

Farmer Practices and Attitudes to Conventional Fallow in the Low Rainfall Mallee

J. Latta

Agriculture Victoria – Walpeup, Victorian Institute for Dryland Agriculture, Walpeup, Victoria.

Abstract

A survey of farmer practices and attitudes to conventional fallow in the low rainfall Mallee regions of Victoria, New South Wales and South Australia ascertained that on average 65% of wheat crops were grown on either mechanical or chemically initiated mechanical fallows. Of these, 38% were first cultivated more than 6 months prior to seeding. Although almost half (46%) of the respondents utilising conventional fallows recognised the need to change this practice, largely due to soil erosion problems (38%), any immediate change is inhibited by the perceived lack of proven alternatives (50%).

Key words

Survey, conservation tillage, low rainfall mallee

Introduction

Adoption of direct drill or minimum tillage systems in the low rainfall areas of the New South Wales, South Australian and Victorian Mallee has been estimated as being very low (<1%) in contrast to higher rainfall areas (1). The Mallee region is characterised by low and variable rainfall, which limits crop options and leads to different management techniques. Consequently practices such as long fallowing have become integral to low rainfall Mallee agriculture as they provide a means by which to stabilise yield fluctuations (3) and thus farm incomes. Conversely fallowing contributes to land degradation via wind erosion and may further contribute to dryland salinity by increasing deep drainage (2). Such issues emphasise the need for 'sustainable' agriculture and farmer awareness of the impact of cultivation on soil erodability, soil structure and organic matter. However, previous survey work in the South Australian Mallee suggests that regardless of the issues, the use of fallows remains a significant aspect of farming in the low rainfall Mallee environment (4,5).

To quantify the use of conventional fallows and identify the issues influencing adoption of conservation cropping systems in the low rainfall Mallee regions, a survey was conducted over four seasons (1996-1999). The survey served as both a guide for future extension and as a baseline from which to measure change. It also provides the opportunity to evaluate the impact of several research and extension programs implemented throughout the study region over the same time frame. These programs are part of the Mallee Sustainable Farming Project and are aimed at increasing adoption of sustainable farming practices in the low rainfall Mallee.

The survey population encompassed 146 farmers from the New South Wales, South Australian and Victorian Mallee with an average annual rainfall of less than 350mm and growing season rainfall less than 225mm (Figure 1). Farm management practices were surveyed annually over the 4 seasons (1996-1999) to encompass a range of climatic conditions and thus help determine 'common' practice. The initial survey was conducted by personal interviews with each farm's principal decision-maker. Follow up surveys were mailed to the original sample with an average response rate of 73% over the remaining three seasons. This paper reports the prevalence of conventional fallows in the low rainfall Mallee and identifies issues that may be inhibiting the adoption of conservation cropping systems.

Results and Discussion

On average 65% of all wheat crops were grown on either mechanical (19%) or chemically initiated mechanical fallows (46%). The remainder of wheat crops were sown following pasture (22%), cereal (9%) or grain legume (4%). Thirty eight percent of fallows were first cultivated at least 6 months prior to seeding

and were thus categorised as conventional fallow. The number of cultivations conducted in conventional fallow systems ranged from 1-7 with a mean of 4.4.

Farmers perceived the principal advantages of conventional fallows in Mallee farming systems to be moisture retention (15%), weed control (15%), disease control (14%), increased yields (14%), timeliness of sowing (13%) and seedbed preparation (9%). Of farmers utilising conventional fallows almost half (46%) recognised a need to change this practice in the future due to soil erosion (38%), loss of grazing and cropping opportunities (21%), operating costs (19%) or reduced soil health (19%).

Any immediate change is however inhibited by the perceived lack of proven alternatives (50%) and the cost of either new or modified machinery (40%). Only 2% of farmers recognised ground water recharge as a problem associated with fallow.

Conclusion

Whilst the use of conventional fallows may no longer be as prevalent in the low rainfall Mallee regions as previous surveys have suggested (4,5), it does remain a common practice. Although there appears to be a strong understanding amongst farmers of the risks associated with conventional fallow practices and a willingness to change in the interest of conservation land management, this is inhibited largely by the perceived lack of compelling evidence that any change would be beneficial. For a broad-scale change in farming practice to occur in the low rainfall Mallee detailed research, demonstration and extension of alternative farming systems will be required. This is currently being addressed by the Mallee Sustainable Farming Project. Following the 2000 cropping season the initial interview survey will be followed up, enabling any changes in farmer's attitude and behaviour towards conventional fallows over the past 5 years to be monitored.

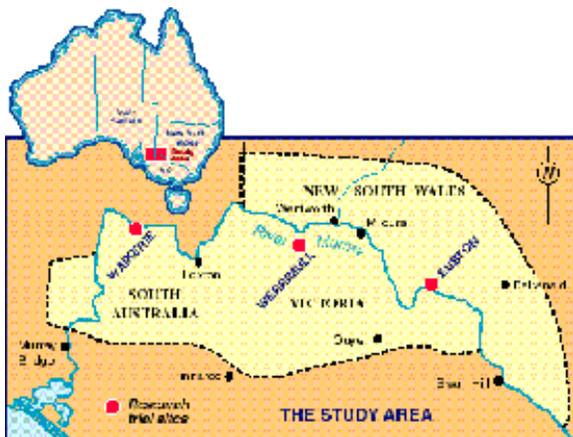


Figure 1. Low rainfall Mallee regions of New South Wales, South Australia and Victoria encompassed by survey.

Acknowledgments

This research was funded by the Grains Research and Development Corporation as part of the Mallee Sustainable Farming Project.

References

1. Clarke, D. 1997. Regional Implementation Strategy, Dryland Areas, Murray-Darling Basin, South Australia. Summary Report for the Soils Board Care Program, SA.
2. O'Connell, M.G., O'Leary, G.J. and Incerti, M. 1995. Agric. Wat. Man. **29**, 37-52.

3. O'Leary, G.J. and Connor, D.J. 1997. Field Crop. Res. **52**, 209-219.
4. McDonough, C. 1992. Murraylands Agricultural Bureaux Soil Management Survey Summary. Primary Industries South Australia, Murray Bridge.
5. Slee, D. and Assoc. 1996. Farming practices in the northern Mallee. Murray Mallee Soil Conservation Board.