

# **Effect of temperature, high pressure and freezing/thawing of dry-cured ham slices on dielectric time domain reflectometry response**

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## **Abstract**

Dielectric Time Domain Reflectometry (TDR) is a useful technique for the characterization and classification of dry-cured ham according to its composition. However, changes in the behavior of dielectric properties may occur depending on environmental factors and processing. The effect of temperature, high pressure (HP) and freezing/thawing of dry-cured ham slices on the obtained TDR curves and on the predictions of salt and water contents when using previously developed predictive models, was evaluated in three independent experiments. The results showed that at temperatures below 20 °C there is an increase of the predicted salt content error, being more important in samples with higher water content. HP treatment caused a decrease of the reflected signal intensity due to the major mobility of available ions promoting an increase of the predicted salt content. Freezing/thawing treatment caused an increase of the reflected signal intensity due to the microstructural damages and the loss of water and ions, promoting a decrease of the predicted salt content.