Effect of ultraviolet treatment (UV-C) on *Alicyclobacillus acidoterrestris* spores in orange juice

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Outline

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Abstract

Alicyclobacillus ssp. is a bacterium capable of destroying industrial orange juice, and its spores are resistant to heat pasteurization and high hydrostatic pressure during juice processing. Therefore, the effect of effective control alternative UV-C radiation on reducing the spores of *Alicyclobacillus acidoterrestris* was investigated. Orange juice was evaluated at different doses (4.2 to 12.6 kJ/m^2) at UV-C wavelength of 254 nm, but the exposure time did not significantly affect the quantity. The effects of UV-C treatment on raw orange peel (0.3 to 59.9 kJ/m^2) and orange juice spores (31.4 to 370.6 kJ/m^2) were further evaluated. As well as evaluating the use of UV-C radiation in combination with nisin, nisin (7.81 and 15.62 μg/mL) combined with different doses of UV-C (2.52 to 12.6 kJ/m^2) can effectively inactivate spores, And using UHPLC-HRMS found that fruit juice vitamins are not degraded and are a promising alternative for the beverage industry.

Reference

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