Neogen launches breakthrough NeoSEEK™ system for rapid genomic detection and identification of emerging pathogens

Neogen Corporation has announced the development of a breakthrough pathogen detection and identification technology that provides next day, DNA-specific test results for seven pathogenic E. coli strains.

The technology could be adapted to target almost any bacterium of concern in almost any food sample type.

Neogen's new NeoSEEK™ pathogen DNA detection method for E. coli strains is the first food safety laboratory technology developed through the close collaboration of Neogen's food safety research group and the company's GeneSeek research team.

Acquired by Neogen in April 2010, GeneSeek is considered the leading commercial agricultural genetics laboratory in the United States.

"The NeoSEEK food safety technology is exactly the type of technology we envisioned developing when we acquired GeneSeek," said James Herbert, Neogen's chairman and CEO.

"GeneSeek has been very successful in employing DNA genotyping technology for animal applications.

Food safety applications are natural extensions of that technology. As recent worldwide food recalls have clearly shown, regulators and the food industry need a rapid, DNA-definitive test for bacterial pathogens.

NeoSEEK provides that DNA-definitive test result." Initially, Neogen will provide next-day results from enriched samples through its GeneSeek laboratory facilities for seven E. coli strains — O26, O45, O103, O111, O121, O145, and O157.

Like the better known and widely regulated E. coli O157:H7 strain, these other six E. coli strains are known food safety concerns, and produce Shiga toxins, which are well known to cause severe illness.

The NeoSEEK technology uses mass spectrometry based multiplexing to develop a "DNA bar code" for bacteria in a food sample, and then

compares those results with the known genetic makeup of the target E. coli strains to identify and differentiate the target strains.
NeoSEEK assays a total of 71 independent genetic markers to detect and identify, which provides actionable results much sooner than conventional cultural methods.

The extreme sensitivity of the method allows a limit of detection far more sensitive than existing rapid methods for the pathogens.

The technology is expandable and customizable to include any bacteria for which a genetic profile can be developed, whether they be dangerous foodborne pathogens, or spoilage microorganisms that present food quality and shelf-life concerns.

NEOGEN CORPORATION ISO 9001:2000