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## Yields of the Field Experiments 1986

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### 86/R/BE/2 Sowing Methods, Dates and Seed Rates - W. Beans

#### Rothamsted Research

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86/R/BE/2

WINTER BEANS

SOWING METHODS, DATES AND SEED RATES

Object: To study the effects of drilling or ploughing in seed, on three dates and at three seed rates, on the yield of w. beans - Bones Close.

Sponsors: J. McEwen, D.P. Yeoman, R. Moffitt.

Design: 2 randomised blocks of 18 plots.

Whole plot dimensions: 6.0 x 10.0.

Treatments: All combinations of:-

1. SOW METH            Methods of sowing:  
    DRILL              By drill sowing rows 12 cm apart  
    PLOUGH             Seed broadcast on soil surface and ploughed in
2. SOW DATE            Dates of sowing:  
    19 SEP              19 September, 1985  
    17 OCT              17 October  
    13 NOV              13 November
3. POPULATN            Plant populations per hectare:  

	Seeds sown	Plants established
120	120,000	83,000
240	240,000	167,000
360	360,000	233,000

Basal applications: Weedkillers: Simazine at 1.2 kg with propyzamide at 0.85 kg in 280 l. (SOW DATE 19 SEP also received paraquat at 0.28 kg ion applied with the other weedkillers). Fungicides: Benomyl at 0.50 kg with chlorothalonil at 1.0 kg and a wetting agent ('Agral' at 0.075 l) in 500 l and on a second occasion in 200 l. Maneb at 0.80 kg and mancozeb at 0.80 kg in 500 l. Insecticide: Deltamethrin at 0.0079 kg in 200 l on two occasions. Desiccant: Diquat at 0.60 kg ion with a wetting agent ('Agral' at 0.075 l) in 500 l.

Seed: Banner, dressed with carbendazim and thiram.

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Cultivations, etc.: - Heavy spring-tine cultivated: 12 Sept, 1985 and on two further occasions: 18 Sept. Discd: 19 Sept. SOW DATE 19 SEP plots rotary harrowed, seed sown or broadcast, broadcast plots ploughed: 19 Sept. Weedkillers applied to SOW DATE 19 SEP: 30 Sept. SOW DATE 17 OCT plots rotary harrowed, seed sown or broadcast: 17 Oct, broadcast plots ploughed: 18 Oct. Weedkillers applied to SOW DATE 17 OCT: 24 Oct. SOW DATE 13 NOV plots rotary harrowed, seed sown or broadcast, broadcast plots ploughed: 13 Nov. Weedkillers applied to SOW DATE 13 NOV: 14 Nov. Insecticide applied: 1 May, 1986 and 19 May. Benomyl with chlorothalonil and wetting agent applied: 30 May, 16 June. Maneb and mancozeb applied: 18 July. Desiccant with wetting agent applied: 17 Sept. Combine harvested: 22 Sept. Previous crops: W. wheat 1984, s. barley 1985.

NOTE: Plant emergence counts were made. Numbers of stems and plants were counted in April. Flowering dates were recorded, chocolate spot, rust and lodging were assessed. Components of yield were measured at maturity.

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GRAIN TONNES/HECTARE

\*\*\*\*\* TABLES OF MEANS \*\*\*\*\*

SOW DATE	19 SEP	17 OCT	13 NOV	MEAN
SOW METH				
DRILL	5.36	4.63	2.87	4.29
PLOUGH	5.55	5.12	4.90	5.19
MEAN	5.46	4.87	3.89	4.74
POPULATN	120	240	360	MEAN
SOW METH				
DRILL	3.35	4.49	5.02	4.29
PLOUGH	4.09	5.63	5.86	5.19
MEAN	3.72	5.06	5.44	4.74
POPULATN	120	240	360	MEAN
SOW DATE				
19 SEP	4.56	5.90	5.91	5.46
17 OCT	3.72	5.18	5.72	4.87
13 NOV	2.87	4.10	4.69	3.89
MEAN	3.72	5.06	5.44	4.74
SOW METH	POPULATN	120	240	360
DRILL	SOW DATE			
19 SEP		4.71	5.81	5.58
17 OCT		3.59	4.73	5.57
13 NOV		1.76	2.95	3.91
PLOUGH	SOW DATE			
19 SEP		4.42	5.99	6.25
17 OCT		3.85	5.63	5.86
13 NOV		3.98	5.26	5.46

\*\*\*\*\* STANDARD ERRORS OF DIFFERENCES OF MEANS \*\*\*\*\*

TABLE	SOW METH	SOW DATE	POPULATN	SOW METH SOW DATE
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SED	0.197	0.241	0.241	0.342
TABLE	SOW METH	SOW DATE	SOW METH	
	POPULATN	POPULATN	SOW DATE	
			POPULATN	
-----	-----	-----	-----	-----
SED	0.342	0.418	0.592	

\*\*\*\*\* STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION \*\*\*\*\*

STRATUM	DF	SE	CV%
BLOCK.WP	17	0.592	12.5
GRAIN MEAN DM%	83.6		
PLOT AREA HARVESTED	0.00320		