IDENTIFICATION OF CERVID AND BEAR SPECIES WITH DOUBLE IMMUNO-DIFFUSION AND ISOELECTRIC FOCUSING

T.C.D. Packer, J.F. Comeau, T.M. Sjovold, D.K. Patterson and Richard M. Jobin
Alberta Fish and Wildlife Forensic Laboratory, Edmonton, Alberta, Canada

Identification of the species of origin of tissue samples found in possession of suspects is an important part of investigations into wildlife offences. In the present study, two techniques are employed to identify seven different big game species, a double immuno-diffusion test and an isoelectric focusing (IEF) technique. The double immuno-diffusion test is used to separate bear samples from cervid (deer family) samples with no cross reactivity. The migration of superoxide dismutase was measured on a 3-9 IEF gel. This analysis allowed for a 100 % discrimination (as determined by discriminant analysis using SPSS 8.0) of black bear from grizzly bear as well as a 100% discrimination of moose and elk from each other as well as separating them from caribou, white-tailed deer and mule deer. When migration of erythrocyte acid-phosphatase was measured on a 5-8 pH IEF gel, mule deer were separated from caribou and white tailed deer with 100 % discrimination. Finally, white-tailed deer and caribou can be separated with 100% discrimination when their samples are analyzed using a 5-6 pH IEF gel and superoxide dismutase is examined. The above results taken together, show that by using double immuno-diffusion and IEF techniques, tissues from seven different Albertan big game species can be reliably identified.