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Microbiological quality and safety assessment of lettuce production in Brazil

Siele Ceuppens, Claudia Titze Hessel, Rochele de Quadros Rodrigues, Sabrina Bartz, Eduardo César Tondo, Mieke Uyttendaele

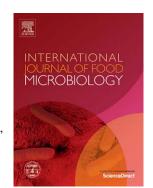
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# **ACCEPTED MANUSCRIPT**

#### Title

Microbiological quality and safety assessment of lettuce production in Brazil

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#### **Keywords**

lettuce, faecal indicators, Salmonella, E. coli O157:H7, irrigation water, organic fertilizer.

## **Abstract**

The microbiological quality and safety of lettuce during primary production in Brazil was determined by enumeration of hygiene indicators *E. coli*, coliforms and enterococci and detection of enteric pathogens *Salmonella* and *E. coli* O157:H7 in organic fertilizers, soil, irrigation water, lettuce crops, harvest boxes and worker's hands taken from six different lettuce farms throughout the crop growth cycle. Generic *E. coli* was a suitable indicator for the presence of *Salmonella* and *E. coli* O157:H7, while coliforms and enterococci were not. Few pathogens were detected: 5 salmonellae and 2 *E. coli* O157:H7 from 260 samples, of which only one was lettuce and the others were manure, soil and water. Most (5/7) pathogens

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