

Effect of meat aging on survival of MS2 bacteriophage as a surrogate of enteric viruses on lamb meat

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Background: The objective of this study was to determine the role of meat aging process on survival of male specific bacteriophage MS2 on meat.

Methods: MS2 was used as a viral surrogate to study the impact of aging on enteric viruses on lamb meat. They were spiked at concentration of 10, 103 or 105 pfu on lamb chops sliced into cuts of meats at 10×10×1.5 cm³, and were stored at 4°C for 14 days. Physicochemical characteristics such as pH, oxidation-reduction potential, water holding capacity and total count of mesophilic bacteria as well as MS2 were measured during the aging.

Results: The results indicated that the aging were not sufficient to completely inactivate all spiked MS2 on the lamb meat. However, physicochemical changes during muscle convert to meat significantly reduced MS2 survival (P<0.05).

Conclusion: The results also indicated that by increasing the spiked concentration of MS2, the survival rate of virus was significantly increased (P<0.05).

Keywords: Aging process, Enteric virus, Lamb meat, MS2 bacteriophage, Physicochemical properties

Animal cloning and Food Production

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Somatic Cell Nuclear Transfer (SCNT), or cloning, is likely to be used for the expansion of elite breeding stock of agronomically important livestock used for food. Cloning is a way to control genetic selection by preventing the random distribution of parent genes into offspring that takes place in sexual reproduction and makes possible the use of genomes from validated genitors. Cloning can be used in breeding to accelerate the introduction of desired traits into herds. The first cloned animal, "Dolly the sheep", was born in Scotland. Most commercial cloning is mainly taking place in cattle and pigs in the US. The risk assessment is comprised of two prongs; The first evaluates the health of animal clones, and is referred to as the Critical Biological Systems Approach. The second considers the composition of meat and milk from animal clones. There have been no health effects seen in sexually reproduced offspring of clones and conventional animals. Meat and food products (such as milk from cattle) from clones and their offspring are within the normal range observed in conventional products, and it is unlikely to be any food safety issues consuming such products. Many bodies, including The European Group on Ethics and the Advisory Committee on Novel Food and Processes, express the opinion that products from cloned animals and their offspring should be labelled. Therefore, we conclude that food from the progeny of any clone poses no more risk than food from any other sexually reproduced animal. No additional management measures need to be implemented to safeguard food products derived from clone progeny.

Keywords: Animal cloning, Somatic Cell Nuclear Transfer (SCNT), Food Safety, labeling