

Biochemical polymorphism studies in breeds of wool-sheep, hair-sheep and their hybrids in Malaysia

ABSTRACT

A biochemical genetic study on blood enzyme/protein systems in some breeds/crosses of sheep in Malaysia was carried out using horizontal starch electrophoresis. Blood samples were collected from 435 sheep, representing 8 breeds/crosses. These included 5 wool sheep breeds (Thai Longtail, Wiltshire, Suffolk, Dorsimal and cMBLx), 1 hair sheep breed (Barbados Blackbelly) and 2 hybrids between wool sheep and hair sheep (Cameroon x Thai Longtail and Bali Bali x Malin). Twenty loci systems were examined. Of these, ten (HB, ALB, TF, XP, CAT, DIAI, EsA, GPI, ME and NP) exhibited genetic variation whereas the other ten (AAT, CA, DIA2, GLO, GLU, LDH, MDH, PEP[leu-gly-gly], 6PGD and SOD) were monomorphic. The allelic frequencies which were obtained in 10 polymorphic markers are assessed and compared with the results obtained by previous workers. The estimations of inbreeding coefficient, intrabreed variation and breed relationships have been critically discussed and are used to reveal some important recommendations.

Keyword: Sheep; Biochemical polymorphism; Inbreeding; Genetic distances; Malaysia