

## A VISUALLY INTERACTIVE PROGRAM FOR CHOOSING AN ALTERNATE MERINO BLOODLINE SOURCE

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### SUMMARY

Encouraging the movement of flock ram buyers to studs of higher genetic merit should encourage ram breeders to adopt superior breeding practices so as to maintain their market share. The computer program 'Bloodline Benchmark' allows the commercial Merino producer to benchmark his flock to the Merino Bloodline comparison. The program provides a simple interactive method for the user to visualise the possible production and economic results of choosing an alternate ram source.

**Keywords:** Merino, benchmark, gross margin, computer program.

### INTRODUCTION

NSW Agriculture's Merino breeding team at Orange have developed a system that enables wool growers to compare genetic differences between bloodlines after removing the influence of different environments. This is achieved by the Merino Bloodline Comparison (Coelli *et.al.*, 1996) which displays estimates of production effects for 73 bloodlines. The traits estimated are fleece weight, fibre diameter, body weight and other wool quality traits. The data used for the analysis came from 55 New South Wales and 21 Victorian wether trials conducted between 1984 and 1995. Commercial Merino breeders interested in identifying a more profitable ram source to improve their flocks must go through a stepwise process. The Merino Bloodline Comparison outlines the steps needed to choose an alternate bloodline source:

1. Choose a long-term breeding objective for fleece weight and fibre diameter which incorporates your view of the possible micron premium levels in the wool market 10 years hence.
2. Benchmark your flock on the fleece weight and fibre diameter distribution of Figure 1 by locating the coordinates of your current bloodline source.
3. Starting at your current bloodline source draw an arrow in the direction of your chosen breeding objective. Choose an alternate bloodline which exists in the general direction of this arrow.
4. The chosen bloodline must meet other aspects of your breeding objective, for example body weight and other wool quality traits. Other constraints of the chosen bloodline must also be considered, such as price and availability of rams and geographical distance of the chosen stud from your commercial property.

This paper reports on an interactive program called 'Bloodline Benchmark' which graphically displays the output from the Merino Bloodline Comparison. It is a simple, graphical way for the commercial Merino producer to go through steps 1 to 3 above. The user can benchmark the current bloodline source, visualise a breeding objective and see the resultant gross margin of an alternate bloodline source under

a number of possible wool market scenarios.

**Bloodline Benchmark.** The program 'Bloodline Benchmark' is a slide show written in Quattro Pro (Novel Inc., 1994). It consists of six screens where the user can move from screen to screen using 'click on' buttons.

The first screen, displayed in figure 1, allows the user to benchmark their flock to the fleece weight and fibre diameter distribution. The user can click on a button to select a bloodline from the alphabetical list of 73 bloodlines existing within the Merino Bloodline Comparison database. Once this is done a red dot appears on the graphic with the coordinates of that chosen bloodline.

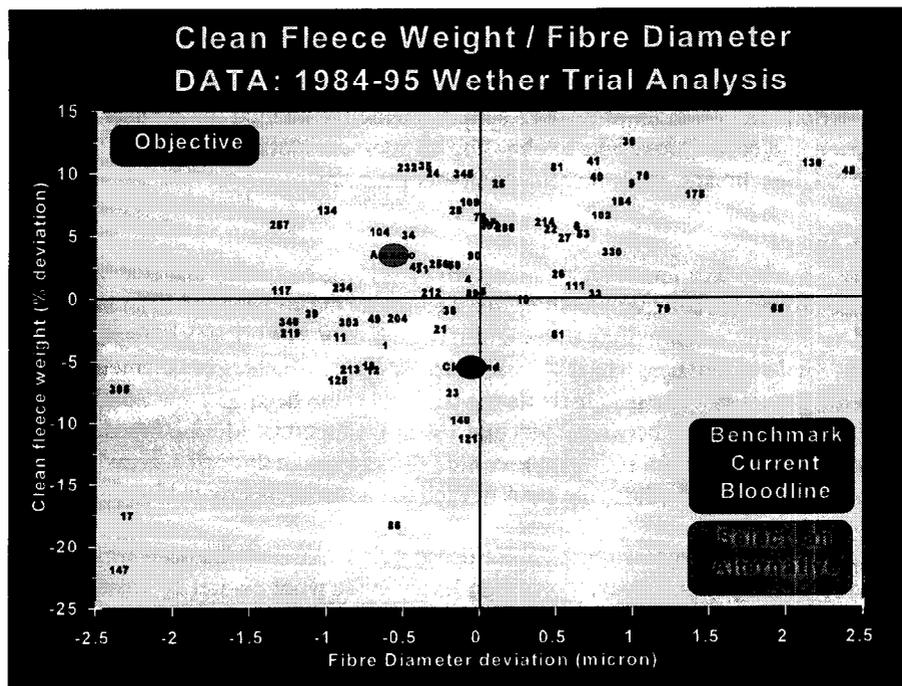


Figure 1. 'BENCHMARK' allows you to locate the coordinates of your flock

All bloodlines are displayed using a number code. The user can choose an alternate bloodline source in the 'select an alternate' bloodline option. Once a code has been chosen, the name of that bloodline and a blue dot appears at the coordinates of that bloodline.

The second screen, displayed in figure 2, shows the production results for fleece weight and fibre diameter resulting from a number of standard breeding objectives. The user can choose one of these breeding objective which he or she considers to best match the wool market in 10 years time. Clicking

on the chosen breeding objective will switch display to that chosen screen.

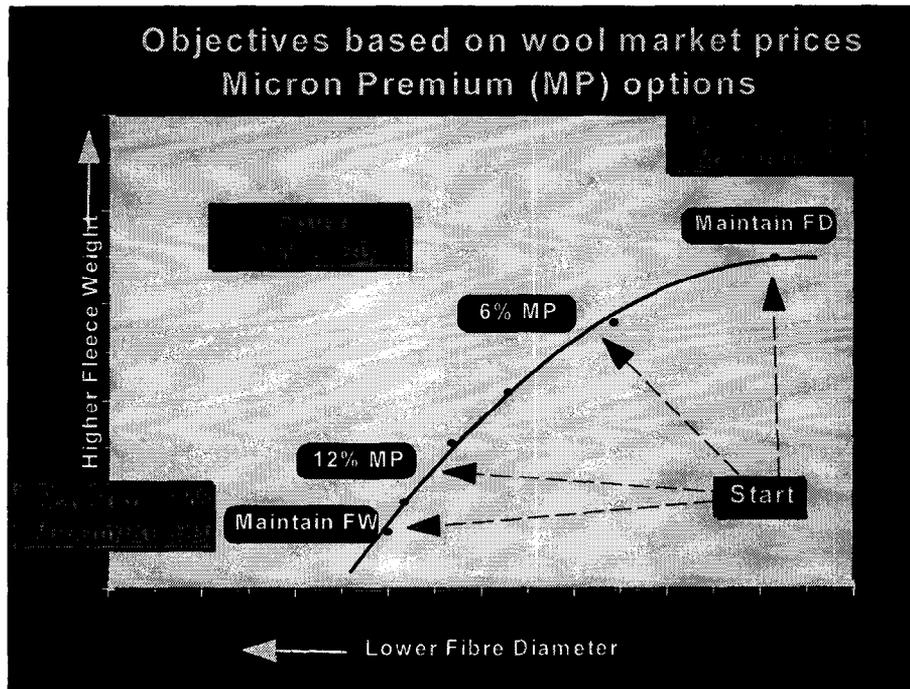


Figure 2. 'Objective' allows you to visualise a number of standard breeding objectives

An example of screens three to six is displayed in figure 3. These screens show the gross margin of all the bloodlines in the comparison relative to their fibre diameter. A red dot shows the gross margin of the current bloodline source and a blue dot represents the chosen alternate bloodline source. The user can look at the resultant gross margin under other possible wool market scenarios or return to screen one to choose an alternate bloodline source.

#### DISCUSSION

Encouraging the movement of flock ram buyers to studs that are demonstrating high genetic merit and are achieving effective genetic gain will lead to substantial economic incentive for all ram breeders to adopt superior breeding practices so as to maintain or increase their market share.

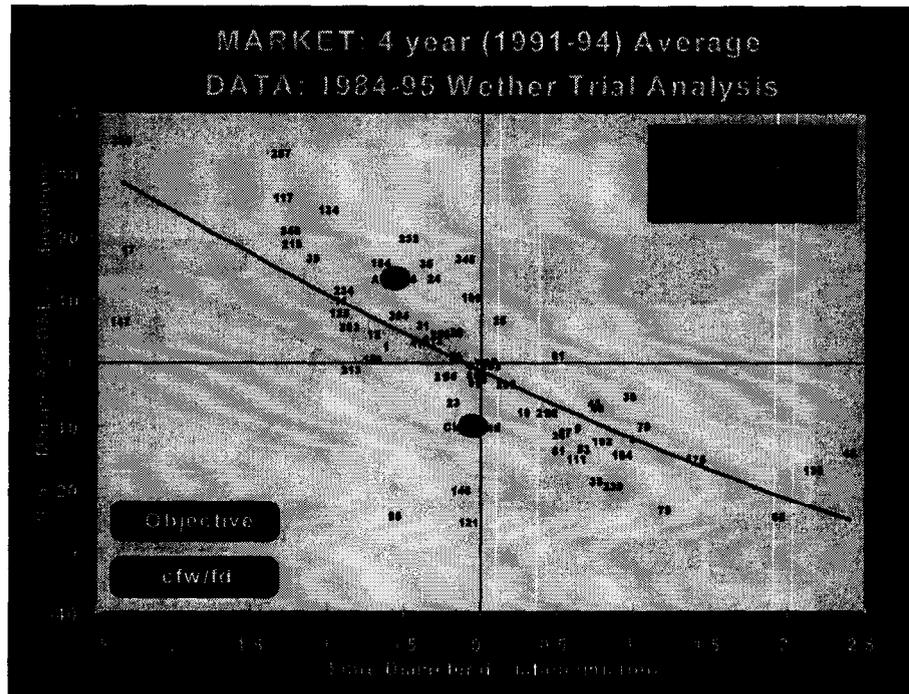


Figure 3. '12% Micron Premium' displays the gross margin of all bloodlines based on this wool market

Until recently, little public information existed on the relative profitability of alternative Merino bloodlines. Much of the current research data on bloodline variation maintains confidentiality over stud flock identity, so that the information was not available to commercial Merino producers. The Merino Bloodline Comparison allows the commercial producer to access information on a large number of commonly used bloodlines by collating information from a number of NSW and Victorian wether trials over the 10 years prior to release of the results.

The advantage of the 'Bloodline Benchmark' program is that commercial producers can easily benchmark their current ram source on the Merino Bloodline Comparison. More importantly, a chosen alternative bloodline source can be visualised on the graphical displays for production and economic performance.

#### REFERENCES

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