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Tamarind (*Tamarindus indica*) concrete as a natural antimicrobial and insecticidal agent

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Abstract: Tamarind (*Tamarindus indica*) concrete was evaluated for antimicrobial and fumigant insecticidal activity. It inhibited all tested bacteria (MIC₅₀: 0.770–2.625 mg/mL) and showed high insect mortality (up to 92.67%). Results indicate its potential as a natural food protection agent.

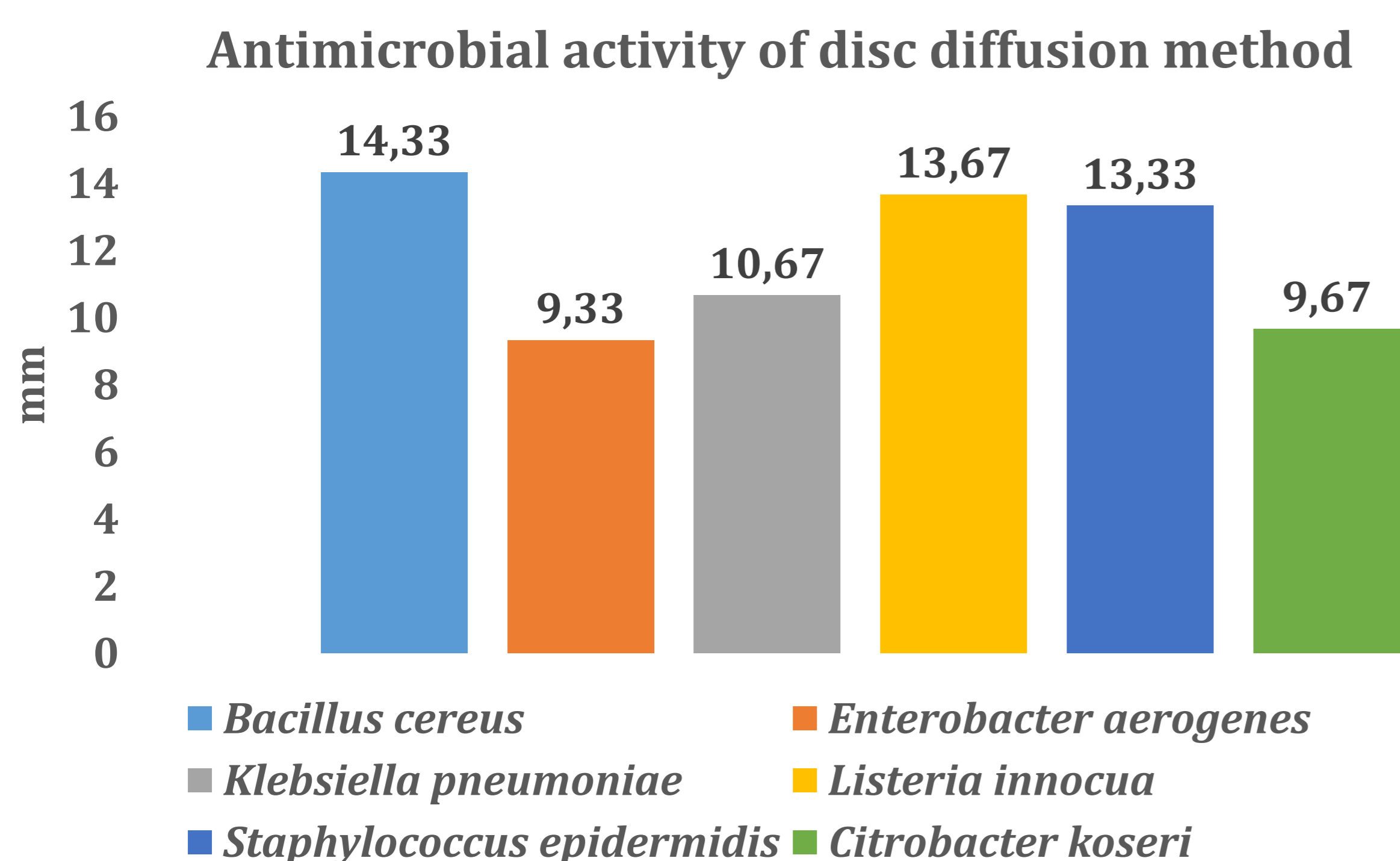
Keywords: *Tamarindus indica*; antimicrobial; insecticidal

• Introduction

Tamarind contains furan derivatives and fatty acid esters with known bioactivity. The biological effects of its concrete remain unclear.

• Results and discussions

Antibacterial activity was observed across all strains (MIC₅₀: 0.770–2.625 mg/mL), particularly against Gram-positive bacteria. High fumigant toxicity reached 92.67%.

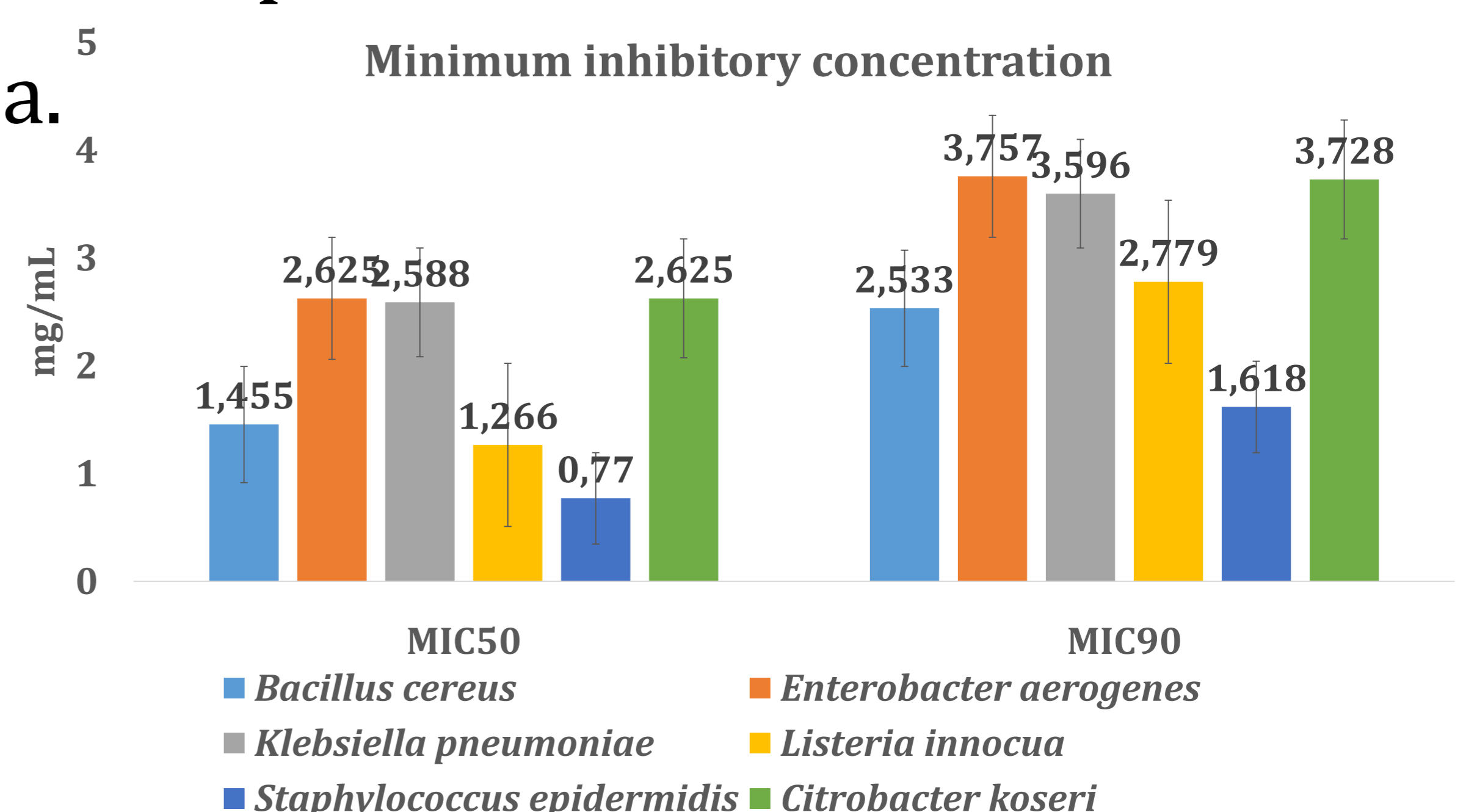


• Material and method

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

• Conclusions

Tamarind concrete shows notable bioactivity. Potential natural agent for food protection.



Insecticidal activity of Tamarind

Concentration (%)	<i>C. maculatus</i> Mean ± SD (%)	<i>M. dorsalis</i> Mean ± SD (%)
100	92.67 ± 3.21 ^a	88.67 ± 5.51 ^a
50	75.67 ± 2.31 ^b	72.67 ± 1.53 ^b
25	53.33 ± 4.51 ^c	52.00 ± 4.58 ^c
12.5	30.67 ± 2.31 ^d	33.00 ± 4.58 ^d
6.25	22.33 ± 2.52 ^e	23.33 ± 6.51 ^d
3.125	8.33 ± 0.58 ^f	10.33 ± 2.08 ^e
LC ₅₀ (%)	19.21	20.09
LC ₉₀ (%)	98.10	123.36

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