



STUDIES ON *IN VITRO* SCREENING OF VARIOUS SEMI SYNTHETIC MEDIA ON PATHOGENICITY OF *METARHIZIUM ANISOPLIAE* (METCH.) SOROKIN AGAINST *SPODOPTERA LITURA* (FABRICIOUS)

MOHAN C^{1*} and SOWMYA PRIYA S²

¹Division of Forest Protection, Tropical Forest Research Institute, Jabalpur (M.P), India.

²Department of Plant Physiology,

Tamil Nadu Agricultural University, Coimbatore, India

*Corresponding author email: mohanentomology@gmail.com

ABSTRACT: The present study was undertaken for screening of various semi synthetic liquid growth media such as Emerson Yeast Phosphate Soluble Starch (YPSS), Carrot Agar Medium (CAM), Malt Extract agar medium (ME), Sabouraud Maltose supplemented with yeast extract (SMA+Y) and Potato Dextrose Agar (PDA). These media derived conidiospores and blastospores tested on *S. litura*. Among the various semi synthetic media, the conidia harvested from Emerson Yeast Phosphate Soluble Starch (YPSS), Sabouraud Maltose Yeast extract Broth (SMYB), Potato Dextrose broth and Carrot Agar Medium (CAM) and they were found to be pathogenic to all the larval instars of *S. litura*. However, no mortality was caused by blastospores derived from any of the media.

Key words: *Metarhizium anisopliae*, semi synthetic media, *Spodoptera litura*

Citation: Mohan C, Sowmya Priya S (2020) Studies on *in vitro* screening of various semi synthetic media on pathogenicity of *Metarhizium anisopliae* (Metch.) Sorokin against *Spodoptera litura* (Fabricious). Indian J Trop Biodiv 28(1&2):94-96

INTRODUCTION

Entomopathogens based on fungi are now being extensively used as microbial biocontrol agents, because of their broad spectrum of activity, less non-toxic effect and easily amenable for mass multiplication of fungi on wide range of synthetic and non - synthetic media (Mishear *et al.*, 2005). Among the 750 species of entomopathogenic fungi, the green muscardine fungi, *Metarhizium anisopliae* (Metsch) Sorokin is reported to control a wide variety of insect pests (Chroton, 2007). The knowledge on growth requirements of entomopathogenic fungi is more essential for their mass multiplication and pathogenicity (Sreeramakumar *et al.*, 2002). The nutritional requirements of entomopathogenic fungi vary with the fungal species and even the fungal strains under consideration. Generally fungi require oxygen, water, source of carbon, inorganic or organic nitrogen besides minerals that play a major role in growth and their pathogenicity including novel metabolite production

(Samson, 1988). *S. litura* ranks first in lowering the yield both qualitatively and quantitatively in many crops. The severity of these pests on many crops has ranged from 59-100% in different area in last few decades. The loss caused by *S. litura* during Khariff season is about Rs. 110.50 crores annually (Shekharappa and Kulkarni, 2002). Because of the adverse side effects and insecticide resistance, biological control is now extensively used to control the pest. In the present study, conidia and blastospores derived from various growth media were evaluated against *S. litura*.

MATERIALS AND METHODS

The pure cultures of *M. anisopliae* were obtained from National Bureau of Agricultural Insect Resources (NBAIR), Bangalore, Karnataka. The pure culture of the fungi was maintained on PDA medium and 15 days old culture was used for further study. Emerson Yeast Phosphate Soluble Starch broth (YPSS), Sabouraud Maltose broth, Carrot Dextrose broth, Potato Dextrose