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INDEX

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P-AP-6

VARIABILITY OF THE IGF2 LOCUS IN THE "NERO LUCANO" PIG POPULATION

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The "Nero Lucano" pig originates from one or more native breeds reared in Southern Italy about a century ago such as: "cavallino-lucano", "appulo-lucano" "cavallino", "italico". Today, thanks to Basilicata region Institutions, such as ARA, Alsia, Comunità Montana del Medio Basento, University of Basilicata and the collaboration of breeders, the danger of extinction has been prevented and the "Nero Lucano" pig is again reared in Basilicata.
As a first step toward the analysis of the genetic variability of the "Nero Lucano" pig we considered the IGF2 (Insulin-like Growth Factor 2) gene which is associated with meat quality traits such as intramuscular fat content, marbling and backfat thickness. According to literature data, this gene plays a role in regulating proliferation, differentiation and apoptosis of cells in many different tissues.
We analysed two known IGF2 SNPs: g.-225C>G and g.-182T>C located in the promoter region of the gene. The DNA was extracted, using the NucleoSpin QuickPure Kit, from 259 pig samples representing almost the whole "Nero Lucano" population. The analysis was performed using RFLP-PCR technique. Restriction enzyme Eco0109I was used to distinguish C and G alleles at the locus g.-225 and DraIII-HF to distinguish T and C alleles at the locus g.-182. According to the obtained data the "Nero Lucano" pig shows a low level of variability at the IGF2 gene. Work is in progress in order to establish whether, as reported for Duroc, Large White and Pietrain breeds, also in "Nero Lucano" these polymorphic sites are associated with effects on economic traits. Finally, we are planning to analyse polymorphisms (randomly chosen SNPs) spread all over the "Nero Lucano" pig genome in order to assess genetic diversity and structure of this population, to plan selection, and preserve and improve this population.

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