

Antimicrobial Potential of *Camellia japonica* Flowers (var. Dr Tinsley) against Foodborne Pathogens

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Introduction: Antibiotic resistance is a growing global health threat. Overuse and misuse of antibiotics have led to the emergence of resistant strains, especially in foodborne pathogens. Natural antimicrobials derived from plants are gaining interest as safe, sustainable alternatives. *Camellia japonica* flowers contain bioactive molecules, including phenolic compounds and polyphenols, which may exhibit antimicrobial activity.

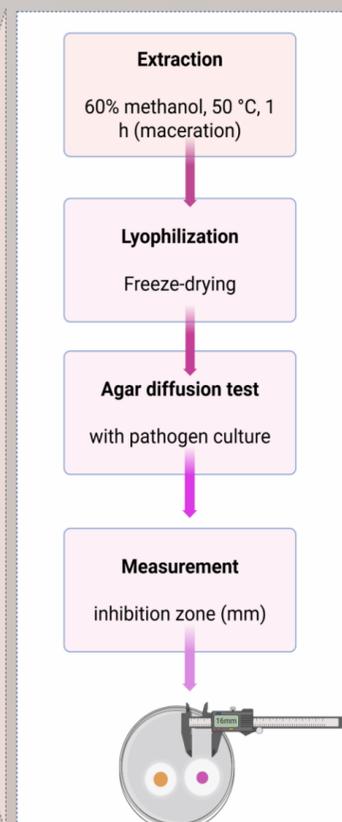
Aim: To evaluate the antimicrobial activity of *C. japonica* (var. Dr Tinsley) flower extracts against foodborne pathogens.

Materials & Methods:

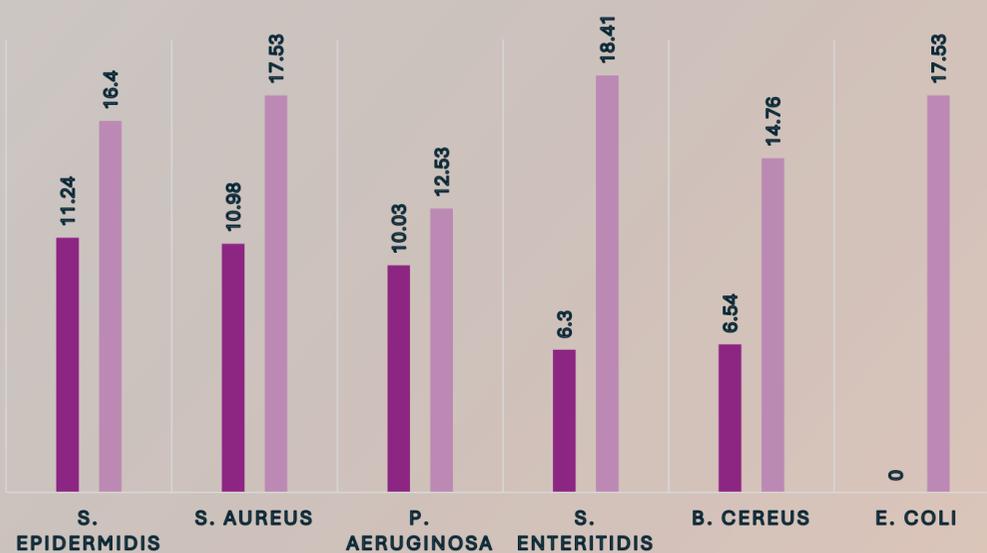
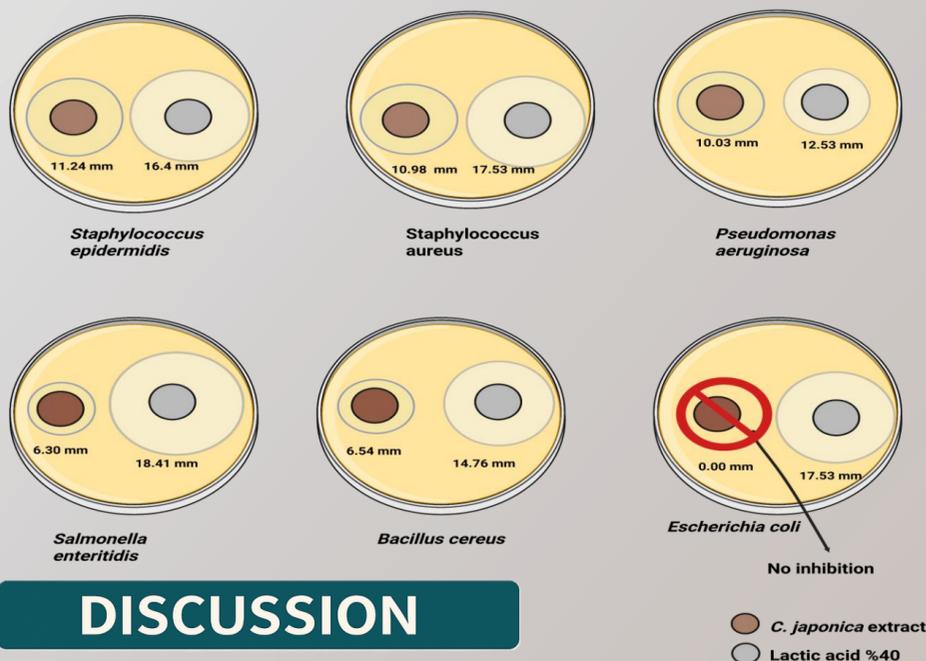
- **Sample:** *Camellia japonica* var. Dr Tinsley flowers
- **Extraction:** Maceration using 60% methanol at 50 °C for 1 hour; extract was lyophilized and re-suspended in DMSO.
- **Test Method:** Agar well diffusion method
- **Test Organisms:** *S. aureus*, *S. epidermidis*, *B. cereus*, *P. aeruginosa*, *S. enteritidis*, *E. coli*
- **Controls:**
 - **Positive control:** 15 µL of 40% lactic acid
 - **Negative control:** 15 µL of DMSO
 - Methanol was not used as a control as it was removed during lyophilization.



Method Flowchart



Inhibition zones of *Camellia japonica* (var. Dr Tinsley) extract and 40% lactic acid against foodborne pathogens



DISCUSSION

Extract was effective mostly against Gram-positive bacteria

No effect on *E. coli* → Possibly due to outer membrane barrier

Lactic acid had stronger overall inhibition

Crude extract limits efficacy → Isolation/purification needed

Conclusion

C. japonica (Dr Tinsley) flower extracts exhibit promising antimicrobial activity against several foodborne pathogens. This supports their potential use as bioprotectants in food and pharmaceutical applications.

Future Work

