
Keywords: 78Eur/allele/allozyme/antler/antler development/Cervus elaphus/fluctuating asymmetry/genotype/heterozygosity/loci/Malme/polymorphism/red deer

Abstract: Antler characters in red deer were examined in relation to allozyme variation. In morphological characters both size and fluctuating asymmetry of antler traits, in allozymes both overall heterozygosity and single genotypes as ubiquitously polymorphic loci were considered. The allozyme/antler associations found in different populations were interpreted as the result of chromosomal linkage, and the occurrence of a polymorphism as to combinations of alleles at allozyme loci and major genes responsible for antler development was hypothesized to occur throughout Europe.
ALLOZYME VARIATION AND ANTLER DEVELOPMENT IN RED DEER (CERVUS ELAPHUS)

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Antler characters (number of antler points, length of main beam, circumference of main beam, coronet circumference) in red deer were examined in relation to allozyme variation. In morphological characters both size and fluctuating asymmetry of antler traits, in allozymes both overall heterozygosity and single genotypes at ubiquitous polymorphic loci were considered. In red deer from two autochthonous populations in the Vosges, eastern France, particular homozygous genotypes at the enzyme loci Adh-2 and Acp-2 were found to be associated with a larger number of antler points and generally larger antlers, respectively. The same relationship was found in red deer from various Hungarian populations, but for the respective opposite allele of the two biallelic polymorphisms. The allozyme/antler associations were interpreted as the result of chromosomal linkage, and the occurrence of a polymorphism as to combinations of alleles at allozyme loci and major genes responsible for antler development was hypothesized to occur throughout Europe. Presently a population in Val di Susa, Italy, polymorphic at both Adh-2 and Acp-2, is being investigated for a possible relationship of allozyme genotypes with antler development. In addition, the allozyme genotypes and antler traits are being examined for relationships with body weight, an important factor not considered in previous studies.