



**Study on induction of mutations in chamomile and pot
marigold plants**

By

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B.Sc. Agric. Sc. (Horticulture), Fac. Agric., Fayoum Univ., 2013

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Abstract

Seven different colchicine concentrations(0.0, 0.025, 0.05, 0.1, 0.2, 0.4 and 0.8 %) in combination with two stage of colchicine application, were selected to assess the effects on germination percentage, vegetative growth, flower yield components and chemical components in chamomile and calendula plants. The molecular diversity among the treatments was assessed using ten SRAP marker combinations. Seed soaking in colchicine significantly decreased germination percentage in both the plants, also treatments of different colchicine concentrations significantly decreased number of branches, number of flowers per plant, fresh weight of flower and dry weight of flowers in chamomile and calendula plants, as well as flower diameter in calendula plant. At high concentration of colchicine a superior effect on seed germination was observed. Whereas 0.05% produced the highest number of branches, number of flowers, fresh and dry weight of flowers, and the largest flower diameter. The larger plant height was found at 0.0%, while the 0.8% recorded the shortest plant. At the molecular level, results clearly showed the existence of genetic variation among colchicine treated calendula plants and the clustering of the studied mutants was concordant with the colchicine concentration used.

Key Words:

Chamomile – calendula – colchicine – markers – primers