

TGRM provides you with the opportunity to properly balance the technical, cost and logistical issues in your breeding program:

Technical issues include: Genetic improvement in nominated traits; pattern of collection of semen, oocytes and embryos; genetic connection to other herds/flocks; exploitation of maternal effects and heterosis; avoidance of inbreeding; maintenance of genetic variation; use of genetic markers; corrective matings and spread in progeny merit.

Cost issues include: Cost of setting up mating paddocks; seedstock purchase costs; costs of semen/embryo collection and insemination; cost per breeding female in the herd/flock; limits on funds available.

Logistical issues include: Availability of seedstock, semen and embryos; number of mating paddocks available; current quarantine restrictions; mating constraints based on age, location, etc.

How do I get more information on TGRM?



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The TGRM service is delivered by the group at the University of New England, and by trained operators at other locations.

TGRM is trademarked to LAMBPLAN. The method and software underpinning TGRM are Copyright of Brian Kinghorn and colleagues. The TGRM service has been developed with support from the Twynam Pastoral Company and is hosted at the Beef CRC and Department of Animal Science, University of New England.

A powerful service for Animal Breeders

TOTAL **TGRM**TM

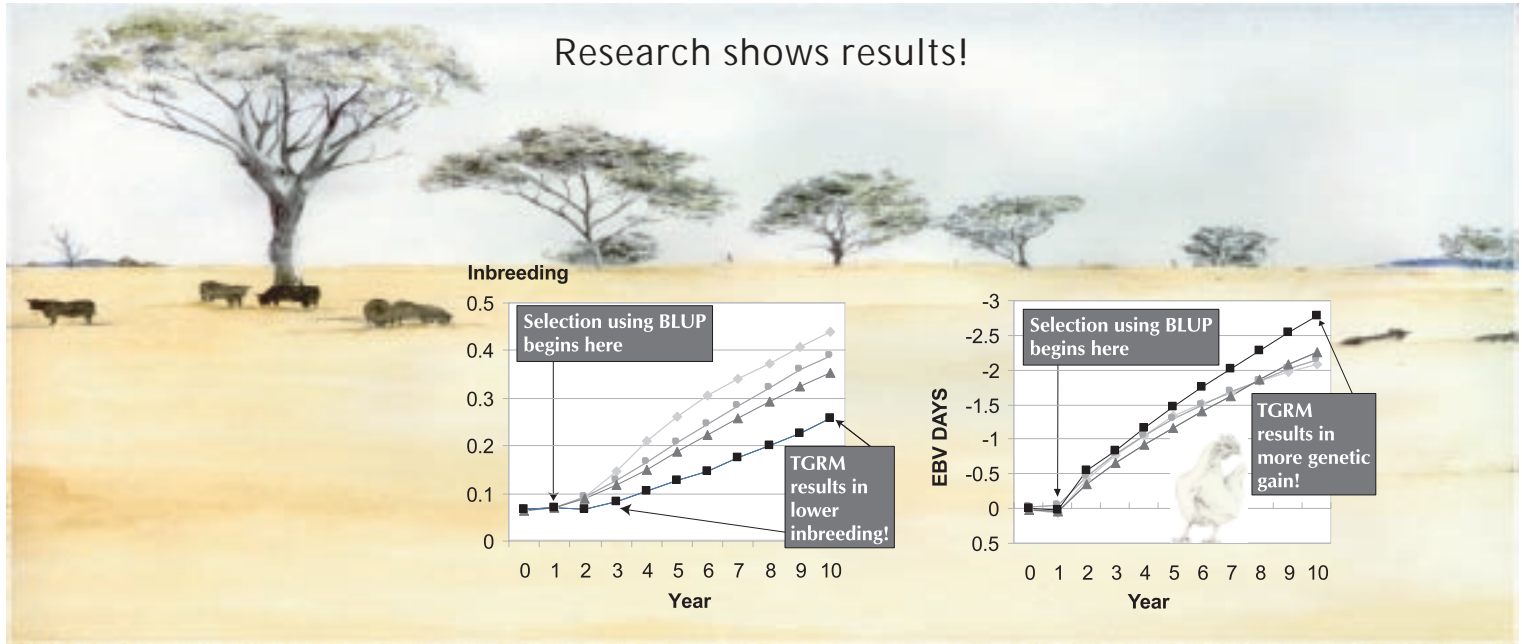
GENETIC

RESOURCE

MANAGEMENT

TOTAL GENETIC RESOURCE MANAGEMENT

Research shows results!



What is TGRM?

Total Genetic Resource Management is a new breeding aid that is driven by specifying desired outcomes.

TGRM works tactically, meaning that it makes the on-the-ground selection and mating decisions at the level of existing animals, using prevailing EBV's, operational constraints, prices etc. This is quite different from breeding aids that provide information, typically on trait EBVs, and then leave a gap to implementation.

In any breeding operation, there is an almost infinite range of routes ahead. Each route is predicted to have a given utility to the breeder - based on factors such as genetic gains, risk, costs and constraints satisfied. TGRM works by searching across all these possible routes ahead, and finding the one that is predicted to

best suit the breeder's needs. This has only recently become possible because of development of efficient computing algorithms that mimic evolutionary processes to find the best solution.

It will make corrective matings to your outcome specifications, while paying attention to mating for inbreeding avoidance, flock/herd connection, heterosis exploitation, and narrow range in progeny merit, as appropriate.

Application of TGRM

TGRM can be used in all breeding operations for which quality pedigree and trait records are kept. TGRM results in more effective breeding programs:

- It gives a rational basis to use better sires more extensively, while accounting for the dangers of inbreeding and genetic drift.
- It will search genetic evaluation reports to exploit outstanding seedstock, while accounting for purchase and transport costs in balance with value to the breeding program.

It can take the stress out of tedious selection and mating decisions, while leaving full control in your hands.

TGRM can simultaneously allocate sires to commercial production units, while accounting for differences between these units in trait requirements and use of crossbreeding.



The TGRM Control Centre

You can cull undesirable animals yourself - or possibly include visual classing scores in the analysis. Sitting beside your TGRM operator, you can visualise the key features of your breeding program, explore the range of possible outcomes, and literally guide the analysis to the outcome that suits you best:

The action report from your TGRM analysis includes a full mate selection list. You use this to make seedstock purchases, draft out culled animals and set up mating groups and the AI/ Embryo transfer program.

