

Evaluation of some plant leaves for mass multiplication of the nematophagous fungus, *Paecilomyces lilacinus*

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Paecilomyces lilacinus (Thom) Samson is one of the promising bio-control agents of phytonematodes. For field application, *P. lilacinus* is usually cultured on cereal grains (Jatala, 1983), which may not be economically viable. Hence, certain easily and abundantly available low cost materials such as leaves of green manure plants with tender stems were tried for their suitability as substrate for mass multiplication of *P. lilacinus*. This technique supplies the organic matter to soil and improves its structure and water holding capacity.

Fresh leaves and tender stem of ten different green manure plants (Table 1) were collected and chopped into small pieces. Ten g. each of the plant samples were transferred to ten 250 ml. Erlenmeyer flasks and plugged with cotton. In each treatment, half of the flasks were steam sterilised at 15 psi and half of them were kept unsterilised. Fresh spore suspension was prepared from 15-day-old *P. lilacinus* grown on PDA slants. Equal quantity (1 ml.) of inoculum (4×10^6 spores/ml.) was dispensed into the flasks. *P. lilacinus* inoculated on sterilised

wheat grain (10 g) served as control. The flasks were incubated at 28 to 30°C for 45 days.

After 45 days, 100 ml sterilised water was added to each flask and the contents were shaken in a shaker for 10 minutes. To make the uniform spread of the spores for easy counting, a drop of liquid soap was added to each flask before drawing the sample. The spore count was made with a haemocytometer. Three counts were made from each flask and average was taken.

Among the ten plants tried, *Hyptis suaveolens* supported maximum sporulation under sterilised condition (188×10^6) followed by *Mimosa invisa* (98.6×10^6) and *Chromolaena odorata* (98×10^6). Minimum spore production was observed in *Glyricidia maculata* (Table 1). In unsterilised condition, maximum spore production was noticed in *Mimosa invisa* (35×10^6).

The common contaminants encountered in the unsterilised substrates were species of *Rhizopus*, *Mucor*, *Aspergillus*, *Fusarium* and *Penicillium*.

TABLE 1. Growth of *P. lilacinus* on sterilised and unsterilised tender leaves of different green manure plants.

Plants tried	Common name/ Vernacular name	Family	Final spore load* (x10 ⁶)	
			Sterilised leaves	Unsterilised leaves
<i>Chromolaena odorata</i>	"Communist pacha"	Asteraceae	98.0	15.3
<i>Clerodendron infortunatum</i>	"Perivelom"	Verbenaceae	84.6	15.0
<i>Crotolaria juncea</i>	Sunnhemp	Leguminosae	24.3	9.3
<i>Crotolaria striata</i>	"Kilukkanchedi"	Leguminosae	75.6	11.6
<i>Glyricidil maculata</i>	"Sheemakonna"	Leguminosae	13.0	17.3
<i>Hyptis suaveolens</i>	Malabar hutan	Labiatae	188.0	8.3
<i>Mimosa invisa</i>	"Mimosa"	Leguminosae	98.6	35.6
<i>Mucuna bracteata</i>		Leguminosae	27.0	14.6
<i>Pueraria phaseoloides</i>	"Kudzu"	Leguminosae	32.6	15.3
<i>Ricinus communis</i>	Castor	Euphorbiaceae	79.0	9.0
Control (wheat grains)	Wheat	Peaceae	11.6	11.6
S.E.			32.07	32.07
C.D.			94.61	94.61

* Mean of 5 replications

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