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Object: To compare different treatments of land temporarily withdrawn from arable cropping and to study their effects on nitrate leaching and on subsequent wheat crops - Woburn, Horsepool Lane Close I.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

93/W/CS/356

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