

FINAL REPORT

CRF1

Production of Quality Wheat

PROJECT DETAILS

PROJECT CODE: CRF1

PROJECT TITLE: PRODUCTION OF QUALITY WHEAT

START DATE: 01.04.1995

END DATE: 31.03.1997

SUPERVISOR:

ORGANISATION: CROPFAC TS PTY LTD

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Summary

Project Aims

1. Identify and develop agronomic practices which produce high quality wheat
2. Develop fertiliser practices required to produce high quality wheat
3. Undertake trial work with farm groups focussed on N management training

Project Outcomes

Fourteen large scale field trials investigating nitrogen fertiliser use and grain quality were established in the Victorian Mallee and Wimmera, in 1995 and 1996. Active farm groups co-operated with the work at each site and were involved with developing skills in nitrogen management. Main results:

- Pre-drilling nitrogen resulted in a yield increase of more than 0.4 t/ha at 5 out of 14 sites in 1995 and at 9 out of 14 sites in 1996
- Top-dressing 37 kg N/ha as urea at the second node stage resulted in a protein content increase of more than 0.5% at 13 out of the 14 sites in 1995 and at 9 out of 14 sites in 1996
- Protein contents were below 12% at all sites in 1995 and 1996 (even with topdressed nitrogen fertiliser)
- Nitrogen use efficiency (NUE) was very low (38% and 39% in 1995 and 1996 respectively) for pre-drilled nitrogen and even lower for topdressed nitrogen (35% and 34% in 1995 and 1996 respectively).
- The nitrogen use equation of **Grain N uptake = 32 + 0.32 (available N)** developed from trial work in 1995 has been successfully used to:
 - predict a nitrogen fertiliser requirement prior to sowing, following an available nitrogen soil test
 - assess the performance of wheat crops after harvest

- in-crop tools for assessing nitrogen status of the growing crop were inconsistent and more work needs to be done to evaluate these techniques for practical and reliable use
- grain produced at the trial sites was generally acceptable in terms of its rheological characteristics for baking purposes but the protein contents were too low to be considered as preferred sources for baking-quality grain

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