

Decomposed coconut coirpith and AM fungal inoculum - A good nursery media mix for *Ruta graveolens* L.

M.G. NADAGOUDA¹ AND H.C. LAKSHMAN*

Post Graduate Department of Botany, Microbiology Laboratory, Karnataka University, DHARWAD
(KARNATAKA) INDIA

ABSTRACT

Slow growing *Ruta graveolens* at nursery stage was tested by using five media mixes. The use of (*G. mosseae*) VAM fungi as biofertilizer with decomposed coconut coirpith in 50 and 75 per cent most significantly increased the vigour, plants height, increased in the vigour index, root length, number of leaves, VAM per cent colonization, spore number and nutrient content in shoots. The use of decomposed coconut coirpith with mycorrhizal inoculation at nursery stage of slow growing plants, must be suggest to chosen as the preferred strategy for waste treatment management.

Key words : Vesicular -arbuscular (VA) Mycorrhizal fungi *Ruta graveolens*, Plant growth, Vigour index.

INTRODUCTION

Ruta graveolens L. is a most important medicinal plants, belonging to family Solanaceae. It grows as shrubby bushes reach up to 1.25 meter in height. Plants occur throughout drier parts, subtropical and semi temperature region of India. Plant whose roots have been employed as valuable drug in Indian traditional systems of Ayurveda. It is used in the treatment of rheumatic pain, inflammation of joints, nervous disorders and epilepsy. It is mainly used as aphrodisiac and diuretic, restorative and rejuvenative drug. Plants grow at very slow rate at nursery stage. They normally raised in a medium containing red earth, farm yard manure and fine sand in equal volumes. Several hard wood trees are infected with vesicular arbuscular mycorrhiza as a microsymbiont (Lakshman, 1992). Significance of VA-mycorrhizal fungi on plant growth and nutrients uptake by tree species was reported earlier Mosse (Nalini *et al.*, 1986). Healthy and vigorous seedlings will stand better in plantations and hence a nursery mix which will promote better germination and seedling vigour is a must to sustain the demand for seedlings. Hence, the present investigation was undertaken to standardise a media mix suitable for *Ruta graveolens* using Mycorrhiza (*G. mosseae*) with coconut coirpith which is available in plenty in Karnataka, Tamil Nadu and Kerala.

MATERIALS AND METHODS

Preparation of VAM inoculum:

Chlorios gayana Munch. (Rhode grass) is a potential host plant for culturing mycorrhiza. Therefore,

the grass was grown in separate earthen pots to culture *G. mosseae*. Mixed mycorrhiza inoculum of the pot cultured of 25 g. was provided to each polythene bag with 25 g. decomposed coconut coirpith.

Preparation of composed coconut coirpith:

The raw coconut coirpith (RCCP) collected from Kumta area of North Canara district. It was decomposed using edible oyster mushroom fungus, *Pleurotus platypus* following the method of Nagarajan *et al.* (1985) and modified by Theradimani and Marimuthu (1992) and Kumar and Marimuthu (1997) for laboratory conditions. Well decomposed coconut coirpith available after 30 days of inoculation was shade dried for 24 days and then thoroughly mixed with normal nursery mix in varying proportions (V/V) to get the following treatments.

- Normal nursery mix (NNM)
- Decomposed coconut coirpith (DCCP)
- Raw coconut coirpith (RCCP)
- NNM 25 % + DCCP 75 % (DCCP 75)
- NNM 50 % + DCCP 50 % (DCCP 50)
- NNM 75 % DCCP 25% (DCCP 25)

The experiment was conducted in Randomized Block Design replicated four times. Seeds were collected from four year old plant of *Ruta graveolens*, where plants were maintained at Karnataka forest Department Dharwad. The media mixes were separately filled in plastic trays of size 26 × 26 × 10cm. Well filled seeds were hand picked with the aid of hand lens (5×) from the seed lot and were sown in line on the media mixes contained in polythene bags. Each replication had 100 seeds. The different growth parameters were observed and seedling vigour

* Author for correspondence.

¹ Department of Botany, A.S.M. College for Women, Gandhinagar, BELLARY (KARNATAKA) INDIA