INTERNATIONAL JOURNAL OF PLANT PROTECTION / VOLUME 5 | ISSUE 2 | OCTOBER, 2012 | 248-251

RESEARCH ARTICLE

# Management of Sclerotium wilt of *Stevia rebaudiana* through biorationals

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ARITCLE INFO

**Received** : 13.02.2012
**Revised** : 07.04.2012
**Accepted** : 21.07.2012

Key Words :
*Stevia rebaudiana,*
Management,
Sclerotium wilt,
Biorationals

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ABSTRACT

*In vitro* evaluation of biorationals against *Sclerotium rolfsii* causing wilt of *Stevia rebaudiana* indicated that cow urine and Panchagya inhibited the mycelial growth of the pathogen completely. Among different bioagents, botanicals and biorationals tested in pot experiment, have given good results. *Trichoderma harzianum, T. viride, Duranta repens* and *Eupatorium odoratum* were very effective and completely inhibited the disease incidence up to 30 days after planting. Maximum plant height was recorded in *T. harzianum* at 30 DAP.

**How to view point the article :** Shwetha, G. S. and Hegde, Yashoda R. (2012). Management of Sclerotium wilt of *Stevia rebaudiana* through biorationals. *Internat. J. Plant Protec.*, **5**(2) : 248-251.

## INTRODUCTION

*Stevia rebaudiana* is commonly known as sweetest plant of the world. It is widely grown for its sweet leaves which contains stevioside and rebaudioside. Stevia has garnered attention with the rise in demand for low carbohydrate low sugar food alternatives. Demand for natural sweeteners have driven the farmers in India for large scale cultivation of stevia. Wilt caused by a soil borne pathogen, *Sclerotium rolfsii* is becoming serious problem in the commercial cultivation of this crop ( Hegde *et al*.,2010). Management of disease through biorationals is eco-nomical, eco-friendly and gaining ample importance in recent years. Hence, an attempt was made to find out the effective biorational for management of wilt of stevia.

## MATERIALS AND METHODS

The efficacy of six organic products were tested against *S. rolfsii* for radial growth inhibition on Potato dextrose agar medium using poison food technique under *in vitro* condition. The biorationals used in this study were obtained from bio-farming unit, UAS, Dharwad. The following biorationals were used against *S. rolfsii* :

– Biodigester slurry @ 10 and 20 per cent
– Cow urine @ 10 and 20 per cent
– Panchagavya @ 10 and 20 per cent
– Vermiwash @ 10 and 20 per cent
– Raw neem oil @ 10 and 20 per cent
– Jeevamrutha @ 10 and 20 per cent

Required quantity of individual organic products was added separately into sterilized molten and cooled Potato dextrose agar so as to get the desired concentration of the organic products. Later, 20 ml of the poisoned medium was poured into sterilised Petriplate. Mycelial disc of five mm size from actively growing zone of seven days old culture was cut by a sterile cork borer and one such disc was placed at the centre of each agar plate. Control treatment was maintained without adding any organic products to the medium. Three replications were maintained for each treatment. Then such plates were incubated at room temperature and radial growth was measured when fungus attained the maximum growth in control plates. Per cent inhibition of mycelial growth over control was calculated by using the formula given by Vincent (1947) :

$$I = \frac{C - T}{C} x100$$

where,

I = Per cent inhibition