

Specialized Phytochemical Properties of *Stachys inflata* Eco-Types in Different Ecological Circumstances of Southern Iran

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Abstract : *Stachys* forms one of the largest genera in the flowering plant family Lamiaceae. The number of species in the genus is estimated from about 300 to about 450 and comprises some 34 species in Iran. This genus is one of the richest sources of diterpenes which are particularly interesting because of their ecological role as antifeedants against different species of insects and for their role as the medicinal properties of the plants. The ecological distribution of *Stachys inflata* was studied and the resulted eco-types were sampled from four regions ranging 230-340 mm of rainfall and 1690-2125 m a.s.l of height In Fars Province Southern Iran. The essential oils of air-dried samples were obtained by hydrodistillation and analyzed by gas chromatography and gas chromatography/mass spectrometry. The number of secondary metabolites varied from 25 to 50 depending to ecological conditions. The main compounds in these areas were: Germacrene D, Bicyclogermacrene, spathulenol, δ -cadinene. Statistical analysis of photochemical resulted in recognizing 3 distinct groups that show internal variety in these herbs.

Keywords : eco-type, phytochemistry, secondary metabolites, *Stachys inflata*

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