

Contribution to the phytochemical study and antibacterial effect of phenol and flavonoid contents in *Trigonella foenum-graecum* L. from Algeria

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Abstract. The present work aims to evaluate the presence of polyphenols and flavonoids in *Trigonella foenum-graecum* (fenugreek) seeds extracts, grown in south of Blida, northern Algeria, to study its antimicrobial activities via: *Escherichia coli*, *Klebsiella pneumonia* and *Staphylococcus aureus*, by the diffusion method in agar medium, and appreciate its antioxidant activities by the DPPH method.

The seed powder was extracted with ethanol in a soxhlet extractor, followed by a series of clashes with three solvents namely (ether petroleum, ethyl acetate and n-butanol).

Shibata reaction and chromatography (TLC) tests showed the presence of flavonoids in all samples. The quantitative determination of total polyphenols showed the richness of polyphenol butanol extract 30.120 µg GAE / g (microgram gallic acid equivalent / gram) and 0.564 mg / ml of flavonoids.

The expression of the results of the antibacterial activity showed that the n-butanol extract (24.75%) is active on all the strains tested and that the petroleum ether extract (26.78%) is more active against *Klebsiella pneumoniae*.

Finally the results of the antioxidant activity test showed that butanolic extract with high activity with IC_{50} equal to 1.546 mg / ml.

Keywords: antibacterial, antioxidant, *Trigonella foenum-graecum*.