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Numerical Results of the Field Experiments 1970

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70/R/RN/11 Irrigation - S. Beans, Barley

Rothamsted Research

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IRRIGATION

(70/R/PN/11)

The effect of irrigation on spring beans and barley, Great Field I and II 1970.

Design: Spring beans: 2 randomised blocks of 4 plots.
Barley: 2 randomised blocks of 4 plots, split into 3.

Area of each plot:-

Spring beans: 0.2571. Area harvested: 0.0222.

Barley (sub-plot): 0.0322. Area harvested: 0.0171.

Treatments:-

Spring beans: Irrigation: None (O), early (A), late (B), full (C).

Barley: All combinations of:-

Whole plots: 1. Irrigation: None (O), early (A), late (B), full (C).

Sub plots: 2. Nitrogen (in cwt N): 0.2 (N1), 0.4 (N2), 0.6 (N3). N1 applied in basal compound, remaining N as 'Nitro-Chalk'.

Basal applications:

Spring beans: 5 tons ground chalk. 360 lb (0:14:28) placement drilled. Weedkillers: Paraquat at 0.5 lb ion in 20 gals. Simazine at 1 lb in 20 gals. Insecticide: Demeton-s-methyl at 3.5 oz in 40 gals.

Barley: 3 tons ground chalk. 280 lb (8:20:16) combine drilled. Weedkiller: 2,4-D at 0.5 lb and dichlorprop at 2 lb in 20 gals.

Cultivations, etc.:

Spring beans: Paraquat applied: 18 Sept, 1969. Subsoiled 28 ins. apart, 15 ins. deep: 3 Oct. Ground chalk applied: 10 Oct.

Ploughed: 20 Dec. Seed placement drilled at 200 lb:

27 Mar, 1970. Simazine applied: 31 Mar. Insecticides applied:

22 June. Combine harvested: 4 Sept. Variety: Maris Bead.

Barley: Subsoiled 28 ins. apart 15 ins. deep: 7 Oct, 1969.

Ground chalk applied: 10 Oct. Ploughed: 2 - 19 Dec. 'Nitro-

Chalk' applied: 31 Mar, 1970. Seed combine drilled at 140 lb:

1 Apr. Weedkiller applied: 18 May. Combine harvested: 12 Aug.

Variety: Zephyr.

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RAINFALL AND IRRIGATION: INCHES

Week- ending	Rainfall	IRRIGATION					
		A	Barley B	C	A	Beans B	C
Apr 29	0.98						
May 6	0.06						
May 13	0.55						
May 20	0.02						
May 27	0.06	1.00		1.00	1.00		1.00
June 3	0.21	1.00		1.00	0.50		0.50
June 10	0.00	1.00		1.00	1.00		1.00
June 17	0.05						
June 24	0.49		1.00	1.00		1.00	1.00
July 1	0.33		0.75	0.75		0.75	0.75
July 8	0.48		0.50	0.50		1.00	1.00
July 15	0.53						
July 22	0.29						
July 29	0.62						
Aug 5	0.09					1.00	1.00
Aug 12	0.90						
Aug 19	1.15						
Aug 26	0.37						
Sept 2	0.08						
Sept 9	0.37						
Sept 16	1.44						
Sept 23	0.01						
Sept 30	0.09						
Total	9.17	3.00	2.25	5.25	2.50	3.75	6.25

Standard error per sub plot.

Barley, grain, cwt: 0.91 or 2.2% (8 d.f.)

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SUMMARY OF RESULTS

GRAIN: CWT

	O	A	B	C	Mean
SPRING BEANS					
	11.7	20.7	17.4	19.9	17.4
BARLEY					
	(±0.64)*				(±0.32)
N1	36.4	40.3	37.9	37.2	37.9
N2	40.9	45.2	39.5	44.0	42.4
N3	44.2	46.2	42.5	46.5	44.9
Mean	40.5	43.9	39.9	42.5	41.7

* For use in vertical and interaction comparisons only

Mean D.M. %: Spring beans: 79.2
Barley: 83.6