

ANALYSIS OF THE GENETIC HISTORY OF THE PROLIFIC PALAS BREED

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Abstract

The creation of a sheep breed with high prolificacy was necessary in the context where the improvement of the sheep meat production is dependent on the productive capacity of the breeds, so as to obtain a greater number of lambs from a ewe in a system of complex crosses, involving specialized meat breeds. To increase meat production in sheep, the Prolific Palas Breed was created at Research and Development Institute for Sheep and Goat Breeding Palas - Constanta for over 15 years, based on a complex program of crosses between the Palas Merino breed and imported prolific breeds. A multitude of combinations of Palas Merino with Romanov, Border Leicester, Île-de-France, East Friesian and Finnish Landrace breeds were tested, in 1989 obtaining the desired type. The newly created population has been reproductively isolated since 1990, self-breeding for 7 generations to date, aiming to maintain prolificacy above 150%, a high lactation capacity and an increase inbreeding per generation below 1%. The Prolific Palas Breed was approved in 2020. The analysis of the genetic history of the breed was made on the four random lines of the pedigrees, extracted from the Genealogical Register of the Palas High Prolific Line and there were calculated the genetic similarity, inbreeding coefficients and relatedness itself. The Prolific Palas Breed is 39.07% similar to the Romanov breed, 28.13% to the Merino breed, 15.63% to the East Friesian breed, 9.36% to the Border Leicester breed, 6.25% to the Île-de-France and 1.56% with Finnish Landrace breed. The intergenerational interval on father-son and father-daughter lineages was 3.49 and 3.94 years, respectively. Total inbreeding was 4.39%, inbreeding per generation 0.57%, current inbreeding (incest) being 0.0%, and the average number per generation 7.71.

Key words: sheep, genetic analysis, Prolific Palas Breed