

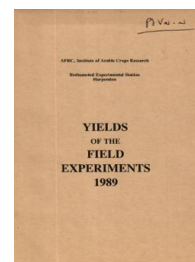
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## Yields of the Field Experiments 1989

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### 89/R/CS/337 Previous Crops and N - W. Barley, W. Oats, W. Beans, W. Oilseed Rape, Potatoes

#### Rothamsted Research

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89/R/CS/337

#### PREVIOUS CROPS AND N

**Object:** To study the effects of a range of crops on the nitrogen requirements, quality and yield of a subsequent w. barley crop - Webbs.

**Sponsors:** D.G. Christian, N.L. Carreck.

The first year, w. barley, w. oats, w. beans, s. oilseed rape, potatoes.

**Design:** 3 randomised blocks of 5 plots.

**Whole plot dimensions:** 21.0 x 20.0.

**Treatments:**

| CROP     | Crops:          |
|----------|-----------------|
| W BARLEY | W. barley       |
| W BEANS  | W. beans        |
| W OATS   | W. oats         |
| W RAPE   | W. oilseed rape |
| POTATOES | Potatoes        |

**NOTE:** Winter oilseed rape failed and was replaced by s. oilseed rape, yields not taken.

**Standard applications:**

All crops: Manures: (0:18:36) at 920 kg.  
W. barley: Manure: 'Nitram' at 360 kg. Weedkiller: Isoproturon at 2.5 kg in 200 l. Fungicide: Propiconazole at 0.12 kg in 200 l.  
W. beans: Weedkillers: Simazine at 0.17 kg and trietazine at 1.2 kg in 200 l. Insecticide: Deltamethrin at 7.5 g in 400 l.  
W. oats: Manure: 'Nitram' at 290 kg. Weedkiller: Methabenzthiazuron at 1.6 kg in 200 l.  
W. oilseed rape (failed): Manure: 'Nitram' at 220 kg (to two of three plots only). Weedkiller: Propyzamide at 0.70 kg in 200 l.  
S. oilseed rape: Manure: 'Nitram' at 220 kg (to two plots given N to w.oilseed rape) and 440 kg to remaining plot. Weedkiller: Propachlor at 4.3 kg in 450 l.  
Potatoes: Manure: 'Nitram' at 640 kg. Weedkiller: Metribuzin at 1.0 kg in 300 l. Fungicides: Mancozeb at 1.4 kg in 200 l on three occasions and at 1.0 kg in 200 l on a fourth occasion.

**Seed:** W. barley: Halcyon, sown at 150 kg.  
W. beans: Bourdon, dressed with thiabendazole and thiram, sown at 240 kg.  
W. oats: Image, sown at 190 kg.  
W. oilseed rape: Ariana, dressed gamma HCH, thiram and fenpropimorph, sown at 8 kg.  
S. oilseed rape: Topaz, dressed gamma HCH, thiram and fenpropimorph, sown at 8 kg.  
Potatoes: Desiree.

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**Cultivations, etc.:-**

All crops: Heavy spring-tine cultivated: 30 Aug, 1988. PK applied: 9 Sept.

W. barley: Rotary harrowed, seed sown: 18 Oct, 1988. Weedkiller applied: 16 Nov. N applied: 30 Mar, 1989. Fungicide applied: 16 May. Combine harvested: 21 July.

W. beans: Rotary harrowed, seed sown: 18 Oct, 1988. Weedkillers applied: 4 Nov. Insecticide applied: 10 May. Combine harvested: 14 Aug.

W. oats: Rotary harrowed, seed sown: 18 Oct, 1988. Weedkiller applied: 29 Oct. N applied: 18 Apr, 1989. Combine harvested: 25 July.

W. oilseed rape: Seed sown: 9 Sept, 1988. Weedkiller applied: 4 Nov. N applied (to two plots): 23 Feb, 1989. Crop destroyed by cultivating with rotary grubber: 15 Apr.

S. oilseed rape: N applied: 20 Apr, 1989. Rotary harrowed twice, seed sown: 21 Apr. Weedkiller applied: 1 June. Cut with forage harvester: 29 Aug.

Potatoes: Ploughed: 19 Oct, 1988. N applied: 20 Apr, 1989. Rotary harrowed: 24 Apr. Planted: 3 May. Rotary ridged: 26 May. Metribuzin applied: 31 May. Mancozeb applied: 3 July, 17 July, 28 July, 14 Aug. Haulm mechanically destroyed: 21 Aug. Lifted: 8 Sept.

Previous crops: W. oilseed rape 1987, w. wheat 1988.

**NOTES:** (1) Soil samples were taken from rape plots in April 1989, to determine N content.

(2) Crop samples were taken from each crop in August, just before harvest, to determine total dry matter yield and N content.

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GRAIN TONNES/HECTARE

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

| CROP     |      |
|----------|------|
| W BARLEY | 6.85 |
| W BEANS  | 5.38 |
| W OATS   | 6.73 |
| Mean     | 6.32 |

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

| CROP  |
|-------|
| 0.743 |

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

| Stratum             | d.f.    | s.e.  | cv%  |
|---------------------|---------|-------|------|
| BLOCK.WP            | 4       | 0.910 | 14.4 |
| GRAIN MEAN DM%      | 87.3    |       |      |
| PLOT AREA HARVESTED | 0.00230 |       |      |

POTATOES

TOTAL TUBERS TONNES/HECTARE

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

| CROP | POTATOES |
|------|----------|
|      | 26.4     |