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# Numerical Results of the Field Experiments 1970

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## 70/R/CS/59 Break Crops and Wheat - Barley, Oats, Beans, Maize, Clover, Undersown *Trefoil*

### Rothamsted Research

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## BREAK CROPS AND WHEAT

(70/R/CS/59)

Geescroft 1970 the first year, barley, oats, beans, maize, clover and undersown trefoil.

Design: 3 randomised blocks of 14 plots.

Area of each plot: 0.0350. Area harvested: Barley: 0.0232. Oats: 0.0234. Beans: 0.0263. Clover: 0.0083.

Treatments: Crops:- Spring beans (2 plots per block), clover (2 plots per block) and all combinations of:-

1. Crops: Barley (B), oats (O)
2. Undersowing: None (O), Trefoil (T)
3. Nitrogen: 0.4 (N1), 0.8 (N2) cwt as 'Nitro-Chalk' in the seedbed.

Together with additional crop maize (MA), receiving N at 0.8 (N2) 1.6 (N4) cwt as 'Nitro-Chalk' in the seedbed.

Basal and standard applications: 3 tons ground chalk. 450 lb (0:20:20) across the plough furrow. Weedkillers: Paraquat at 0.5 lb ion in 20 gals. MCPB at 2.5 lb a.e. in 20 gals to oats, barley and clover. Insecticide: Phorate at 17 oz in granules to beans.

Cultivations, etc.: Paraquat applied: 3 Oct, 1969. Ground chalk applied: 30 Oct. Ploughed: 1 Dec. Basal PK compound applied: 1 Apr, 1970.

Barley: N applied, seed drilled at 140 lb: 17 Apr, 1970. Trefoil undersown at 20 lb: 7 May. MCPB applied: 5 June. Combine harvested: 14 Aug. Variety: Julia.

Oats: N applied, seed drilled at 170 lb: 17 Apr, 1970. Trefoil undersown at 20 lb: 7 May. MCPB applied: 5 June. Combine harvested: 14 - 24 Aug. Variety: Manod.

Spring beans: Seed drilled at 200 lb: 17 Apr, 1970. Insecticide applied: 16 June. Combine harvested: 4 Sept. Variety: Maris Bead.

Maize: N applied: 17 Apr, 1970. Seed drilled at 48 lb: 15 May. Singled: 16 June. Cut with mower: 14 Oct. Variety: Earliking (F1 Hybrid).

Clover: Seed sown at 32 lb: 28 Apr, 1970. MCPB applied: 5 June. Cut twice: 24 Aug, 29 Sept. Variety: Broad Red.

Previous crops: Spring wheat 1968, barley 1969. Variety of trefoil: English.

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NOTE: Barley plots were sampled in summer for eyespot (*Cercospora herpotrichoides*) and take-all (*Ophiobolus graminis*). Maize plots were sampled for take-all in September. Trefoil and clover were sampled before ploughing in and estimates made of the dry matter and N per acre.

Standard errors per plot.

Barley: Grain, cwt: 1.15 or 3.8% (6 d.f.)

Oats: Grain, cwt: 1.32 or 11.0% (6 d.f.)

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SUMMARY OF RESULTS

BARLEY

GRAIN: CWT

	O	T	Mean
	(±0.67)		(±0.47)
N1	28.6	28.1	28.3
N2	33.3	31.3	32.3
Mean (±0.47)	30.9	29.7	30.3

Mean D.M. %: 84.8

OATS

GRAIN: CWT

	O	T	Mean
	(±0.76)		(±0.54)
N1	13.0	10.0	11.5
N2	13.7	11.1	12.4
Mean (±0.54)	13.3	10.5	11.9

Mean D.M. %: 73.2

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BEANS

GRAIN: CWT

Mean

12.4

CLOVER

DRY MATTER: CWT

Mean

1st cut: 36.0

2nd cut: 14.9

Total of 2 cuts: 50.8

Mean D.M. %:

Beans 73.5

Clover, 1st cut: 18.6

2nd cut: 14.9

Total of 2 cuts: 16.8