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Yields of the Field Experiments 1978

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78/R/CS/180 Factors Affecting Yield - Wheat

Rothamsted Research

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78/R/CS/180

FACTORS AFFECTING YIELD

Object: To study the residual effects on wheat of a range of treatments applied to field beans in 1976 - Little Hoos.

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

The third year, winter wheat.

For previous years see 76-77/R/CS/180.

Design: Single replicate of 2 x 2 x 2 x 2 x 2 x 2 x 2 in eight blocks of 2 plots split into 8.

Whole plot dimensions: 9.14 x 40.2.

Treatments applied in 1976: All combinations of:-

Whole plots

- | | |
|-----------------|---------------|
| 1. IRRIGATN(76) | Irrigation: |
| NONE | None |
| FULL | Full (291 mm) |

Sub plots

- | | |
|-----------------|---|
| 2. N(76) | Nitrogen fertiliser: |
| 0 | 0 |
| 150+150 | 150 kg N to seedbed and 150 kg N at flowering |
| 3. ALDICARB(76) | Aldicarb to seedbed (kg): |
| 0 | |
| 10 | |
| 4. DIELDRIN(76) | Dieldrin to seedbed (kg): |
| 0.0 | |
| 2.5 | |
| 5. BENOMYL(76) | Benomyl to seedbed (kg): |
| 0 | |
| 15 | |
| 6. FENITROT(76) | Fenitrothion foliar spray (kg): |
| 0.0 | |
| 1.5 | |
| 7. PIRIMICA(76) | Pirimicarb foliar spray (kg): |
| 0.00 | |
| 0.14 | |

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Basal applications: Manures: (0:20:20) at 310 kg, combine drilled. 'Nitra-Shell 34' at 360 kg. Weedkillers: Dicamba with mecoprop and MCPA ('Banlene Plus' at 4.9 l in 220 l).

Seed: Atou, sown at 210 kg.

Cultivations, etc.:— Ploughed: 23 Sept, 1977. Power harrowed: 17 Oct. Seed sown: 20 Oct. N applied: 25 Apr, 1978. Weedkiller applied: 8 May. Combine harvested: 13 Sept.

GRAIN TONNES/HECTARE

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

N(76)	0	150+150	MEAN
IRRIGATN(76)			
NONE	6.58	6.25	6.41
FULL	6.62	6.65	6.64
MEAN	6.60	6.45	6.52
ALDICARB(76)	0	10	MEAN
IRRIGATN(76)			
NONE	6.46	6.36	6.41
FULL	6.67	6.60	6.64
MEAN	6.57	6.48	6.52
ALDICARB(76)	0	10	MEAN
N(76)			
0	6.63	6.57	6.60
150+150	6.51	6.39	6.45
MEAN	6.57	6.48	6.52
DIELDRIN(76)	0.0	2.5	MEAN
IRRIGATN(76)			
NONE	6.37	6.46	6.41
FULL	6.58	6.69	6.64
MEAN	6.47	6.57	6.52
DIELDRIN(76)	0.0	2.5	MEAN
N(76)			
0	6.58	6.62	6.60
150+150	6.37	6.53	6.45
MEAN	6.47	6.57	6.52
DIELDRIN(76)	0.0	2.5	MEAN
ALDICARB(76)			
0	6.59	6.55	6.57
10	6.36	6.60	6.48
MEAN	6.47	6.57	6.52

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GRAIN TONNES/HECTARE

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

BENOMYL(76)	0	15	MEAN
IRRIGATN(76)			
NONE	6.43	6.39	6.41
FULL	6.66	6.61	6.64
MEAN	6.55	6.50	6.52
BENOMYL(76)	0	15	MEAN
N(76)			
0	6.55	6.64	6.60
150+150	6.54	6.36	6.45
MEAN	6.55	6.50	6.52
BENOMYL(76)	0	15	MEAN
ALDICARB(76)			
0	6.57	6.57	6.57
10	6.52	6.44	6.48
MEAN	6.55	6.50	6.52
BENOMYL(76)	0	15	MEAN
DIELDRIN(76)			
0.0	6.49	6.46	6.47
2.5	6.60	6.55	6.57
MEAN	6.55	6.50	6.52
FENITROT(76)	0.0	1.5	MEAN
IRRIGATN(76)			
NONE	6.49	6.33	6.41
FULL	6.66	6.61	6.64
MEAN	6.58	6.47	6.52
FENITROT(76)	0.0	1.5	MEAN
N(76)			
0	6.61	6.59	6.60
150+150	6.54	6.36	6.45
MEAN	6.58	6.47	6.52
FENITROT(76)	0.0	1.5	MEAN
ALDICARB(76)			
0	6.61	6.53	6.57
10	6.55	6.41	6.48
MEAN	6.58	6.47	6.52
FENITROT(76)	0.0	1.5	MEAN
DIELDRIN(76)			
0.0	6.52	6.43	6.47
2.5	6.63	6.52	6.57
MEAN	6.58	6.47	6.52

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GRAIN TONNES/HECTARE

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

FENITROT(76)	0.0	1.5	MEAN
BENOMYL(76)			
0	6.60	6.49	6.55
15	6.55	6.45	6.50
MEAN	6.58	6.47	6.52
PIRIMICA(76)	0.00	0.14	MEAN
IRRIGATN(76)			
NONE	6.45	6.37	6.41
FULL	6.59	6.68	6.64
MEAN	6.52	6.53	6.52
PIRIMICA(76)	0.00	0.14	MEAN
N(76)			
0	6.61	6.59	6.60
150+150	6.43	6.47	6.45
MEAN	6.52	6.53	6.52
PIRIMICA(76)	0.00	0.14	MEAN
ALDICARB(76)			
0	6.51	6.62	6.57
10	6.53	6.43	6.48
MEAN	6.52	6.53	6.52
PIRIMICA(76)	0.00	0.14	MEAN
DIELDRIN(76)			
0.0	6.47	6.48	6.47
2.5	6.57	6.58	6.57
MEAN	6.52	6.53	6.52
PIRIMICA(76)	0.00	0.14	MEAN
BENOMYL(76)			
0	6.51	6.58	6.55
15	6.53	6.48	6.50
MEAN	6.52	6.53	6.52
PIRIMICA(76)	0.00	0.14	MEAN
FENITROT(76)			
0.0	6.57	6.59	6.58
1.5	6.48	6.46	6.47
MEAN	6.52	6.53	6.52

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GRAIN TONNES/HECTARE

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

IRRIGATN(76)	N(76)	ALDICARB(76)	DIELDRIN(76)	BENOMYL(76)	FENITROT(76)	PIRIMICA(76)	GRAIN
NONE	0	0	0.0	0	0.0	0.00	6.84
NONE	0	0	0.0	0	0.0	0.14	6.63
NONE	0	0	0.0	0	1.5	0.00	6.78
NONE	0	0	0.0	0	1.5	0.14	6.56
NONE	0	0	0.0	15	0.0	0.00	6.59
NONE	0	0	0.0	15	0.0	0.14	6.54
NONE	0	0	0.0	15	1.5	0.00	6.34
NONE	0	0	0.0	15	1.5	0.14	6.76
NONE	0	0	2.5	0	0.0	0.00	6.44
NONE	0	0	2.5	0	0.0	0.14	6.50
NONE	0	0	2.5	0	1.5	0.00	6.36
NONE	0	0	2.5	0	1.5	0.14	6.40
NONE	0	0	2.5	15	0.0	0.00	6.78
NONE	0	0	2.5	15	0.0	0.14	6.49
NONE	0	0	2.5	15	1.5	0.00	6.70
NONE	0	0	2.5	15	1.5	0.14	7.08
NONE	0	10	0.0	0	0.0	0.00	6.55
NONE	0	10	0.0	0	0.0	0.14	6.87
NONE	0	10	0.0	0	1.5	0.00	6.44
NONE	0	10	0.0	0	1.5	0.14	6.33
NONE	0	10	0.0	15	0.0	0.00	6.65
NONE	0	10	0.0	15	0.0	0.14	6.39
NONE	0	10	0.0	15	1.5	0.00	6.83
NONE	0	10	0.0	15	1.5	0.14	6.62
NONE	0	10	2.5	0	0.0	0.00	6.58
NONE	0	10	2.5	0	0.0	0.14	6.47
NONE	0	10	2.5	0	1.5	0.00	6.57
NONE	0	10	2.5	0	1.5	0.14	6.50
NONE	0	10	2.5	15	0.0	0.00	6.55
NONE	0	10	2.5	15	0.0	0.14	6.39
NONE	0	10	2.5	15	1.5	0.00	6.90
NONE	0	10	2.5	15	1.5	0.14	6.03

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GRAIN TONNES/HECTARE

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

IRRIGATN(76)	N(76)	ALDICARB(76)	DIELDRIN(76)	BENOMYL(76)	FENITROT(76)	PIRIMICA(76)	GRAIN
NONE	150+150	0	0.0	0	0.0	0.00	5.66
NONE	150+150	0	0.0	0	0.0	0.14	6.78
NONE	150+150	0	0.0	0	1.5	0.00	6.82
NONE	150+150	0	0.0	0	1.5	0.14	6.27
NONE	150+150	0	0.0	15	0.0	0.00	6.27
NONE	150+150	0	0.0	15	0.0	0.14	5.63
NONE	150+150	0	0.0	15	1.5	0.00	6.46
NONE	150+150	0	0.0	15	1.5	0.14	7.03
NONE	150+150	0	2.5	0	0.0	0.00	6.99
NONE	150+150	0	2.5	0	0.0	0.14	6.64
NONE	150+150	0	2.5	0	1.5	0.00	5.54
NONE	150+150	0	2.5	0	1.5	0.14	6.36
NONE	150+150	0	2.5	15	0.0	0.00	5.72
NONE	150+150	0	2.5	15	0.0	0.14	6.56
NONE	150+150	0	2.5	15	1.5	0.00	5.92
NONE	150+150	0	2.5	15	1.5	0.14	6.42
NONE	150+150	10	0.0	0	0.0	0.00	6.30
NONE	150+150	10	0.0	0	0.0	0.14	6.89
NONE	150+150	10	0.0	0	1.5	0.00	5.07
NONE	150+150	10	0.0	0	1.5	0.14	4.92
NONE	150+150	10	0.0	15	0.0	0.00	6.17
NONE	150+150	10	0.0	15	0.0	0.14	6.55
NONE	150+150	10	0.0	15	1.5	0.00	6.07
NONE	150+150	10	0.0	15	1.5	0.14	5.09
NONE	150+150	10	2.5	0	0.0	0.00	6.75
NONE	150+150	10	2.5	0	0.0	0.14	6.59
NONE	150+150	10	2.5	0	1.5	0.00	7.12
NONE	150+150	10	2.5	0	1.5	0.14	6.17
NONE	150+150	10	2.5	15	0.0	0.00	6.99
NONE	150+150	10	2.5	15	0.0	0.14	6.03
NONE	150+150	10	2.5	15	1.5	0.00	6.61
NONE	150+150	10	2.5	15	1.5	0.14	5.50

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GRAIN TONNES/HECTARE

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

IRRIGATN(76)	N(76)	ALDICARB(76)	DIELDRIN(76)	BENOMYL(76)	FENITROT(76)	PIRIMICA(76)	GRAIN
FULL	0	0	0.0	0	0.0	0.00	6.99
FULL	0	0	0.0	0	0.0	0.14	6.40
FULL	0	0	0.0	0	1.5	0.00	6.49
FULL	0	0	0.0	0	1.5	0.14	6.60
FULL	0	0	0.0	15	0.0	0.00	7.41
FULL	0	0	0.0	15	0.0	0.14	6.26
FULL	0	0	0.0	15	1.5	0.00	6.40
FULL	0	0	0.0	15	1.5	0.14	6.55
FULL	0	0	2.5	0	0.0	0.00	6.54
FULL	0	0	2.5	0	0.0	0.14	7.17
FULL	0	0	2.5	0	1.5	0.00	5.97
FULL	0	0	2.5	0	1.5	0.14	6.46
FULL	0	0	2.5	15	0.0	0.00	6.69
FULL	0	0	2.5	15	0.0	0.14	7.05
FULL	0	0	2.5	15	1.5	0.00	6.56
FULL	0	0	2.5	15	1.5	0.14	6.78
FULL	0	10	0.0	0	0.0	0.00	6.32
FULL	0	10	0.0	0	0.0	0.14	6.28
FULL	0	10	0.0	0	1.5	0.00	6.61
FULL	0	10	0.0	0	1.5	0.14	6.33
FULL	0	10	0.0	15	0.0	0.00	6.54
FULL	0	10	0.0	15	0.0	0.14	6.25
FULL	0	10	0.0	15	1.5	0.00	6.66
FULL	0	10	0.0	15	1.5	0.14	6.78
FULL	0	10	2.5	0	0.0	0.00	5.89
FULL	0	10	2.5	0	0.0	0.14	6.99
FULL	0	10	2.5	0	1.5	0.00	6.94
FULL	0	10	2.5	0	1.5	0.14	6.86
FULL	0	10	2.5	15	0.0	0.00	6.66
FULL	0	10	2.5	15	0.0	0.14	6.85
FULL	0	10	2.5	15	1.5	0.00	6.93
FULL	0	10	2.5	15	1.5	0.14	6.63

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GRAIN TONNES/HECTARE

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

IRRIGATN(76)	N(76)	ALDICARB(76)	DIELDRIN(76)	BENOMYL(76)	FENITROT(76)	PIRIMICA(76)	GRAIN
FULL	150+150	0	0.0	0	0.0	0.00	6.65
FULL	150+150	0	0.0	0	0.0	0.14	6.48
FULL	150+150	0	0.0	0	1.5	0.00	6.86
FULL	150+150	0	0.0	0	1.5	0.14	7.12
FULL	150+150	0	0.0	15	0.0	0.00	6.59
FULL	150+150	0	0.0	15	0.0	0.14	6.78
FULL	150+150	0	0.0	15	1.5	0.00	6.55
FULL	150+150	0	0.0	15	1.5	0.14	6.68
FULL	150+150	0	2.5	0	0.0	0.00	6.85
FULL	150+150	0	2.5	0	0.0	0.14	6.52
FULL	150+150	0	2.5	0	1.5	0.00	6.50
FULL	150+150	0	2.5	0	1.5	0.14	7.12
FULL	150+150	0	2.5	15	0.0	0.00	6.97
FULL	150+150	0	2.5	15	0.0	0.14	6.97
FULL	150+150	0	2.5	15	1.5	0.00	6.22
FULL	150+150	0	2.5	15	1.5	0.14	6.36
FULL	150+150	10	0.0	0	0.0	0.00	6.23
FULL	150+150	10	0.0	0	0.0	0.14	6.88
FULL	150+150	10	0.0	0	1.5	0.00	6.94
FULL	150+150	10	0.0	0	1.5	0.14	6.85
FULL	150+150	10	0.0	15	0.0	0.00	6.46
FULL	150+150	10	0.0	15	0.0	0.14	6.91
FULL	150+150	10	0.0	15	1.5	0.00	5.60
FULL	150+150	10	0.0	15	1.5	0.14	6.22
FULL	150+150	10	2.5	0	0.0	0.00	7.01
FULL	150+150	10	2.5	0	0.0	0.14	6.59
FULL	150+150	10	2.5	0	1.5	0.00	6.87
FULL	150+150	10	2.5	0	1.5	0.14	6.87
FULL	150+150	10	2.5	15	0.0	0.00	6.46
FULL	150+150	10	2.5	15	0.0	0.14	6.57
FULL	150+150	10	2.5	15	1.5	0.00	6.65
FULL	150+150	10	2.5	15	1.5	0.14	6.61

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GRAIN TONNES/HECTARE

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

SED 0.060*
 0.085**
 0.121***

* USE ONLY ON MARGINS OF A TWO WAY TABLE, EXCEPT FOR IRRIGATN(76) .

** USE FOR THE BODY OF A TWO WAY TABLE, ONLY WITHIN THE SAME LEVEL OF IRRIGATN(76) (IF APPLICABLE).

*** USE FOR THREE WAY TABLES (IF CONSTRUCTED FROM INDIVIDUAL VALUES), ONLY WITHIN THE SAME LEVEL OF IRRIGATN(76) (IF APPLICABLE) .

DO NOT USE SED FOR THE FOLLOWING TABLES

N(76).DIELDRIN(76).BENOMYL(76)

N(76).ALDICARB(76).FENITROT(76)

ALDICARB(76).DIELDRIN(76).PIRIMICA(76)

BENOMYL(76).FENITROT(76).PIRIMICA(76)

AS NO SED'S ARE AVAILABLE FOR THESE TABLES .

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

STRATUM	DF	SE	CV%
BLOCK	7	0.090	1.4
BLOCK.WP.SP	54	0.342	5.2

GRAIN MEAN DM% 83.9

SUB PLOT AREA HARVESTED 0.00259