

## Volatile components of *Phlomis bourgaei* Boiss. and endemic taxa *Phlomis leucophracta* P. H. Davis & Hub.-Mor.: Andırın and Gülnar comparison case

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**Abstract:** *Phlomis* is one of the most important species of the Lamiaceae that is one of the greatest families in the world and, is represented by 52 taxa totaling about 39 taxa and 13 hybrids in Turkey. Many of *Phlomis* species are used in the traditional medicine field as herbal tea for stimulated, tonic, diuretic, ulcer and hemorrhoid treatment. By phytochemical studies on *Phlomis* taxa have shown that it contains intense volatile oils and constituents. In this study that is conducted in vegetation period of 2016, leaf and flower samples of *Phlomis bourgaei* Boiss. and *Phlomis leucophracta* P. H. Davis & Hub.-Mor. were collected in flowering period at Kahramanmaraş-Andırın and Mersin-Gülnar provinces and also volatile components for leaf and flower were determined by gas chromatography mass spectroscopy (GC-MS) after solid phase micro extraction (SPME). Collected leaf and flower samples were placed in paper packages and transported to the laboratory on the same day without being exposed to the sun light. After the plant materials collected were dried at room temperature (25°C), flower and leaf samples were subjected to solid phase microextraction (SPME). 2 g of samples were placed into a 10 mL vial. After incubation for 30 min at 60°C, SPME fibre was pushed through the headspace of a sample vial to adsorbed the volatiles, and then inserted directly into the injection port of the GC-MS (Shimadzu 2010 Plus GC-MS with the capillary column, Restek Rxi®-5Sil MS 30 m x 0.25 mm, 0.25 µm) at a temperature of 250°C for desorption (5 min) of the adsorbed volatile compounds for analysis. Totally 49 components were *P. bourgaei* from Kahramanmaraş-Andırın province and also germacrene-D (15.25 %), (E)-2-Hexenal (12.68 %) and β-caryophyllene (18.60 %) were found main components. 57 components were determined for *Phlomis bourgaei* from Mersin-Gülnar province and germacrene-D (15.66 %), (E)-β-farnesene (14.76 %) and β-caryophyllene (17.63 %) were found as main components. For *Phlomis leucophracta* that is distributed in Kahramanmaraş-Andırın province, 57 components were determined, of them (E)-2-Hexenal (9.74 %), limonene (15.56 %) and β-caryophyllene (22.32 %) were main components. 58 components of *P. leucophracta* were found in Mersin-Gülnar province and (E)-2-Hexenal (7.50 %), limonene (13.64 %) and β-caryophyllene (22.45 %) were main components. For *P. bourgaei*, (E)-2-Hexenal were differ from others in Kahramanmaraş-Andırın and (E)-β-farnesene in Mersin-Gülnar province. Components were found as similar for *P. leucophracta* in both provinces.

**Keywords:** *Phlomis bourgaei*, *Phlomis leucophracta*, Volatile components, β-caryophyllene, Andırın, Gülnar