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BOOK OF ABSTRACTS

HERITABILITY ESTIMATE OF MEDULLATED FIBRE IN ALPACA HUACAYA

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The aim was to estimate the heritability of medullated fibre in alpaca Huacaya. Samples from 36 fleeces of white males Huacaya (0.4-10.4 years old), from Pacomarca Ranch (Puno, Peru) were measured by projection microscope (PM) to record the fibre diameter (FD) and the class of medullation (CM) of 600 fibres per sample. The CM was recorded according the classes stablished in the literature (eg. Villarroel, 1963). Also, the percentage of medullated fibre (PMF) per sample were calculated by two methods (PM and the optical fiber diameter analyser 100-OFDA). The statistical model used for genetic parameters estimation for CM included aged and age^2 as fixed effects and the animal and permanent environmental as random effects, the model for FD was similar except permanent environmental effect. Bivariate models were used to estimate heritability and genetic correlation for DF and CM. Moreover, different models considering CM as continuous or a categorical trait were tested by TM software. The PMF ranged from 12.33% to 91.67% per sample. The correlations between OFDA and PM measurements were 79% for PMF. The highest heritability estimate for CM were 0.36 ± 0.13 obtained using a bivariate continuous model where CM was a binary trait (non-medullated versus medullated-fibre) and FD was a continuous trait. Using the same model, the heritability estimate for FD was 0.35±0.15 and the genetic correlations between CM and FD was 0.93±0.12. This study was the first to estimate heritability for CM and genetic correlations between CM and FD. These results implied that selection against medullated fibre is feasible without affecting the reduction of FD in alpacas. Since measurement of CM per fibre sample was time-consuming, PM measured by OFDA will be used as an indicator trait for reducing medullatted fiber in alpaca fleece.