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# Yields of the Field Experiments 1985

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

### Rothamsted Research

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85/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 - Appletree.

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:  
    26 SEP                26 September, 1984  
    1 NOV                 1 November
3. POPULATN            Plant populations per hectare:  

	Target Population	Mean population achieved
120	120,000	130,000
240	240,000	250,000
360	360,000	340,000

plus three extra treatments, duplicated, all with seed broadcast and ploughed in on 11 December:

PL 11DEC	Target Population	Population achieved
120	120,000	100,000
240	240,000	160,000
360	360,000	240,000

NOTE: The extra treatments replaced those planned for a third level of SOW DATE which could not be achieved because conditions were too wet to permit drilling.

Basal applications: Weedkillers: Trietazine at 1.2 kg with simazine at 0.17 kg in 250 l on SOW DATE, 26 SEP and 1 NOV and in 500 l on SOW DATE PL 11DEC. Fungicides: Chlorothalonil at 1.0 kg with benomyl at 0.50 kg and a wetting agent ('Agral' at 0.075 l) on three occasions in 240 l, 500 l and 200 l respectively. Insecticides: Deltamethrin at 0.0079 kg on two occasions, in 500 l and 200 l respectively; pirimicarb at 0.14 kg in 200 l.

Seed: Banner, dressed with carbendazim and thiram.

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Cultivations, etc.:- Heavy spring-tine cultivated: 5 Sept, 1984.  
 Ploughed: 14 Sept. Rotary harrowed: 19 Sept. SOWDATE 26 SEP seed sown or broadcast: 26 Sept. SOW DATE 26 SEP PLOUGH plots ploughed: 27 Sept. Weedkillers applied to SOWDATE 26 SEP: 9 Oct. SOWDATE 1 NOV plots seed sown or broadcast, broadcast plots ploughed: 1 Nov. Weedkillers applied to SOWDATE 1 NOV: 2 Nov. PL 11DEC plots seed broadcast and ploughed in: 11 Dec. Weedkillers applied to PL 11DEC plots: 1 Feb, 1985. Deltamethrin applied: 3 May, 23 May. Fungicides applied: 29 May, 11 June, 3 July. Pirimicarb applied: 23 July. Combine harvested: 24 Sept. Previous crops: S. wheat 1983, w. wheat 1984.

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

GRAIN TONNES/HECTARE

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

SOW DATE	26 SEP	1 NOV	MEAN	
SOW METH				
DRILL	4.15	4.30	4.23	
PLOUGH	4.72	4.59	4.66	
MEAN	4.43	4.45	4.44	
POPULATN	120	240	360	MEAN
SOW METH				
DRILL	4.23	4.44	4.01	4.23
PLOUGH	4.97	4.49	4.51	4.66
MEAN	4.60	4.47	4.26	4.44
POPULATN	120	240	360	MEAN
SOW DATE				
26 SEP	4.64	4.52	4.15	4.43
1 NOV	4.55	4.41	4.38	4.45
MEAN	4.60	4.47	4.26	4.44
SOW METH	POPULATN	120	240	360
DRILL	SOW DATE			
	26 SEPT	4.31	4.37	3.77
	1 NOV	4.14	4.50	4.26
PLOUGH	26 SEPT	4.97	4.67	4.52
	1 NOV	4.96	4.32	4.50
PL 11DEC	120	240	360	
	3.30	3.81	4.20	
GRAND MEAN	4.22			

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GRAIN TONNES/HECTARE

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

TABLE	PL 11DEC	SOW METH	SOW DATE	POPULATN
SED	0.134	0.077	0.077	0.095
TABLE	SOW METH SOW DATE	SOW METH POPULATN	SOW DATE POPULATN	SOW DATE SOW METH POPULATN
SED	0.110	0.134	0.134	0.190

SED FOR COMPARING ANY ITEM IN  
PL 11DEC TABLE WITH ANY ITEM IN  
SOW DATE.SOW METH.POPULATN IS 0.164

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

STRATUM	DF	SE	CV%
BLOCK.WP	20	0.190	4.5

GRAIN MEAN DM% 73.9

PLOT AREA HARVESTED 0.00310