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92/W/CS/346 Set-aside Study - W. Wheat, Fallow

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92/W/CS/346

SET-ASIDE STUDY

Object: To compare different treatments of land temporarily withdrawn from arable cropping and to study their effects on nitrate leaching and on subsequent wheat crops - Woburn, White Horse.

Sponsors: R.D. Prew, E.T.G. Bacon, M.V. Hewitt, D.P. Yeoman, J.F. Jenkyn, R.J. Gutteridge, W. Powell, J. Ashby.

Associate sponsors: D.L.O. Smith, I. Shield, M.D. Helps.

The third year, w. wheat.

For previous years see 90-91/W/CS/346.

Design: 3 randomised blocks of 7 plots split into 7.

Whole plot dimensions: 10.0 x 24.0.

Treatments: All combinations of:-

Whole plots

- | | |
|------------------------|---|
| 1. LAND TRT[90] | Land treatment in 1990, after w. wheat 1989 (all treatments ploughed autumn 1990 before w. wheat): |
| CA WW | Cultivated in autumn, sown to w. wheat |
| CA RA | Cultivated in autumn, sown to ryegrass in autumn, topped in spring |
| SA CA FA | Straw chopped and spread in autumn, cultivated in autumn, sown to forage rape in autumn, topped in spring |
| CA CS | Cultivated in autumn, cultivated in spring |
| SA CS | Straw chopped and spread in autumn, cultivated in spring |
| WT | Weeds topped |
| WT CS TS | Weeds topped, cultivated in spring, trefoil sown in spring, topped |

Sub plots

- | | |
|-----------------|---|
| 2. N RES | Residues of nitrogen fertilizer (kg N) to w. wheat in 1991: |
| (0) | |
| (80) | |
| (120) | |
| (160) | |
| (200) | |
| (240) | |
| (280) | |

NOTE: An additional fallow sub plot was present, systematically arranged on one side of each whole plot.

92/W/CS/346

Experimental diary:

21-Sep-91 : B : Ploughed.
 25-Sep-91 : B : Rolled.
 02-Oct-91 : B : Rotary cultivated.
 02-Oct-91 : T : On wheat plots Mercia drilled at 140 kg.
 09-Mar-92 : T : 34.5% N at 116 kg to wheat plots.
 01-Apr-92 : B : Duplosan New System CMPP at 2.0 l and Asset at 2.0 l in 200 l.
 23-Apr-92 : T : 34.5% N at 464 kg to wheat plots.
 15-May-92 : T : Dorin at 1.0 l and Ally at 30 g in 300 l to wheat plots.
 08-Jun-92 : T : Halo at 2.0 l in 200 l to wheat plots.
 29-Aug-92 : T : Combine harvested.

NOTE: Soil N was measured in autumn and spring. Foliar diseases and foot and root rots were assessed in spring and summer.

GRAIN TONNES/HECTARE

***** Tables of means *****

	N RES	(0)	(80)	(120)	(160)	(200)	(240)	(280)	Mean
LAND TRT[90]									
CA WW		6.75	6.23	5.78	6.35	6.05	5.51	6.26	6.13
CA RA		7.25	6.92	6.09	6.36	5.06	6.34	5.56	6.23
SA CA FA		6.60	6.61	5.87	5.84	5.22	5.66	6.26	6.01
CA CS		6.19	6.37	6.45	5.64	5.46	6.11	5.38	5.94
SA CS		5.72	4.98	5.10	4.75	5.73	5.21	5.04	5.22
WT		6.18	4.97	5.84	5.37	4.89	5.15	4.67	5.29
WT CS TS		6.10	5.32	5.83	4.49	5.34	4.67	5.01	5.25
Mean		6.40	5.91	5.85	5.54	5.39	5.52	5.45	5.72

*** Standard errors of differences of means ***

	LAND TRT[90]	N RES	LAND TRT[90]
			N RES
	0.526	0.259	0.823
Except when comparing means with the same level(s) of			
LAND TRT[90]			0.684

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	12	0.644	11.3
BLOCK.WP.SP	84	0.838	14.6

GRAIN MEAN DM% 79.9

SUB PLOT AREA HARVESTED 0.00199