

## Analysis of Alliin and Allicin Contents in *Allium tuncelianum*

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**Abstract :** *Allium tuncelianum* is a close relative of cultivated garlic (*A. sativum* L.) and naturally grows only in eastern part of Turkey. This species has mild garlic odor and therefore, it is locally consumed as garlic by collecting from its natural flora. This over collection threatens the species to extinction. Although it has morphological resemblance to cultivated garlic, the nutritional value of the species has not been characterized very well. Alliin and allicin are two predominant organosulfur compounds found in cultivated garlic. Allicin derived from alliin precursor gives garlic characteristic odor and most of the garlic health benefits are attributed to this compound. The aims of this work were to determine alliin and allicin contents of *A. tuncelianum* and to compare them with those of cultivated garlic, onion (*A. cepa* L.) and leek (*A. porrum* L.). Alliin and allicin were extracted from 400 mg lyophilized samples and 10 µl extracts were measured with high-performance liquid chromatography attached with diode array detector. The alliin contents of *A. tuncelianum* genotypes ranged from 2.5 to 7.0 mg/g and the allicin contents changed from 0.5 to 1.5 mg/g, whereas alliin and allicin contents of garlic genotypes ranged from 20.0 to 30.0 mg/g and 3.0 to 6.0 mg/g, respectively. On the other hand, we did not detect any measurable alliin and allicin in onion or leek tissues. In conclusion, alliin and allicin contents of *A. tuncelianum* were characterized first time in this study, which are about 20% of alliin and allicin contents of cultivated garlic.

**Keywords :** allicin, alliin, *Allium tuncelianum*, garlic

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