

**Selection of genetically diverse animals from pedigree in Croatian autochthonous pig breeds**

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The selection of the animals for genotyping is rarely described in the genetic diversity studies. The aim of this study was to combine various indicators of genetic diversity and population structure based on pedigree data to find the genetically most diverse animals for SNP genotyping in Croatian autochthonous pig breeds. Pedigree analysis obtained animals of Black Slavonian (BLS; 6,445), Turopolje (TUP; 632), and Banija spotted (BSP; 179) pig breeds. Based on the financial resources, genetically diverse groups in the living population per breed have been chosen according to the following criteria: largest number of offspring by sire or dam (25% of selected animals), the cumulated proportion of genetic variance explained by the selected ancestors (additional 25% of animals), and the average relationship among animals (remaining 50% of animals). Data were prepared using SAS statistical package while genetic diversity parameters were estimated using ENDOG and CFC software. Average number of offspring per sire or dam was 12.5 in BLS, followed by 10.3 in BSP, and 7.6 in TUP, respectively. The cumulated proportion of genetic variance explained by the selected ancestors ranged from 0.952 to 0.999 in BLS, from 0.994 to 0.999 in TUP, and from 0.951 to 0.987 in BSP. Average relationship among selected animals ranged from 0.002 to 0.029 in BLS, from 0.029 to 0.104 in TUP, and from 0.160 to 0.238 in BSP. In all breeds, average inbreeding coefficient was lower in the sample groups compared to the total alive populations as follows: 0.006 vs 0.063 for BLS, 0.021 vs 0.024 for TUP, and 0.052 vs 0.118 for BSP. Maximum value for the relationship among individuals of 0.125 as a threshold value could not be applied in BSP due to a high relatedness in this small population. When genotypes for selected animals will be available, genomic parameters will be compared with those obtained from pedigree data and the usefulness of this approach can be tested and upgraded.

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