

PHYTOCHEMICAL, ANTIOXIDANT AND ANTIBACTERIAL PROFILE OF ACHILLEA MILLEFOLIUM L.: A LITERATURE REVIEW

Maria Roberta TRIPON^{1,3}, F.A. HUIBAN^{1,3}, Marijana SOKOLOVIC⁴, Cristina GAȘPAR^{1,2},
 D.D. Camen^{1,3}, Camelia TULCAN^{1,3*}

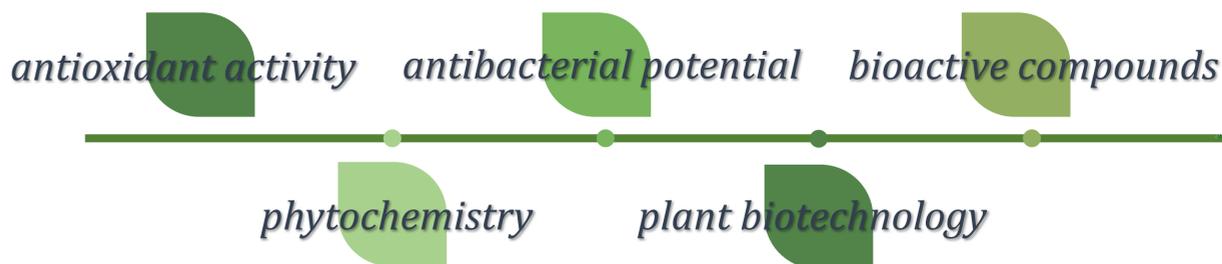
¹University of Life Sciences „King Mihai I” from Timisoara (ULST), Faculty of Engineering and Applied Technologies, Timișoara, România

²University of Life Sciences „King Mihai I” from Timisoara (ULST), Faculty of Veterinary Medicine, Timișoara, România

³ULST Research Institute for Biosecurity and Bioengineering (ICBB), Timișoara, România

⁴CVI - Poultry Centre, Feed Analysis Laboratory, Zagreb, Croatia

Abstract: The literature indicates the use of *A. millefolium* since ancient times, predominantly for addressing various gastrointestinal disorders. With advancements in analytical techniques and plant biotechnology, subsequent investigations have revealed additional therapeutic properties attributed to this plant, such as **anti-inflammatory, antifungal, analgesic, hemostatic, cholagogue, hepatoprotective**, as well as **anti-inflammatory and antibacterial effects**. More recent studies performed on *in vitro* cell lines, also indicated the apoptotic effect of *A. millefolium* extracts on human cervical cancer (HeLa) cells.

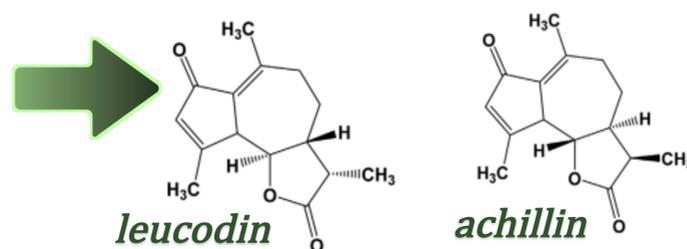


• *Alchillea millefolium* L.

Commonly known as yarrow, *A. millefolium* boasts a fascinating chemical profile with potential health benefits. Studies reveal a rich content of phytochemicals, including **flavonoids, sesquiterpenes, and volatile oils** [1]. These compounds are believed to contribute to its well-documented antioxidant properties [1, 2].



<https://gradinabotanica.umfst.ro/project/achillea-millefolium/>



- ✓ mono- and sesquiterpenoids
- ✓ lactones and saponins
- ✓ phenolic compounds
- ✓ amino and fatty acids
- ✓ organic acids
- ✓ sugars
- ✓ coumarins

- volatile oils mediates antimicrobial effects;
- sesquiterpenes assure the anti-inflammatory effect;
- dicaffeoylquinic acids exert choleric effects;
- flavonoids cause the spasmolytic properties.

Research suggests that *Achillea millefolium* can significantly reduce free radicals, molecules that can damage cells and tissue integrity [1, 2].

Its antibacterial activity against a range of bacteria, including *Staphylococcus aureus* and *Escherichia coli*, has been demonstrated [2]

References

- [1] "Phytochemical, antioxidant and antibacterial activities of *Achillea millefolium* L."
 [2] "Phytochemical, Antioxidant and Antimicrobial Activity of the Essential Oil from Flowers and Leaves of *Achillea millefolium* subsp. *millefolium*"



Acknowledgement: This paper was supported by the "Comprehensive Research on the Impact of Plant Extracts against resistant *Staphylococcus* (CRISP)" project.