

Results: Treatment with 2 kGy irradiation dose reduced considerably the microbiological contamination of carrot and tomato on the day of exposure. The microorganisms surviving the irradiation on tomato were able to grow, while the number of microorganisms on carrots did not grow significantly during refrigerated storage. The effect of irradiation on *Listeria* strains was dose-related on tomatoes, while on carrot doses above 0.5 kGy decreased its number below detection limit. Radiation doses of 0–2 kGy had no significant effect on sensory properties. Chemical parameters did not seem to be dose dependent.

Significance: The results of these studies suggest that radiation processing can ensure safety of minimally processed foods of pre-cut selected vegetables. Assistance of AGROSTER Co. Ltd Budapest in irradiation of samples is highly acknowledged. This work was supported by IAEA Nr.16243 and the TÁMOP-4.2.1/B-09/1, TÁMOP-4.2.2/B-10 projects.

P3-26 Incidence of Salmonella in Organic Fruits and Alternative Control of this Pathogen in Post-harvest Mangoes

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Introduction: Data on the microbiological safety of organic fruits are still scarce. Tomatoes and strawberries are among the most consumed organic produce. An outbreak of salmonellosis in the United States associated with consumption of Brazilian mangoes has been documented. A hot water immersion treatment to kill fly larvae is thought to be responsible for contamination. Alternative treatments such as a mixture of warm water and ethanol have not been evaluated for effectiveness in killing *Salmonella* on mangoes.

Purpose: To study the incidence of *Salmonella* in organic fruits (strawberry, mangoes and tomatoes) and to evaluate the combined effects of warm water and ethanol for controlling this pathogen on post-harvest mangoes.

Methods: Organic fruits (mangoes, tomatoes and strawberries) were collected from markets and analysed for *Salmonella* presence according to the BAM method. An alternative treatment was also studied for *Salmonella* control in mangoes. Mangoes were spot-inoculated with *Salmonella*, dried, and immersed in water containing ethanol (0, 1, 3, 5 and 7) at 46°C for 70 min, then cooled in water at 21°C for 30 min. Populations of *Salmonella* on mangoes were evaluated before and after treatments. Physical-chemical analysis of treated and control mangoes stored for at 25°C/75% RH and at 10°C/90% RH were also performed.

Results: *Salmonella* was not detected in the three organic fruits analyzed. Mangoes spot-inoculated with *Salmonella*, dried, immersed in warm water (46°C/70 min) containing ethanol (0, 3, 5 and 7%) and cooled in water at 21°C for 30 minutes still showed the pathogen presence. Quality of treated mangoes was affected during subsequent storage at 10°C/90% RH but not at 25°C/75% RH.

Significance: Organic tomatoes, mangoes and strawberries grown in Brazil were not found to be contaminated with *Salmonella*. Other treatment methods should be tested to achieve elimination of *Salmonella* without compromising fruit quality during storage at refrigerated temperature.

P3-27 Development and Evaluation of an Immunochromatographic Rapid Assay for the Detection of Pathogenic Vibrio parahaemolyticus in Marine Food

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Introduction: *Vibrio parahaemolyticus* is an important foodborne pathogen throughout the world, particularly in Asian countries where it is a major cause of foodborne illnesses. Infections are mostly associated with the consumption of contaminated raw or undercooked seafood and manifest in gastroenteritis. The thermostable direct hemolysin (TDH) is known as the major virulence factor. Standard detection methods are mainly cultural based, labour-intensive and time-consuming (3 to 7 days). Rapid deterioration of raw seafood in particular, requires faster detection methods. Lateral Flow technology offers a reliable, fast and user-friendly, alternative detection method.

Purpose: To develop and evaluate an immunochromatographic assay for detection of pathogenic *Vibrio parahaemolyticus* from marine food, as a rapid alternative to standard reference methods.

Methods: A sandwich Lateral Flow assay was developed, using gold labelled specific antibodies for detection of TDH of *Vibrio parahaemolyticus*. Evaluation included determination of detection limit of TDH and of pure cultures, inclusivity testing of 23 *tdh*-positive *V. parahaemolyticus* strains and exclusivity testing of 69 *tdh*-