

P-104 (207)**EFFECT OF WATER DEFICIENCY ON CHEMOTYPIC AND PHENOTYPIC ATTRIBUTES OF SOME THYMUS DAENENSIS CELAK. ECOTYPES FROM IRAN**

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Growth and productivity of plants are affected by water as it may limit cultivation of high water requirement plants. Use of plants with low water requirement and also high economical increment might be a good choice to overcome the limitation. *Thymus daenensis* Celak. An endemic medicinal plant in Iran, with high adaptation potential to drought habitats and also high percentage of thymol has great importance in pharmaceutical, alimentary and hygienic industries. In this study, phenotypic and chemotypic attributes of eight Iranian *Th. daenensis* ecotypes were assessed under water deficit conditions during two years. The experiment was run as split plot design based on RCBD with three replicates. In order to simulate water limited conditions, three irrigation treatments were considered as normal irrigation, stop irrigation at beginning of flowering and at the vegetative stages. There was no significant effect of water stress on essential oil percentage. In second year of cultivation (two year old plants), essential oil and dry matter were significantly affected by water stress and differentiated among the ecotypes. The carvacrol was dominant component of essential oil in ecotype of Zaghe while that was in others for thymol. The ecotype of Khanemirane-paien had the highest thymol (76.51 %). Totally, based on morphological and phytochemical response of the species to water limited conditions, *Th. daenensis* can be introduced as a drought tolerant plant and also as a good alternative for *Th. vulgaris* (the cultivated species) because of existing high quality and quantity of essential oil producing genotypes.

Keywords: Thyme, water deficit, phytochemical variation, chemotype