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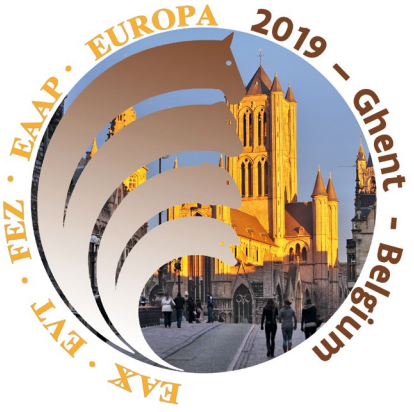

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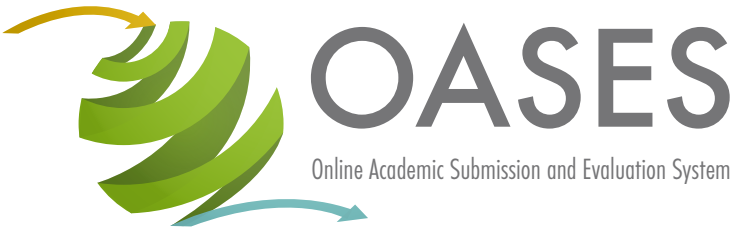

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Poster Session 53

Session 54. Free communications Inbreeding; GxE

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Theatre Session 54

Poster Session 54

Calving date as a potential breeding objective to manage the reproductive seasonality in alpacas

A. Cruz[1], I. Cervantes[2], R. Torres[1], N. Formoso-Rafferty[2], R. Morante[1], A. Burgos[1] and J.P. Gutiérrez[2]
[1]INCA TOPS S.A, Miguel Forga 348, Arequipa, Peru, [2]Universidad Complutense de Madrid, Departamento de Producción Animal, 28040 Madrid, Spain; gutgar@vet.ucm.es

The reproductive seasonality is the norm in the production of alpacas in Peru. It conditions the female reproductive performance, as a female not becoming pregnant within the reproductive period will remain open for a year, with the corresponding losses in the productivity of the farm. Births are preferred to occur in the middle of the reproductive season as there will not be sufficient food resources if they are too soon, and the animals will lose the opportunity of becoming pregnant for a year if they occur too late, having in addition an increase in the probability of enterotoxemia. Management of this scenario has been traditionally treated by analysing the age at first calving and calving interval traits, but these traits do not account with the search of the optimal date. Thus, the objective of this work was to estimate genetic parameters for the calving date trait to be considered as a possible selection objective itself or combined with its variability. Data from complete reproductive campaigns from Pacomarca experimental farm from second half of 2001 to 2018 were used, counting with 6,533 records of calving date from huacaya genetic type that were recorded as the number of days elapsed from the previous reproductive interseason date as reference. There were 9,575 animals in the pedigree file. Homogeneity and heterogeneity models were fitted both including sex, year and colour as systematic effects, age of the female as covariate and genetic and permanent environmental random effects. The calving date heritability become 0.09 (sd=0.02) with a repeatability of 0.20 (sd=0.01), suggesting the possibility of breeding animals to delay or advance the date. The genetic coefficient of the variance for the variability was 0.10 (sd=0.05), a value that suggests also the possibility of selecting animals performing the birth preferably close to the middle of the season. Genetic correlation between the mean and the variability was -0.84 (sd=0.12), suggesting that concentrating births would delay them within the season.

Status of the alpaca breeding in Poland

A. Slawinska[1], A. Zmudzinska[1] and M. Wierzbicki[2]
[1]UTP University of Science and Technology, Department of Animal Biotechnology and Genetics, Mazowiecka 28, 85-084 Bydgoszcz, Poland, [2]Polish Alpaca Breeders Association, Nowogrodzka 31, 00-511 Warszawa, Poland; slawinska@utp.edu.pl

Alpaca (*Vicugna pacos*) is gaining recognition as a valuable livestock species in Poland. Rapidly growing interest in alpaca breeding has been driven by their unique properties as fibre-producing as well as companion and therapy animals. The standards and guidelines for alpaca breeding in Poland are under ongoing legislative procedure. Polish alpaca breeders are associated in the Polish Alpaca Breeders Association (PABA, http://pzha.pl/). The breeders associated in PABA own approximately 1,500 animals, 700 of which are currently registered and included in the database. The vast majority of the alpacas (91%) registered in PABA belong to huacaya breed and the remaining 9% are Suri. The demographic structure indicates that the majority of the animals are young females. Sex proportion is approximately two females to one male. 80% of alpacas were born in 2012 or later. The fleece colour distribution ranges from white (37%), different shades of beige and fawn (27%), brown (21%) to black (10%) and grey (6%). The appaloosa and multicolour alpacas are extremely rare in Poland (about 1%). In the near future, PABA will continue registering animals in the database. The animals registered in PABA database will be characterized with respect to their genetics, fitness and the fibre quality. In this paper we are going to present the case studies regarding health and reproduction that were described in Polish alpaca herds. At the early stages of alpaca breeding in Poland fostering collaboration between breeders and scientist plays a critical role. Strategic implementation of the research program on Polish alpacas will contribute to the knowledge on camelids and their adaptation to European environment.