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# Yields of the Field Experiments 1981

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## 81/W/RN/13 Intensive Cereals - Ley

### Rothamsted Research

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81/W/RN/13

INTENSIVE CEREALS

Object: To study the effects of intensive cereal cropping on yield, incidence of soil-borne pathogens and organic matter in the soil - Woburn Stackyard I.

Sponsors: A.E. Johnston, J. McEwen.

The 16th year, w. wheat, ley.

For previous years see 'Details' 1973 and 74-80/W/RN/13.

Treatments:-

Until 1977 the experiment tested all phases of the five-course rotation ley, potatoes, cereal, cereal, cereal and continuous cereal. From 1977 to 1980 all phases were cropped with cereal. The experiment was in two halves, one in which the cereal was w. wheat, sown on part of the site of the classical wheat experiment 1877-1954 and one in which the cereal was s. barley, sown on part of the site of the classical barley experiment 1877-1954. From 1981 the experiment is being used to establish leys of different durations for test on w. wheat in 1987. Plots not in ley are sown to w. wheat on both halves of the experiment.

The following crop sequences are planned:-

1981	82	83	84	85	86	87
W(5)	W	W	W	W	L	W
W(5)	W	W	W	L	L	W
W(6)	W	W	L	L	L	W
W(7)	W	L	L	L	L	W
W(8)	L	L	L	L	L	W
L	L	L	L	L	L	W

L = clover/grass ley w = w. wheat (5)etc = number of years continuous cereal

NOTE: Yields are not taken in the period 1981-86.

Standard applications:

W. wheat: Manures: Chalk at 7.5 t. (10:23:23) at 280 kg. N at 150 kg as 'Nitro-Chalk'. Weedkillers: Glyphosate at 1.5 l in 280 l. Chlortoluron at 4.5 l in 300 l. Mecoprop with bromoxynil and ioxynil (as 'Brittox' at 2.4 l) in 280 l. Fungicide: Triadimefon with captafol (as 'Bayleton CF' at 2.0 kg) in 280 l.

1st year ley: Manures: Chalk at 7.5 t. (10:23:23) at 300 kg. N at 65 kg as 'Nitro-Chalk'. Weedkiller: Glyphosate at 1.5 l in 280 l.

Seed: W. wheat: Flanders, sown at 190 kg.

Ley: S23 perennial ryegrass at 31 kg, Blanca white clover at 8 kg, mixture sown at 39 kg.

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Cultivations, etc.:-

W. wheat: Glyphosate applied: 9 Sept, 1980. Chalk applied: 11 Sept.  
Ploughed: 16 Sept. Spring-tine cultivated: 25 Sept. Spring-tine  
cultivated with crumbler attached, rotary cultivated after barley  
only: 30 Sept. Seed sown: 1 Oct. Chlortoluron applied: 3 Oct. N  
applied: 10 Apr, 1981. 'Brittox' applied: 22 Apr. Fungicide  
applied: 20 June. Combine harvested: 19 Aug.

1st year ley: Glyphosate applied: 9 Sept, 1980. Chalk applied: 11 Sept.  
Ploughed: 16 Sept. Spring-tine cultivated, NPK applied: 25 Sept.  
Seeds sown: 26 Sept. N applied: 7 May, 1981. Cut: 11 June, 8 Sept.