



EFFECTS OF TRIAZOLE FUNGICIDES ON THE SOIL HEALTH TOWARDS A SUSTAINABLE AGRICULTURE

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Abstract

Within this study, the effects, produced by several triazole fungicides on soil microbiota and on activity of soil enzymes, are assessed taking into account the stereoisomeric nature of these pesticides. A combination of experimental and computational approaches was considered. The experimental method was used to assess the effect of different doses of triazole fungicides on soil health. The computational approach considered the molecular docking of the enantiomers of fungicides with enzymes. This study reveals that the effects of triazole fungicides on the soil health are dose dependent. The high doses of fungicides affect the structure of microbial communities in the soil and activities of the soil enzymes. The computational study revealed the enantioselectivity of interactions the isomers of fungicides with the soil enzymes. These results confirm the need to implement better management practices regarding the use of triazole fungicides.

Keywords: soil enzymes, population of microorganisms, stereoisomers, triazole fungicides