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## GENETIC DIVERSITY ANALYSIS AMONG ALFALFA ECOTYPES OF 'TOMIN' OF ALBANIA

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### ABSTRACT

Alfalfa (*Medicago sativa* L.) is a major cultivated forage legume crop, used mainly as forage and its benefits in sustainable cropping system in agriculture. 'Tomin' is an alfalfa native variety cultivated in large scale due to its superior characteristics and adaptability to dry conditions. Ecotypes of Tomin were grown in different regions, they show variation on their morphological and agronomical characteristics, and therefore knowledge on the level of the genetic diversity among these ecotypes would assist in introducing this crop in breeding programs to produce high quality and drought resistant genotypes. The aim of current study was to molecularly characterize four ecotypes belonging to alfalfa 'Tomin' variety cultivated into two different ecoclimatic regions. The AFLP fingerprinting using two EcoRI/ MseI enzyme combination and twelve selective primer pairs was carried out to elucidate the genetic diversity among alfalfa ecotypes. The results revealed a high variation among the alfalfa ecotypes analysed, they showed the mean similarity of 38% among them. The UPGMA based cluster analysis and Principal Coordinate Analysis (PCoA) showed that alfalfa ecotypes cultivated in two different geographical areas did not cluster according to their geographical origin, however higher similarity was observed between ecotypes from Fushe-Kruje region than between the ecotypes of Gjirokaster.

**Key words:** genetic diversity, ecotype, Tomin, alfalfa, Albania