Conservation status of Austrian, Croatian and German draught horses

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Abstract

All over Europe, the number of draught horses has decreased drastically during last 50 years. As a prerequisite for efficient management decisions, we analysed the conservation status in Austrian (Noriker Carinthia-NC, Noriker Salzburg-NS), Croatian (Croatian Coldblood-C, Posavina Horse-P) and German (Altmaerkisch Coldblood-A, Black Forest Horse-BF, Mecklenburg Coldblood-M, Rhenish German Draught Horse-R, Saxon Thuringa Coldblood-ST, Schleswig Draught Horse-Sch, South German Coldblood-SG) draught horses (434) using multilocus genotypic information from 30 microsatellite loci. The PCA plots revealed that populations form five separate groups. The “Noriker” group (NC, NS and SG) and the “Rhenish” group (A, M, R, and ST) were the most distinctive groups (pairwise $F_{ST}$ values ranged from 0.078 to 0.094). The “Croatian” group (C and P) was in the centre, while BF and Sch populations formed two out-groups. A posterior Bayesian analysis detected further differentiation, mainly caused by political and geographical factors. Thus, it was possible to separate South German Coldblood from the Austrian Noriker population where no subpopulation structure has been detected. The admixture analysis revealed imprecise classification between C and P populations. Small but notable separation of R from A, M and ST populations was detected, while Sch and BF populations remained as out-groups. The information obtained should aid in establishing efficient conservation programmes.

Key words: conservation genetics, draught horses, endangered resources, microsatellite diversity, population admixture