Article Title No. 8	CHAMOMILE (*MATRICARIA CHAMOMILLA* L.) EXPLORES AGRO-MORPHOLOGICAL AND GENETIC VARIATION AFFECTED BY CHEMICAL MUTAGEN
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Journal	

ABSTRACT

Chamomile (*Matricaria chamomilla* L.) is one of the most important medicinal plants in cosmetics and sanitary industries, with various applications. This research was carried out with a view to elucidate the efficacy of six doses of colchicine (0,025, 0.05, 0.1, 0.2, 0.4 and 0.8%) to improvement yield and enhance genetic diversity of chamomile mediated evaluate agronomical, chemical and molecular characteristics. Mutants with substantially superior economical properties, including number of branches, number of flowers, flower fresh and dry weight and the essential oil content, were all induced in colchicine treatments. The RAPD-PCR study has shown that the inducing mutants have been divided into two clusters. The genetic diversity coefficient has been measured at 30 and 35%. The main of two-stage polymorphism was 67.6%, and the Polymorphism Information Content (PIC) ranged between 0 to 0.449 in the bud stage and from 0 to 0.338 from in the seedling stage. Estimation of genetic diversity and selection of prefered mutants would be considerable importance in enhancement breeding programs and to identify of genotypes with higher desirable traits for further multiplication and commercial production. The usefulness of molecular markers as a method to identify the colchicine effect and meaningfully detect useful mutants was demonstrated in a combination of molecular level findings with physiological and morphological results found during various colchicine treatments. The 0.05% colchicine concentration for effective breeding of chamomile mutation is recommended in the results.