

RAMPOWER '96: NEW GENETIC HORIZONS FOR MERINO BREEDERS

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SUMMARY

The wool industry has lagged behind other livestock species in terms of adoption of the scientific principles of genetics and selection. Rampower '96 will allow many breeders to use BLUP technology for the first time, and to pursue their breeding objective with new power and renewed vigour. Rampower '96 will also create a new niche for service providers who will be able to add value to existing wool testing services. We expect that niche will be largely filled by existing operators.

Keywords: Rampower, Merino, Software, BLUP, Fleece measurement

INTRODUCTION

There are several reasons for wool testing. These relate to the testing of sale lots:

- a. Prior to sale at auction,
- b. Prior to private sale, and to the testing of individual animals:
- c. To assist separation of fleeces into lines for sale,
- d. For genetic evaluation of potential breeding animals.

Part a. is by far the largest part of the market, but is undertaken exclusively by the Australian Wool Testing Authority (AWTA). For the other three parts, AWTA is a small player in competition with smaller wool testing laboratories across the country. This paper is concerned with part d.

Rampower '96 is a new software package, launched earlier this year. It is designed for use by wool testing laboratories and independent data processors. It will streamline data processing, and most importantly provide for the delivery of advanced genetic processing to Australian Merino ram breeders.

The actual software will perform BLUP analysis of Merino data, using BVEST (Gilmour 1993). Evaluation results may be expressed as Estimated Progeny Values, or trait information can be combined according to a specified breeding objective - an index.

Another critical part is the report generator, which will allow a very wide range of report styles and formats to be generated. This will put power in the hands of the processor to quickly and efficiently prepare reports which meet individual client's needs.

Rampower '96 is the culmination of several years work and the product of many years experience in the provision of services to the wool industry - both good and bad experiences. It is also intended to be integrative. From the wool laboratory point of view, use of the software comes

under the accreditation conditions already required. The Rampower Committee, as the accrediting body, takes responsibility for setting the standards, and now for providing a set of genetic parameters. More background information on Rampower may be found in Rogan (1995).

From the breeder's point of view, Rampower '96 is a flexible platform, providing animal evaluation ranging from the transparently simple to the full complexity of the quantitative genetic theory which BLUP allows. As such, breeders are free to follow at their own pace a natural progression in the adoption of objective measurement and the use of genetic evaluation in their flocks. At an appropriate stage, breeders can access assistance in defining their breeding objective, and have a corresponding index developed for their particular needs.

WHAT'S NEW?

Rampower '96 is a major extension and re-focusing of previously-available services. While in some respects, Rampower '96 is a successor to Woolplan, there are also many differences which aim both to overcome the perceived failings of Woolplan and to provide the very best possible outcomes for wool laboratory operators and breeders.

Following the demise of Woolplan as the national testing scheme, breeders have had limited access to genetic processing of their data, beyond the expression of phenotypic data as deviations or simple trait combinations. Some laboratories have continued to use their Woolplan program to provide that service for the few clients still requesting it. The inflexibility of Woolplan in terms of data and report formats and the loss of software support however, has rendered that option less than satisfactory. Other breeders have accessed the services they require through a small number of independent data processors. The testing laboratory forwards the data on behalf of their client, for further processing such as breeding value estimation, index ranking, multi-group sire evaluation, across-year analysis, genetic trend estimation. Transfer of data between remote points by electronic means is relatively efficient, but porting from one application to another, and the inevitable delays in double-handling means that this option also has drawbacks in the expense and timeliness of providing results to breeders.

While Rampower '96 does not allow wool testers to perform all of the types of analysis listed in the preceding paragraph, a capability to provide estimated breeding values and selection index will in fact satisfy a large proportion of the current clients of 'further processing'.

Another strength of Rampower '96 is its ease of use for preparing breeder reports with flexibility barely limited by the imagination. For some wool testers, this capacity will replace several separate and narrow pieces of software now used, while for others it will replace messy and time-consuming 'manual' report preparation in a spreadsheet. While this is likely to have substantial benefits for wool testers through improved efficiency, it also raises some new issues; these are discussed below.

OPPORTUNITIES

The wool market crash in the early part of this decade led to a predictable shake-out in the wool testing industry. Since then the sector has enjoyed a level of demand which is capable of supporting some 20-30 laboratories around Australia, and generally it is safe to assume that the operators which have survived up to now desire to continue wool testing. Importantly however, these operations are not an homogenous mass. Some have a local outlook, while others have marketed their services across state borders. The former are more typically smaller than the latter. Some of the enterprises have restricted themselves to wool metrology, while others have expanded their range of services or developed an advisory role, taking a more holistic approach to breeders' requirements.

Throughout 1996 the wool market has been wavering, and views for future price trends range across almost the full spectrum. If one takes a reasonably optimistic view - that the dwindling fine wool stockpile will lead to profitable returns for apparel types over the longer term - and that the current price premiums for quality will continue or increase, then it follows that the wool testing sector can expect modest expansion in the volume and value of their market.

The Merino stud sector has also seen changes. Recognition of so-called 'performance' breeders has increased more slowly than many might have expected, but has increased none-the-less. The general profile of objective measurement has improved - for example through wether trial comparisons and central test sire evaluations. Breeders overall have become more familiar with handling numbers - now a requirement of many parts of an agricultural enterprise. As a consequence, a small but growing number of breeders have access to a personal computer, and the range and quality of agricultural software available has increased dramatically. These changes also point to a likely increase in demand for wool testing services over time, provided that breeders can access the services they want.

Rampower '96 as a concept has been intended for use by wool testers. In many ways it is natural for data gathering and data processing to be grouped together under one roof - a one-stop shop for ram breeders. As such, it would be difficult for an independent data processor to become a provider of 'further processing' through Rampower '96; the costs and delays of data transfer and double handing would be difficult to offset at a reasonable cost to breeders. However, as indicated above, some wool test operators have focussed their enterprise and expertise on wool metrology, and have deliberately not entered the field of advising their clients on aspects of their breeding strategy. This may mean that a niche is created for an enterprise that can provide 'further processing' independent of a wool tester, but as part of a consultancy covering the field of breeding and genetics.

ISSUES

A major issue for the wool testing sector is the impact the new software will have on the profitability and distribution of wool testing operators, and the level of competition between them. On a more fundamental level, how the mixture of free market and external influences will affect the players meeting their objectives: for the testers, the objective of an adequate level of return; for

IWS, ensuring the on-going provision of reliable wool testing services to the Merino stud sector, in turn contributing competitiveness as well as stability and credibility to the industry as a whole.

Historically, IWS and its forebears have supported wool testing for industry reasons. Certain activities of Rampower, such as accreditation of testers, have been provided below cost. The Rampower '96 software will certainly be provided to laboratories at a cost below full commercial cost. In general, one would expect no complaints from testers at this provision, and the wider industry is also likely to view the benefits as exceeding costs. However there may be instances where this support results in inequity between operators. For example, a lab which has in the past invested a greater sum in developing its own software will be at a disadvantage compared to a lab which has survived on more basic software, if both are now superseded by Rampower '96 at the same cost to each.

More importantly, the availability of Rampower '96 could make wool testing more attractive and affordable to prospective new providers. Certainly the matters of equipping a laboratory, attaining Rampower accreditation, and establishing market share would remain major hurdles for a new entrant to clear. IWS is unlikely to attempt any overt restrictions on free market forces, even if the corporate interest of industry stability or the private interests of existing wool testers were under threat.

As described above, we expect Rampower '96 to increase the efficiency of a wool testing operation. Economic theory predicts that in a competitive environment this can be expected over time to flow back to clients as lower fees; and further that this may lead to narrower margins for operators, making efficiencies of scale more critical. With the modest increases in turnover explained above, this effect will be partially masked and the total number of wool testing operators is likely to remain about the same.

FUTURE DEVELOPMENTS

The current funding from IWS continues until June 1998. During that time, methods will be developed for processing of data with syndicate matings, allowing both improved accuracy of evaluation for syndicate progeny, as well as reliable estimation of genetic trend in the absence of full pedigree.

Beyond that time scale, the future support and development of this software is unclear. Developments in wool testing, genetics and computing are likely to march on, and there will be an ongoing need for both support and development. The current arrangements, in contrast to those existing under Woolplan, should mean that wool testers have a greater interest in ensuring that this happens, and may even be expected to make a contribution towards it in respect of their private gains. That would probably require the establishment of some type of league of wool testers, such as does not exist at present.

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