

119 **THE CARVACROL LEVEL AND ANTIBACTERIAL PROPERTIES OF INDUSTRIAL AND LABORATORY ESSENTIAL OILS OF THE WILD AND CULTIVATED *SATUREJA KHUZESTANICA***

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**Background and aim:** *Satureja khuzestanica* has numerous proven biological properties. This study was carried out to determine the amount of carvacrol in the industrial and laboratory essential oils of the wild and cultivated *S. khuzestanica*, and investigate their antibacterial properties.

**Methods:** The essential oil of the cultivated *S. khuzestanica* was prepared industrially in the Khorraman Pharmaceutical Company, and the essential oils of the cultivated and wild *S. khuzestanica* were extracted in the laboratory using the Hydrodistillation method. Identifying and determining the amount of carvacrol were performed using the gas chromatography (GC) equipment. The microbroth dilution method was applied to evaluate the antibacterial properties of the essential oils.

**Results:** Carvacrol was the main component of the plant, and its amounts were found to be 96.9% (the highest level of carvacrol reported so far) for the essential oil of the wild *S. khuzestanica* taken in the laboratory, 90.6% for the essential oil of the cultivated *S. khuzestanica* extracted in the laboratory, and 81.47% for the essential oil of the cultivated *S. khuzestanica* prepared industrially. It was also found that the essential oil of this plant has remarkable antibacterial effects on standard bacteria, particularly on resistant *Staphylococcus aureus*.

**Conclusion:** These results suggest that *S. khuzestanica* is rich in phenolic compounds and has antioxidant properties as well. Therefore, it can be used as a useful herbal source in food and drug industries.