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80/R/B/3 Winter Barley Dates of Sowing, N and Growth Regulator

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80/R/B/3

WINTER BARLEY

DATES OF SOWING, N AND GROWTH REGULATOR

Object: To study the effects of rates and times of nitrogen fertiliser for early and late sown w. barley, a growth regulator is also tested - Gt. Knott I N.

Sponsors: F.V. Widdowson, J.N. Gallagher, M.E. Finney.

Design: 2 randomised blocks of 25 plots.

Whole plot dimensions: 2.67 x 13.9.

Treatments: All combinations of:-

- | | |
|-------------|--|
| 1. SOWDATE | Dates of sowing: |
| 18 SEP | 18 September, 1979 |
| 16 OCT | 16 October |
| 2. EN RATE | Rate of early nitrogen fertiliser (kg N): |
| 0 | None |
| 35 | 35 on 25 January, 1980 |
| 3. SN RATE | Rate of spring nitrogen fertiliser (kg N): |
| 75 | |
| 110 | |
| 4. SN TIME | Time of applying spring nitrogen fertiliser: |
| E | Early, on 7 Mar, 1980 |
| L | Later, on 8 April |
| EL | Dressing equally divided between above dates |
| 5. GRTH REG | Growth regulator: |
| 0 | None |
| MEP+ETH | Mepiquat chloride + ethephon as 'Terpal' at 2.46 l in
280 l |

plus two extra treatments not given nitrogen fertiliser or growth regulator:

EXTRA

18 SEP 0	Sown 18 September
16 OCT 0	Sown 16 October

NOTE: The growth regulator was applied at the recommended growth stage (Zadoks 3.1 - 3.2) which occurred on 22 April for the first sowing, and 7 May for the second.

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Basal applications: Manures: (0:14:28) at 360 kg. Weedkillers: Mecoprop, bromoxynil and ioxynil (as 'Brittox' at 3.5 l) in 220 l. Fungicides: Tridemorph at 0.53 kg applied twice, with the weedkillers on the first occasion and with benodanil on the second. Benodanil at 1.1 kg in 200 l applied with a 'wetter' ('Cittowet' at 0.18 l).

Seed: Sonja, sown at 160 kg.

Cultivations, etc.: - PK applied, heavy spring-tine cultivated: 17 Sept, 1979. Spring-tine cultivated: 18 Sept. Weedkillers and tridemorph applied: 15 Apr, 1980. Tridemorph and benodanil applied: 15 May. Combine harvested: 30 July. Previous crops: S. beans 1978, potatoes 1979.

NOTE: Nitrate in the crop was measured three times during the season, and nitrate in the soil twice. Crop height and ear numbers were measured in June.

GRAIN TONNES/HECTARE

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

EN RATE	0	35	MEAN	
SOWDATE				
18 SEP	8.29	8.36	8.33	
16 OCT	8.11	8.14	8.12	
MEAN	8.20	8.25	8.22	
SN RATE	75	110	MEAN	
SOWDATE				
18 SEP	8.16	8.49	8.33	
16 OCT	7.97	8.28	8.12	
MEAN	8.06	8.39	8.22	
SN RATE	75	110	MEAN	
EN RATE				
0	8.05	8.34	8.20	
35	8.07	8.43	8.25	
MEAN	8.06	8.39	8.22	
SN TIME	E	L	EL	MEAN
SOWDATE				
18 SEP	8.12	8.66	8.20	8.33
16 OCT	7.89	8.23	8.24	8.12
MEAN	8.01	8.45	8.22	8.22
SN TIME	E	L	EL	MEAN
EN RATE				
0	8.07	8.30	8.22	8.20
35	7.94	8.59	8.22	8.25
MEAN	8.01	8.45	8.22	8.22

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GRAIN TONNES/HECTARE

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

SN TIME	E	L	EL	MEAN		
SN RATE						
75	7.91	8.23	8.06	8.06		
110	8.11	8.66	8.39	8.39		
MEAN	8.01	8.45	8.22	8.22		
GRTH REG	0	MEP+ETH	MEAN			
SOWDATE						
18 SEP	7.94	8.72	8.33			
16 OCT	7.70	8.55	8.12			
MEAN	7.82	8.63	8.22			
GRTH REG	0	MEP+ETH	MEAN			
EN RATE						
0	7.91	8.49	8.20			
35	7.73	8.77	8.25			
MEAN	7.82	8.63	8.22			
GRTH REG	0	MEP+ETH	MEAN			
SN RATE						
75	7.69	8.44	8.06			
110	7.94	8.83	8.39			
MEAN	7.82	8.63	8.22			
GRTH REG	0	MEP+ETH	MEAN			
SN TIME						
E	7.65	8.36	8.01			
L	7.90	8.99	8.45			
EL	7.90	8.55	8.22			
MEAN	7.82	8.63	8.22			
EN RATE	0		35			
SN RATE	75	110	75	110		
SOWDATE						
18 SEP	8.17	8.41	8.15	8.57		
16 OCT	7.94	8.27	7.99	8.28		
EN RATE	0			35		
SN TIME	E	L	EL	E	L	EL
SOWDATE						
18 SEP	8.14	8.63	8.10	8.10	8.69	8.30
16 OCT	8.01	7.97	8.35	7.78	8.49	8.14

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GRAIN TONNES/HECTARE

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

SN RATE	75			110		
SN TIME	E	L	EL	E	L	EL
SOWDATE						
18 SEP	8.05	8.34	8.09	8.19	8.98	8.31
16 OCT	7.77	8.11	8.03	8.02	8.35	8.46
SN RATE	75			110		
SN TIME	E	L	EL	E	L	EL
EN RATE						
0	7.93	8.07	8.16	8.22	8.53	8.29
35	7.89	8.38	7.95	7.99	8.80	8.48
EN RATE	0		35			
GRTH REG	0	MEP+ETH	0	MEP+ETH		
SOWDATE						
18 SEP	7.92	8.66	7.95	8.77		
16 OCT	7.89	8.33	7.50	8.77		
SN RATE	75			110		
GRTH REG	0	MEP+ETH	0	MEP+ETH		
SOWDATE						
18 SEP	7.85	8.47	8.03	8.96		
16 OCT	7.53	8.40	7.86	8.69		
SN RATE	75			110		
GRTH REG	0	MEP+ETH	0	MEP+ETH		
EN RATE						
0	7.94	8.17	7.88	8.81		
35	7.45	8.70	8.01	8.85		
SN TIME	E		L		EL	
GRTH REG	0	MEP+ETH	0	MEP+ETH	0	MEP+ETH
SOWDATE						
18 SEP	7.73	8.51	8.15	9.17	7.93	8.47
16 OCT	7.57	8.22	7.66	8.80	7.86	8.62
SN TIME	E		L		EL	
GRTH REG	0	MEP+ETH	0	MEP+ETH	0	MEP+ETH
EN RATE						
0	7.71	8.44	7.92	8.67	8.09	8.36
35	7.59	8.29	7.88	9.30	7.71	8.73
SN TIME	E		L		EL	
GRTH REG	0	MEP+ETH	0	MEP+ETH	0	MEP+ETH
SN RATE						
75	7.69	8.12	7.74	8.72	7.64	8.47
110	7.61	8.60	8.07	9.26	8.15	8.62

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GRAIN TONNES/HECTARE

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

EXTRA	18 SEP 0	16 OCT 0	MEAN
	6.88	5.81	6.35

GRAND MEAN 8.15

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

TABLE	SOWDATE	EN RATE	SN RATE	SN TIME
-----	-----	-----	-----	-----
SED	0.142	0.142	0.142	0.174
TABLE	GRTH REG	SOWDATE EN RATE	SOWDATE SN RATE	EN RATE SN RATE
-----	-----	-----	-----	-----
SED	0.142	0.201	0.201	0.201
TABLE	SOWDATE SN TIME	EN RATE SN TIME	SN RATE SN TIME	SOWDATE GRTH REG
-----	-----	-----	-----	-----
SED	0.247	0.247	0.247	0.201
TABLE	EN RATE GRTH REG	SN RATE GRTH REG	SN TIME GRTH REG	SOWDATE EN RATE SN RATE
-----	-----	-----	-----	-----
SED	0.201	0.201	0.247	0.285
TABLE	SOWDATE EN RATE SN TIME	SOWDATE SN RATE SN TIME	EN RATE SN RATE SN TIME	SOWDATE EN RATE GRTH REG
-----	-----	-----	-----	-----
SED	0.349	0.349	0.349	0.285
TABLE	SOWDATE SN RATE GRTH REG	EN RATE SN RATE GRTH REG	SOWDATE SN TIME GRTH REG	EN RATE SN TIME GRTH REG
-----	-----	-----	-----	-----
SED	0.285	0.285	0.349	0.349
TABLE	SN RATE SN TIME GRTH REG			
-----	-----			
SED	0.349			

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

STRATUM	DF	SE	CV%
BLOCK.WP	10	0.493	6.0

GRAIN MEAN DM% 81.8

PLOT AREA HARVESTED 0.00349