



21 – 22 May 2026

## Jasmine (*Jasminum sambac*) absolute: antimicrobial and fumigant insecticidal activity against bacterial pathogens and stored product beetles

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**Abstract:** Jasmine (*Jasminum sambac*) absolute was evaluated for antimicrobial and fumigant insecticidal activity. It showed effective inhibition of bacteria (MIC<sub>50</sub>: 0.215–2.724 mg/mL) and high insect mortality (up to 97.67%). The results indicate its potential as a natural agent for food protection.

**Keywords:** jasmine absolute; phytochemicals; antibacterial effect; stored-product pests; bioinsecticide; natural compounds.

### • Results and discussions

#### • Introduction

*Jasminum sambac* is a key aromatic plant rich in bioactive volatiles. These compounds are promising natural alternatives to synthetic preservatives.

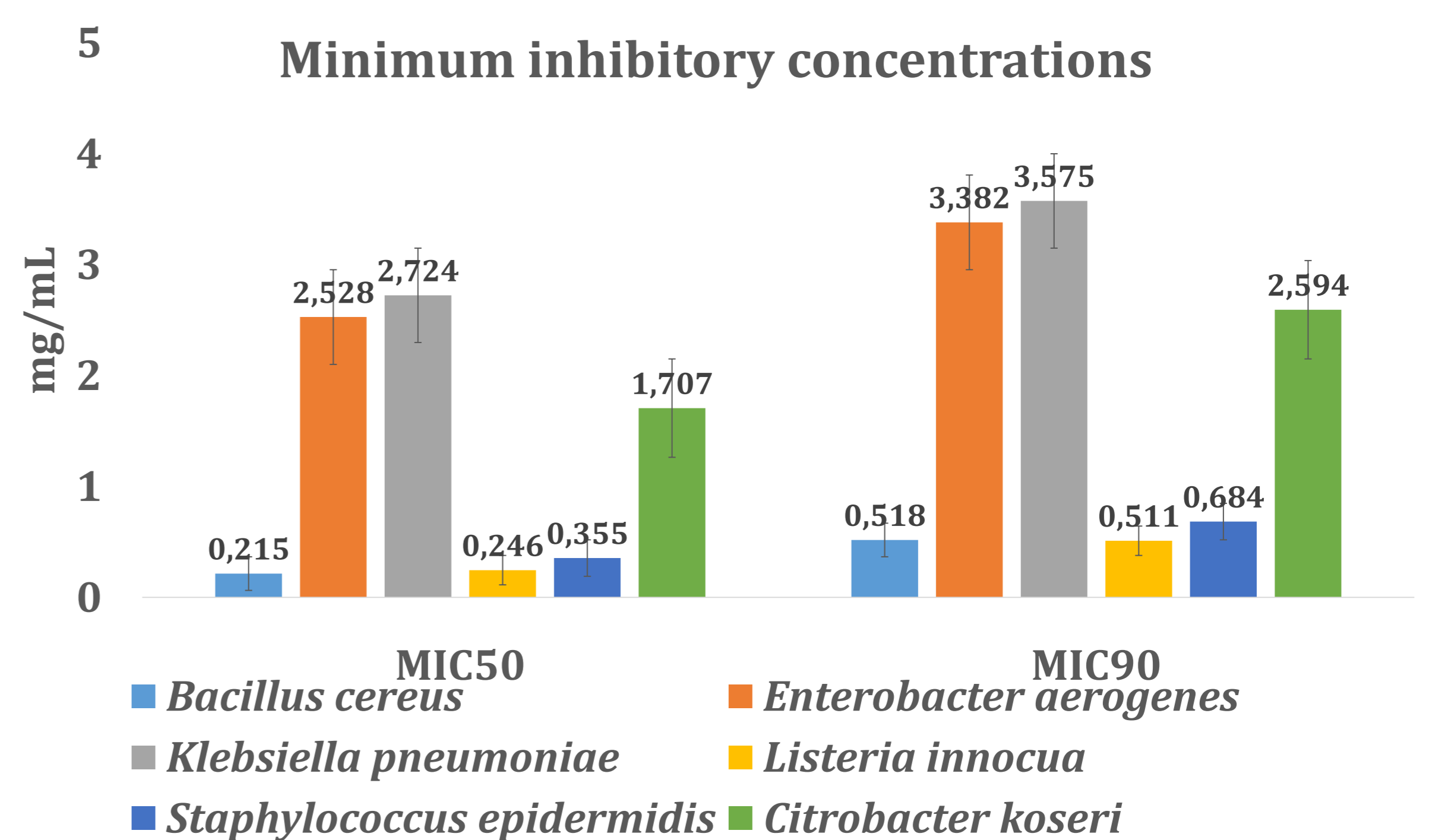
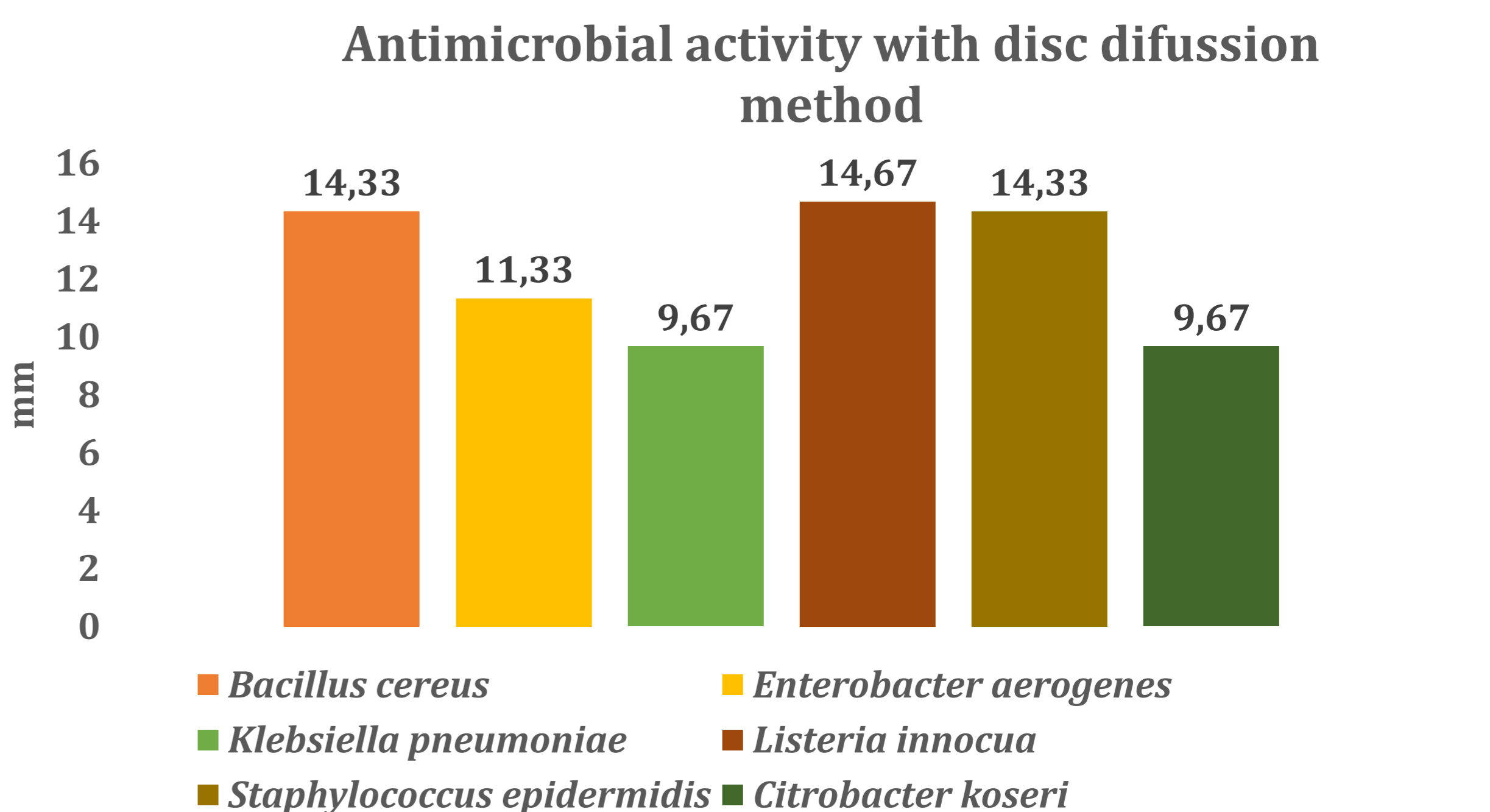
#### • Material and method

Jasmine absolute: GuiLin Four Seasons Sunshine Co., Ltd. (Guilin, Guangxi, China). Antimicrobial activity: disc diffusion, MIC<sub>50</sub>/MIC<sub>90</sub>. Tested strains: obtained from the Czech Collection of Microorganisms. Insecticidal activity: fumigation assay. Target insects: *C. maculatus*, *M. dorsalis*

#### • Conclusions

A promising natural alternative for antimicrobial and pest control applications.

**Acknowledgement:** This research was supported by APVV-20-0058 and VEGA 1/0059/24 grants.



#### Fumigant insecticidal activity of jasmine (*J. sambac*) absolute

Concentration (%)	<i>C. maculatus</i> Mortality (%) Mean	<i>M. dorsalis</i> Mortality (%) Mean
100	97.67 ± 2.31 <sup>a</sup>	90.00 ± 7.94 <sup>a</sup>
50	78.33 ± 1.53 <sup>b</sup>	74.33 ± 2.52 <sup>a</sup>
25	53.67 ± 5.13 <sup>c</sup>	55.33 ± 2.08 <sup>b</sup>
12.5	34.33 ± 1.53 <sup>d</sup>	30.67 ± 3.06 <sup>c</sup>
6.25	23.67 ± 1.53 <sup>e</sup>	23.67 ± 1.53 <sup>cd</sup>
3.125	7.33 ± 0.58 <sup>f</sup>	9.67 ± 1.53 <sup>d</sup>
LC <sub>50</sub> (%)	16.76	18.69
LC <sub>90</sub> (%)	67.99	98.61