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May 31, 2005

Study of High Pressure Treatment to Inactivate Norwalk Virus Underway
Infectious disease research part of \$0.6 M grant from USDA/CSREES

Blacksburg, VA -- The U.S. Department of Agriculture's Cooperative State Research, Education, and Extension Service (USDA/CSREES) announced that Virginia Tech, in collaboration with the USDA/ARS Microbial Safety of Aquaculture Products Center of Excellence (Dover, DE), and the Rollins School of Public Health at Emory University (Atlanta, GA) were awarded a grant to study the effects of high hydrostatic pressure in inactivating Norwalk virus, using oysters as a model.

Norwalk and Norwalk-like viruses (collectively 'noroviruses') are the most common cause of foodborne disease outbreaks in the U.S., with 22 million cases reported annually. Disease is characterized by nausea and gastroenteritis, and usually passes in 2-3 days with no long term effects. The disease is rarely fatal, but dehydration can become dangerous in rare cases. In the U.S., most outbreaks are linked to consumption of raw oysters and clams, contaminated water, raw salads, and ready-to-eat foods. Noroviruses are resistant to detergents, solvents, high temperatures and freezing, and are extremely contagious.

The research team, which includes Drs. Daniel Holliman and George Flick (MD and PhD, respectively, Virginia Tech), Christine Moe (PhD, Emory University), David Kingsley and Gary Richards (both PhD's, USDA/ARS) will identify one or more high pressure processing schedules resulting in virus inactivation. Co-PI Angela Correa (Virginia Tech) will develop a suite of education and outreach materials on the applications of high pressure for human pathogen reduction in foods.

The study will also include an evaluation of the murine norovirus-1 (MNV-1) as a research surrogate for human norovirus, specifically Norwalk virus. Results obtained from human subjects will be compared to those obtained using mice to determine if the mouse model is equally effective for determining rates of virus inactivation achieved through high pressure processing. Validation of a murine model would greatly simplify future research on noroviruses.

Most importantly, the study should make consumers safer from foodborne infectious disease.

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