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Yields of the Field Experiments 1996



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

Rothamsted Research

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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

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
(TILLE) Tumbledown natural regrowth cuttings left in situ

(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)

- 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 1 in 300 1.

12-Oct-95 : B : Ploughed.

22-Nov-95 : B : Stomp 400 SC at 2.5 1 with Dagger at 1.5 1 in 200 1.

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 1 with Mallard 750 EC at 0.5 1 in 300 1.

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	
W	HEAT (W)		(S)	
PREVCROP	N NO	NOPT	NO	NOPT
(RY LF)	4.60	8.23	5.69	8.74
(PC)	5.56		6.93	9.48
(PCR)	5.76	8.27	7.14	8.90
(RY+N RE)				
	4.56	0.40	5.04	8.66
(TU LF)	4.56 4.07	8.46 8.51	5.04 4.65	8.66 7.71

96/W/CS/347

GRAIN TONNES/HECTARE

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

		PREVCROP		WHEAT		PREVCROP		
Except	when	comparing	1.015 means		0.16		1.054	of
PREVCI		oompar riig	mound		0110	Dame	0.406	01

	PREVCROP*	WHEAT*	PREVCROP* WHEAT	
			N	
	1.218	0.646	1.260	
Except when	comparing means wi	th the same	level(s) of	
PREVCROP	0.740		0.844	
WHEAT		0.631		
N	1.060	0.187	1.108	
PREVCROP.W	HEAT		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