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CHANGES IN GROWTH OF WHEAT PLANTLETS INDUCED BY THE ACTION OF THIAMETHOXAM AND THIOPHANATE-METHYL ON SEEDS

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Abstract

Pesticides can be considered useful to eliminate pests, but can also induce negative effects to the processes of germination, growth and development of plants or disrupt some physiological and metabolic processes. By studying the effect of pesticides on treated seeds germination, and determination of growth indices, it was possible to evaluate the positive or negative influence or toxicity of the chemical compounds. The aim of this research is to highlight the effects of differentiated treatment with two types of pesticides with their common name Actara 25 WG and Topsin AL 70 PU on germination, growth and development of wheat plantlets. The experiment included 1300 wheat seeds which were divided into thirteen groups, the first group of 100 wheat seeds was considered the control sample and the others were divided equally into twelve groups which were treated with three different concentration dose of each pesticide, one less, one optimal, and one more compared to the optimal one for treatment, acting for a period of 14 and 24 hours. Biometric examinations of seedlings were subjected to analysis of variance (ANOVA) followed by Tukey's B test and analysis of covariance (ANCOVA). The concentration of each pesticides and acting time may also influence the allometric relationship between stem weights and stem length, root weight and number of roots, in different ways. It was observed the existence of a relationship between pesticides concentration, exposure time and weight of stem, in case of Topsin fungicide, under the influence of stem length, the observed power of this dependence being very high, 0.975.

Key words: allometry, ANCOVA, germination, thiamethoxam, thiophanate-methyl, wheat seed

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