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Inactivation of some pathogenic bacteria and phytoviruses by ultrasonic treatment

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1 **Inactivation of some pathogenic bacteria and phytoviruses by** 2 **ultrasonic treatment**

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10 **Abstract**

11 High intensity ultrasound is becoming important and more widely used in the food
12 industry for microorganisms decontamination. This sterilization technique has been evaluated
13 to improve food safety and to replace common processing with chemical additive compounds.
14 The efficiency of a horn-type power ultrasound treatment (300 W and 600 W, 28 kHz, 10-30
15 min) on *Listeria monocytogenes*, *Bacillus cereus*, *Escherichia coli*, *Salmonella typhimurium*
16 bacteria suspensions and phytoviruses was examined in this study. The results of this study
17 showed that ultrasonic treatment can be used to eliminate vegetative cells of gram-positive
18 and gram-negative bacteria from 1.59 to 3.4 log in bacterial suspensions and some
19 phytoviruses in fruits.

20 **Highlights**

- 21 • The ultrasonic treatment caused a reduction of microorganisms vegetative cells.
- 22 • Spores appear to be more resistant to the ultrasonic treatment than vegetative cells.
- 23 • A 28 kHz, 600 W power ultrasound caused best reduction of pathogenic bacteria.
- 24 • The ultrasonic treatment caused reduction of phytoviruses in fruits.

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