



“Development of an emulsifiable concentrate of the strain EH-511/3 of *Isaria fumosorosea* for controlling *Bemisia tabaci*”

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Introduction

I. fumosorosea is an entomopathogenic fungus that cause natural epizootics in *Trialeurodes vaporariorum* and *B. tabaci* biotype “B” in the worldwide. The Strain EH 511/3 of *I. fumosorosea* is considered candidate to *B. tabaci* control; It causes high levels of mortality in a short time compared with other fungi (1), and is innocuous (2). To employ these microorganisms is necessary to develop formulations which provide the microorganisms protection because the conidia are inactivated at temperatures above 35 °C and UV light. Vegetable oils and oil derivatives are inherently compatible with lipophilic conidia and as ingredients of liquid formulations (3).

Methods

Was determined the affinity of the conidia to vehicles which may be employed in the formulation. These were performed exclusion assays of phases, to determine the ratio of cells distributed between aqueous and organic phases. As organic phases were used: mineral oil, castor oil, soybean oil, peanut oil, corn oil, glycerin, canola oil and olive oil. The conidia were suspended in buffer KNO₃ to 0.1 M at a concentration of 1x10⁷ conidia/ml, was stirred for 3 min. It took 1 ml of conidial suspension and placed in an Eppendorf tube, after was added 0.2 ml the organic phase, stirred for 20 s and was left for 10 min. Optical density the aqueous phase was measured in spectrophotometer at 660 nm. To determine the viability of conidia was taken 0.1g with 5% moisture and 10 ml of each one of the above mentioned oils during 10 min and allowed to stand 3 days, the samples were diluted taken 20 uL one and inoculated into culture medium PDAY; It was monitored after 24 h. We developed an emulsifiable concentrate containing mixture of vehicles evaluated and mixture of emulsifiers.

We determined quality parameters the formulation.

Results

The affinity percentage was estimated to different vehicles of formulation. Analysis of variance showed significant differences between treatments when we compared the averages for this variable, as shown in Fig 1. The Fig 2 show the estimated percentage of germination of conidia to different percentage of formulation.

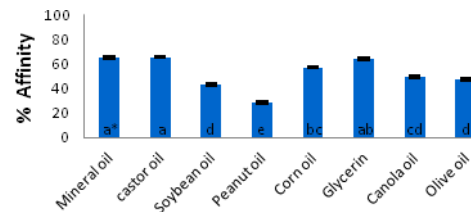


Fig 1. Percentage of affinity. *Different letters between columns are statistically different (P < 0.05).

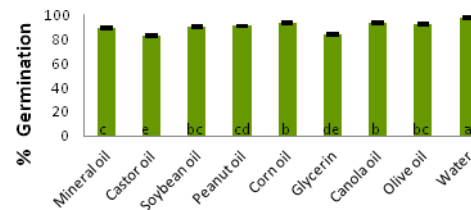


Fig 2. Percentage of germination. *Different letters between columns are statistically different (P < 0.05).

Conclusions:

We determined the affinity and germination of conidia on different oils, the information obtained allowed us to know the best vehicles to employ in developing emulsifiable concentrate.

References

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