

Supporting Information

Benzalkonium Chloride and Benzethonium Chloride Effectively Reduce Spore Germination of Ginger Soft Rot Pathogens: *Fusarium solani* and *Fusarium oxysporum*

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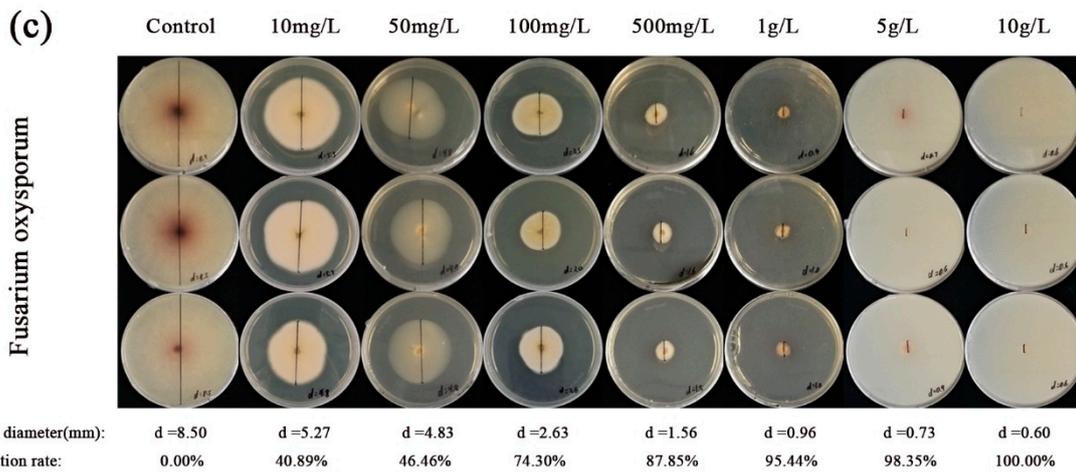
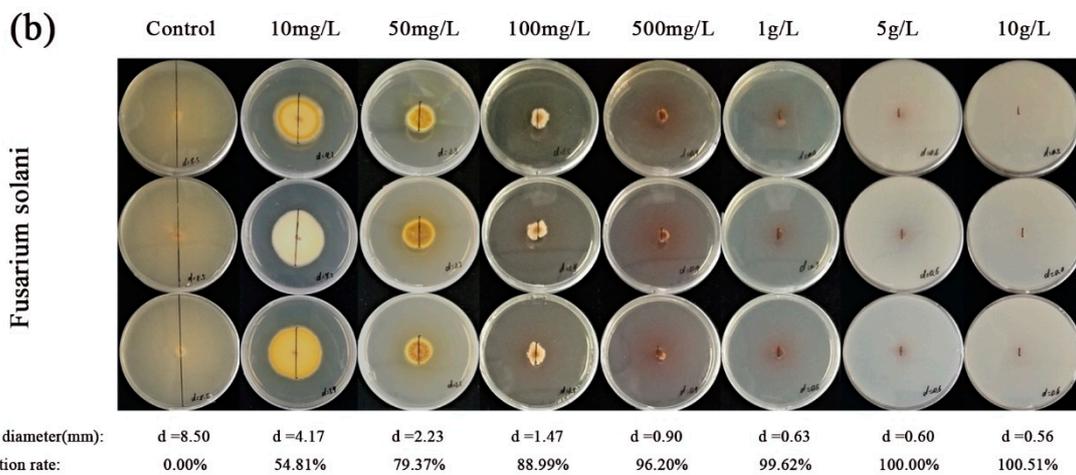
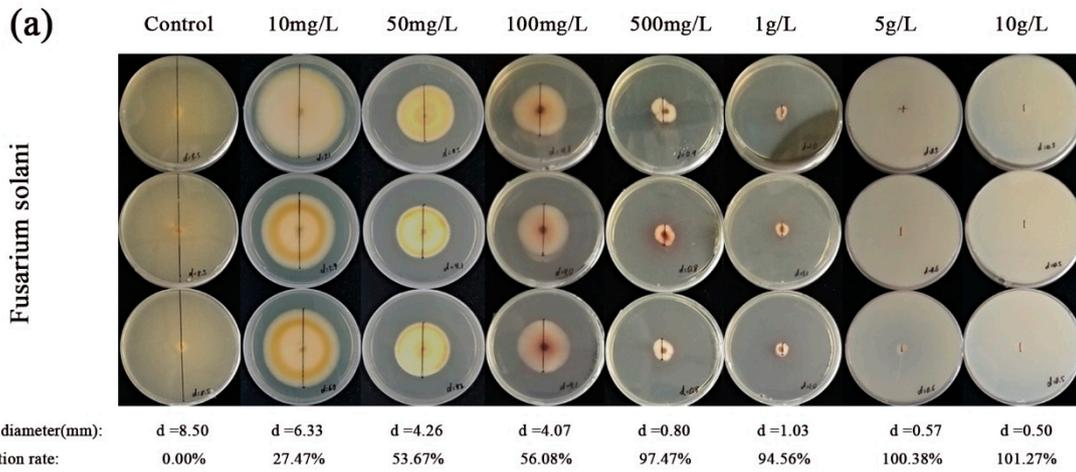
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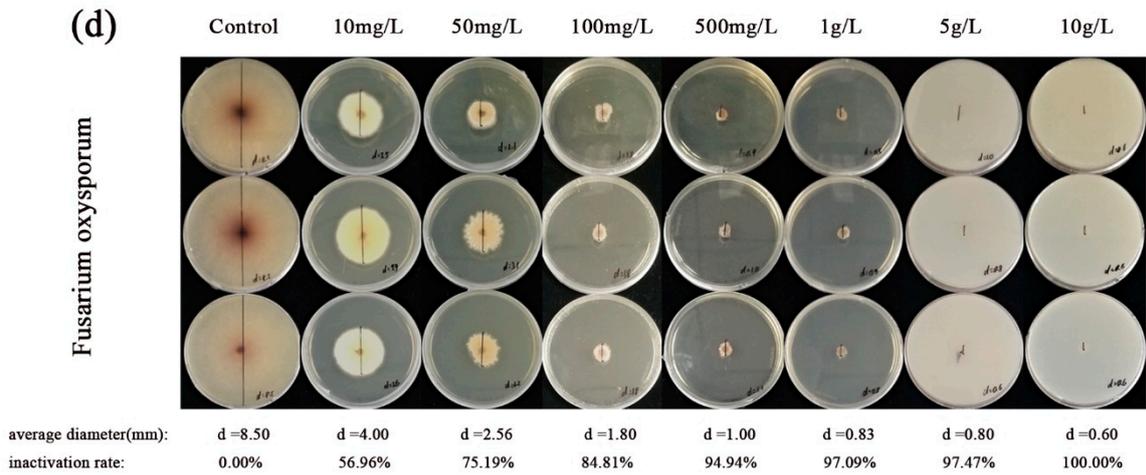


Figure S1. Comparison of mycelial growth of the two fungi after 7 days of incubation on fungicide-containing plates (Corresponds to the bar chart in Figure 4). (a) *Fusarium solani* mycelium after BAC treatment; (b) *Fusarium solani* after BEC treatment; (c) *Fusarium oxysporum* mycelium after BAC treatment; (d) *Fusarium oxysporum* mycelium after BEC treatment. Experimental conditions: [BAC] = [BEC] = 10, 50, 100, 500, 1000, 5000 mg/L; initial concentration of fungal spores = 10^6 CFU/mL; pH = 7.40; T = 28 ± 1 °C.

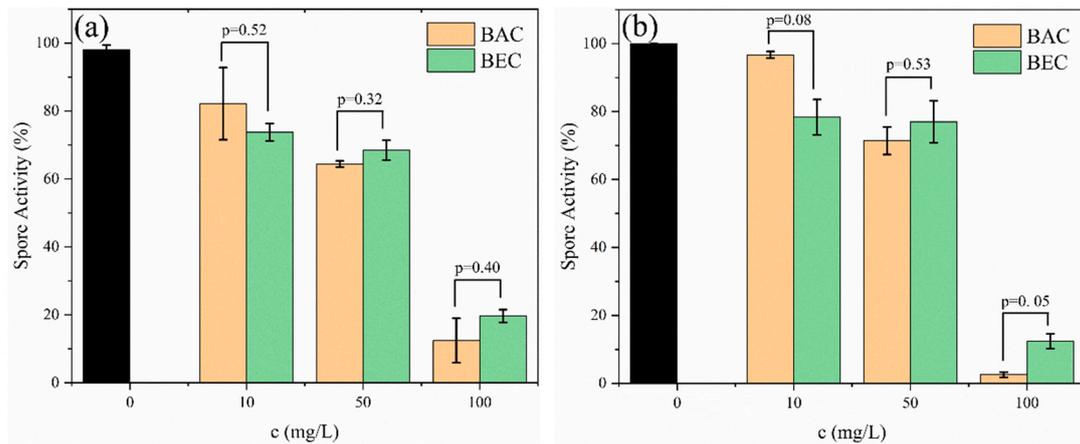


Figure S2. Laser confocal microscopy to observe changes in spore viability. Expressed as the ratio of red fluorescence intensity to total fluorescence intensity. (a) *Fusarium solani* spores and (b) *Fusarium oxysporum* spores. Experimental conditions: initial concentration of fungal spores = 10^6 CFU/mL; pH = 7.40; T = 28 ± 1 °C.

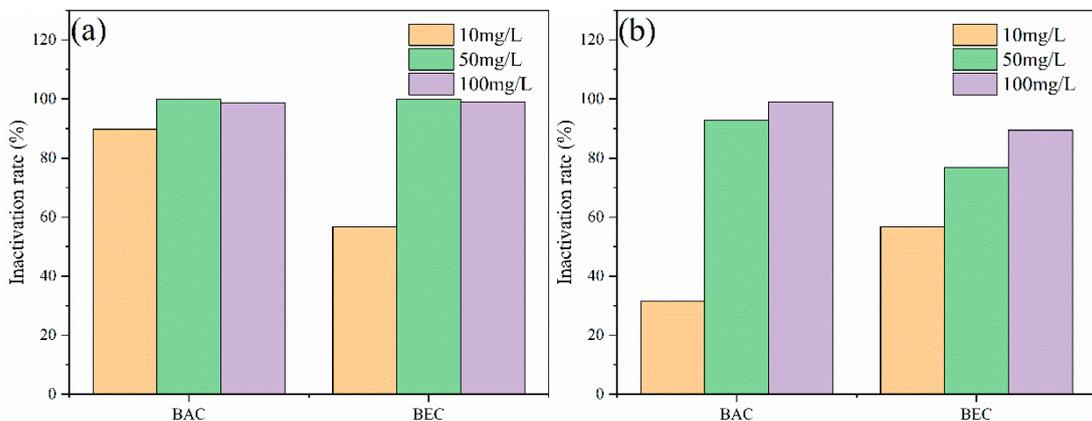


Figure S3. Results of flow cytometric analysis of inactivation of *Fusarium solani* spores (a) and *Fusarium oxysporum* spores (b) by BAC and BEC. Experimental conditions: [BAC] = [BEC] = 10, 50, 100 mg/L; initial concentration of fungal spores = 10^6 CFU/mL; pH = 7.40; T = 28 ± 1 °C.

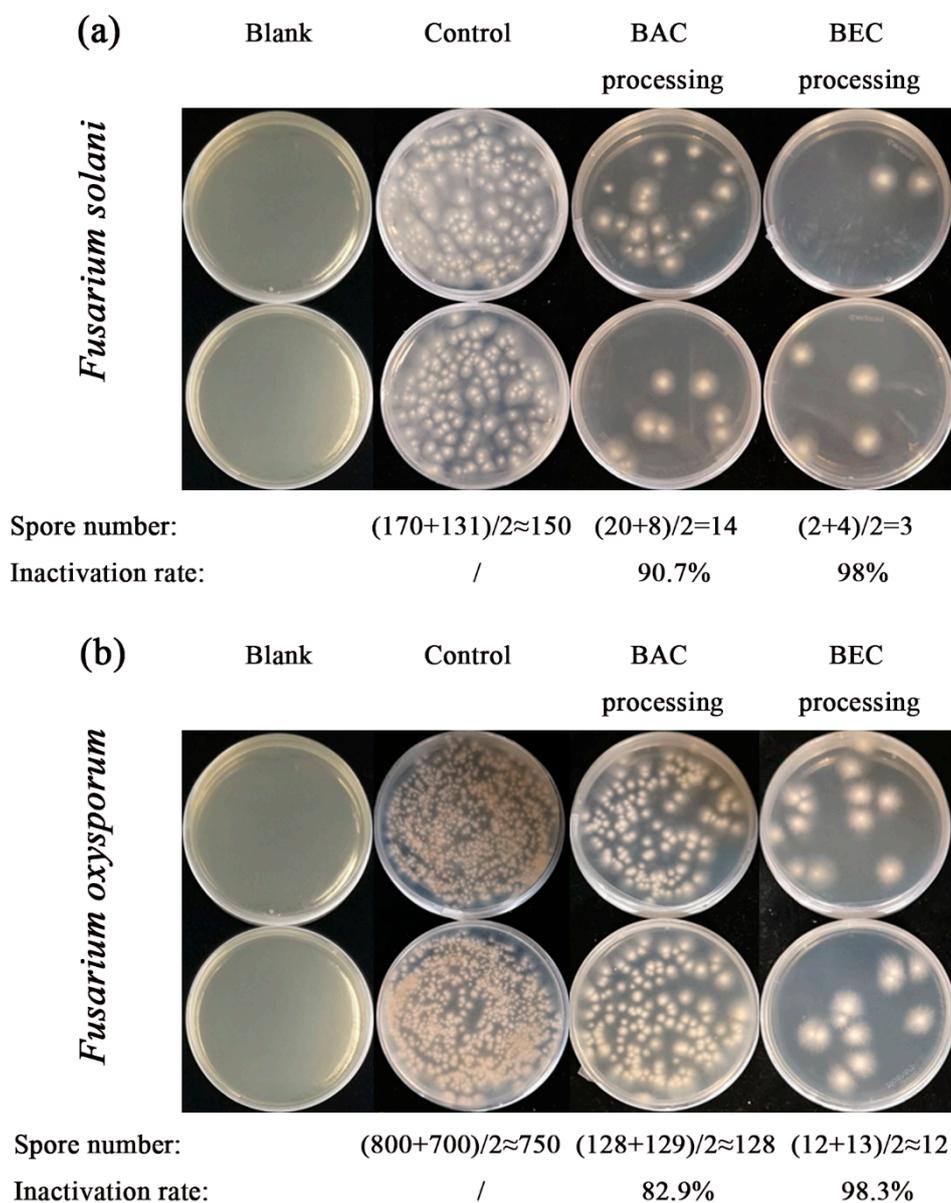


Figure S4. Effect of BAC and BEC on the inactivation of *Fusarium solani* spores (a) and *Fusarium oxysporum* spores (b) in sterilized soil samples. Experimental conditions: [BAC] = [BEC] = 100mg/L; initial concentration of fungal spores = 10^6 CFU/mL; pH = 7.40; T = 28 ± 1 °C; reaction time= 30 min.