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## Yields of the Field Experiments 1995

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### 95/W/CS/347 Green Crops for Set-aside - W. Wheat , S. Wheat

#### Rothamsted Research

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95/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:** R.D. Prew, 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 sixth year, w. and s. sown wheat.

For previous years see 90-94/W/CS/347.

**Treatments:**

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

Whole plots

1. **PREVCROP** Previous crops, 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:
  - W Winter
  - S Spring
3. **N** Fertilizer nitrogen applied in spring:
  - NO None
  - N OPT Optimum

**NOTES:** (1) N OPT was given 40 kg N early (W in March, S in June) and the following rates later (W in April, S in July)

	(RY LF)	(RY+CL LF)	(RY+CL RE)	(RY+N RE)	(TU LF)	(ARABLE)
W	155	135	135	160	140	170
S	120	120	120	120	130	155

(2) The three blocks after 3-year set-aside were discontinued after the second test crop in 1994.

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**Experimental diary:**

05-Oct-94 : T : WHEAT W: Ploughed.  
07-Oct-94 : T : WHEAT W: Rolled. Rotary harrowed, Cadenza, dressed Rappor, drilled at 300 seeds per m<sup>2</sup>.  
01-Dec-94 : B : Stomp 400 at 3.3 l with Stefes IPU at 3.0 l in 200 l.  
16-Mar-95 : T : WHEAT W: N N OPT: 27% N at 148 kg.  
22-Mar-95 : T : WHEAT S: Ploughed.  
30-Mar-95 : T : WHEAT S: Rotary harrowed.  
31-Mar-95 : T : WHEAT S: Rotary harrowed, Cadenza, dressed Rappor, drilled at 500 seeds per m<sup>2</sup>.  
28-Apr-95 : T : WHEAT W, N N OPT: Nitrogen treatments applied as 27% N.  
          : T : WHEAT S: Rotary harrowed, Cadenza, dressed Cerevax, re-drilled at 500 seeds per m<sup>2</sup>.  
02-May-95 : T : WHEAT W: Halo at 2.0 l in 200 l.  
25-May-95 : T : WHEAT S: Cadenza, dressed Rappor, re-drilled at 900 seeds per m<sup>2</sup>.  
26-May-95 : T : PREVCROP (RY+CL RE), (RY+N RE): Corrective P and K applied.  
01-Jun-95 : T : WHEAT W: Cyclone at 1.0 l in 300 l.  
15-Jun-95 : T : WHEAT S: Ally at 30 g in 300 l.  
16-Jun-95 : T : WHEAT S, N N OPT: 27% N at 148 kg.  
29-Jun-95 : B : Pirimicarb 50 DG at 280 g in 300 l.  
19-Jul-95 : T : WHEAT S, N N OPT: Nitrogen treatments applied as 27% N.  
05-Aug-95 : T : WHEAT W: Combine harvested.  
22-Sep-95 : T : WHEAT S: Combine harvested.

- NOTES:** (1) The spring wheat was re-drilled twice following the failure of the first and second sowings, and yields were negligible and are not presented.
- (2) Soil mineral nitrogen was measured in autumn and spring. Weeds were counted in November and July. Numbers of ears of wheat were estimated in July.

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GRAIN TONNES/HECTARE

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

	N	NO	N OPT	Mean
<b>PREVCROP</b>				
(RY LF)		1.70	6.74	4.22
(RY+CL LF)		4.03	8.29	6.16
(RY+CL RE)		3.72	7.17	5.45
(RY+N RE)		2.15	7.12	4.63
(TU LF)		1.44	7.64	4.54
(ARABLE)		1.72	7.24	4.48
Mean		2.46	7.37	4.91

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

	PREVCROP	N	PREVCROP	N
	0.707	0.304	0.884	
Except when comparing means with the same level(s) of				
<b>PREVCROP</b>			0.752	
<b>N</b>			0.886	

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP1.WP2	10	0.923	18.8

GRAIN MEAN DM% not measured

SUB-PLOT AREA HARVESTED 0.00235 or 0.00323