

New method to detect bacterial contamination

At the University of Wales-Aberystwyth (UWA), the United Kingdom, a team of researchers have demonstrated a novel analytical approach to detect spoilage caused by micro-organisms. The new method provides rapid, accurate and quantitative results in real time. The UWA team used Fourier Transform Infrared (FT-IR) spectroscopy to produce a 'fingerprint' of the biochemical changes that occur on the surface of chicken breast meat, caused by microbial growth. These metabolic changes result in a number of organoleptic features that make meat unacceptable to consumers, including changes in appearance, development of off-odours, slime formation or changes in taste. Measuring biochemical alterations within the meat substrate enhances and accelerates the detection of microbial spoilage.

Horizontal attenuated total reflectance (HATR) FT-IR spectroscopy has been developed with the most appropriate machine learning algorithms for estimating the bacterial total viable count directly off the surface of muscle foods. The effectiveness of this technology has been established through a detailed investigation of the natural spoilage process on chicken breast muscles. In addition, this technique yields results within a few seconds. *Contact: University of Wales-Aberystwyth, Old College, King Street, Aberystwyth, Ceredigion SY23 2AX, the United Kingdom. Tel: +44 (1970) 623 111. (Website: www.aber.ac.uk)*