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72/R/BE/8 Spring Beans N, Carbohydrate and Irrigation

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72/R/BE/8

SPRING BEANS

N, CARBOHYDRATE AND IRRIGATION

Object: To study the effects of nitrogen fertiliser, sucrose and irrigation, applied at flowering time, on yield, and its components, in field beans - Long Hoos V 5.

Sponsor: J. McEwen.

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

Whole plot dimensions: 2.03 x 4.27. Sub plot area harvested: 0.00019.

Treatments: All combinations of:-

Whole plots: 1. Irrigation (I): None (0), irrigated for 3 weeks after first flowers seen (3).

Sub plots: 2. Nitrogen just before flowering: None, 150 kg N as 'Nitro-Chalk'.

3. Carbohydrate (C): None (0), sucrose at 150 kg (half when first flowers seen, half two weeks later) (S).

Irrigation applied by watering can on 16, 17, 24, 27 June, 5 July - 6.3 mm on each occasion. Sucrose was applied as a foliar spray in 1,000 l.

Basal applications: 1570 kg (0:14:28) in autumn. Weedkiller: Simazine at 0.84 kg in 340 l. Insecticide: Demeton-s-methyl at 0.25 kg in 340 l and later at 1 kg in 340 l. Fungicide: Benomyl at 0.75 kg in 1000 l on 2 occasions (applied with sucrose to C plots).

Seed: Minor sown at 224 kg.

Cultivations, etc.: Ploughed: 6 Oct, 1971. Basal PK applied: 30 Sept. Rotary cultivated: 16 Mar, 1972. Seed drilled: 17 Mar. Weedkiller applied: 21 Mar. N applied: 14 June. Benomyl and sucrose applied: 20 June. Insecticide applied: 26 June. Benomyl and sucrose applied: 7 July. Insecticide applied: 19 July. Hand harvested: 28 Sept. Previous crops: Barley 1970, fallow 1971.

NOTE: Counts were made of number of stems and pods. 1000 grain weights and % N in grain were measured.

Standard error per plot.

Grain, tonnes/hectare: Sub plot: 0.157 or 3.4% (12 d.f.).

72/R/BE/8

TABLES OF MEANS

GRAIN: TONNES/HECTARE

	N: KG/HA		C		Mean
	0	150	0	S	
I					
0	4.28	4.64	4.42	4.50	4.46
3	4.61	4.82	4.82	4.60	4.71
		N: KG/HA			
		0	4.47	4.42	4.45
		150	4.78	4.68	4.73
Mean			4.62	4.55	4.59

STANDARD ERRORS OF DIFFERENCES

N	C	I*	I*	N
		N	C	C
0.064	0.064	0.091	0.091	0.091

* Within the same level of I only

Mean D.M. %: 83.2