

Dissemination strategies of the entomopathogenic fungus *Lecanicillium muscarium* ZARE, GAMS 2000 in the host population of *Frankliniella occidentalis* PERGANDE 1895

Introduction

The entomopathogenic fungus *Lecanicillium muscarium* syn. *Verticillium lecanii* can be used to control population of the western flower thrips *F. occidentalis*. In laboratory, semi-field and greenhouse trials were recorded the infection and mortality of this host population (HETSCH 2004; MEYER 2007). At the end of disease process the fungus grew and sporulated very well on the cadavers of *F. occidentalis*. These sporulating cadavers are an effective inoculum source and therefore a centre of infection for the host population (LERCHE 2005). Trials were realized to describe the possibilities of fungal dissemination and the efficiency in this host-pathogen-relationship.

Materials and Methods

The standard method of trials were realized with cut off leaflets of beans *Phaseolus vulgaris* L. in petri dishes or on leaflets of plant in climatic chambers. At first 20 larvae (1st stadium) were dipped in suspension ($1,5 \times 10^8$ conidia/ml) of *L. muscarium* strain V24. Five days later, one infected, died and not yet moulded larvae were put on the leaf together with 10 untreated larvae (2nd stadium) of the host. The incubation occurred with 20°C, light regime L/D 16:8, rel. humidity 65% and 95%). The degree of coverage of the sporulating cadavers were determined and the number of died and moulded individuals of test population were counted. The dissemination of spores on plants should be provided by impression the leaves on agar plates and counting the colony forming units.

Results and Discussion

The most important way to dispersal the fungus in the examined host-pathogen-relationship is the dissemination in consequence of behaviour and movement of the thrips. The high mobility of the host larvae and adults promote this very well. The results showed that the sporulating cadavers on leaves were effective inoculum sources. It became found dead and moulding hosts within the parental generation up to the offspring. The contamination of the insect's habitat with *L. muscarium* could be found also outside of the first infection place additionally. This included the sporulation of infectious stages in cast of exuvia during moulting or on cadavers after death of the host respectively and by the loss of spores during the movement of contaminated insects.

The thrips individuals can pick up the spores from any moulding cadaver in succession. They lose a part of spores by the movement on the leaves and this corresponds to their movement pattern.