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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	D	Mean	
	50	100	150	E	L				
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			APPLICATION					
	50			E		SD		Mean	
	100			L		D		4.03	
	150			4.13		3.94		4.59	
	5.01			4.26		4.76		4.50	
	4.34			4.84		4.53		4.67	
	5.01			4.84		4.38		4.18	
Mean						4.61	4.25	4.43	

Mean D.M. %: 86.2

STANDARD ERRORS OF DIFFERENCES

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

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STRAW: TONNES/HECTARE

	N: KG/HA			APPLICATION		SD		Mean
	50	100	150	E	L	D	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			APPLICATION				
		50	100	4.33	4.16	4.49	4.01	4.25
				5.69	4.92	5.44	5.17	5.31
				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