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"Gheorghe Asachi" Technical University of Iasi, Romania

PHYTOCHEMICAL ANALYSIS OF EXTRACTS FROM INFLORESCENCES OF *Calendula officinalis* L. SPECIES TREATED WITH MUTAGENE SUBSTANCES

Teodor Robu*, Roxana Vătavu, Constantin Leonte, Marius Zaharia

"Ion Ionescu de la Brad" University of Agricultural Sciences and Veterinary Medicine, Faculty of Agriculture, 3 Mihail Sadoveanu Alley, 700490 Iasi, Romania

Abstract

The most important argument of this experiment was to demonstrate an increased content of active principles under the influence of some substances (considered in the literature as mutagene), when used in low concentration, do not affect the environment. The purpose of this study was the selection of some treatment variants, which, during the experimentations show the same biosynthetic potential, stabilized or increased.
The substances used in the experiment were ethidium bromide at the concentration 0.01 % and colchicine 0.04 %. A part of the treatments were applied to the seeds with 3 and 6 hours time of action, before planting in the field and some treatments were made in the field on the vegetative peak, after the plants, reached 4-6 leaves. After the treatments with mutagenic agents, applied in different concentration and with different times of action, we have retained 6 lines (as groups of individuals with superior characteristics derived from the selection) proved to be the most productive (M_2 and M_3 generation). The plant material collected from field was qualitatively and quantitatively analyzed and compared with the untreated variant.
The methods used allowed a reliable analysis, and HPLC technique providing an accurate qualitative and quantitative information. Thin layer chromatography (TLC) analysis were conducted on methanolic extracts obtained from *Calendula officinalis* L. inflorescences collected from the experimental field. The chromatographic analysis confirmed the cvercetol and rutoside presence in methanol extracts in variable levels. This was confirmed by the presence of the same fraction in the control case.

Key words: Calendula officinalis L., colchicine, ethidium bromide, mutagenic, polyphenolic acids

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* Author to whom all correspondence should be addressed: e-mail: teorobu@univagro-iasi.ro