

Lettuce, Leafy Greens And E. Coli

ScienceDaily (Sep. 7, 2007) — The rise in year-round consumption of fresh leafy greens such as lettuce and baby spinach is increasing the difficulty of keeping produce free from contamination by food poisoning bacteria, according to scientists.

"The only land suitable for supplying this abundance of year-round, high quality, fresh leafy vegetables, which are eaten raw by large populations in Europe and the United States, is in special geographic regions, with ideal soil and climate conditions", says Robert Mandrell from the US Department of Agriculture's Research Service in Albany, California.

This move to the year-round supply of leafy vegetables has required new methods to clean, package and deliver rapidly these fragile food items across large distances to consumers in many parts of the world. These include harvesting mowers for some leafy greens, processing in water flumes and triple washing, and modified atmosphere packaging for extended shelf-life.

Recent food scares and food poisoning outbreaks have led to intensive investigations of farms and ranches. These have shown that at least some food poisoning bacteria outbreaks have been due to field contamination before the greens are even harvested.

"This situation complicates strategies for eliminating illnesses and outbreaks due to the complex ecosystem of multiple potential sources, such as water, wildlife, and nearby livestock, all of which could be sources of bacteria causing food poisoning", says Robert Mandrell.

Following wide media coverage of outbreaks caused by E. coli in leafy vegetables and Salmonella in tomatoes, the US fresh produce industry and federal and state agencies are trying to address the microbial food safety of leafy greens and other vegetables. Major US produce industry associations have worked together to establish a marketing agreement, a set of food safety guidelines (metrics) for growers to produce and harvest leafy greens, and have increased funding for research.

Probably, a convergence of unusual events is required for very large outbreaks to occur, a factor everyone is hoping will not affect 2007 harvests. Logical theories about pre-harvest contamination provide points for study, but no definitive conclusions about the most recent outbreaks can be provided. Fresh, minimally processed leafy greens are here to stay, if the industry continues to work hard to re-establish consumer confidence.

Dr Mandrell is presenting the paper 'Fresh leafy greens and Escherichia coli O157:H7: outbreaks, incidence in the environment, source-tracking' at 0945 on Monday 03 September 2007 in the Microbial Infection Group session of the 161st Meeting of the Society for General Microbiology at the University of Edinburgh, 03 - 06 September 2007.

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