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## Yields of the Field Experiments 1988

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### 88/R/CS/324 Comparison of Combinable Crops - W. Wheat

#### Rothamsted Research

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88/R/CS/324

### COMPARISON OF COMBINABLE CROPS

**Object:** To compare yields and other attributes of a range of combinable crops and to study their effects on a following crop of w. wheat - Long Hoos VI/VII 2.

**Sponsors:** J. McEwen, D.P. Yeoman, R.J. Darby, M.V. Hewitt.

The second year, w. wheat, s. wheat.

For previous year see 87/R/CS/324.

**Design:** 3 randomised blocks of 10 plots split into 2.

**Whole plot dimensions:** 2.5 x 8.0.

**Treatments:** All combinations of:-

Whole plots

1. PREVCROP	Crops in 1987:
W OATS	W. oats
W RAPE	W. oilseed rape
W PEAS	W. peas, <i>Pisum sativum</i>
W WHEAT	W. wheat
S BEANS	S. field beans, <i>Vicia faba</i>
S LUPINS	S. lupins, <i>Lupinus albus</i>
S PEAS	S. peas, <i>Pisum sativum</i>
SNFLOWER	Sunflower
FALLOW B	Fallow (after w. field beans that failed)
FALLOW	Fallow

Sub plots

2. SPRING N	Nitrogen fertilizer applied on 14 Apr, 1988:
0	None
N	Applied, amount depending on quantity in crop and soil in spring

**NOTES:** (1) Amounts of N applied (kg N) as 'Nitro-Chalk' were:

After PREVCROP	W PEAS	190
	W RAPE, S PEAS	200
	FALLOW B	210
	S BEANS	220
	W WHEAT, FALLOW	240
	W OATS	250

(2) W. wheat after PREVCROP S LUPINS and SNFLOWER failed and was resown to s. wheat given 125 kg N to SPRING N N.

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**Standard applications:**

After all treatments except after lupins and sunflowers (w. wheat only): Weedkillers: Paraquat at 0.60 kg ion in 220 l. Terbutryne at 2.8 kg in 220 l. Mecoprop at 1.8 kg (after s. beans only) in 220 l. Mecoprop at 3.0 kg with isoproturon at 2.1 kg and (after oats only) diclofop-methyl at 1.1 kg in 220 l. Cyanazine at 0.46 kg, clopyralid at 0.078 kg with mecoprop at 1.8 kg in 220 l. Flamprop-M-isopropyl at 0.70 kg (after oats only) in 220 l. Fungicides: Prochloraz at 0.27 kg and carbendazim at 0.10 kg applied with the cyanazine, clopyralid and mecoprop. Propiconazole at 0.12 kg applied with the flamprop-M-isopropyl (after oats only). Fenpropimorph at 0.75 kg and chlorothalonil at 1.0 kg in 220 l. Carbendazim at 0.25 kg and maneb at 1.6 kg in 220 l. Insecticides: Deltamethrin at 0.062 kg in 220 l. Pirimicarb at 0.14 kg applied with the fenpropimorph and chlorothalonil.

After s. lupins and sunflowers (s. wheat only): Weedkillers: Terbutryne at 2.8 kg in 220 l (after sunflowers only). Mecoprop at 3.0 kg with isoproturon at 2.1 kg in 220 l. Bentazone at 0.80 kg, dichlorprop at 1.1 kg and MCPA at 0.64 kg in 220 l. Fungicides: Fenpropimorph at 0.75 kg and chlorothalonil at 1.0 kg in 220 l. Carbendazim at 0.25 kg and maneb at 1.6 kg in 220 l. Insecticides: Deltamethrin at 0.062 kg in 220 l to sunflowers only. Pirimicarb at 1.4 kg applied with the fenpropimorph and chlorothalonil.

**Seed:** W. wheat: Mercia, sown at 200 kg.  
S. wheat: Alexandria, sown at 180 kg.

**Cultivations, etc.:-**

After w. oats, w. rape, w. peas, w. wheat, s. beans, s. peas and fallow (w. wheat only): Paraquat applied, rotary harrowed twice, w. wheat sown: 24 Sept, 1987. Terbutryne applied: 25 Sept. Mecoprop applied (after beans only): 15 Dec. Deltamethrin applied: 21 Jan, 1988. Mecoprop, isoproturon and (after oats only) diclofop-methyl applied: 30 Mar. Cyanazine, clopyralid, mecoprop, prochloraz and carbendazim applied: 28 Apr. Flamprop-M-isopropyl and propiconazole applied (after oats only): 5 May. Fenpropimorph, chlorothalonil and pirimicarb applied: 25 May. Carbendazim and maneb applied: 20 June. Combine harvested: 25 Aug.

After s. lupins and sunflowers (s. wheat only): Rotary harrowed, w. wheat sown: 29 Oct, 1987 (after sunflowers only). Terbutryne applied: 30 Oct (after sunflowers only). Spring-tine cultivated: 18 Nov (after lupins only). Rotary harrowed, w. wheat sown: 30 Nov (after lupins only). Deltamethrin applied: 21 Jan, 1988 (after sunflowers only). Mecoprop and isoproturon applied: 30 Apr. Rotary harrowed, resown with s. wheat: 8 Apr. Bentazone, dichlorprop and MCPA applied: 20 May. Fenpropimorph, chlorothalonil and pirimicarb applied: 25 May. Carbendazim and maneb applied: 20 June. Combine harvested: 12 Sept.

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GRAIN TONNES/HECTARE

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

SPRING N	0	N	Mean
PREVCROP			
W OATS	1.06	8.00	4.53
W RAPE	3.07	9.51	6.29
W PEAS	3.21	9.32	6.26
W WHEAT	1.10	7.59	4.34
S BEANS	3.69	9.52	6.60
S LUPINS	3.06	4.53	3.80
S PEAS	3.58	9.01	6.29
SNFLOWER	1.09	5.00	3.04
FALLOW B	3.74	9.20	6.47
FALLOW	3.03	9.12	6.07
Mean	2.66	8.08	5.37

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

	PREVCROP	SPRING N	PREVCROP SPRING N
	0.313	0.104	0.390
Except when comparing means with the same level(s) of PREVCROP			0.328

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	18	0.384	7.1
BLOCK.WP.SP	20	0.401	7.5

GRAIN MEAN DM% 79.6

SUB PLOT AREA HARVESTED 0.00058