



University of Zabol  
Graduate school  
Faculty of Agriculture  
Department of Agronomy and Plant Breeding

**The Thesis Submitted for the Degree of M.Sc (in the field of  
Agronomy Science)**

**Investigation of chemical composition and  
antimicrobial properties of flowers in three  
populations of *Capparis spinosa* in Iran**

**Supervisors:**

Mehdi Dehghani kazemi

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**Advisors:**

Sedighess Esmailzade Behabadi

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**By:**

Behnaz Mirparsa

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## **Abstract**

*Capparis spinosa* is a valuable medicinal plant which is widely used in different parts of the world. In this thesis, the chemical composition and antimicrobial activity of the flowers of *Capparis spinosa* have been investigated in three different geographical regions of Tehran, Gorgan and Zabol. For this purpose, the samples were collected from the mentioned regions during late spring and early summer in 2021. The total phenolic content was measured by the Folin Ciocalteu method and the total flavonoid content was determined using the aluminum chloride colorimetric method. The antimicrobial properties of the methanolic extracts of the flowers of the three populations were assessed on eight Gram-negative and Gram-positive bacteria and three fungi using well agar diffusion method. The results of this study showed that the total phenolic content is the highest in the sample from Tehran and the lowest in the sample from Zabol. The total flavonoid content is almost the same in all three studied populations. Antimicrobial results showed that the methanolic extracts of the flowers of this plant have no effect on the investigated microorganism. The results obtained showed that the total phenolic content in different populations is related to the climatic characteristics of the plant habitat.

Key words: Antimicrobial, *Capparis spinosa*, chemical composition, phenolic content.