Concentrations of lipoproteins in the serum of wild boar and Lithuanian pig breeds followed by principal component and cluster analyses to demonstrate the differences among genotypes

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Abstract

With the aim of evaluating serum cholesterol and triglyceride concentrations in Lithuanian wild boar and Lithuanian pig breeds, twelve gilts from three genotype groups were used in the experiment. Only the concentration of high-density lipoprotein (HDL) was significantly higher in the serum of wild boar than in serum of domestic pig breeds (P<0.05). Factor loadings of the principal components (PCs) revealed that lipoproteins were positively related in PC1 for wild boars but associations between lipoproteins of domestic pigs varied differently in PC1 and PC2. Cluster analysis showed a greater distance between wild boar and domestic pigs than that between two domestic pig breeds.

Key words: lipoproteins, cholesterol, pigs, serum, triglyceride

Introduction

In recent years, researchers have focused their attention on studying changes of cholesterol and triglyceride concentrations in serum and muscle tissue of domestic and other animals through different dietary supplementation (Bird et al. 2004, Tsuji et al. 2008, Zawistowski et al. 2009). However, there has been limited research on the effect of different genotypes, including Lithuanian pig breeds. Therefore, the present study was designed to evaluate serum cholesterol and triglyceride concentrations in Lithuanian wild boar and Lithuanian pig breeds followed by principal component and cluster analyses to demonstrate the differences among genotypes.

Materials and Methods

The study included material from wild boar (WB), Lithuanian indigenous wattle (LIW) and Lithuanian White gilts from the open population (LB x DB). Wild boars used in the experiment were captive reared. All gilts of approximately about 100 kg were first collected onto one farm and kept for 30 days. The animals were fed the same standard concentrate feed.

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