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Certification of Grass-fed Quality Characteristics of Beef Based on Small Molecule Markers

A fast, on-site, and accurate method uses lipid profiling coupled with mass spectrometry to validate grass-fed claims in beef, reducing certification costs and risk of adulteration.

Researchers at Purdue University and the University of Sao Paulo have developed a method to determine the type of feed provided to the cattle. Grass-fed beef has been recognized as healthier than grain-fed beef. However, there has been no optimum way to independently validate the grass-fed claim. The Purdue and Sao Paulo researchers' method uses a lipid panel coupled with mass spectrometry to identify the metabolized products of grass and grain, allowing determination of whether the cows were fed grass or grain in finishing. This technology allows for a fast and accurate approach to determine the beef quality and meet certification requirements, reducing costs and risk of adulteration.

Technology Validation: 7 lipids were identified that correlated with luminosity, 43 with redness, and 132 with shear force. Luminosity, redness, and shear force each has a distinct characteristic for grass-fed and grain-fed beef.

Advantages

- fast (2 minutes)

- on-site analysis

- avoids certification costs and adulteration

- increased consumer confidence

Applications

- validation of finishing feed composition for cattle

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Category
Agriculture, Nutrition, & AgTech/Food Safety & Traceability
Biotechnology & Life Sciences/Analytical & Diagnostic Instrumentation

Authors
Daniel Antonelo
Julio Balieiro
Christina R Ferreira

Further information
Dipak Narula
dnarula@prf.org

View online

For additional information, please visit Dr. Ferreira's homepage: https://www.purdue.edu/discoverypark/bioscience/directory/view.php?id=3037

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Intellectual Property:

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