

## Accepted Manuscript

High pH thresholding of beef with VNIR hyperspectral imaging

Stuart O.J. Crichton, Sascha M. Kirchner, Victoria Porley, Stefanie Retz, Gardis von Gersdorff, Oliver Hensel, Barbara Sturm



PII: S0309-1740(17)30165-1

DOI: doi: [10.1016/j.meatsci.2017.07.012](https://doi.org/10.1016/j.meatsci.2017.07.012)

Reference: MESC 7318

To appear in: *Meat Science*

Received date: 8 February 2017

Revised date: 14 June 2017

Accepted date: 17 July 2017

Please cite this article as: Stuart O.J. Crichton, Sascha M. Kirchner, Victoria Porley, Stefanie Retz, Gardis von Gersdorff, Oliver Hensel, Barbara Sturm, High pH thresholding of beef with VNIR hyperspectral imaging, *Meat Science* (2017), doi: [10.1016/j.meatsci.2017.07.012](https://doi.org/10.1016/j.meatsci.2017.07.012)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

## High pH thresholding of beef with VNIR hyperspectral imaging

Stuart O.J. Crichton<sup>1</sup>, Sascha M. Kirchner<sup>1</sup>, Victoria Porley<sup>2,3</sup>, Stefanie Retz<sup>1</sup>, Gardis von Gersdorff<sup>1</sup>, Oliver Hensel<sup>1</sup>, Barbara Sturm<sup>1,4\*</sup>

<sup>1</sup>Postharvest Technologies and Processing Group, Department of Agricultural Engineering, University of Kassel, Witzenhausen, Germany

<sup>2</sup>School of Chemistry, University of St Andrews, St Andrews, UK

<sup>3</sup>School of Physics, University of St Andrews, St Andrews, UK

<sup>4</sup>School of Agriculture, Food and Rural Development, Newcastle University, Newcastle upon Tyne, UK

## Highlights

- A novel non-invasive approach detects whether beef has a pH above a specific threshold tending towards being dry, firm, and dark (DFD) meat.
- The constructed classification model exhibits a robust detection of beef meat with high pH even under different freshness conditions.
- The underlying biochemical and physical aspects of DFD meat and in conjunction with its spectral response is thoroughly discussed.

## Abstract

Initial quality grading of meat is generally carried out using invasive and occasionally destructive sampling for the purposes of pH testing. Precise pH and thresholds exist to allow the classification of different statuses of meat, e.g. for detection of dry, firm, and dark (DFD) (when dealing with cattle and sheep), or pale, soft exudative meat (when dealing with pork).

---

\* Corresponding Author: [barbarasturm@daad-alumni.de](mailto:barbarasturm@daad-alumni.de)

Download English Version:

<https://daneshyari.com/en/article/5543206>

Download Persian Version:

<https://daneshyari.com/article/5543206>

[Daneshyari.com](https://daneshyari.com)