Strawberry Tree (*Arbutus unedo*) Flowers as a Sustainable Source of Phenolic Compounds with Activity against Canine Pathogens

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The rapid global spread of antibiotic-resistant bacteria represents a major challenge to both human and animal health, as therapeutic options are becoming increasingly limited. *Staphylococcus pseudintermedius* is the predominant staphylococcal species colonizing healthy dogs and is also a leading cause of canine pyoderma. In recent years, the emergence and dissemination of methicillin-resistant *S. pseudintermedius* (MRSP) throughout Europe has intensified the need for alternative antimicrobial strategies. In this context, plant-derived polyphenols have gained attention due to their bioactive properties, including antimicrobial effects associated with disruption of bacterial cell membranes.

This study aimed to recover phenolic compounds from strawberry tree (*Arbutus unedo*) flowers—an underexploited plant by-product—and to assess their antibacterial potential against methicillin-resistant and methicillin-susceptible *S. pseudintermedius* (MRSP and MSSP) isolates obtained from canine pyoderma. Flower samples were freeze-dried, ground, and subjected to extraction using either a hydroethanolic solution (20:80, v/v) or methanol. Antimicrobial activity was evaluated against fourteen clinical isolates (seven MRSP and seven MSSP) by agar dilution, and minimum inhibitory concentrations (MICs) were determined at extract concentrations ranging from 10 to 500 µg/mL.

Both hydroethanolic and methanolic extracts demonstrated inhibitory activity against all tested isolates. However, hydroethanolic extracts produced more pronounced antibacterial effects, with inhibition zone diameters between 19 and 23 mm at 500 µg/mL. MIC values varied among isolates, with the lowest value (10 µg/mL) observed in two strains, while most isolates were inhibited at concentrations of 25 or 50 µg/mL. No significant differences in susceptibility were observed between MRSP and MSSP strains, indicating that methicillin resistance did not affect the antibacterial performance of the extracts.

Overall, these findings highlight strawberry tree flowers as a promising and sustainable source of bioactive phenolic compounds with antibacterial activity. The broad inhibitory effect observed against both resistant and susceptible strains supports their potential application as complementary agents to conventional antibiotics, contributing to the valorization of plant resources within a sustainable waste management framework.

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