Title Microbial safety of fresh-cut vegetables

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Abstract

As consumption of fresh produce increases, there has been an increase in produce-linked food poisoning outbreaks. A number of serious outbreaks involving *E. coli* 0157:H7 have been linked to fresh-cut vegetables, notably lettuce and spinach. While it has been difficult to determine the exact route of contamination, the environment and agricultural practices around production and harvesting are of particular concern. Potential implications of production, harvesting, minimal processing, packaging, and distribution for the contamination, survival and growth of human pathogens are outlined. Wild birds and animals, contaminated water, and human contact are important potential sources of contamination. Anti-microbial treatments during minimal processing are useful, but cannot be relied upon to eliminate pathogens. Modified atmospheres extend product life and appear safe when combined with chill storage. Temperature control is very important, as storage at even mild abuse temperatures (e.g. 8°C) can facilitate rapid proliferation of pathogens. Measures available to ensure the safety of fresh-cut vegetables are listed, based on current knowledge, highlighting knowledge gaps and challenges. The paper concludes that the fresh-cut system remains exposed because it lacks a pasteurisation step, and that additional measures are needed to protect public health.