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Texture characterization of dry-cured ham using multi energy X-ray analysis

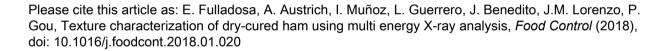
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- 12 **Abstract** Multi energy X-ray sensors are able to differentiate and quantify X-rays of
- different energies. In contrast to conventional sensors, which simply record the overall
- energy of the X-rays whatever the energy of x-rays is, multi energy sensors provides a
- spectrum of the X-rays energies, which may be differently attenuated. In this study, the
- 16 feasibility of this technology to detect changes in dry-cured ham slices after inducing
- 17 proteolysis was evaluated. Effect of salt and water contents on the attenuation was also
- 18 studied. In addition, the classification of commercial samples according to their
- 19 proteolysis index was assessed. Results showed a decrease of attenuation for increasing
- 20 proteolysis induction times (p<0.01) for all the regions of the spectrum (energy bands),
- but not with the same intensity, at any of the analysed acquisition conditions. Salt and
- 22 water contents produced a significant (p<0.01) effect on the attenuation. Influence of salt
- 23 content was higher than that of water content, and both affected the prediction of the
- 24 proteolysis index. Classification score of commercial samples exhibited a limited
- 25 discrimination capacity, showing the need for more sophisticated data analysis.

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Key Words – non-destructive, quality evaluation, proteolysis, spectrometry

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