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81/R/WW/3 Factors Limiting Yield - W. Wheat

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81/R/WW/3

WINTER WHEAT

FACTORS LIMITING YIELD

Object: To study the effects of a range of factors on the incidence of pests and diseases and on the growth and yield of w. wheat - Little Hoos.

Sponsors: R.D. Prew, B.M. Church, A. Dewar, J. Lacey, A. Penny, R.T. Plumb, G.N. Thorne, A.D. Todd, T.D. Williams.

Associate sponsors: P. Barraclough, D.S. Jenkinson, R. Leigh, A. Weir, P.J. Welbank, F.V. Widdowson.

Design: Half replicate of 2^8 + 38 extra plots, arranged in 4 blocks.

Whole plot dimensions: 3.0 x 15.2.

Treatments: Combinations of:-

1. SOWDATE Dates of sowing:
 15 SEP 15 September, 1980
 30 OCT 30 October
2. TOTAL N Total amount of nitrogen fertiliser (kg N) applied:
 80
 150
3. N DIVIS Division of total nitrogen fertiliser:
 SINGLE Single dressing
 DIVIDED 40 kg of the total before single dressing, 20 kg after the
 single dressing, remainder on single dressing date
4. N TIME Time of applying single dressing of nitrogen fertiliser:
 EARLY At ear initiation of SOWDATE 15 SEP
 LATE At ear initiation of SOWDATE 30 OCT
5. AUT PEST Autumn pesticide:
 NONE None
 ALDICARB Aldicarb at 5 kg worked in to seedbed
6. APHICIDE Aphicide:
 NONE None
 PIRIMICA Pirimicarb at 0.14 kg on 23 June, 1981
7. FUNGCIDE Fungicides:
 NONE None
 CA+MA+TR Carbendazim + maneb + tridemorph (as 'Cosmic' at 4.0 kg)
 with captafol at 0.96 l applied on 13 May, 1981, 10 June
 and 30 June

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8. IRRIGATN Irrigation:

NONE None
FULL Full (125 mm) to lessen a deficit of 37.5 mm to 12.5 mm

plus all combinations of the following (all given single N dressing, aldicarb, pirimicarb, carbendazim + maneb + tridemorph, no irrigation):

1. SOWDATEX Dates of sowing:

15 SEP 15 September, 1980
30 OCT 30 October

2. TOTAL NX Total amount of nitrogen fertiliser (kg N):

40
80
115
150
185
220

3. N TIMEX Time of applying nitrogen fertiliser:

EARLY At ear initiation of SOWDATE 15 SEP
LATE At ear initiation of SOWDATE 30 OCT

plus two extra plots (both given aldicarb, pirimicarb, carbendazim + maneb + tridemorph, no irrigation):

NO 15 SEP Sown 20 September, given no nitrogen
NO 30 OCT Sown 30 October, given no nitrogen

plus all combinations of the following (all sown 15 September, given aldicarb, pirimicarb, carbendazim + maneb + tridemorph + captafol, no irrigation, all given 150 kg N as 'Nitro-Chalk', divided dressing except plots given 40 kg N as urea on 2 February which received 110 kg N as 'Nitro-Chalk'):

1. INHIB Nitrification inhibitor:

NONE None
DICYANDI Dicyandiamide at 3 kg

2. UREA UREA (kg N):

0
40

3. I U DATE Times of applying nitrification inhibitor and urea:

8 DEC 8 December, 1980
2 FEB 2 February, 1981

plus four extra plots used for root sampling, all sown 30 October, given aldicarb, pirimicarb, carbendazim + maneb + tridemorph + captafol, no irrigation, given 150 kg N as 'Nitro-Chalk' as a single dressing at ear initiation. Yields not presented.

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NOTES: (1) The irrigation treatment was as follows (mm water):-

25 June	25
1 July	25
7 July	25
16 July	25
21 July	<u>25</u>
Total	125

(2) Nitrogen applications were as follows:-

	N DIVIS	
	SINGLE	DIVIDED
SOWDATE 15 SEP	19 Mar	2 Feb, 19 Mar, 6 May
SOWDATE 30 OCT	23 Apr	19 Mar, 23 Apr, 20 May

(3) All treatment sprays were applied in 340 l.

Basal applications: Manures: (0:14:28) at 360 kg. Weedkillers: Methabenzthiazuron at 3.2 kg in 250 l. Mecoprop with bromoxynil and ioxynil (as 'Brittox' at 3.5 l) in 340 l. Growth regulator: Chlormequat at 1.4 kg, applied at Zadoks growth stage 30, with the 'Brittox'.

Seed: Hustler, sown at 380 seeds per square metre.

Cultivations, etc.:- PK applied: 10 Sept, 1980. Heavy spring-tine cultivated twice: 11 Sept. Aldicarb applied for the first sowing, and all early sown plots sown with the rotary harrow, seed drill combination: 15 Sept. Aldicarb applied for the second sowing, and all late sown plots sown with the rotary harrow, seed drill combination: 30 Oct. Methabenzthiazuron applied: 31 Oct. 'Brittox' and growth regulator applied to first sowing: 3 Apr, 1981. 'Brittox' and growth regulator applied to second sowing: 1 May. Combine harvested: 27 Aug. Previous crops: S. beans, 1979, potatoes 1980.

NOTE: Soil was sampled for nematodes, wheat bulb fly larvae, water levels, and mineral N. Plants were assessed for foot and root rots in April and July, and lodging in July and August. The above ground crop was examined for barley yellow dwarf virus, growth stage, aphids, foliar diseases and general microflora. Light interception, dry weight, leaf area, and N and K content of the above ground crop, and stem nitrate were measured on several occasions. Weeds were scored in June.

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GRAIN TONNES/HECTARE

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

TOTAL N	80	150	MEAN
SOWDATE			
15 SEPT	8.58	8.18	8.38
30 OCT	8.32	8.07	8.19
MEAN	8.45	8.12	8.29
N DIVIS	SINGLE	DIVIDED	MEAN
SOWDATE			
15 SEPT	8.43	8.33	8.38
30 OCT	8.14	8.25	8.19
MEAN	8.28	8.29	8.29
N DIVIS	SINGLE	DIVIDED	MEAN
TOTAL N			
80	8.41	8.48	8.45
150	8.15	8.10	8.12
MEAN	8.28	8.29	8.29
N TIME	EARLY	LATE	MEAN
SOWDATE			
15 SEPT	8.27	8.49	8.38
30 OCT	8.15	8.23	8.19
MEAN	8.21	8.36	8.29
N TIME	EARLY	LATE	MEAN
TOTAL N			
80	8.41	8.49	8.45
150	8.01	8.24	8.12
MEAN	8.21	8.36	8.29
N TIME	EARLY	LATE	MEAN
N DIVIS			
SINGLE	8.25	8.32	8.28
DIVIDED	8.17	8.41	8.29
MEAN	8.21	8.36	8.29
AUT PEST	NONE	ALDICARB	MEAN
SOWDATE			
15 SEPT	8.25	8.51	8.38
30 OCT	8.13	8.26	8.19
MEAN	8.19	8.39	8.29

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GRAIN TONNES/HECTARE

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

AUT PEST	NONE	ALDICARB	MEAN
TOTAL N			
80	8.29	8.61	8.45
150	8.09	8.16	8.12
MEAN	8.19	8.39	8.29
AUT PEST	NONE	ALDICARB	MEAN
N DIVIS			
SINGLE	8.22	8.34	8.28
DIVIDED	8.15	8.43	8.29
MEAN	8.19	8.39	8.29
AUT PEST	NONE	ALDICARB	MEAN
N TIME			
EARLY	8.11	8.31	8.21
LATE	8.27	8.46	8.36
MEAN	8.19	8.39	8.29
APHICIDE	NONE	PIRIMICA	MEAN
SOWDATE			
15 SEPT	8.41	8.35	8.38
30 OCT	8.21	8.18	8.19
MEAN	8.31	8.26	8.29
APHICIDE	NONE	PIRIMICA	MEAN
TOTAL N			
80	8.54	8.36	8.45
150	8.08	8.17	8.12
MEAN	8.31	8.26	8.29
APHICIDE	NONE	PIRIMICA	MEAN
N DIVIS			
SINGLE	8.26	8.30	8.28
DIVIDED	8.36	8.23	8.29
MEAN	8.31	8.26	8.29
APHICIDE	NONE	PIRIMICA	MEAN
N TIME			
EARLY	8.27	8.15	8.21
LATE	8.34	8.38	8.36
MEAN	8.31	8.26	8.29

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GRAIN TONNES/HECTARE

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

APHICIDE	NONE	PIRIMICA	MEAN
AUT PEST			
NONE	8.22	8.16	8.19
ALDICARB	8.40	8.37	8.39
MEAN	8.31	8.26	8.29
FUNGCIDE	NONE	CA+MA+TR	MEAN
SOWDATE			
15 SEPT	7.31	9.45	8.38
30 OCT	7.59	8.79	8.19
MEAN	7.45	9.12	8.29
FUNGCIDE	NONE	CA+MA+TR	MEAN
TOTAL N			
80	7.75	9.15	8.45
150	7.16	9.09	8.12
MEAN	7.45	9.12	8.29
FUNGCIDE	NONE	CA+MA+TR	MEAN
N DIVIS			
SINGLE	7.39	9.18	8.28
DIVIDED	7.52	9.07	8.29
MEAN	7.45	9.12	8.29
FUNGCIDE	NONE	CA+MA+TR	MEAN
N TIME			
EARLY	7.39	9.03	8.21
LATE	7.52	9.21	8.36
MEAN	7.45	9.12	8.29
FUNGCIDE	NONE	CA+MA+TR	MEAN
AUT PEST			
NONE	7.42	8.96	8.19
ALDICARB	7.49	9.28	8.39
MEAN	7.45	9.12	8.29
FUNGCIDE	NONE	CA+MA+TR	MEAN
APHICIDE			
NONE	7.50	9.12	8.31
PIRIMICA	7.41	9.12	8.26
MEAN	7.45	9.12	8.29

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GRAIN TONNES/HECTARE

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

IRRIGATN	NONE	FULL	MEAN
SOWDATE			
15 SEPT	8.58	8.19	8.38
30 OCT	8.40	7.99	8.19
MEAN	8.49	8.09	8.29
IRRIGATN	NONE	FULL	MEAN
TOTAL N			
80	8.66	8.24	8.45
150	8.31	7.94	8.12
MEAN	8.49	8.09	8.29
IRRIGATN	NONE	FULL	MEAN
N DIVIS			
SINGLE	8.51	8.05	8.28
DIVIDED	8.46	8.12	8.29
MEAN	8.49	8.09	8.29
IRRIGATN	NONE	FULL	MEAN
N TIME			
EARLY	8.39	8.03	8.21
LATE	8.58	8.15	8.36
MEAN	8.49	8.09	8.29
IRRIGATN	NONE	FULL	MEAN
AUT PEST			
NONE	8.39	7.99	8.19
ALDICARB	8.58	8.19	8.39
MEAN	8.49	8.09	8.29
IRRIGATN	NONE	FULL	MEAN
APHICIDE			
NONE	8.48	8.14	8.31
PIRIMICA	8.49	8.03	8.26
MEAN	8.49	8.09	8.29
IRRIGATN	NONE	FULL	MEAN
FUNGCIDE			
NONE	7.69	7.22	7.45
CA+MA+TR	9.28	8.96	9.12
MEAN	8.49	8.09	8.29

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GRAIN TONNES/HECTARE

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

TOTAL N	80		150	
N DIVIS	SINGLE	DIVIDED	SINGLE	DIVIDED
SOWDATE				
15 SEPT	8.65	8.51	8.21	8.16
30 OCT	8.18	8.46	8.09	8.04
TOTAL N	80		150	
N TIME	EARLY	LATE	EARLY	LATE
SOWDATE				
15 SEPT	8.57	8.59	7.96	8.40
30 OCT	8.25	8.39	8.06	8.08
N DIVIS	SINGLE		DIVIDED	
N TIME	EARLY	LATE	EARLY	LATE
SOWDATE				
15 SEPT	8.26	8.59	8.28	8.39
30 OCT	8.23	8.04	8.07	8.43
N DIVIS	SINGLE		DIVIDED	
N TIME	EARLY	LATE	EARLY	LATE
TOTAL N				
80	8.42	8.41	8.40	8.57
150	8.07	8.23	7.95	8.25
TOTAL N	80		150	
AUT PEST	NONE	ALDICARB	NONE	ALDICARB
SOWDATE				
15 SEPT	8.35	8.81	8.15	8.22
30 OCT	8.23	8.41	8.03	8.11
N DIVIS	SINGLE		DIVIDED	
AUT PEST	NONE	ALDICARB	NONE	ALDICARB
SOWDATE				
15 SEPT	8.29	8.57	8.21	8.46
30 OCT	8.16	8.11	8.10	8.41
N DIVIS	SINGLE		DIVIDED	
AUT PEST	NONE	ALDICARB	NONE	ALDICARB
TOTAL N				
80	8.29	8.54	8.30	8.67
150	8.16	8.13	8.01	8.19
N TIME	EARLY		LATE	
AUT PEST	NONE	ALDICARB	NONE	ALDICARB
SOWDATE				
15 SEPT	8.15	8.38	8.34	8.64
30 OCT	8.06	8.25	8.20	8.27
N TIME	EARLY		LATE	
AUT PEST	NONE	ALDICARB	NONE	ALDICARB
TOTAL N				
80	8.29	8.53	8.29	8.68
150	7.93	8.10	8.25	8.23

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GRAIN TONNES/HECTARE

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

N TIME	EARLY		LATE	
AUT PEST	NONE	ALDICARB	NONE	ALDICARB
N DIVIS				
SINGLE	8.21	8.28	8.24	8.39
DIVIDED	8.00	8.35	8.30	8.52
TOTAL N	80		150	
APHICIDE	NONE	PIRIMICA	NONE	PIRIMICA
SOWDATE				
15 SEPT	8.69	8.46	8.12	8.24
30 OCT	8.39	8.25	8.04	8.10
N DIVIS	SINGLE		DIVIDED	
APHICIDE	NONE	PIRIMICA	NONE	PIRIMICA
SOWDATE				
15 SEPT	8.45	8.40	8.37	8.30
30 OCT	8.07	8.20	8.35	8.15
N DIVIS	SINGLE		DIVIDED	
APHICIDE	NONE	PIRIMICA	NONE	PIRIMICA
TOTAL N				
80	8.39	8.44	8.69	8.28
150	8.13	8.17	8.03	8.17
N TIME	EARLY		LATE	
APHICIDE	NONE	PIRIMICA	NONE	PIRIMICA
SOWDATE				
15 SEPT	8.35	8.19	8.47	8.52
30 OCT	8.20	8.10	8.22	8.25
N TIME	EARLY		LATE	
APHICIDE	NONE	PIRIMICA	NONE	PIRIMICA
TOTAL N				
80	8.58	8.24	8.50	8.48
150	7.97	8.05	8.19	8.29
N TIME	EARLY		LATE	
APHICIDE	NONE	PIRIMICA	NONE	PIRIMICA
N DIVIS				
SINGLE	8.26	8.23	8.26	8.37
DIVIDED	8.29	8.06	8.43	8.39
AUT PEST	NONE		ALDICARB	
APHICIDE	NONE	PIRIMICA	NONE	PIRIMICA
SOWDATE				
15 SEPT	8.30	8.19	8.51	8.51
30 OCT	8.14	8.12	8.28	8.23
AUT PEST	NONE		ALDICARB	
APHICIDE	NONE	PIRIMICA	NONE	PIRIMICA
TOTAL N				
80	8.45	8.14	8.63	8.58
150	7.99	8.18	8.16	8.16

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GRAIN TONNES/HECTARE

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

AUT PEST APHICIDE N DIVIS SINGLE DIVIDED	NONE		ALDICARB	
	NONE	PIRIMICA	NONE	PIRIMICA
SINGLE	8.19	8.25	8.32	8.35
DIVIDED	8.25	8.06	8.48	8.39

AUT PEST APHICIDE N TIME EARLY LATE	NONE		ALDICARB	
	NONE	PIRIMICA	NONE	PIRIMICA
EARLY	8.18	8.04	8.37	8.26
LATE	8.26	8.28	8.43	8.49

TOTAL N FUNGICIDE SOWDATE 15 SEPT 30 OCT	80		150	
	NONE	CA+MA+TR	NONE	CA+MA+TR
15 SEPT	7.62	9.53	7.00	9.37
30 OCT	7.87	8.77	7.32	8.82

N DIVIS FUNGICIDE SOWDATE 15 SEPT 30 OCT	SINGLE		DIVIDED	
	NONE	CA+MA+TR	NONE	CA+MA+TR
15 SEPT	7.28	9.57	7.34	9.33
30 OCT	7.49	8.78	7.70	8.80

N DIVIS FUNGICIDE TOTAL N 80 150	SINGLE		DIVIDED	
	NONE	CA+MA+TR	NONE	CA+MA+TR
80	7.68	9.15	7.82	9.15
150	7.09	9.20	7.22	8.98

N TIME FUNGICIDE SOWDATE 15 SEPT 30 OCT	EARLY		LATE	
	NONE	CA+MA+TR	NONE	CA+MA+TR
15 SEPT	7.19	9.35	7.43	9.56
30 OCT	7.58	8.72	7.61	8.86

N TIME FUNGICIDE TOTAL N 80 150	EARLY		LATE	
	NONE	CA+MA+TR	NONE	CA+MA+TR
80	7.65	9.17	7.85	9.13
150	7.13	8.90	7.19	9.29

N TIME FUNGICIDE N DIVIS SINGLE DIVIDED	EARLY		LATE	
	NONE	CA+MA+TR	NONE	CA+MA+TR
SINGLE	7.35	9.14	7.42	9.22
DIVIDED	7.42	8.93	7.62	9.20

AUT PEST FUNGICIDE SOWDATE 15 SEPT 30 OCT	NONE		ALDICARB	
	NONE	CA+MA+TR	NONE	CA+MA+TR
15 SEPT	7.34	9.16	7.28	9.74
30 OCT	7.50	8.76	7.69	8.82

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

AUT PEST FUNGCIDE	NONE	CA+MA+TR	ALDICARB NONE	CA+MA+TR
TOTAL N				
80	7.63	8.95	7.87	9.35
150	7.20	8.97	7.11	9.22
AUT PEST FUNGCIDE	NONE	CA+MA+TR	ALDICARB NONE	CA+MA+TR
N DIVIS				
SINGLE	7.35	9.10	7.43	9.25
DIVIDED	7.49	8.82	7.55	9.31
AUT PEST FUNGCIDE	NONE	CA+MA+TR	ALDICARB NONE	CA+MA+TR
N TIME				
EARLY	7.33	8.89	7.45	9.18
LATE	7.50	9.04	7.53	9.38
APHICIDE FUNGCIDE	NONE	CA+MA+TR	PIRIMICA NONE	CA+MA+TR
SOWDATE				
15 SEPT	7.26	9.56	7.36	9.35
30 OCT	7.74	8.68	7.45	8.90
APHICIDE FUNGCIDE	NONE	CA+MA+TR	PIRIMICA NONE	CA+MA+TR
TOTAL N				
80	7.87	9.21	7.63	9.09
150	7.13	9.03	7.19	9.16
APHICIDE FUNGCIDE	NONE	CA+MA+TR	PIRIMICA NONE	CA+MA+TR
N DIVIS				
SINGLE	7.39	9.13	7.38	9.23
DIVIDED	7.61	9.11	7.43	9.02
APHICIDE FUNGCIDE	NONE	CA+MA+TR	PIRIMICA NONE	CA+MA+TR
N TIME				
EARLY	7.48	9.06	7.29	9.00
LATE	7.51	9.18	7.52	9.24
APHICIDE FUNGCIDE	NONE	CA+MA+TR	PIRIMICA NONE	CA+MA+TR
AUT PEST				
NONE	7.45	8.99	7.38	8.94
ALDICARB	7.54	9.25	7.44	9.31
TOTAL N	80		150	
IRRIGATN	NONE	FULL	NONE	FULL
SOWDATE				
15 SEPT	8.72	8.43	8.43	7.94
30 OCT	8.59	8.05	8.20	7.93

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GRAIN TONNES/HECTARE

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

N DIVIS	SINGLE		DIVIDED	
IRRIGATN	NONE	FULL	NONE	FULL
SOWDATE				
15 SEPT	8.67	8.19	8.49	8.18
30 OCT	8.35	7.92	8.44	8.06
N DIVIS	SINGLE		DIVIDED	
IRRIGATN	NONE	FULL	NONE	FULL
TOTAL N				
80	8.61	8.22	8.70	8.27
150	8.41	7.89	8.22	7.98
N TIME	EARLY		LATE	
IRRIGATN	NONE	FULL	NONE	FULL
SOWDATE				
15 SEPT	8.48	8.06	8.67	8.31
30 OCT	8.31	8.00	8.49	7.98
N TIME	EARLY		LATE	
IRRIGATN	NONE	FULL	NONE	FULL
TOTAL N				
80	8.63	8.19	8.68	8.29
150	8.15	7.87	8.48	8.00
N TIME	EARLY		LATE	
IRRIGATN	NONE	FULL	NONE	FULL
N DIVIS				
SINGLE	8.42	8.07	8.60	8.04
DIVIDED	8.36	7.99	8.56	8.26
AUT PEST	NONE		ALDICARB	
IRRIGATN	NONE	FULL	NONE	FULL
SOWDATE				
15 SEPT	8.47	8.02	8.68	8.35
30 OCT	8.31	7.95	8.48	8.03
AUT PEST	NONE		ALDICARB	
IRRIGATN	NONE	FULL	NONE	FULL
TOTAL N				
80	8.51	8.07	8.81	8.41
150	8.27	7.90	8.36	7.97
AUT PEST	NONE		ALDICARB	
IRRIGATN	NONE	FULL	NONE	FULL
N DIVIS				
SINGLE	8.51	7.93	8.50	8.17
DIVIDED	8.27	8.04	8.66	8.21
AUT PEST	NONE		ALDICARB	
IRRIGATN	NONE	FULL	NONE	FULL
N TIME				
EARLY	8.28	7.93	8.51	8.12
LATE	8.50	8.04	8.66	8.26

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GRAIN TONNES/HECTARE

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

APHICIDE	NONE		PIRIMICA	
IRRIGATN	NONE	FULL	NONE	FULL
SOWDATE				
15 SEPT	8.56	8.26	8.59	8.11
30 OCT	8.40	8.03	8.40	7.96
APHICIDE	NONE		PIRIMICA	
IRRIGATN	NONE	FULL	NONE	FULL
TOTAL N				
80	8.73	8.35	8.58	8.13
150	8.22	7.93	8.41	7.94
APHICIDE	NONE		PIRIMICA	
IRRIGATN	NONE	FULL	NONE	FULL
N DIVIS				
SINGLE	8.44	8.07	8.57	8.04
DIVIDED	8.51	8.21	8.42	8.03
APHICIDE	NONE		PIRIMICA	
IRRIGATN	NONE	FULL	NONE	FULL
N TIME				
EARLY	8.42	8.12	8.36	7.93
LATE	8.53	8.16	8.63	8.14
APHICIDE	NONE		PIRIMICA	
IRRIGATN	NONE	FULL	NONE	FULL
AUT PEST				
NONE	8.39	8.05	8.39	7.92
ALDICARB	8.57	8.23	8.60	8.15
FUNGCIDE	NONE		CA+MA+TR	
IRRIGATN	NONE	FULL	NONE	FULL
SOWDATE				
15 SEPT	7.55	7.07	9.60	9.30
30 OCT	7.82	7.37	8.97	8.62
FUNGCIDE	NONE		CA+MA+TR	
IRRIGATN	NONE	FULL	NONE	FULL
TOTAL N				
80	7.99	7.50	9.32	8.98
150	7.39	6.93	9.24	8.94
FUNGCIDE	NONE		CA+MA+TR	
IRRIGATN	NONE	FULL	NONE	FULL
N DIVIS				
SINGLE	7.70	7.07	9.31	9.04
DIVIDED	7.68	7.36	9.25	8.88
FUNGCIDE	NONE		CA+MA+TR	
IRRIGATN	NONE	FULL	NONE	FULL
N TIME				
EARLY	7.63	7.14	9.15	8.92
LATE	7.75	7.29	9.41	9.00

81/R/WW/3

GRAIN TONNES/HECTARE

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

FUNGCIDE	NONE		CA+MA+TR				
IRRIGATN	NONE	FULL	NONE	FULL			
AUT PEST							
NONE	7.69	7.14	9.10	8.83			
ALDICARB	7.69	7.29	9.47	9.09			
FUNGCIDE	NONE		CA+MA+TR				
IRRIGATN	NONE	FULL	NONE	FULL			
APHICIDE							
NONE	7.67	7.32	9.28	8.96			
PIRIMICA	7.71	7.11	9.28	8.96			
TOTAL NX	40	80	115	150	185	220	MEAN
SOWDATEX							
15 SEPT	9.47	10.20	9.49	9.62	9.52	9.03	9.56
30 OCT	9.48	9.59	9.54	9.19	8.37	8.86	9.17
MEAN	9.48	9.90	9.52	9.40	8.94	8.95	9.36
N TIMEX	EARLY	LATE	MEAN				
SOWDATEX							
15 SEPT	9.21	9.91	9.56				
30 OCT	9.09	9.26	9.17				
MEAN	9.15	9.58	9.36				
N TIMEX	EARLY	LATE	MEAN				
TOTAL NX							
40	9.65	9.30	9.48				
80	9.53	10.27	9.90				
115	9.13	9.91	9.52				
150	9.44	9.36	9.40				
185	8.62	9.26	8.94				
220	8.51	9.39	8.95				
MEAN	9.15	9.58	9.36				
SOWDATEX	N TIMEX	EARLY	LATE				
15 SEPT	TOTAL NX						
	40	9.46	9.48				
	80	9.67	10.74				
	115	9.01	9.98				
	150	9.59	9.64				
	185	9.19	9.85				
	220	8.32	9.75				
30 OCT	40	9.84	9.13				
	80	9.39	9.79				
	115	9.26	9.83				
	150	9.29	9.09				
	185	8.06	8.68				
	220	8.69	9.04				

81/R/WW/3

GRAIN TONNES/HECTARE

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

EXTRA	NO 15 SEP	NO 30 OCT
	7.66	6.63

INHIB	UREA	I U DATE	
NONE	0	-	10.22
NONE	40	8 DEC	9.73
NONE	40	2 FEB	9.98
DICYANDI	0	8 DEC	10.33
DICYANDI	0	2 FEB	10.79
DICYANDI	40	8 DEC	10.12
DICYANDI	40	2 FEB	10.15

GRAND MEAN 8.54

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

SED APPLY TO MAIN FACTORIAL PLOTS ONLY

MARGINS OF TWO FACTOR TABLES	0.067
TWO FACTOR TABLES	0.095
THREE FACTOR TABLES	0.135

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

STRATUM	DF	SE	CV%
BLOCK.WP	32	0.381	4.6

GRAIN MEAN DM% 86.3

PLOT AREA HARVESTED 0.00223