

Crypto-tobiano horses as a breeding problem in the Hucul population in Poland

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Knowledge of coat colour genetics is especially important in **Hucul horse bred in Poland**, where there has long been a problem in distinguishing white spotting pattern (Tobiano) from white markings. According to the provisions of the breed standard published by the Polish Horse Breeders Association, **white markings disqualifies a Hucul horse from breeding; whereas Tobiano spotting is accepted**. However, a horse with apparent white spots may be crypto-Tobiano and have, for example, only white spots on legs.

This study aimed to determine the scale of the problem of crypto-Tobiano pattern occurrence in Hucul horses in Poland, using a PCR method described by Brooks et al. (2007).

The test material used was blood sampled from 96 piebald Hucul horses and 55 horses described in the passport as single-coloured with white markings. DNA isolated from the blood was used to identify the inversion on chromosome 3.

Pics. 1-3. Various size of white patches in heterozygous Tobiano Hucul horses (M.Pasternak)



Pics. 4-6. Crypto - Tobiano pattern in Hucul horses (M.Pasternak)



The results showed the presence of chromosome 3 inversion in all of the 96 piebald horses (100%), thus confirming the presence of the Tobiano gene. The inversion was also located in 10 out of the 55 horses described in the passport as single-coloured with white markings, which constitutes 18% of the animals misclassified for colour. In fact, these horses have a crypto-Tobiano pattern, expressed mainly as white spots on the legs.