Proc. Aust. *Soc. Anim. Prod. (1978)* **12: 200**

GENETIC ANALYSIS OF THE BRITISH ALPINE GOAT HERD IN AUSTRALIA

T.L. IKIN* and N.D. HERRON*

In recent years breeders have reported reproductive difficulties and general lack of viability amongst British Alpine (B.A.) goats. A genetic analysis was carried out to identify possible causes of these problems.

In 1956 two B.A. does and one B.A. buck were imported to New Zealand. Two half brothers from matings between these three animals were subsequently imported to Australia. In addition two half sisters, unrelated to the two bucks were imported to Australia from Great Britain. There were no further importations to Australia until 1975 when a small number of bucks were imported from New Zealand. These later imports have similar ancestry to the original bucks. Registration regulations only permit the use of purebred bucks.

Generation length, inbreeding, important studs and animals, and genetic contribution of studs were estimated from pedigrees using the methods of Wiener (1953) and Barker (1957) for all purebred does registered in 1975.

TABLE 1. Genetic contribution of studs and important animals.

Stud Name	Genetic Contribution (%) For Generations: 1	2	3	4	Total	Important Animals: Name	Direct Relationship (%)
Ashton	5	8	15	24	52	Dhunan Fennel (Imp)	32
Greenleaves	11	13	6	5	35	Ferncliffe Marshbird (Imp)	24
Aurora	5	4	3	0	12	Ferncliffe Darkiltie (Imp)	19
Kulgoa	0	5	7	3	15	Dhunan Holly (Imp)	18
St. Trinians	4	5	1	0	10	Greenleaves Dante	16
Macfields	10	1	0	0	11	Ashton Macdonald Dhu	16
Paracombe	8	5	1	0	14	Ashton Mackenzie Dhu	16
Bonamanda	20	0	0	0	20	Kulgoa Donald	14
Imported	0	0	1	12	13	Ashton Bruce	12
Appendices*	17	10	11	10	48	Greenleaves Monty	12

*contribution from females only.

Generation interval was 2.8 years. Total inbreeding was 28%, made up of 4% current and 24% long term. There was no strain inbreeding. The most important stud was "Ashton", to which the four original importations were made. "However its genetic contribution has declined over the last four generations. The genetic contribution of appendix females is high and increasing, indicating the potential importance of other breeds to the B.A. breed. On an individual basis the four original importations are still the most important.

It is clear that without importations from countries other than New Zealand and with inbreeding increasing at about 2% per year breeding difficulties will continue. Inbreeding problems could be overcome and the genetic contribution of the appendices made more effective if selection and registration of bucks from the later stages of the grading up process is allowed.

BARKER, J.S.F. (1957). Aust. J. agric. Res. 8:561.
WIENER, G. (1953). J. agric. Sci. (Camb.) 43:123.

*Dept. of Animal Production, University of Queensland, St. Lucia, 4067.
** Division of Dairying, Qld. Dept. of Primary Industries, Brisbane, 4000.