The inhibitory activity and phytochemical of *Artemisia absinthium* L. and *Oxalis corniculata* L. extracts against pathogens from tomato *in vitro*

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ABSTRACT

*Oxalis corniculata* and *Artemisia absinthium* plants are widely used in Iranian folklore medicine. The aim of this study was to evaluate the antibacterial activity and determination of phytochemical composition of leaves of these two plant species in northern Iran against tomato pathogenic bacteria in vitro. In this study, the antibacterial activity of aquatic and methanolic extracts of leaves of two plants on Xanthomonas, Pseudomonas and Pectobacterium isolates was performed by disk diffusion methods on agar and macrodilution broth to determine MIC and MBC values. The results showed that the herbal extracts used had antibacterial activity in the inhibitory range of 9 to 19 mm relative to the streptomycin antibiotic (25 mm). MIC and MBC values were 32 to 512 mg/ml according to the microdilution method, respectively. The composition of both extracts indicated the presence of saponins, phenolic compounds, anthraquinone, tannins, flavonoids, steroids and terpenoids, alkaloids, phlobatannin and volatile oils. The highest inhibitory effect was seen as a result of the synergistic activity of the aquatic extract of *Oxalis corniculata* and methanol extract of *Artemisia absinthium* (11 to 17 mm). Based on the results obtained, the combined effects of the two plants can be useful as a practical component in the preparation of herbal drug formulations.

**Key words:** *Artemisia absinthium*, *Oxalis corniculata*, Antimicrobial activity, Synergy

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