THE EFFECT OF UV RADIATION ON THE CONIDIA OF SOME NATIVE FUNGAL STRAINS FORMULATED WITH VEGETABLE OILS.

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Background: To protect crops, farmers are increasingly resorting to chemical control of insects. However, chemicals not only destroy harmful insects but also have significant environmental consequences, such as inducing resistance or harmful effects on non-target organisms. Additionally, their ability to penetrate and accumulate in plant organs can drastically reduce crop quality. All these concerns have led to the search for natural remedies, such as entomopathogenic fungi, recognized as promising biological control agents due to their proven efficacy against various insect pests. They are naturally found in the soil, are widespread across different climatic regions, and have the capacity to produce epizootics. In addition, biopesticides based on native strains of entomopathogenic fungi present several advantages over the use of chemicals. These strains are better adapted to environmental conditions, and local production would be beneficial for farmers, as they can always have access to these products. However, their use as biological control agents is hampered by physical factors, with solar radiation being one of the most destructive ones. This problem can be solved by adding protective substances to the biopreparation formula, such as optical brighteners, like Tinopal, sunscreens, and natural additives, such as vegetable oils, teas, or humic acids.

The present study aimed to investigate the effect of UVB radiation on the viability of conidia of two native micromycete strains with bioinsecticidal potential, formulated with vegetable oils as protective additives, under laboratory conditions.

Materials and Methods: The study included two strains of native entomopathogenic fungi, identified as *B. bassiana* and *I. fumosorosea,* and ten vegetable oils. The compatibility of the investigated strains with the selected vegetable oils was studied. Subsequently, the conidia emulsified in the selected oils were exposed to UVB irradiation (λ = 312 nm) for 15, 30, 45, 60, and 90 min.

Results: The compatibility of the fungal strains formulated with different vegetable oils was confirmed, the germination rate varying significantly between the two strains, with ranges from 7.0% to 82% for *I. fumosorosea* and from 0% to 43% for *B. bassiana*, compared to the control sample, in which the germination percentage was 100% for both strains. The protective effect of oils such as sunflower oil, soybean oil, almond oil, sea buckthorn oil, and pumpkin oil was found, confirming the survival of conidia exposed to UVB for up to 90 min., with a germination rate of 10% in almond oil for the *B. bassiana* strain and 9% in pumpkin oil for the *I. fumosorosea* strain. **Conclusions:** Vegetable oils are compatible with the conidia of the tested fungal strains and can partially reduce the damage caused by UVB radiation. Further research will be conducted to confirm the preservation of the bioinsecticidal properties of the tested fungal strains in emulsion form and to evaluate the protective effect under both protected and open field conditions.

Keywords: entomopathogenic micromycetes, UVB radiation, additives

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