SELECTION DEMONSTRATION FLOCKS - WHAT HAVE WE LEARNT?

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SUMMARY

The 2002 and 2003 progeny results for key traits from the Selection Demonstration Flocks (SDF) project are presented. Long-term responses to selection are also discussed. Established along with an unselected control flock (CON) in 1996, the original three selection flocks emphasise use of either measured performance (MPR), professional classer assessment (PCA) or an elite wool or 'soft rolling skin' approach (EWF). A Meat Merino flock was added in 1999 (FM+). All SDFs are outperforming the CON. Commencing with the 2001-drop, considerable divergence between the selection flocks was observed for mean fibre diameter and fleece weight; since that time divergence in mean fibre diameter has not increased, whereas the MPR, EWF and PCA flocks have tended to converge again for fleece weight. Most of the initial advantage in 16-month live weight in the FM+ flock over the CON has been retained in later years, whilst achieving small increases in fleece weight and maintaining a lower mean fibre diameter.

Keywords: Selection demonstration flocks, Merino, selection approaches

INTRODUCTION

In 1996, the Selection Demonstration Flocks (SDF) were established in South Australia to highlight the strengths and weaknesses of the three prevailing selection approaches used by industry (Ponzoni *et al*. 1999). These approaches were selection by measured performance and quantitative genetics (MPR), visual and tactile appraisal by professional sheep classers (PCA) and the Elite wool or 'soft rolling skin approach' (EWF). An unselected line was established as a control (CON). A further two selection lines have been added, one for breeding a Merino more suitable for meat production, whilst maintaining high quality wool (FM+ flock, Ingham and Ponzoni 2001) and the other, for producing fine wool in a traditionally medium to strong wool environment (the Fine Wool Flock – Ramsay *et al.* 2004).

The purpose of this paper is to provide a short account of the SDF project and discuss the key implications of the findings obtained to date. Results are shown for the sixth (2002) and seventh (2003) drops from the original flocks and the third and fourth drops of the FM+ flock. No further account is given of the Fine Wool Flock, because of its different origin and management.

MATERIALS AND METHODS

Details of the establishment and management of the SDF flocks, and the traits recorded, are given by Ponzoni *et al.* (1999), Ingham and Ponzoni (2001) and Ramsay *et al.* (2003, 2004). Briefly, the breeding objective of the original SDFs is to improve profitability of the South Australian Merino. This translated into maintaining or slightly improving fleece weight and body weight and greatly