

**Title** Microwave dielectric spectroscopy for the determination of pork meat quality  
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#### **Abstract**

The use of dielectric spectra to detect quality defects in porcine muscle during postmortem period was evaluated. The changes in dielectric spectra during meat ageing were also studied. For these purposes, dielectric spectra were measured by using an *Agilent 85070E Open-ended Coaxial Probe* connected to an *Agilent E8362B Vector Network Analyzer* from 500 MHz to 20 GHz parallel and perpendicular to muscle fiber direction. This study reveals that dielectric properties at two punctual frequencies (0.5 GHz and 10 GHz) are a useful tool to determine meat quality classes (RFN, PSE, and DFD) soon (6 h) after slaughter. Based on these results, it is possible to develop control algorithms in order to discriminate low quality pork meats and to decide their best uses. Moreover, the evolution of dielectric spectra during meat ageing showed important variations only in DFD meats, while in PSE and RFN meats the variations were observed only at some punctual frequencies of the spectrum during the 24 h after slaughter.