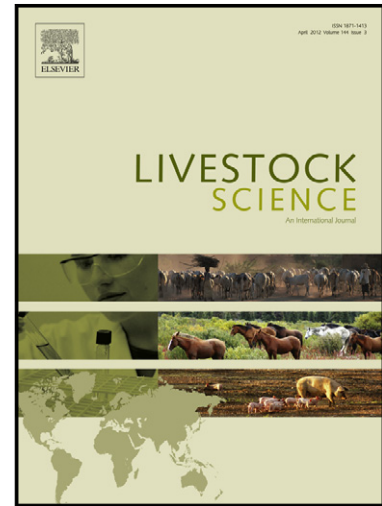


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Prolactin, dopamine receptor D1 and Spot14 α polymorphisms affect production traits of Hungarian Yellow hens

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ABSTRACT

Six potential candidate polymorphisms were investigated in Hungarian Yellow hens, one of seven indigenous chicken breeds registered in Hungary. In this study, 436 individuals were genotyped for the 24-base-pair indel in prolactin (PRL), the G123A single nucleotide polymorphism (SNP) in dopamine receptor D1 (DRD1), and the A213C SNP in thyroid hormone responsive spot14 α (Spot14 α) genes, respectively. In addition, promising SNPs in insulin-like growth factor 1 (IGF1), insulin-like growth factor-binding protein 2 (IGFBP2), and somatostatin (SST) genes were also analysed; however, only one allele at each locus occurred in the population. There were polymorphisms for PRL, DRD1 and Spot14 α , each with high heterozygosity (0.50, 0.49, and 0.47, respectively). Observed genotype frequencies did not differ ($P>0.05$) from the expected assuming Hardy–Weinberg equilibrium (HWE). The PRL genotype was associated with egg production intensity ($P<0.05$), whereas DRD1 genotype affected egg production intensity and body weight at 45 weeks (wk) of age ($P<0.05$). The Spot14 α polymorphism significantly influenced body weight from 8 to 14 wk ($P<0.05$), and at 40 and 45 ($P<0.01$) wk, and was also associated with average egg

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