



## VERIFICATION OF THE TRACEABILITY MODEL OF AUTOCHTHONOUS POULTRY BREEDS

Lukáš Jurčaga<sup>1</sup>✉, Radoslav Židek<sup>2</sup>, Jozef Golian<sup>2</sup>, Ľubomír Belej<sup>2</sup>, Alžbeta Demianová<sup>2</sup>, Marek Bobko<sup>1</sup>, Alica Bobková<sup>2</sup>

<sup>1</sup>*Department of Technology and Quality of Animal Products, Slovak University of Agriculture in Nitra, Tr. A. Hlinku 2, 949 76 Nitra, Slovak Republic*

<sup>2</sup>*Department of Food Hygiene and Safety, Slovak University of Agriculture in Nitra, Tr. A. Hlinku 2, 949 76 Nitra, Slovak Republic*  
✉*xjurcaga@uniag.sk*

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### ABSTRACT

Microsatellite markers are reliable and cheap method for studying diversity among animal breeds. They are widely used for separation of related animal breeds on genetic level. When used in food industry, they have great potential to be used for authentication of animal food products. We are aiming to explore the variability of alleles in selected markers in modeled F1 generation of Slovak breeds of chicken. We want to compare, if previously proposed traceability model is relevant for next generation of chickens or it is limited to one, parental, generation. Our analysis was based on 7 selected microsatellite markers. We modeled genotypes of 42 F1 generation individuals of Oravka tawny and 42 of Oravka white, derived from 1 rooster and 7 chickens from each breed. In our study, we used PCoA analysis and neighbor joining (NJ) analysis. With usage of both analyzes, we proved, that both generations are unique and genetic distance between individuals of different color breed are wide enough. We proved, that we only need to genotype the parental generation of both Oravka chicken tawny and white breeds. After creating F1 generation, we are reliably able to separate those populations. There is no need to genotype whole F1 generation. This provide huge financial benefits. Furthermore, we are able to trace and authenticate whole F1 production generation.

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