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8th International Conference on

ANIMAL HEALTH & VETERINARY MEDICINE

October 20-21, 2017 | Toronto, Canada

Analysis of ultrasonic attenuation as a technique to identify different types of meat cuts

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In order to strengthen the reliability in the sale and purchase of meat, it is necessary to certify the type of cuts bought by the customer. Therefore, the ultrasound was used to verify if the attenuation coefficient is an intrinsic acoustic property to each meat cuts, generating positive impacts in the modernization of the meat trade. Thus, the pulse-echo technique was employed using a function generator applying an electric pulse at 1.0 MHz in one transducer (Olimpicus) immersed in distilled water aligned with an aluminum reflector by positioners. An oscilloscope (TEKTRONIX TPS2024) connected to a computer via the USB port was used to save and process the signal. Three samples of each meat cuts (strip loin, full rump and rump tail) with average thickness of 0.87 ± 0.05 cm were immerse in water at 26°C where the ultrasound signals were transmitted and receipt by transducer five times in order to determine the acoustic attenuation. The signals were acquired and processed by a software developed in Labview Platform. The results showed that strip loin attenuation was 3.15 ± 1.08, full rump 1.35 ± 1.07 and rump tail 2.37 ± 1.20 dB/cm^2. The anova analysis at α 0.05 shows p-value of 0.072 and F of 3.28. There was no difference between the meat cuts attenuation, but maybe this is due to technical difficulties. Some technical improvements can be made.

Biography

Glória Diniz Pires de Contreira is a student of Veterinary Medicine at the Federal University of Acre.

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