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Yields of the Field Experiments 1979

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79/R/CS/201 Factors Affecting Yield - Wheat

Rothamsted Research

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FACTORS AFFECTING YIELD

Object: To study the residual effects on wheat of a range of treatments applied to field beans in 1977 - Pastures.

Sponsors: R. Bardner, G.G. Briggs, A.J. Cockbain, J.M. Day, K.E. Fletcher, B.J. Legg, J. McEwen, R.J. Roughley, G.A. Salt, H.R. Simpson, R.M. Webb, J.F. Witty.

The third year, winter wheat.

For previous years see 77-78/R/CS/201.

Design: Half replicate of 2^8 in 8 blocks of 2 plots split into 8.

Whole plot dimensions: 10.4 x 57.6.

Treatments applied in 1977: Combinations of:-

Whole plots

- | | |
|-----------------|---------------|
| 1. IRRIGATN(77) | Irrigation: |
| NONE | None |
| FULL | Full (119 mm) |

Sub plots

- | | |
|-----------------|--|
| 2. N(77) | Nitrogen fertiliser at flowering (kg N): |
| 0 | |
| 150 | |
| 3. ALDICARB(77) | Aldicarb to seedbed (kg): |
| 0 | |
| 10 | |
| 4. FONOFOS(77) | Fonofos to seedbed (kg): |
| 0 | |
| 5 | |
| 5. BEN 1(77) | Benomyl to seedbed (kg): |
| 0 | |
| 32 | |
| 6. PERMETH(77) | Permethrin foliar spray (kg): |
| 0.00 | |
| 0.15 | |

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7. PIRIMICA(77) Pirimicarb foliar spray (kg):

0.00
0.14

8. BEN 2(77) Benomyl foliar spray (kg):

0.0
0.6

Basal applications: Manures: (0:20:20) at 310 kg, combine drilled. 'Nitro-Chalk' at 380 kg. Weedkiller: Mecoprop at 2.5 kg in 220 l.

Seed: Atou, sown at 200 kg.

Cultivations, etc.: - Ploughed: 18 Oct, 1978. Rotary harrowed: 19 Oct. Seed sown: 20 Oct. N applied: 27 Apr, 1979. Weedkiller applied: 8 May. Combine harvested: 30 Aug.

NOTES: (1) The crop was sampled in July for take-all and eyespot assessments.
(2) There were marked differences in yields between the outer and inner strips of subplots; the yields presented have been adjusted for this.

GRAIN TONNES/HECTARE

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

N(77)	0	150	MEAN
IRRIGATN(77)			
NONE	4.77	4.38	4.57
FULL	4.96	4.95	4.96
MEAN	4.86	4.67	4.77
ALDICARB(77)	0	10	MEAN
IRRIGATN(77)			
NONE	4.89	4.26	4.57
FULL	5.08	4.84	4.96
MEAN	4.99	4.55	4.77
ALDICARB(77)	0	10	MEAN
N(77)			
0	5.08	4.65	4.86
150	4.89	4.44	4.67
MEAN	4.99	4.55	4.77
FONOFOS(77)	0	5	MEAN
IRRIGATN(77)			
NONE	4.69	4.46	4.57
FULL	4.93	4.98	4.96
MEAN	4.81	4.72	4.77

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GRAIN TONNES/HECTARE

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

FONOFOS(77)	0	5	MEAN
N(77)			
0	5.00	4.73	4.86
150	4.63	4.71	4.67
MEAN	4.81	4.72	4.77
FONOFOS(77)	0	5	MEAN
ALDICARB(77)			
0	4.99	4.98	4.99
10	4.63	4.46	4.55
MEAN	4.81	4.72	4.77
BEN 1(77)	0	32	MEAN
IRRIGATN(77)			
NONE	4.54	4.61	4.57
FULL	4.74	5.17	4.96
MEAN	4.64	4.89	4.77
BEN 1(77)	0	32	MEAN
N(77)			
0	4.71	5.02	4.86
150	4.57	4.76	4.67
MEAN	4.64	4.89	4.77
BEN 1(77)	0	32	MEAN
ALDICARB(77)			
0	4.83	5.14	4.99
10	4.45	4.64	4.55
MEAN	4.64	4.89	4.77
BEN 1(77)	0	32	MEAN
FONOFOS(77)			
0	4.75	4.87	4.81
5	4.53	4.91	4.72
MEAN	4.64	4.89	4.77
PERMETH(77)	0.00	0.15	MEAN
IRRIGATN(77)			
NONE	4.60	4.55	4.57
FULL	5.04	4.87	4.96
MEAN	4.82	4.71	4.77
PERMETH(77)	0.00	0.15	MEAN
N(77)			
0	4.96	4.77	4.86
150	4.68	4.65	4.67
MEAN	4.82	4.71	4.77

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GRAIN TONNES/HECTARE

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

PERMETH(77)	0.00	0.15	MEAN
ALDICARB(77)			
0	5.07	4.90	4.99
10	4.56	4.53	4.55
MEAN	4.82	4.71	4.77
PERMETH(77)	0.00	0.15	MEAN
FONOFOS(77)			
0	4.83	4.80	4.81
5	4.81	4.63	4.72
MEAN	4.82	4.71	4.77
PERMETH(77)	0.00	0.15	MEAN
BEN 1(77)			
0	4.76	4.52	4.64
32	4.87	4.90	4.89
MEAN	4.82	4.71	4.77
PIRIMICA(77)	0.00	0.14	MEAN
IRRIGATN(77)			
NONE	4.62	4.53	4.57
FULL	5.01	4.91	4.96
MEAN	4.81	4.72	4.77
PIRIMICA(77)	0.00	0.14	MEAN
N(77)			
0	4.85	4.88	4.86
150	4.78	4.56	4.67
MEAN	4.81	4.72	4.77
PIRIMICA(77)	0.00	0.14	MEAN
ALDICARB(77)			
0	4.92	5.05	4.99
10	4.70	4.39	4.55
MEAN	4.81	4.72	4.77
PIRIMICA(77)	0.00	0.14	MEAN
FONOFOS(77)			
0	4.91	4.72	4.81
5	4.72	4.72	4.72
MEAN	4.81	4.72	4.77
PIRIMICA(77)	0.00	0.14	MEAN
BEN 1(77)			
0	4.58	4.70	4.64
32	5.04	4.73	4.89
MEAN	4.81	4.72	4.77

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GRAIN TONNES/HECTARE

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

PIRIMICA(77)	0.00	0.14	MEAN
PERMETH(77)			
	0.00	4.84	4.80
	0.15	4.79	4.64
			4.82
			4.71
MEAN	4.81	4.72	4.77
BEN 2(77)	0.0	0.6	MEAN
IRRIGATN(77)			
	NONE	4.65	4.50
	FULL	4.84	5.08
			4.57
			4.96
MEAN	4.74	4.79	4.77
BEN 2(77)	0.0	0.6	MEAN
N(77)			
	0	4.82	4.91
	150	4.67	4.67
			4.86
			4.67
MEAN	4.74	4.79	4.77
BEN 2(77)	0.0	0.6	MEAN
ALDICARB(77)			
	0	4.94	5.03
	10	4.55	4.55
			4.99
			4.55
MEAN	4.74	4.79	4.77
BEN 2(77)	0.0	0.6	MEAN
FONOFOS(77)			
	0	4.77	4.85
	5	4.72	4.72
			4.81
			4.72
MEAN	4.74	4.79	4.77
BEN 2(77)	0.0	0.6	MEAN
BEN 1(77)			
	0	4.59	4.69
	32	4.90	4.88
			4.64
			4.89
MEAN	4.74	4.79	4.77
BEN 2(77)	0.0	0.6	MEAN
PERMETH(77)			
	0.00	4.78	4.85
	0.15	4.71	4.72
			4.82
			4.71
MEAN	4.74	4.79	4.77
BEN 2(77)	0.0	0.6	MEAN
PIRIMICA(77)			
	0.00	4.80	4.82
	0.14	4.69	4.75
			4.81
			4.72
MEAN	4.74	4.79	4.77

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GRAIN TONNES/HECTARE

***** TABLES OF MEANS (INDIVIDUAL VALUES) *****

IRRIGATN(77)	N(77)	ALDICARB(77)	FONOFOS(77)	BEN 1(77)	PERMETH(77)	PIRIMICA(77)	BEN 2(77)	GRAIN
NONE	0	0	0	0	0.00	0.00	0.0	5.49
NONE	0	0	0	0	0.00	0.14	0.6	5.95
NONE	0	0	0	0	0.15	0.00	0.6	4.56
NONE	0	0	0	0	0.15	0.14	0.0	4.01
NONE	0	0	0	32	0.00	0.00	0.6	5.76
NONE	0	0	0	32	0.00	0.14	0.0	5.62
NONE	0	0	0	32	0.15	0.00	0.0	4.88
NONE	0	0	0	32	0.15	0.14	0.6	6.85
NONE	0	0	5	0	0.00	0.00	0.6	4.29
NONE	0	0	5	0	0.00	0.14	0.0	5.73
NONE	0	0	5	0	0.15	0.00	0.0	2.85
NONE	0	0	5	0	0.15	0.14	0.6	4.98
NONE	0	0	5	32	0.00	0.00	0.0	5.28
NONE	0	0	5	32	0.00	0.14	0.6	4.72
NONE	0	0	5	32	0.15	0.00	0.6	3.96
NONE	0	0	5	32	0.15	0.14	0.0	5.83
NONE	0	0	0	0	0.00	0.00	0.6	4.29
NONE	0	10	0	0	0.00	0.14	0.0	4.29
NONE	0	10	0	0	0.15	0.00	0.0	4.97
NONE	0	10	0	0	0.15	0.14	0.6	5.95
NONE	0	10	0	32	0.00	0.00	0.0	5.55
NONE	0	10	0	32	0.00	0.14	0.6	3.04
NONE	0	10	0	32	0.15	0.00	0.6	4.92
NONE	0	10	0	32	0.15	0.14	0.0	4.53
NONE	0	10	5	0	0.00	0.00	0.0	4.33
NONE	0	10	5	0	0.00	0.14	0.6	3.99
NONE	0	10	5	0	0.15	0.00	0.6	4.46
NONE	0	10	5	0	0.15	0.14	0.0	4.58
NONE	0	10	5	32	0.00	0.00	0.6	4.00
NONE	0	10	5	32	0.00	0.14	0.0	5.01
NONE	0	10	5	32	0.15	0.00	0.0	5.25
NONE	0	10	5	32	0.15	0.14	0.6	2.67

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GRAIN TONNES/HECTARE

***** TABLES OF MEANS (INDIVIDUAL VALUES) *****

IRRIGATN(77)	N(77)	ALDICARB(77)	FONOFOS(77)	BEN 1(77)	PERMETH(77)	PIRIMICA(77)	BEN 2(77)	GRAIN
NONE	150	0	0	0	0.00	0.00	0.6	4.88
NONE	150	0	0	0	0.00	0.14	0.0	4.77
NONE	150	0	0	0	0.15	0.15	0.0	5.72
NONE	150	0	0	0	0.15	0.14	0.6	4.32
NONE	150	0	0	32	0.00	0.00	0.0	3.95
NONE	150	0	0	32	0.00	0.14	0.6	4.28
NONE	150	0	0	32	0.15	0.00	0.6	4.80
NONE	150	0	0	32	0.15	0.14	0.0	4.68
NONE	150	0	5	0	0.00	0.00	0.0	4.44
NONE	150	0	5	0	0.00	0.14	0.6	5.24
NONE	150	0	5	0	0.15	0.00	0.6	3.69
NONE	150	0	5	0	0.15	0.14	0.0	5.50
NONE	150	0	5	32	0.00	0.00	0.6	6.15
NONE	150	0	5	32	0.00	0.14	0.0	3.39
NONE	150	0	5	32	0.15	0.00	0.0	6.03
NONE	150	0	5	32	0.15	0.14	0.6	3.96
NONE	150	10	0	0	0.00	0.00	0.0	3.93
NONE	150	10	0	0	0.00	0.14	0.6	5.24
NONE	150	10	0	0	0.15	0.00	0.6	3.90
NONE	150	10	0	0	0.15	0.14	0.0	3.37
NONE	150	10	0	32	0.00	0.00	0.6	3.42
NONE	150	10	0	32	0.00	0.14	0.0	4.24
NONE	150	10	0	32	0.15	0.00	0.0	4.87
NONE	150	10	0	32	0.15	0.14	0.6	3.02
NONE	150	10	5	0	0.00	0.00	0.6	3.40
NONE	150	10	5	0	0.00	0.14	0.0	3.46
NONE	150	10	5	0	0.15	0.00	0.0	4.99
NONE	150	10	5	0	0.15	0.14	0.6	3.78
NONE	150	10	5	32	0.00	0.00	0.0	4.14
NONE	150	10	5	32	0.00	0.14	0.6	4.82
NONE	150	10	5	32	0.15	0.00	0.6	4.60
NONE	150	10	5	32	0.15	0.14	0.0	3.15

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GRAIN TONNES/HECTARE

***** TABLES OF MEANS (INDIVIDUAL VALUES) *****

IRRIGATN(77)	N(77)	ALDICARB(77)	FONOFOS(77)	BEN 1(77)	PERMETH(77)	PIRIMICA(77)	BEN 2(77)	GRAIN
FULL	0	0	0	0	0.00	0.00	0.6	5.69
FULL	0	0	0	0	0.00	0.14	0.0	4.17
FULL	0	0	0	0	0.15	0.00	0.0	4.17
FULL	0	0	0	0	0.15	0.14	0.6	3.78
FULL	0	0	0	32	0.00	0.00	0.0	5.98
FULL	0	0	0	32	0.00	0.14	0.6	6.21
FULL	0	0	0	32	0.15	0.00	0.6	5.26
FULL	0	0	0	32	0.15	0.14	0.0	4.72
FULL	0	0	5	0	0.00	0.00	0.0	6.04
FULL	0	0	5	0	0.00	0.14	0.6	5.22
FULL	0	0	5	0	0.15	0.00	0.6	5.92
FULL	0	0	5	0	0.15	0.14	0.0	5.57
FULL	0	0	5	32	0.00	0.00	0.6	4.09
FULL	0	0	5	32	0.00	0.14	0.0	5.41
FULL	0	0	5	32	0.15	0.00	0.0	3.11
FULL	0	0	5	32	0.15	0.14	0.6	6.56
FULL	0	10	0	0	0.00	0.00	0.0	5.47
FULL	0	10	0	0	0.00	0.14	0.6	4.77
FULL	0	10	0	0	0.15	0.00	0.6	5.93
FULL	0	10	0	0	0.15	0.14	0.0	4.77
FULL	0	10	0	32	0.00	0.00	0.6	5.40
FULL	0	10	0	32	0.00	0.14	0.0	3.01
FULL	0	10	0	32	0.15	0.00	0.0	5.44
FULL	0	10	0	32	0.15	0.14	0.6	4.45
FULL	0	10	5	0	0.00	0.00	0.6	3.95
FULL	0	10	5	0	0.00	0.14	0.0	4.20
FULL	0	10	5	0	0.15	0.00	0.0	2.44
FULL	0	10	5	0	0.15	0.14	0.6	3.94
FULL	0	10	5	32	0.00	0.00	0.0	5.83
FULL	0	10	5	32	0.00	0.14	0.6	5.87
FULL	0	10	5	32	0.15	0.00	0.6	5.56
FULL	0	10	5	32	0.15	0.14	0.0	5.84

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GRAIN TONNES/HECTARE

***** TABLES OF MEANS (INDIVIDUAL VALUES) *****

IRRIGATN(77)	N(77)	ALDICARB(77)	FONOFOS(77)	BEN 1(77)	PERMETH(77)	PIRIMICA(77)	BEN 2(77)	GRAIN
FULL	150	0	0	0	0.00	0.00	0.0	3.74
FULL	150	0	0	0	0.00	0.14	0.6	3.96
FULL	150	0	0	0	0.15	0.00	0.6	3.40
FULL	150	0	0	0	0.15	0.14	0.0	5.60
FULL	150	0	0	32	0.00	0.00	0.6	5.10
FULL	150	0	0	32	0.00	0.14	0.0	5.61
FULL	150	0	0	32	0.15	0.00	0.0	6.04
FULL	150	0	0	32	0.15	0.14	0.6	5.87
FULL	150	0	5	0	0.00	0.00	0.6	5.37
FULL	150	0	5	0	0.00	0.14	0.0	5.45
FULL	150	0	5	0	0.15	0.00	0.0	4.46
FULL	150	0	5	0	0.15	0.14	0.6	5.68
FULL	150	0	5	32	0.00	0.00	0.0	6.16
FULL	150	0	5	32	0.00	0.14	0.6	4.25
FULL	150	0	5	32	0.15	0.00	0.6	6.15
FULL	150	0	5	32	0.15	0.14	0.0	3.78
FULL	150	10	0	0	0.00	0.00	0.6	6.07
FULL	150	10	0	0	0.00	0.14	0.0	5.88
FULL	150	10	0	0	0.15	0.00	0.0	5.19
FULL	150	10	0	0	0.15	0.14	0.6	3.80
FULL	150	10	0	32	0.00	0.00	0.0	3.30
FULL	150	10	0	32	0.00	0.14	0.6	5.38
FULL	150	10	0	32	0.15	0.00	0.6	4.97
FULL	150	10	0	32	0.15	0.14	0.0	4.73
FULL	150	10	5	0	0.00	0.00	0.0	3.71
FULL	150	10	5	0	0.00	0.14	0.6	4.94
FULL	150	10	5	0	0.15	0.00	0.6	4.79
FULL	150	10	5	0	0.15	0.14	0.0	3.61
FULL	150	10	5	32	0.00	0.00	0.6	5.57
FULL	150	10	5	32	0.00	0.14	0.0	5.47
FULL	150	10	5	32	0.15	0.00	0.0	5.91
FULL	150	10	5	32	0.15	0.14	0.6	4.54

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GRAIN TONNES/HECTARE

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

SED 0.144*
 0.203**
 0.287***

* USE ONLY ON MARGINS OF A TWO WAY TABLE, EXCEPT FOR IRRIGATN(77) .
** USE FOR THE BODY OF A TWO WAY TABLE, ONLY WITHIN THE SAME LEVEL
OF IRRIGATN(77) (IF APPLICABLE).
*** USE FOR THREE WAY TABLES (IF CONSTRUCTED FROM INDIVIDUAL VALUES),
ONLY WITHIN THE SAME LEVEL OF IRRIGATN(77) (IF APPLICABLE) .
DO NOT USE SED FOR THE FOLLOWING TABLES
ALDICARB(77).FONOFOS(77).BEN 1(77)
N(77).BEN 1(77).PERMETH(77)
N(77).FONOFOS(77).PIRIMICA(77)
ALDICARB(77).PERMETH(77).PIRIMICA(77)
N(77).ALDICARB(77).BEN 2(77)
FONOFOS(77).PERMETH(77).BEN 2(77)
BEN 1(77).PIRIMICA(77).BEN 2(77)
AS NO SED'S ARE AVAILABLE FOR THESE TABLES .

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

STRATUM	DF	SE	CV%
BLOCK.WP.SP	27	0.798	16.7
GRAIN MEAN DM%	85.0		
SUB PLOT AREA HARVESTED	0.00259		