

EFFECT OF CERTAIN ORGANIC MANURES AND BIOSTIMULANTS ON GROWTH AND YIELD OF *Phyllanthus niruri*

C. PONNI AND ARUMUGAM SHAKILA

See end of article for authors' affiliations

Correspondence to :

C. PONNI

Department of Horticulture,
Faculty of Agriculture,
Annamalai University,
ANNAMALAINAGAR
(T.N.) INDIA

Accepted : November, 2007

ABSTRACT

Phyllanthus niruri of family Euphorbiaceae, commonly known as 'Bhumyamalaki' is probably native to South America, but it is found worldwide throughout the humid tropics. The roots, leaves, fruits, milky juice and whole plants are used in herbal drug preparations. The present investigation was carried out to study the effect of certain organic manures and biostimulants on growth and yield of *Phyllanthus niruri*. The experiment was laid out in Completely Randomized Design (CRD) with three replications. The treatments comprised of two organic manures viz., FYM @ 25 t ha⁻¹ and vermicompost @ 5 t ha⁻¹ and two biostimulants (panchagavya 3 % and humic acid 0.2 %) and their various combinations. The results revealed that application of FYM @ 12.5 t ha⁻¹ plus vermicompost @ 2.5 t ha⁻¹ along with panchagavya 3 per cent proved to be the best treatment as it was found to record the highest plant height (83.17 cm), number of branches (30.23) and leaves (1115.87) and also recorded the maximum herbage yield (44.21 g plant⁻¹).

Key words : Phyllanthus, FYM, Vermicompost, Humic acid, Panchagavya.

Phyllanthus niruri belongs to the family Euphorbiaceae and is popularly known as Bhumyamalaki in the Indian Systems of Medicine. It is probably native to South America, but is found worldwide throughout the humid tropics. The roots, leaves, fruits, milky juice and whole plants are used as medicine. The fresh root is believed to be an excellent remedy for jaundice. The plant has been reported to exhibit a marked antihepatitis - B virus antigen activity. The bark yields a bitter principle called Phyllanthin and the whole plant is used in herbal drug preparations. There is ample scope for large scale cultivation of *Phyllanthus niruri* as a pure crop. As the whole plant is used as such in drug preparations, there is a need for producing the crop chemical free, which necessitates the use of organic farming technology.

The present study was undertaken to study the effect of certain organic manures and biostimulants on the growth and yield of *Phyllanthus niruri*.

MATERIALS AND METHODS

The experiment was carried out in the Department of Horticulture, Faculty of Agriculture, Annamalai University, Annamalaiagar during the year 2005-2006. The experiment was laid out in a completely randomized

design with 13 treatments which were replicated thrice. The treatments comprised of two organic manures (FYM @ 25 t ha⁻¹ and vermicompost @ 5 t ha⁻¹), foliar spray of two biostimulants (panchagavya 3 % and humic acid 0.2 %) and their various combinations. 25 days old seedlings were planted in pots, in which different combinations of organic manures were applied. Farmyard manure and vermicompost were applied as basal dose. Foliar application of panchagavya (3 %) and humic acid (0.2 %) was done at fortnightly intervals commencing from 30 days after planting to final harvest. The observations regarding plant height, number of branches, number of leaves and herbage yield of *Phyllanthus niruri* were recorded and analyzed statistically (Panse and Sukhatme, 1978).

RESULTS AND DISCUSSION

Data presented in Table 1 shows significant variations among the treatments. The treatment which received the application of FYM @ 12.5 t ha⁻¹ plus vermicompost @ 2.5 t ha⁻¹ along with panchagavya 3 per cent (T₁₀) recorded the highest plant height of 83.17 cm. The next best treatment was T₁₁ which registered a value of 81.02 cm. The plant height was the least (54.74 cm) in T₁₃ (control).

The data on the production of number of branches and leaves presented in Table 1 shows significant differences among the treatments. The treatment T₁₀ (FYM @ 12.5 t ha⁻¹ plus vermicompost @ 2.5 t ha⁻¹ along