

## **Phytochemical Study and Antimicrobial Activity of *Nigella sativa* L. (Renunculaceae) in Algeria**

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**Abstract :** *Nigella sativa* L. (Renunculaceae) native to the Mediterranean region and Western Asia, Black cummin is grown to India, through Sudan and Ethiopia. It is widely cultivated in Egypt, the Middle East, Saudi Arabia, Turkey, Sudan, Afghanistan and Europe. It is among the most important medicinal plants in Algeria that is known for its antifungal and antimicrobial properties. Despite its plethora of uses for treating various diseases, it has garnered very little scientific interest so far, particularly in Algeria. For this study, the seeds of Algerian *Nigella sativa* L cultivated in the area of Magra (M'sila) in northern Algeria, were collected in summer. In such a propitious context, the aim of this study was to enhance *Nigella sativa* as a medicinal herb. The phytochemical screening methods are used. For their antimicrobial activity, extracts of tannin and polyphenols were screened against four pathogenic bacterial strains and two pathogenic yeast strains. The phytochemical analysis results showed a remarkable combination of chemical components including a high content in tannins, in flavonoids, and in alkaloids. The tannins and the polyphenols have strong antimicrobial activity against all the species. The maximum zone of inhibition was noted for polyphenol and tannin extracts against *Escherichia coli* (14 mm, 12.33 mm) and an antifungic activity against *Aspergillus niger* (11.66 mm, 9 mm). These results indicate to some benefits of *Nigella sativa* seeds which can use to treatment the microbial infection.

**Keywords :** *Nigella sativa*, phytochemistry, antimicrobial activity, Algeria

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