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THE CARBOHYDRATES SYNTHESIS IN *CALENDULA OFFICINALIS* L. LEAVES INFLUENCED BY SOME MUTAGENE SUBSTANCES

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Abstract

It is known that carbonhydrates are precursors of all bioactive substances we tried in thes paper work to do some investigation on these substances in the environmental area of Iasi. To observe the influence of some chemical mutagens substances on carbohydrates biosynthesis we conducted investigations on plant material (leaves) taken from the *Calendula officinalis* L species. We used this assay to examine the effects of the herbicide 2,4-dichlorophenoxyacetic acid (2,4-D), etidium bromide and colchicine on the frequency of these events. The treatments were performed in seeds and the substances have different concentrations and different times of action. The results showed that if we increased the concentrations of substances and the time of treatment, the amount of accumulated monoglucid is decreased.
High values are recorded for the treatments made on seed-with 6 hours time of action. In summary, the present results showed that time of action and different concentrations may decrease the biosynthesis of those metabolites, with major importance for plant survival. Since these levels of exposure are not in excess of those associated with normal field application of 2,4-D (0.5–1.2 kg/ha according to manufacturer's directions), concentrations of 2,4-D commonly used in agricultural practice may actually pose a small risk. Moreover, a recent experimental study demonstrated that 2,4-D is rapidly mineralized (i.e., *50% of the applied dose in 10 days).

Key words: Calendula, carbohydrates, colchicine, etidium bromide

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