



## Green plum (*Prunus mume*) concrete: antimicrobial and fumigant insecticidal bioactivity against food-relevant bacteria and stored product beetles

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**Abstract:** Green plum (*Prunus mume*) concrete was evaluated for antimicrobial and fumigant insecticidal activity. It inhibited all tested bacteria (MIC<sub>50</sub>: 1.435–4.661 mg/mL) and showed high insect mortality (up to 96.67%). Results indicate its potential as a natural food protection agent.

**Keywords:** *Prunus mume*; antimicrobial; insecticidal

### • Introduction

*Prunus mume* contains diverse bioactive metabolites with reported health benefits. Its concrete has not been extensively studied.

### • Material and method

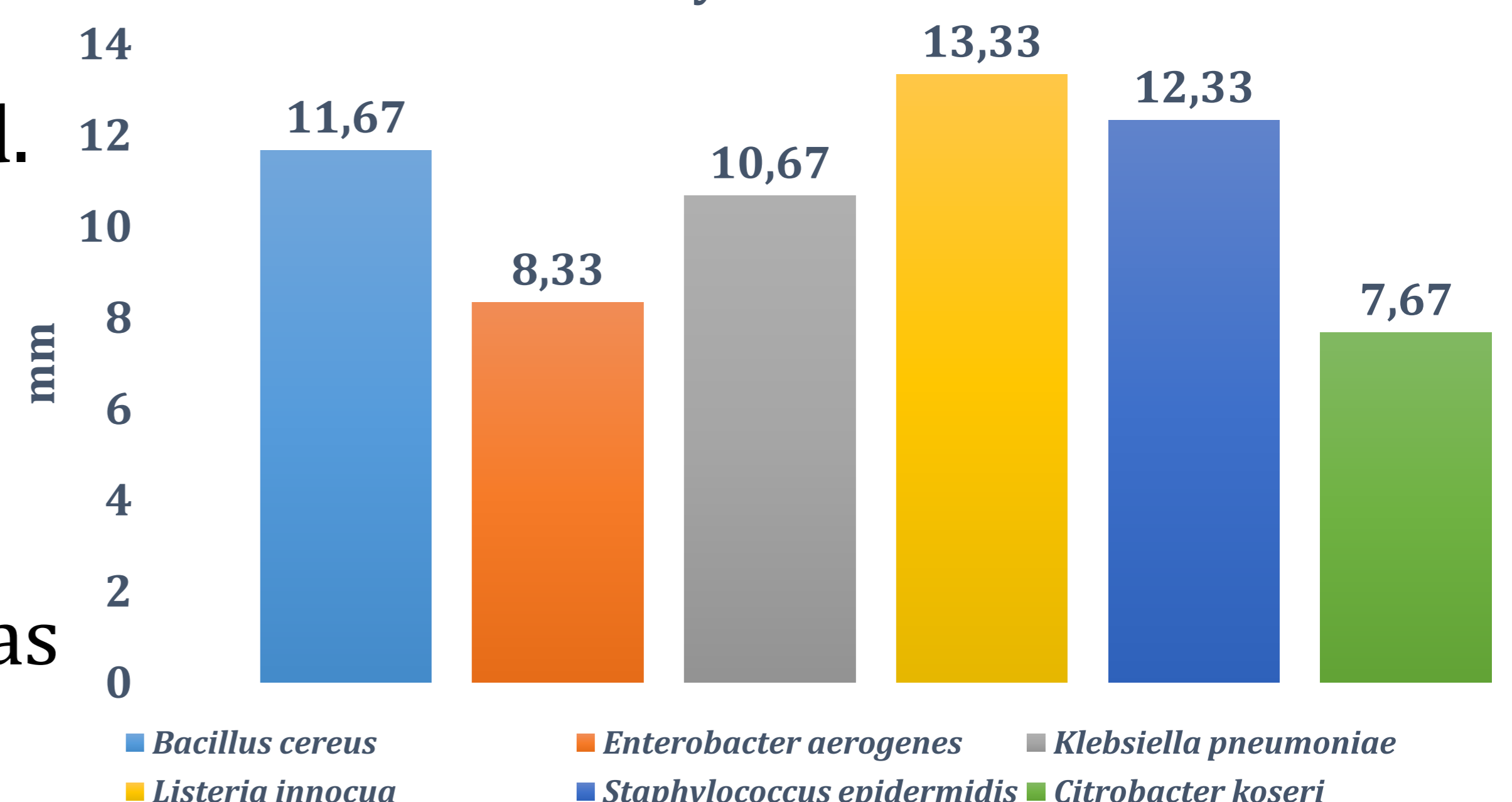
Disc diffusion, MIC (6 bacteria).  
Fumigation assay (*C. maculatus*, *M. dorsalis*).

### • Conclusions

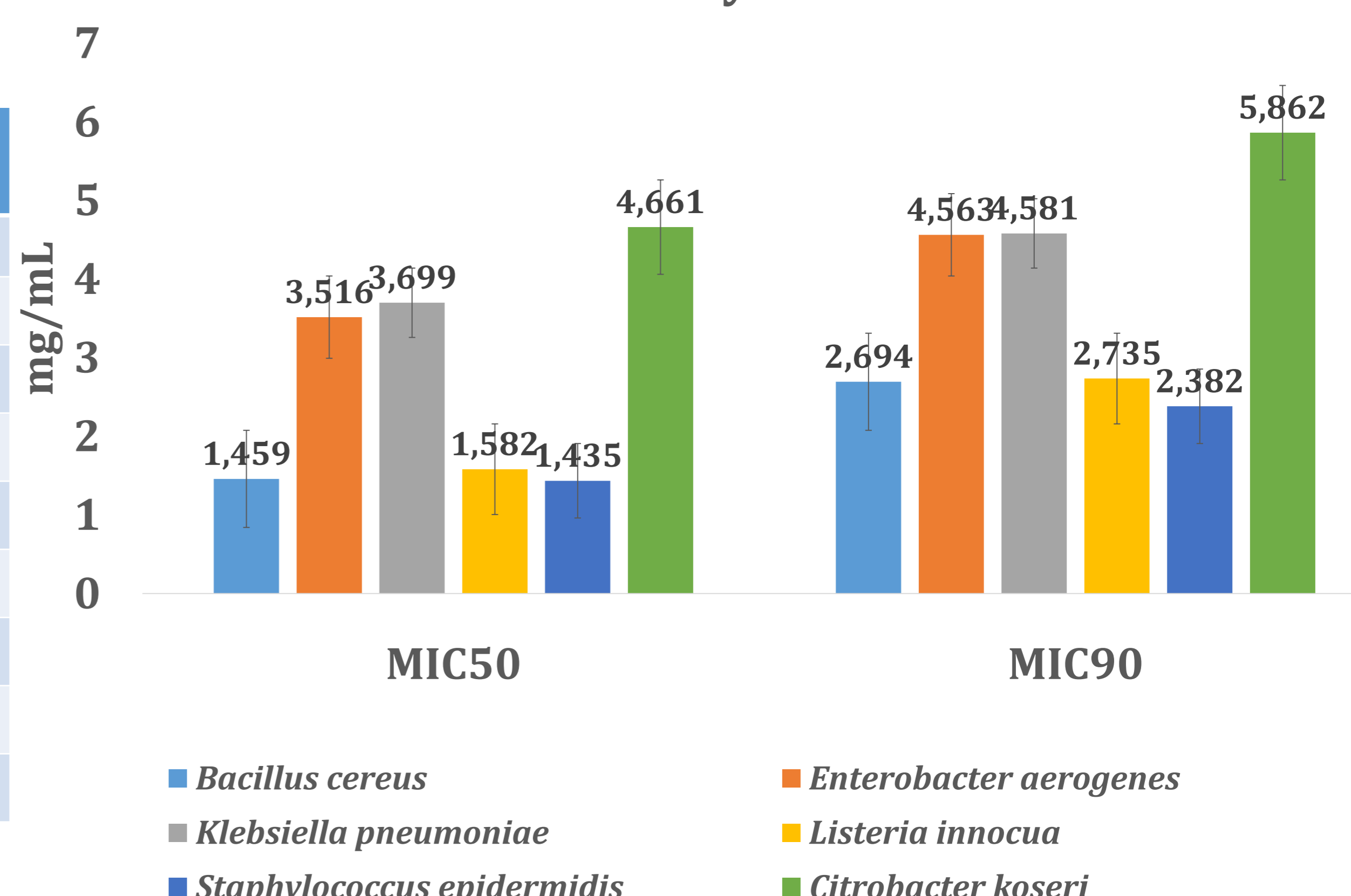
More effective as an insecticidal agent than as an antibacterial agent.

### • Results and discussions

Antimicrobial activity with disc diffusion method



Minimum inhibitory concentrations



Insecticidal activity of Green Plum

Concentration (%)	<i>C. maculatus</i>	<i>M. dorsalis</i>
	Mean ± SD (%)	Mean ± SD (%)
100	96.67 ± 2.52 <sup>a</sup>	92.00 ± 6.08 <sup>a</sup>
50	75.00 ± 3.61 <sup>b</sup>	75.00 ± 2.65 <sup>b</sup>
25	54.33 ± 1.53 <sup>c</sup>	56.67 ± 1.15 <sup>c</sup>
12.5	32.33 ± 2.08 <sup>d</sup>	33.00 ± 1.73 <sup>d</sup>
6.25	21.67 ± 4.16 <sup>e</sup>	22.33 ± 1.15 <sup>e</sup>
3.125	9.33 ± 2.08 <sup>f</sup>	9.67 ± 3.21 <sup>f</sup>
LC <sub>50</sub> (%)	17.49	18.69
LC <sub>90</sub> (%)	78.46	100.86

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