TECHNOLOGY TRANSFER OF EARLY SEEDING TECHNIQUES IN LOW RAINFALL CROPPING ENVIRONMENTS

A.J. Fatchen and R.E. Holloway

Primary Industries South Australia, Minnipa Research Centre, Minnipa, SA 5654

Over the past decade wheat yields have been lifted significantly at the Minnipa Research Centre in South Australia by making better use of early rainfall to establish crops when water demands are low, and consequently make more efficient use of spring rainfall. Farmer adoption of early seeding practises was low so a project began in July 1992 to allow early seeding techniques to be demonstrated on farmers' properties on Upper Eyre Peninsula.

METHODS

Eight demonstration sites were established on a range of soil types across Upper Eyre Peninsula. Annual average rainfall ranged from 275 to 325 mm. The paddock scale demonstrations (50ha) involved comparisons between wheat direct drilled on the opening rain, and conventional practise with cultural weed control and sowing 2-3 weeks after the opening rain. The early sown areas involved specific grass control techniques and conservation of summer rainfall through herbicide use in the year prior to cropping. Information was gained comparing plant growth, yields and gross margins of the two farming systems. Field days were held with local farmer groups at each site to extend the concept and allow farmer discussion.

RESULTS AND DISCUSSION

Over two seasons, early sown crops outyielded conventional practise at every site, with some sites having yield increases exceeding 75%. Gross margins were higher on 80% of early sown crops even though they involved higher input costs. These results were achieved in dry years; 1994 was the driest on record at most sites.

Table 1. Comparisons between early sown and conventional wheat crops (Mean yields, gross margins and date of sowing) (Values in brackets = s.e. of mean)

1993				**1994**			
Conventional		**Early**		**Conventional**		**Early**	
date sown 11.6.93		**date sown 25.5.93**		**date sown 13.6.94**		**date sown 5.6.94**	
t/ha	**$/ha**	**t/ha**	**$/ha**	**t/ha**	**$/ha**	**t/ha**	**$/ha**
0.95 (0.17)	39.88	1.53 (0.30)	96.57	0.58 (0.08)	43.53	0.82 (0.12)	79.02

CONCLUSIONS

The results have shown that large increases in wheat yields and farm profitability are possible by direct drilling wheat on the opening rain in marginal cereal cropping districts, provided grasses are controlled in the previous year.

ACKNOWLEDGMENTS

This project was funded by the Grains Research and Development Corporation.