BVEST - MULTI-TRAIT ANIMAL MODEL BREEDING VALUE ESTIMATION SOFTWARE

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SPECIFICATIONS

BVEST is a program recently developed for use by LAMBPLAN (Gilmour & Banks, 1992) but readily adaptable to other applications.

The primary specifications for BVEST were:

1 Suitable for routine use by non-geneticists. Since LAMBPLAN uses technicians to take certain measurements on the sheep, enter the data on computer and produce an on-farm report to the breeder, BVEST was written for easy routine use. The details of the trait definition, adjustment and variance parameters are read from a STARTUP file which is supplied by LAMBPLAN with the program. The operator prepares the data file in a straight-forward manner. The program includes data validity checks and displays which the operator can easily interpret.

2 The program should not be so specific that it cannot be used for other problems. Thus all the data transformation/adjustment operations are controlled by the STARTUP file. This file will need to be prepared by a biometrician or geneticist and does require knowledge of appropriate data adjustment for the various traits as well as knowledge of the variance parameters. BVEST does not allow for fixed effects (other than GROUPS) to be fitted in the model so prior adjustment must be performed.

3 The program must be able to perform a full multiple trait animal model BLUP analysis and then compute a nominated Selection Index on standard traits. The report should separate the progeny from the parents and be sorted on TAG NUMBER and on Index rank.

4 The program must be able to handle the data from a typical stud lamb drop on a PC as well as handling larger analyses on larger machines. BVEST uses 'sparse matrix' procedures so that an analysis of 400 animals and 5 traits can be readily performed on a PC. It is also available for 386 computers with 4 or more megs of memory and Unix machines for the larger analyses.

DEMONSTRATION

The LAMBPLAN application of BVEST will be demonstrated. The author will also be available to explain the technical details of the STARTUP file and the operation of BVEST as required.

REFERENCES

GILMOUR, A.R. & BANKS, R.G. (1992) Proc. Aust. Assoc. Anim. Breed. Genet. 10: