

**Title** Effect of ultrasound and commercial sanitizers in removing natural contaminants and *Salmonella enterica* Typhimurium on cherry tomatoes

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#### **Abstract**

The aim of this study was to evaluate the effectiveness of ultrasound treatment combined with commercial sanitizers in the decontamination step of minimally processed cherry tomatoes. Previously selected cherry tomatoes were treated with ultrasound (45 kHz) for 10 min in the presence of 20 and 200 mg/L sodium dichloroisocyanurate, 5% hydrogen peroxide, 10 mg/L chlorine dioxide or 40 mg/L peracetic acid. The reduction of natural contaminant microbiota and inoculated *Salmonella* adhered to the surface of the tomatoes were evaluated. The aerobic mesophilic contamination on the cherry tomatoes was reduced by 0.7–4.4 log<sub>10</sub> cfu/g while molds and yeasts were reduced by 1.1–3.4 log<sub>10</sub> cfu/g after different sanitization treatments. The combined treatment of ultrasound and 40 mg/L peracetic acid resulted in the highest reduction of the natural contaminant population and a reduction of adherent *Salmonella* Typhimurium ATCC 14028 by 3.9 log<sub>10</sub> cfu/g. These results indicate the potential of using ultrasound as auxiliary strategy in the sanitization of cherry tomatoes.