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BOOK OF ABSTRACTS



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VEREIN ZUR FÖRDERUNG DER FORSCHUNG
IM GESUNDHEITSEKTOR VON
LAMAS UND ALPAKAS e.V.



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Improving a black alpaca breeding program using colourimeter values for male selection

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In recent years, consumers have been more interested in using eco-friendly garments. The alpaca textile industry does not escape this trend, where products based on natural colours such as black would not need to be dyed, reducing the use of chemical products. So there is an economic interest to increase the number of alpacas with uniform black coat colour. Using colourimetry in testing the fibre colour will help implement a sound black alpaca breeding program. Colourimeter values as L*(lightness), a*(red/green axis), b*(yellow/blue axis) values were recorded from 1,254 Dark Brown Black (DBB) and Black (B) alpacas of the Pacamarca Research Station. The model included the following effects: year in 4 levels (2018 to 2021), sex in 2 levels (male and female), coat colour in 2 levels (DBB and B). The means of the colorimeter parameters were: DBB= 18.47, 1.48 and 1.08, B=17.59, 0.79 and -0.03 for L*, a* and b*, respectively. No significant difference was found for sex and year. However, a significant difference was found in the coat colour. In addition, a factorial analysis was carried out, including year and coat colour, finding that the interaction of both effects was significant. In 2018 the Black Alpaca Program started by classifying DBB and B females and B males by visual appraisal. As a result, only 40% of the offspring could be classified as B. To increase the number of black offspring, the selection of males was refined using the L* and b* values, where lower L* values and negative b* values are indicators of black fibre. Therefore, in 2021 the same females had 79% black offspring. Also, a phenotypic trend for decreasing L*, a* and b* values was observed in the offspring: year 2019= 20.80, 1.38 and 1.59; year 2020= 17.72, 0.97 and 0.37; year 2021= 17.14, 0.72 and -0.13 for L*, a* and b* respectively. In sum, the use of colourimeter values helped to form a more uniform black alpaca herd.