INTRODUCTION

WOOLPLAN has been available, as a national performance recording scheme to the wool industry, since 1987. Little information on its rate of adoption has yet been published. In this paper we discuss the rate of adoption of WOOLPLAN, how breeders perceive the scheme, and how adoption may be improved. We attempt to bring out into the open the issues that are behind the attitudes of some breeders towards WOOLPLAN, and the origins of these attitudes.

ADOPTION OF WOOLPLAN

For the year ended June 30th, 1989, 1,416 WOOLPLAN reports were issued by fleece-testing laboratories, with an estimated 40% of potential users receiving reports (Brien 1990). How WOOLPLAN reports are used to aid sire selection and ram grading is unclear. Survey results will be available soon to assess the adoption of WOOLPLAN in much more detail.

The newly-formed WOOLPLAN Management Committee (WMC), which has a high level of wool grower representation, is now paying close attention to extension of the scheme. A number of refinements will be made over the next 2 years to improve its usefulness and make WOOLPLAN more attractive to potential users. Working parties of extension officers around Australia are now active in the planning of extension campaigns and in providing advice to the WMC.

Issues retarding the adoption of WOOLPLAN

Results of a small survey indicate that a number of breeders have negative perceptions of WOOLPLAN, but are not opposed to the use of objective measurement as an aid to sheep breeding programs. We discuss some possible reasons for breeders perceptions below.

(i) Concerns regarding wool quality  Lax et al. (1988) warned Merino ram breeders that heavy emphasis in sheep selection programs on clean fleece weight or characters associated with it could produce sheep with wool of high fibre diameter variability, because of a widening of the difference in diameter between primary (Dp) and secondary (Ds) fibres. Shedding of fibres, increased susceptibility to fleece rot and fly strike and a greater tendency for fibre diameter to increase with age have been claimed to result from a widening of the Dp/Ds ratio and it has been implied that use of WOOLPLAN could increase these problems (see Hynd et al. 1989 for details).

Unfortunately, the hypothesis of Lax et al. (1988) that primary and secondary fibre populations respond independently to selection based on clean fleece weight and fibre diameter was not subject to rigorous scientific scrutiny before being reported to breeders. More recent experimental evidence suggests that continued selection with the aid of a WOOLPLAN-type index is unlikely to have the undesirable side effects predicted by Lax et al. (1988) (Hynd et al. 1989; Hawker et al. 1991; Ponzoni et al. 1991). Intensive research studies of this subject are underway (Gifford et al. 1990; Franklin, pers. comm.). In the meantime, one of the effects of this debate has been a slowing of the adoption
Many ram breeders are interested in the measurement of fibre diameter variability and its application. Without conclusive evidence, these measurements are being promoted by some people for predicting how much the wool of progeny of the rams tested will increase in fibre diameter with age.

While WOOLPLAN should undergo whatever changes are necessary to make it more useful to breeders, such changes must be based on sound scientific evidence, and not on unproven hypotheses. Because it is a national performance recording scheme with substantial resources and influence, WOOLPLAN provides a focus for sheep breeding research and development, and is assisting in identifying areas where more information is needed, as suggested by McGuirk (1987) in his report to the Australian Wool Corporation.

Unfortunately, the adoption of WOOLPLAN, especially in WA, has been adversely affected by the controversy surrounding the 'Code of Practice' issue. Some stud Merino breeders perceived that WOOLPLAN was the driving force in this controversy and was trying to impose a set of technically developed procedures for sheep selection on the wool industry. This perception is unjustified as, firstly, WOOLPLAN had nothing to do with the controversy that developed between breeders and the WADA and secondly, the sentiment of the WMC and its predecessors has always been that the scheme is to be promoted and offered as a service to aid sheep selection, not as an imposition on breeders. Furthermore, all the WOOLPLAN literature stresses that WOOLPLAN should be used in conjunction with normal ram breeding methods, not as a replacement for them.

It is critical for adoption that a consistent approach is taken to the promotion of WOOLPLAN around Australia. This approach needs to encourage ram breeders to use WOOLPLAN via non-confrontational means. It will only be with the active cooperation of the direct users of recording schemes (mainly ram breeders) that correct adoption can occur.

Some breeders perceive that WOOLPLAN has only one breeding objective, which is the default option used by the laboratory. In most cases, this has been WOOLPLAN breeding objective Option 1 (Ponzoni 1988). The perception may have been created by the way the options have been described in WOOLPLAN literature and the way fleece-testing laboratories have introduced the service to their clients. This perception has resulted in breeders feeling that they do not 'own' the results, so they do not identify with the breeding objective implied by the WOOLPLAN index. Other breeders find it difficult to accept the concept of a stated breeding objective, as it implies revealing the problems in the flock which the breeder is attempting to eliminate or reduce (Beveridge, pers. comm.). This may partly explain why some breeders have difficulty accepting the selection indexes available in WOOLPLAN, which must necessarily be based on clearly defined breeding objectives. Note that WOOLPLAN has always had an option enabling breeders to customise a breeding objective with economic values deemed appropriate for their specific situation.

Greenslade (1989) reports that, in a survey of commercial wool growers in South Australia, less than 20% correctly understood the terms "Estimated Breeding Value" and "Selection Index". This was a much lower result than those who thought they understood. Similarly, although 79% claimed they understood the term "micron deviation", which is in more common use, a much lower percentage would be expected to have the correct interpretation. Similar results have been found in NSW (Kearins 1990).

Extension programs have thus not yet succeeded in achieving high understanding amongst commercial wool growers of even some of the more basic terms used in WOOLPLAN. Surveys of ram breeders are underway to investigate attitudes to performance recording and the results should also indicate ram breeders' level of understanding of the concepts involved.

A number of breeders believe that WOOLPLAN has not proved itself as being an advantage above traditional selection practices. Geneticists point to the
results from over 40 years of research on wool sheep breeding as evidence that WOOLPLAN will work, but many breeders and sheep classifiers do not accept that evidence as 'proof'. Often quoted is the criticism that research experiments have been conducted with low quality sheep. Although this criticism may seldom be justified, it does stress the need to conduct research with sheep which are regarded among the elite of the wool industry if adoption is to be enhanced.

Ways of improving adoption of WOOLPLAN

(i) Improvements to the WOOLPLAN service. Work has commenced on two technical developments to WOOLPLAN. These are: i) two stage selection procedures (Atkins et al. 1990; Lewer and MacLeod, 1990), and ii) use of half-sib information (Ponzoni 1988).

The availability of two stage selection procedures in WOOLPLAN should be attractive to many ram breeders, as firstly, it gives a significant improvement in accuracy of ranking potential sires, secondly, it fits in with current ram breeding schedules and thirdly, it remedies the marketing problem of one half of an elite group of previously selected reserve rams being ranked below average. The implementation of these options in WOOLPLAN is consistent with the WMC policy of focusing attention on assisting ram breeders.

The WOOLPLAN services offered by fleece-testing laboratories are to be improved in a number of ways, including the availability of results on diskette, clearer explanations of options on report forms, laboratory literature and request forms, the issuing of a 'Glossary of terms' with every WOOLPLAN report issued and the availability of extra report formats. A number of 'behind the scenes' improvements are also being made, which should increase the profile of WOOLPLAN accredited fleece-testing laboratories in the eyes of breeders. These are the provision of upgraded software for producing WOOLPLAN reports, the running of workshops for more detailed training of laboratory staff on WOOLPLAN, and an increase in the frequency of round trials.

In the near future, advisers around Australia will have easier access to software for generating customised breeding objectives. Customised breeding objectives will give ram breeders a greater sense of 'ownership' of the information obtained on a WOOLPLAN report, because a breeding objective option will be specifically targeted at their sheep breeding program.

(ii) Regional repeatability trials. Many ram breeders believe that the measurements upon which WOOLPLAN is based have low repeatabilities, especially when taken on animals that are 10 to 12 months of age, with 6 to 7 months wool growth. These breeders tend to perceive repeatability in terms of the changes in the actual performance of individual animals over time. They also believe repeatability is an important indication of breeding value. A series of regional studies on repeatabilities of performance recording data and WOOLPLAN indexes would be of considerable assistance in convincing breeders to place more emphasis on performance recording information. Repeatability trials can be completed over a short period of time for a modest cost when compared to conducting demonstrations of response to selection. Some trials have already taken place, in association with sheep classifiers (e.g. Ponzoni et al. 1991). It is important that this cooperative approach continues, and is expanded. The trialing and implementation of two-stage testing and selection procedures in WOOLPLAN (Atkins et al. 1990) will also provide an opportunity for breeders to observe the results of re-testing on their own animals.

(iii) More bloodline comparisons. If it could be clearly demonstrated to breeders that bloodlines which have been bred with the assistance of performance recording are the higher producing bloodlines in the wool industry, this should encourage more breeders to adopt WOOLPLAN. Testimonials from successful performance breeders, tied together with results of bloodline comparisons should be a powerful way of influencing breeders to use WOOLPLAN, in a similar way in which testimonials are used to market all kinds of products to the rural sector.

(iv) Promoting sire referencing schemes. There is considerable interest among ram breeders in participating in sire referencing schemes, with several currently running in New South Wales. A pilot scheme was run in WA from 1985 to 1990 (with some South Australian studs participating), funded by the Wool Research and Development Fund. Interest in either commencing or recommencing schemes has been expressed by breeders in most states. Breeders involved in sire referencing schemes are exposed to performance recording, and should become increasingly aware with the ability of performance testing data (and WOOLPLAN in particular) to predict rams which perform well in progeny trials. This awareness, and the greater level of knowledge and acceptance of performance data in relation to progeny testing, should encourage more breeders to adoption WOOLPLAN.
Better funded extension campaigns. Recently, there has been a marked decline in government resources available for conducting extension campaigns, particularly in Victoria, Tasmania and South Australia. A shortage of operating funds rather than too few extension staff is the main limitation.

Extension in the animal breeding field needs to be consistent, persistent and preferably done on a one-to-one basis. Extension campaigns to date have concentrated on creating awareness of the WOOLPLAN service. The need for more specific and detailed extension, especially with ram breeders, who are the direct users of the WOOLPLAN service, is becoming clear. Although paid consultancies are fulfilling some of this requirement for extension, these remain restricted to the large studs or breeding groups with significant resources. Further, only a few trained geneticists available in Australia are able to undertake consultancy work. The need for more extension staff to undertake specialised training in animal breeding is also clear.

Governments may start demanding that if they are to transfer technology, a larger contribution of operating costs will need to be borne by industry. The concept of specialist extension officers, operating across state boundaries is now being debated within the wool industry and may become an issue within the wool industry in relation to breeding programs.

CONCLUDING REMARKS

Although many WOOLPLAN reports have been issued to breeders since it was launched in 1987, many breeders have reservations about its usefulness in aiding sheep selection. We have suggested a number of positive steps that can be taken to improve the adoption of WOOLPLAN by breeders. The implementation of some of these is occurring already, but the implementation of others will depend on the financial and moral support they receive. We strongly believe that a continued and persistent extension campaign on WOOLPLAN is imperative to its long term success. The ultimate effectiveness of research on wool sheep breeding depends on a scheme like WOOLPLAN being well established in the wool industry to provide the vehicle for implementing research results.

REFERENCES


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