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93/W/CS/356 Set-aside Study - W. Wheat

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93/W/CS/356

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Object: To compare different treatments of land temporarily withdrawn from arable cropping and to study their effects on nitrate leaching and on subsequent wheat crops - Woburn, Horsepool Lane Close I.

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.

The third year, w. wheat.

For previous years see 91-92/W/CS/356.

Design: 3 randomised blocks of 7 plots split into 8 sub plots.

Whole plot dimensions: 10.0 x 24.0.

Treatments: All combinations of:-

Whole plots

1. **LAND TRT[91]** Land treatment in 1991, after w. wheat 1990 (all treatments ploughed autumn 1991 before two w. wheat test crops):

(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** Nitrogen fertilizer (kg N) applied spring 1992:

(0)
(80)
(120)
(160)
(200)
(240)
(280)

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

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Experimental diary:

W. wheat:

29-Sep-92 : B : Roundup at 4.0 l in 200 l.
08-Oct-92 : B : Ploughed.
13-Oct-92 : B : Rotary harrowed.
14-Oct-92 : B : Rotary harrowed, Mercia dressed Cerevax, drilled at 380
seeds per square metre.
26-Mar-93 : B : 34.5% N at 120 kg.
15-Apr-93 : B : Ally at 30 g and New 5C Cycocel at 2.5 l in 200 l.
06-May-93 : B : 34.5% N at 460 kg.
18-May-93 : B : Cheetah R at 3.0 l, Halo at 2.0 l and Mistral at 0.25 l
in 200 l.
22-Jun-93 : B : Dorin at 1.0 l in 200 l.
02-Jul-93 : B : Starane 2 at 1.0 l in 300 l.
18-Aug-93 : B : Combine harvested.

Fallow:

29-Sep-92 : B : Roundup at 4.0 l in 200 l.
08-Oct-92 : B : Ploughed.
02-Apr-93 : B : Rotary cultivated.
08-Jul-93 : B : Rotary cultivated.

NOTE: Plant counts were made in winter and summer. Foliar diseases and
foot and root rots were assessed.

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GRAIN TONNES/HECTARE

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

	N RES	(0)	(80)	(120)	(160)	(200)	(240)	(280)	Mean
LAND TRT[91]									
(CA WW)		4.49	5.06	5.44	5.30	5.30	4.76	4.73	5.01
(CA RA)		6.17	5.49	6.06	5.47	4.66	5.08	5.17	5.44
(SA CA FA)		5.74	6.31	7.54	6.80	7.47	7.11	7.46	6.92
(CA CS)		7.00	4.72	6.79	5.74	7.49	6.18	7.42	6.48
(SA CS)		4.08	4.30	5.01	4.48	3.71	4.37	5.45	4.48
(WT)		7.46	7.18	7.86	7.59	8.67	8.02	8.05	7.83
(WT CS TS)		4.82	7.27	7.45	6.12	5.39	6.45	5.36	6.12
Mean		5.68	5.76	6.59	5.93	6.10	6.00	6.23	6.04

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

LAND TRT[91]	N RES	LAND TRT[91]	N RES
1.460	0.337	1.677	
Except when comparing means with the same level(s) of			
LAND TRT[91]		0.891	

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	12	1.788	29.6
BLOCK.WP.SP	84	1.091	18.1

GRAIN MEAN DM% 86.6

SUB PLOT AREA HARVESTED 0.00199