Sukhatme (1985).

RESULTS AND DISCUSSION

Growth attributes are considered to be one of the important factors to judge the vigor and yield of a crop. Application of organic nutrients in soil as well as in foliar