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72/S/B/1 Barley Varieties, Ppa, Rates and Times of N

Rothamsted Research

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72/S/B/1

BARLEY

VARIETIES, PPA, RATES AND TIMES OF N

Object: To study the effects of a range of nitrogen levels, applied to seedbed or in May, on the yield of two barley varieties. The effects of dressing seed with phenylphosphonic acid are also studied - Saxmundham Grove Plot.

Sponsors: F.V. Widdowson, A. Penny.

Design: 2 x 3 x 2 x 2 in 2 randomised blocks of 6 plots split into 2 breadthways and lengthways.

Whole plots dimensions: 2.74 x 12.2. Sub plot area harvested: 0.00052.

Treatments: All combinations of:-

- Whole plots: 1. Varieties: Julia, Midas.
2. N levels: 50, 100, 150 kg N as calcium nitrate.
Sub plots: 3. Time of application of N: To seedbed (E), top dressed (L).
4. Seed dressing (SD): None (O), phenylphosphonic acid (D) at 0.38 kg.

Basal applications: 310 kg (0:20:20) to seedbed. Weedkiller: Dichlorprop plus MCPA ('Mephetol Plus' at 5.6 l). Fungicide: Tridemorph at 0.53 kg.

Seed: Sown at 190 kg.

Cultivations, etc.: Ploughed: Oct, 1971. Seedbed N and basal PK applied, seed drilled: 27 Mar, 1972. N top dressed, weedkiller and fungicide applied: 16 May. Cut by hand: 21 Aug. Previous crop: Barley.

Standard errors per plot. Grain, tonnes/hectare:

Whole plot	0.208 or 4.7% (11 d.f.)
Sub plot Application:	0.410 or 9.3% (12 d.f.)
SD:	0.255 or 5.8% (12 d.f.)
Application x SD:	0.462 or 10.4% (12 d.f.)

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TABLES OF MEANS

GRAIN: TONNES/HECTARE

	N: KG/HA			APPLICATION		SD		Mean
	50	100	150	E	L	O	D	
VARIETY								
Julia	3.97	4.90	5.05	4.77	4.51	4.92	4.36	4.64
Midas	4.09	4.28	4.29	4.60	3.84	4.29	4.15	4.22
		N: KG/HA						
			50	4.13	3.94	4.22	3.84	4.03
			100	4.92	4.26	4.76	4.42	4.59
			150	5.01	4.34	4.84	4.50	4.67
				APPLICATION				
				E		4.84	4.53	4.68
				L		4.38	3.97	4.18
Mean						4.61	4.25	4.43

Mean D.M. %: 86.2

STANDARD ERRORS OF DIFFERENCES

VARIETY	N	APPLICATION	SD	VARIETY	VARIETY APPLICATION	VARIETY SD
0.120	0.147	0.167	0.104	0.208	0.206	0.159
Unless same level of VARIETY					0.237	0.147

	N APPLICATION	N SD	APPLICATION SD
0.252	0.195	0.197	
Unless same level of N APPLICATION SD			
0.290	0.181	0.169	0.214

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STRAW: TONNES/HECTARE

	N: KG/HA			APPLICATION		SD		Mean
	50	100	150	E	L	O	D	
VARIETY								
Julia	3.69	5.28	6.05	5.26	4.75	5.24	4.77	5.01
Midas	4.81	5.33	6.28	5.81	5.14	5.66	5.28	5.47
		N: KG/HA						
			50	4.33	4.16	4.49	4.01	4.25
			100	5.69	4.92	5.44	5.17	5.31
			150	6.58	5.75	6.42	5.90	6.16
				APPLICATION				
				E		5.74	5.33	5.53
				L		5.16	4.72	4.94
Mean						5.45	5.03	5.24

Mean D.M. %: 86.1