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ALLELOPATHY POTENTIAL OF *Aesculus hippocastanum* EXTRACTS ASSESSED BY PHYTOBIOLOGICAL TEST METHOD USING *Zea mays*

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Abstract

Natural herbicides may be more sustainable than their chemical homologues, but they are still toxic substances that can affect humans and animals. Implementation of natural herbicides may require just as many safety precautions as the application of commercial herbicides, hence the need not to confuse the term "organic" with "non toxic". Allelopathy is accomplished through chemical inhibition of species towards each other, being an antagonistic phenomenon. Response and adaptation of *Zea mays* plants under optimal conditions are assured by the existence of a complex system of adjustment at different levels of organization. At the molecular level, the negative impact of the stressor can be to some extent a consequence of oxidative damage, as biologically important molecules following imbalances between the productions of reactive oxygen species and antioxidative protection. The subject of this survey consists in assessing the action of extractive solutions produced from *Aesculus hippocastanum* on the enzymatic activity, the amount of chlorophyll, and the root elongation for the mitotic film the plant cells, performed by phytobiological Mays test using *Zea mays* ssp.. In this context, the purpose of the present study consists in assessing the role of antioxidant enzymes in the formation and development tolerance of *Zea mays* plants throughout their development.

Key words: allelopathic interactions, antioxidant enzymes, Mays test

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