

Conservation farming in northern N.S.W. - a six year case study

R.H. Colless

Soil Conservation Service of N.S.W.
P.O. Box 546, Gunnedah. N.S.W. 2380

Farming land in northern N.S.W. suffers from extremely high rates of runoff and soil loss when an aggressive tillage approach is adopted in a crop management programme. Research has shown that this runoff and soil loss can be reduced to 9% and 12% respectively (of the rates under conventional tillage) by using a no-tillage crop management programme (1).

A no-till demonstration site was commenced in 1978 on the property "Cintra", Werris Creek, on a uniform black self mulching clay soil. The farmer, Mr. Tony Windsor, is extremely concerned about soil erosion and degradation and their effect on the agronomic and economic aspects of crop production.

Results

CROP	SOWING DATE	YIELD T HA ⁻¹		FALLOW COST \$ HA ⁻¹		NET RETURN \$ HA ⁻¹	
		NT	C	NT	C	NT	C
SORGHUM	Oct. 78	6.9	6.2	79.00	62.00	542.00	494.00
SUNFLOWER	Jan. 80	1.6	0.9	67.00	59.00	317.00	159.00
WHEAT	Jun. 81	4.7	3.8	91.00	69.00	444.00	364.00
SORGHUM	Oct. 82	1.55	0	84.00	59.00	164.00	-59.00
SUNFLOWER	Jan. 84	1.35	0.82	*176.00	77.00	204.00	136.00
*Includes 0.648kg ha ⁻¹ glyphosate applied preharvest Ttl:						\$1671.00	1094.00
AVERAGE OVER SIX YEARS						278.50	182.33

Variability is unable to be estimated because there is only one plot in each treatment.

Conclusions

- Long term no-till crop production appears to be an economically viable alternative to conventional crop production methods.
- The improvement in soil structure under a no-tillage system is reflected by vastly reduced rates of runoff and soil loss. It also provides a superior matrix for the growth and production of crops.
- Problems of controlling weeds in some crops during periods of prolonged wet weather are not yet overcome. The same problem does, however, also apply to conventional tillage methods.
- A sound crop rotation is necessary to permit greater control of weeds, pests and diseases. A rotation also allows maximum use of available stored moisture by double cropping when conditions are suitable.
- Further development of specialised planting and spraying equipment to allow improved efficiency in no-till farming systems is necessary.

No-tillage is an economically feasible, agronomically sound and a highly beneficial soil conservation crop production practice in northern N.S.W.

1. Harte, A.J. 1983. Proc. North West No-till Project Team Meeting. Tamworth. 32-35