



13-14 November 2025

PHYTOCHEMICAL PROFILE OF SOME CONSUMED MEDICINAL PLANTS

Melinda Bot^{1, 2}, Patricia Tarkanyi¹, Mihaela Stanciugelu³, Ariana Velciov¹, Sofia Popescu^{1*}

¹University of Life Sciences "King Mihai I" from Timisoara, 300645, 119 Calea Aradului, Romania

²University of Medicine and Pharmacy "Victor Babes" from Timisoara, Romania

³Brukenthal National Museum, Natural History Museum, Sibiu, Romania

Abstract

Herbal teas are a widely consumed beverage that can be easily prepared by infusing dried herbs in hot water. This study aims to characterize the phytochemical, physicochemical, and nutritional properties of some commonly used medicinal plants: *Matricaria chamomilla* (chamomile), *Tilia cordata* (linden), *Robinia pseudoacacia* (black locust), *Sambucus nigra* (elderberry), *Lavandula angustifolia* (lavender), *Rosmarinus officinalis* (rosemary), *Hypericum perforatum* (St. John's wort), and *Achillea millefolium* (yarrow).

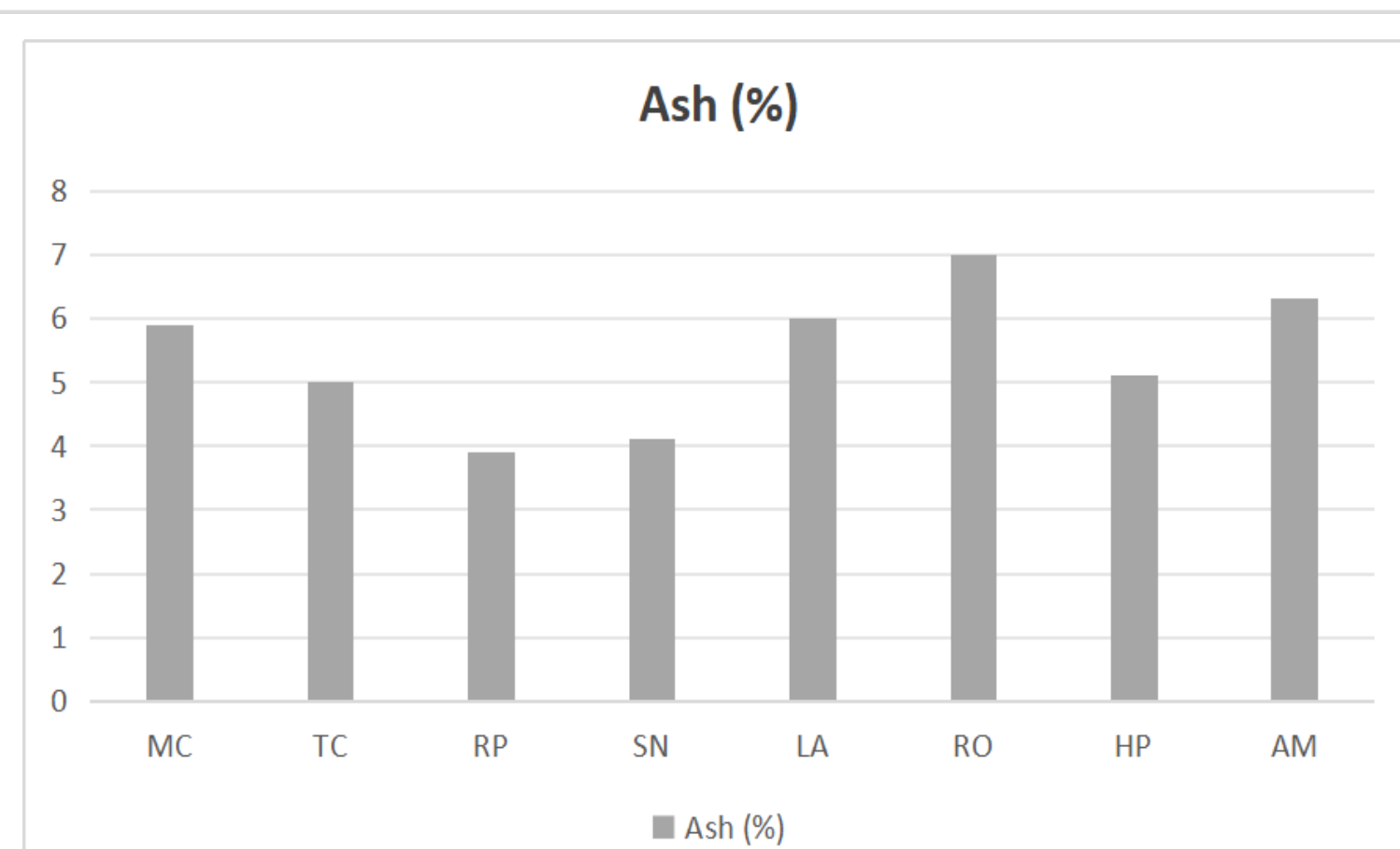
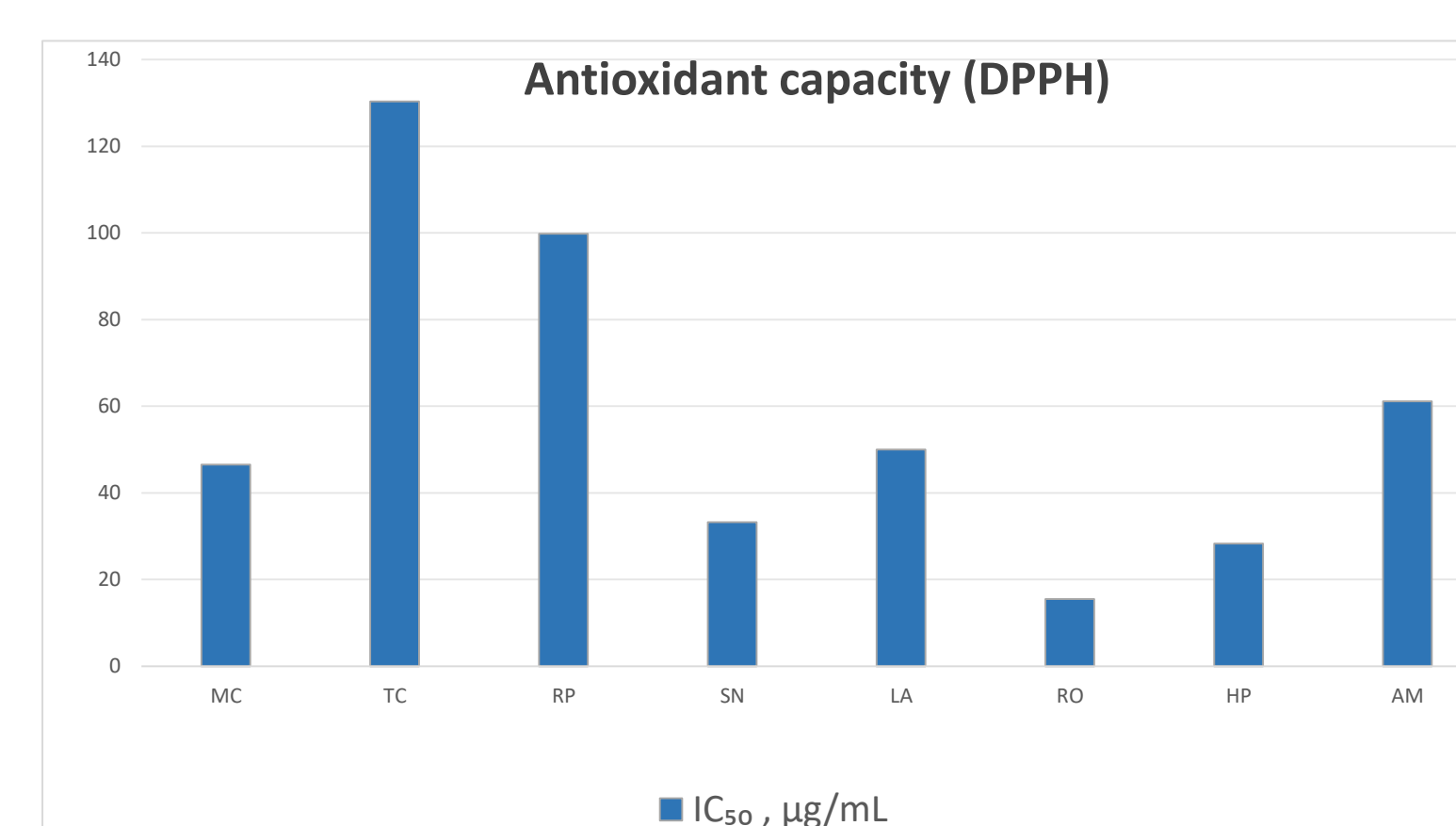
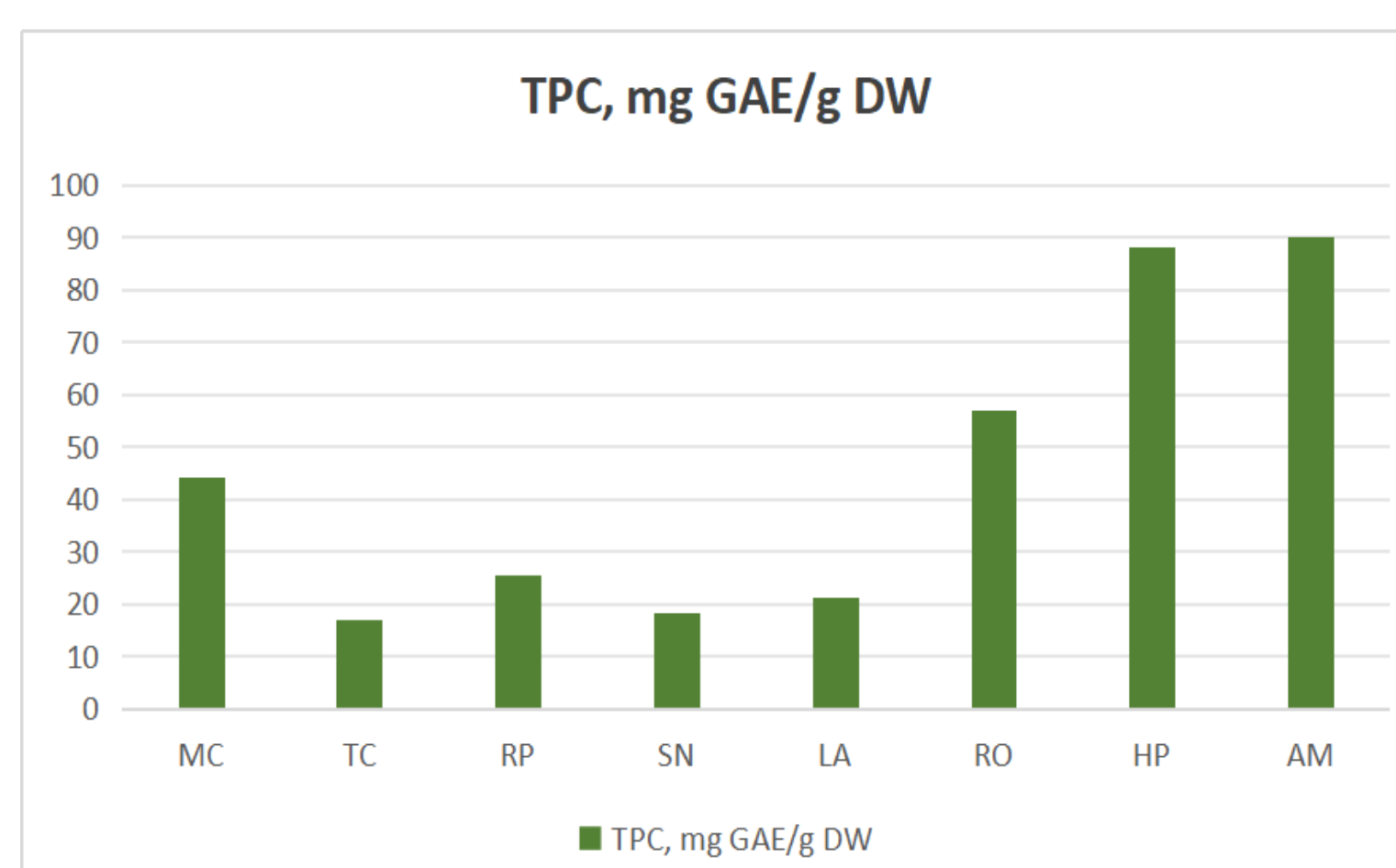
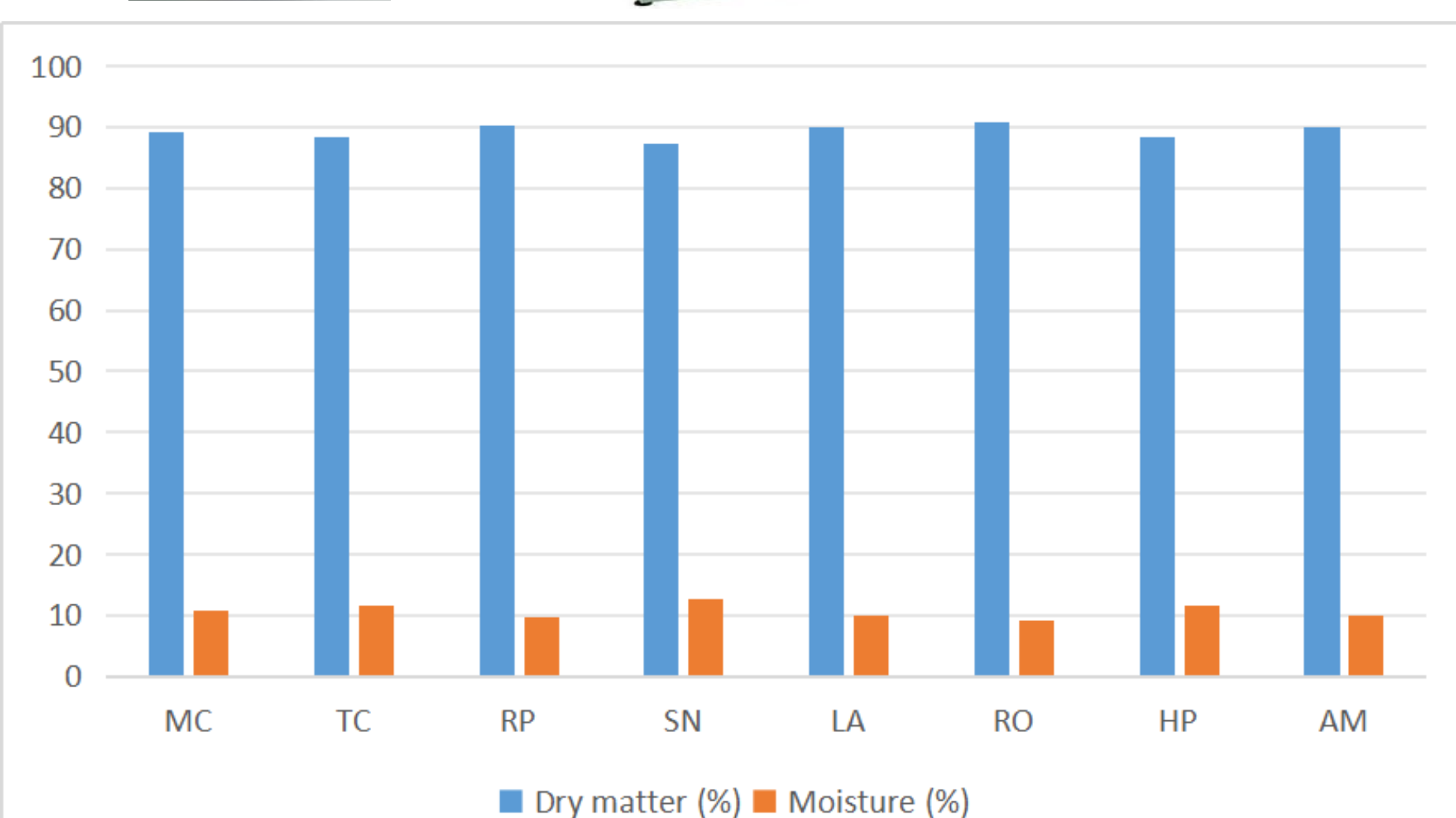
Phytochemical analyses focused on identifying and quantifying the total antioxidant capacity and the main bioactive compounds, such as flavonoids, tannins, and polyphenols. In parallel, physicochemical and nutritional determinations were performed, including dry matter content, moisture, and ash. The results show that the studied plants exhibit a complex and diverse chemical profile, associated with antioxidant, anti-inflammatory, and antimicrobial activities, while their physicochemical characteristics highlight their quality and stability as raw materials for herbal preparations and functional products. The high content of polyphenols and flavonoids emphasizes the therapeutic potential of the studied plants, supporting their traditional and modern use in various herbal formulations.

The study underlines the importance of phytochemical characterization for the scientific validation of the medicinal effects of plants and provides useful information for future research in the nutraceutical and pharmaceutical fields.



MC = *Matricaria chamomilla* (chamomile),
TC = *Tilia cordata* (linden),
RP = *Robinia pseudoacacia* (black locust),
SN = *Sambucus nigra* (elderberry),

LA = *Lavandula angustifolia* (lavender),
RO = *Rosmarinus officinalis* (rosemary),
HP = *Hypericum perforatum* (St. John's wort),
AM = *Achillea millefolium* (yarrow)



Conclusions

The dry matter content (≈87–93%) and ash values (4–8%) indicate good stability and a relevant mineral fraction. The total phenolic content (TPC) varied widely, with the highest values in *Rosmarinus officinalis* and *Hypericum perforatum*, followed by *Matricaria chamomilla* and *Achillea millefolium*.

The antioxidant capacity (DPPH) correlated well with TPC, confirming that phenolic compounds largely contribute to free radical scavenging activity. *Rosmarinus officinalis* and *Sambucus nigra* exhibited the strongest antioxidant effects.

Overall, the studied plants present a valuable source of bioactive phenolics with potential applications in nutraceutical and phytotherapeutic formulations.