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71/R/BE/8 Photosynthetic Zones - Beans

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71/R/BE/8

SPRING BEANS

PHOTOSYNTHETIC ZONES

Object: To study the effects of defoliating different zones of the bean plant on yield - Long Hoos V.

Design: 3 blocks of 2 x 2 x 2 randomisation restricted.

Whole plot dimensions: 2.03 x 4.27. Area harvested: 0.00019.

Treatments: All combinations of:-

1. Defoliation in Zone A: none (O), leaves removed when first flower buds formed (A).
2. Defoliation in Zone B: none (O), leaves removed when first flower buds formed on 9th flowering node (B).
3. Decapitation of Zone C: none (O), decapitation (C) on 3 July.

where (1) Zone A is the section of stem (about 9 nodes) below the first flowering node.

(2) Zone B is the section of stem with the 9 nodes which flower first.

(3) Zone C is the section of stem above the 9th flowering node.

Basal applications: 415 kg (0:14:28) broadcast and rotary cultivated in before sowing. Weedkiller: Simazine at 0.84 kg in 337 l. Insecticide: Demeton-s-methyl at 245 g in 337 l.

Cultivations, etc.: Ploughed: 29 Oct, 1970. Basal PK applied: 4 Mar, 1971. Rotary cultivated, seed drilled at 224 kg: 12 Mar. Weedkiller applied: 17 Mar. Zone A defoliated: 8 June. Insecticide applied: 29 June. Zone B defoliated: 30 June. Zone C decapitated: 3 July. Harvested by hand: 2 Sept. Variety: Tarvin. Previous crops: Potatoes 1969, spring wheat 1970.

NOTE: Counts were made of the number of stems and pods. 1000 grain weights were measured.

Standard error per plot.

Grain, tonnes/hectare: 0.177 or 7.9% (14 d.f.)

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SUMMARY OF RESULTS

GRAIN: TONNES/HECTARE

	O	B	O	C	Mean
	(±0.072)		(±0.072)		(±0.051)
O	3.15	1.76	2.76	2.15	2.46
A	2.86	1.14	2.41	1.58	2.00
			(±0.072)		(±0.051)
		O	3.06	2.95	3.00
		B	2.12	0.78	1.45
Mean (±0.051)			2.59	1.87	2.23

	O		A	
	O	B	O	B
	(±0.102)			
O	3.22	3.08	2.89	2.82
C	2.31	1.22	1.93	0.35

Mean D.M. %: 82.6