

Vincenti L., Ricci A., Protti E., Masoero G., 2013. Evaluation of bovine ovaries by NIR: preliminary report. *Reproduction in Domestic Animals*, 48, supp.1, 115. Poster 173.

P173

Evaluation of bovine ovaries by NIR: preliminary report

L Vincenti ¹, A Ricci ¹, E Protti ¹, G Masoero ²

¹DPT Scienze Veterinarie, Grugliasco, Italy; ²Accademia di Agricoltura di Torino, Torino, Italy

A total of 110 bovine ovaries in different stages of the estrus cycle were collected from slaughterhouse and were submitted to Chemometrics evaluation using the FT-NIR Spectrum IdentiCheck FTNIR System (Perkin-Elmer, Beaconsfield, England). The instrument was used to scan the fresh samples in the range from 714 to 3333 nm. The samples were stored at 26°C in saline in separate vials and read with the NIR in the afternoon. Different parts of the ovaries were examined (Corpus Luteum, Follicles, Parenchyma, Ovarian peduncle, etc.). A good discrimination was found among the different tissues. As expected, the parenchyma is more distinct from the CL examined vertically and CL is recognized separately in its position. In particular, the area close to the baseline CL but away from the apex at least ½ of the width of the ovary is distinctive. The native spectra were imported into the WinISI II vers.1.5 software (Infrasoft International, Port Matilda, PA, USA) and elaborated with first derivative mathematical treatment (2751 absorbance points). The modified partial least squares (MPLS) method ($t > 2.0$) and the cross-validation test were utilized. Statistics of the capacity of the NIRS to estimate the target discriminative variables were the Rsquare in cross-validation (1-RV) which resulted 0.88 for CL vs. parenchyma discrimination, the standard error in cross-validation (SECV) and the relative prediction deviation (RPD = SD/SECV) which resulted 2.9 for the previous contrast. To our knowledge it is the first application of NIR analysis to ovarian tissues and we are working to discriminate active and inactive CL spectra.