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96/W/CS/347 Green Crops for Set-aside - W. Wheat

Rothamsted Research

Rothamsted Research (1997) *96/W/CS/347 Green Crops for Set-aside - W. Wheat* ; Yields Of The Field Experiments 1996, pp 75 - 77 - DOI: <https://doi.org/10.23637/ERADOC-1-51>

96/W/CS/347

GREEN CROPS FOR SET-ASIDE

Object: To obtain information on the establishment and maintenance of sown crops and unsown vegetation in three-year and five-year set-aside. Effects on soil nitrate and leaching after ploughing are also studied - Woburn, Horsepool Lane Close II.

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

Design: 3 randomised blocks of 6 plots split into 2 x 2 criss-cross.

Whole plot dimensions: 6.5 x 26.0.

The seventh year, w. wheat.

For previous years see 90-95/W/CS/347.

Treatments:

Test phase (second test crop after 5-year treatment phase)

Whole plots

- | | |
|-------------|---|
| 1. PREVCROP | Previous crop, cumulative 1990 to 1994: |
| (RY LF) | Ryegrass, cuttings left in situ |
| (RY+CL LF) | Ryegrass + clover, cuttings left in situ |
| (RY+CL RE) | Ryegrass + clover, cuttings removed |
| (RY+N RE) | Ryegrass given 100 kg N in spring, cuttings removed |
| (TU LF) | Tumbledown, natural regrowth, cuttings left in situ |
| (ARABLE) | Arable sequence w. wheat, w. wheat, w. oats, w.wheat, w. oats |

Sub-plots (WHEAT split-plots, N criss-cross)

- | | |
|----------|--|
| 2. WHEAT | Time of ploughing and drilling previous w. wheat crop: |
| (W) | Winter 1994 |
| (S) | Spring 1995 |
| 3. N | Fertilizer nitrogen (kg N) applied in spring cumulative to previous dressings: |
| NO | None |
| N OPT | Optimum, 40 early and 160 later |

Experimental diary:

- 03-Oct-95 : B : Roundup at 4.0 l in 300 l.
12-Oct-95 : B : Ploughed.
19-Oct-95 : B : Rotary harrowed, Cadenza, dressed Beret 050FS, drilled at 375 seeds per m².
22-Nov-95 : B : Stomp 400 SC at 2.5 l with Dagger at 1.5 l in 200 l.
11-Mar-96 : T : N N OPT: 34.5% N at 116 kg.

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Experimental diary:

30-Apr-96 : B : Halo at 1.5 l in 200 l.
 02-May-96 : T : N N OPT: 27.5% N at 581 kg.
 06-Jun-96 : B : Halo at 2.0 l with Mallard 750 EC at 0.5 l in 300 l.
 20-Aug-96 : B : Combine harvested.

NOTE: Soil nitrogen was measured in autumn. Weeds were counted and estimates of ground cover were made in spring.

GRAIN TONNES/HECTARE

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

	N	NO	NOPT	Mean	
PREVCROP					
(RY LF)		5.14	8.48	6.81	
(RY+CL LF)		6.24	9.44	7.84	
(RY+CL RE)		6.45	8.58	7.52	
(RY+N RE)		4.80	8.56	6.68	
(TU LF)		4.36	8.11	6.23	
(ARABLE)		4.53	8.58	6.56	
Mean		5.25	8.63	6.94	
WHEAT	(W)		(S)	Mean	
PREVCROP					
(RY LF)		6.41	7.21	6.81	
(RY+CL LF)		7.48	8.20	7.84	
(RY+CL RE)		7.02	8.02	7.52	
(RY+N RE)		6.51	6.85	6.68	
(TU LF)		6.29	6.18	6.23	
(ARABLE)		6.20	6.91	6.56	
Mean		6.65	7.23	6.94	
WHEAT	(W)		(S)	Mean	
N					
NO		4.76	5.75	5.25	
NOPT		8.55	8.71	8.63	
Mean		6.65	7.23	6.94	
WHEAT	(W)		(S)		
PREVCROP	N	NO	NOPT	NO	NOPT
(RY LF)		4.60	8.23	5.69	8.74
(PC)		5.56	9.40	6.93	9.48
(PCR)		5.76	8.27	7.14	8.90
(RY+N RE)		4.56	8.46	5.04	8.66
(TU LF)		4.07	8.51	4.65	7.71
(ARABLE)		3.99	8.41	5.06	8.75

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GRAIN TONNES/HECTARE

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

	PREVCROP	WHEAT	PREVCROP WHEAT
	1.015	0.166	1.054
Except when comparing means with the same level(s) of PREVCROP			0.406

	PREVCROP*	WHEAT*	PREVCROP*
	N	N	WHEAT N
	1.218	0.646	1.260
Except when comparing means with the same level(s) of PREVCROP	0.740		0.844
WHEAT		0.631	
N	1.060	0.187	1.108
PREVCROP.WHEAT			0.769
PREVCROP.N			0.457
WHEAT.N			1.108

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP1	10	1.243	17.9
BLOCK.WP1.SP	12	0.497	7.2
BLOCK.WP1.WP2	10	0.532	7.7
BLOCK.WP1.SP.WP2	12	0.366	5.3

GRAIN MEAN DM% 88.1

SUB-PLOT AREA HARVESTED 0.00236 or 0.00325