ROTHAMSTED RESEARCH

Yields of the Field Experiments 1996

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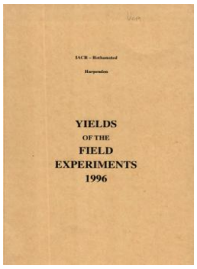

Crop Sequences

Rothamsted Research

Rothamsted Research (1997) *Crop Sequences ;* Yields Of The Field Experiments 1996, pp 52 - 102 **- DOI: https://doi.org/10.23637/ERADOC-1-51**

96/R/CS/10 and 96/W/CS/10

LONG TERM LIMING

Object: To study the effects of different amounts of lime, phosphate and sulphur on the yields and compositions of a sequence of crops - Rothamsted (R) Sawyers I and Woburn (W) Stackyard C.

Sponsor: S.P. McGrath.

The 35th year, w. wheat.

For previous years see 'Details' 1967, 1973 and 74-95/R&W/CS/10.

Design: 2 randomised blocks of 16 plots split into 2 sub-plots.

Whole plot dimensions: 6.0 x 16.1.

Treatments: All combinations of:-

Whole plots

1. **CHALK** — Residual effects of ground chalk (tonnes CaCO3) (total applied 1962-87):

R	W	Rothamsted total 1962-78	Rothamsted total 1982-87	Woburn total 1962-78	Woburn total 1982-87
0	0	0	0	0	0
15	9	7	8	6	3
24.5	25.5	15	9.5	14	11.5
52.5	45.5	30	22.5	23	22.5

2. **P** — Residual effects of P fertilizer applied:

	Until 1978 R & W	1981 R & W	1982 R & W	1983 R	1983 W	1988 R	1988 W
0	0	0	0	0	0	0	0
P1	0	P1	P1	0	P2	P1	P1
P2	P	P1	0	P2	P2	P1	P1
P3	P	P3	P1	P2	P4	P3	P3

Rates 1981-83 and 1988 P1, P2, P3, P4 = 25, 50, 75, 100 kg P as superphosphate

Sub-plots

3. **SULPHUR** — Sulphur (kg S, as calcium sulphate), applied cumulatively since 1991:

0
30

https://doi.org/10.23637/ERADOC-1-51

96/R/CS/10 and 96/W/CS/10

NOTES: (1) Until 1978 test P was applied cumulatively, rates varied with crop, none in 1979 and 1980. K was also applied cumulatively, to P1 and P3 plots. Since 1981 K has been applied basally (none in 1986, 1987, 1989, 1990 and 1993 to 1996).
(2) Test manganese was applied cumulatively, 1987-90.

Experimental diary:

Sawyers I (R):
10-Aug-95 : B : Straw baled.
22-Aug-95 : B : Sub-soiled.
25-Sep-95 : B : Ploughed.
28-Sep-95 : B : Rotary harrowed, Hereward, dressed Panoctine, drilled at 380 seeds per m^2.
11-Mar-96 : B : 34.5% N at 116 kg.
09-Apr-96 : T : **SULPHUR** 30: Gypsum (17.5% S) at 171 kg.
15-Apr-96 : B : 34.5% N at 463 kg.
26-Apr-96 : B : Ally at 30 g with Cheetah Super at 1.25 l and Barclay Holdup at 2.3 l in 200 l.
13-Jun-96 : B : Alto 100 SL at 0.6 l with Mallard 750 EC at 0.4 l in 300 l.
09-Aug-96 : B : Combine harvested.

Stackyard C (W):
25-Aug-95 : B : Sub-soiled.
19-Sep-95 : B : Ploughed.
23-Sep-95 : B : Rolled.
03-Oct-95 : B : Rotary harrowed, Hereward, dressed Sibutol, drilled at 375 seeds per m^2.
13-Nov-95 : B : Panther at 2.0 l in 200 l.
13-Mar-96 : B : 34.5% N at 116 kg.
19-Mar-96 : T : **SULPHUR** 30: Gypsum (17.5% S) at 171 kg.
16-Apr-96 : B : 34.5% N at 348 kg.
30-Apr-96 : B : Halo at 1.5 l in 200 l.
06-Jun-96 : B : Silvacur at 1.0 l in 300 l.
19-Aug-96 : B : Combine harvested.

NOTE: At Rothamsted, most **CHALK** 0 plots failed. They have been omitted from the analysis.

96/R/CS/10 SAWYERS I (R)

GRAIN TONNES/HECTARE

***** Tables of means *****

P	0	P1	P2	P3	Mean
CHALK					
15	7.47	8.38	8.91	8.44	8.30
24.5	8.38	8.83	8.74	9.20	8.79
52.5	8.03	8.94	8.69	8.86	8.63
Mean	7.96	8.72	8.78	8.83	8.57

https://doi.org/10.23637/ERADOC-1-51

96/R/CS/10 SAWYERS I (R)

GRAIN TONNES/HECTARE

***** Tables of means *****

SULPHUR	0	30	Mean
CHALK			
15	8.44	8.16	8.30
24.5	8.73	8.85	8.79
52.5	8.74	8.52	8.63
Mean	8.63	8.51	8.57

SULPHUR	0	30	Mean
P			
0	8.21	7.71	7.96
P1	8.64	8.79	8.72
P2	8.84	8.71	8.78
P3	8.83	8.83	8.83
Mean	8.63	8.51	8.57

SULPHUR	0	30
CHALK	P	
15	0	7.99	6.94
	P1	8.30	8.46
	P2	9.05	8.76
	P3	8.40	8.48
24.5	0	8.50	8.26
	P1	8.75	8.92
	P2	8.51	8.97
	P3	9.16	9.25
52.5	0	8.15	7.91
	P1	8.88	9.00
	P2	8.97	8.40
	P3	8.95	8.77

*** Standard errors of differences of means ***

P	CHALK	SULPHUR	P CHALK
0.263	0.227	0.108	0.455

P SULPHUR	CHALK SULPHUR	P CHALK SULPHUR
0.304	0.263	0.526

Except when comparing means with the same level(s) of

P	0.217		
CHALK		0.188	
P.CHALK			0.375

https://doi.org/10.23637/ERADOC-1-51

96/R/CS/10 SAWYERS I (R)

GRAIN TONNES/HECTARE

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	11	0.455	5.3
BLOCK.WP.SP	12	0.375	4.4

GRAIN MEAN DM% 87.8

SUB-PLOT AREA HARVESTED 0.00150

96/W/CS/10 STACKYARD C (W)

GRAIN TONNES/HECTARE

***** Tables of means *****

P	0	P1	P2	P3	Mean
CHALK					
0	3.58	3.63	4.12	4.45	3.95
9	7.81	8.19	8.12	8.30	8.10
25.5	7.58	7.04	7.76	7.54	7.48
45.5	6.74	8.14	7.46	7.92	7.56
Mean	6.43	6.75	6.86	7.05	6.77

SULPHUR	0	30	Mean
CHALK			
0	4.03	3.86	3.95
9	8.09	8.12	8.10
25.5	7.43	7.53	7.48
45.5	7.51	7.61	7.56
Mean	6.77	6.78	6.77

SULPHUR	0	30	Mean
P			
0	6.25	6.60	6.43
P1	6.65	6.85	6.75
P2	6.90	6.82	6.86
P3	7.26	6.84	7.05
Mean	6.77	6.78	6.77

https://doi.org/10.23637/ERADOC-1-51

96/W/CS/10 STACKYARD C (W)

GRAIN TONNES/HECTARE

***** Tables of means *****

SULPHUR		0	30
CHALK	P		
0	0	3.28	3.88
	P1	3.32	3.95
	P2	3.87	4.38
	P3	5.68	3.22
9	0	7.40	8.21
	P1	8.42	7.97
	P2	8.31	7.93
	P3	8.25	8.35
25.5	0	7.73	7.43
	P1	6.77	7.30
	P2	7.78	7.73
	P3	7.44	7.64
45.5	0	6.59	6.89
	P1	8.10	8.17
	P2	7.66	7.26
	P3	7.69	8.14

*** Standard errors of differences of means ***

CHALK	P	SULPHUR	CHALK P
0.548	0.548	0.133	1.097

CHALK SULPHUR	P SULPHUR	CHALK P SULPHUR
0.580	0.580	1.159

Except when comparing means with the same level(s) of

CHALK	0.266
P	0.266
CHALK.P	0.531

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	15	1.097	16.2
BLOCK.WP.SP	15	0.531	7.8

GRAIN MEAN DM% 90.8

SUB-PLOT AREA HARVESTED 0.00143

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96/R/CS/140

CHEMICAL REFERENCE PLOTS

Object: To study the persistence in soil of agricultural chemicals applied annually, singly and in combination, and their effects on soil microflora and on yield of continuous s. barley - Long Hoos V 3.

Sponsors: R.H. Bromilow, A.A. Evans, P.H. Nicholls.

The 23rd year, s. barley.

For previous years see 74-95/R/CS/140.

Design: Single replicate of 32 plots.

Whole plot dimensions: 4.06 x 4.57.

Treatments: Applied cumulatively every year until 1993, none since.

All combinations of:-

1. **WEEDKLLR** Weedkiller in autumn:

   (NONE) None
   (GLYPHOS) Glyphosate to barley stubble

2. **FUNGCIDE[1]** Fungicide in autumn:

   (NONE) None
   (TRIADIM) Triadimefon in autumn

3. **FUNGCIDE[2]** Fungicide in spring:

   (NONE) None
   (BENOMYL) Benomyl to the seedbed

4. **INSCTCDE** Insecticide:

   (NONE) None
   (CHLORFEN) Chlorfenvinphos to the seedbed

5. **NEMACIDE** Nematicide:

   (NONE) None
   (ALDICARB) Aldicarb to the seedbed

Experimental diary:

12-Aug-95 : B : Straw baled.
09-Oct-95 : B : Stubble topped.
15-Nov-95 : B : Ploughed.
20-Mar-96 : B : Spring-tine cultivated, rotary harrowed, Alexis, undressed, drilled at 350 seeds per m^2.
08-May-96 : B : 34.5% N at 435 kg.
04-Jun-96 : B : Ally at 30 g with Vindex at 1.0 l in 200 l.

https://doi.org/10.23637/ERADOC-1-51

96/R/CS/140

Experimental diary:
09-Jul-96 : B : Wild oats pulled by hand.
22-Aug-96 : B : Combine harvested.

NOTE: Soils were sampled for chemical analysis and pH.

GRAIN TONNES/HECTARE

***** Tables of means *****

FUNGCIDE[1]	(NONE)	(TRIADIM)	Mean
WEEDKLLR			
(NONE)	5.38	5.44	5.41
(GLYPHOS)	5.88	5.82	5.85
Mean	5.63	5.63	5.63

FUNGCIDE[2]	(NONE)	(BENOMYL)	Mean
WEEDKLLR			
(NONE)	5.51	5.31	5.41
(GLYPHOS)	5.64	6.06	5.85
Mean	5.58	5.69	5.63

FUNGCIDE[2]	(NONE)	(BENOMYL)	Mean
FUNGCIDE[1]			
(NONE)	5.60	5.67	5.63
(TRIADIM)	5.55	5.70	5.63
Mean	5.58	5.69	5.63

INSCTCDE	(NONE)	(CHLORFEN)	Mean
WEEDKLLR			
(NONE)	5.48	5.35	5.41
(GLYPHOS)	5.92	5.78	5.85
Mean	5.70	5.56	5.63

INSCTCDE	(NONE)	(CHLORFEN)	Mean
FUNGCIDE[1]			
(NONE)	5.47	5.79	5.63
(TRIADIM)	5.92	5.33	5.63
Mean	5.70	5.56	5.63

INSCTCDE	(NONE)	(CHLORFEN)	Mean
FUNGCIDE[2]			
(NONE)	5.60	5.55	5.58
(BENOMYL)	5.80	5.57	5.69
Mean	5.70	5.56	5.63

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96/R/CS/140

GRAIN TONNES/HECTARE

***** Tables of means *****

NEMACIDE	(NONE)	(ALDICARB)	Mean
WEEDKLLR			
(NONE)	5.49	5.33	5.41
(GLYPHOS)	5.85	5.85	5.85
Mean	5.67	5.59	5.63

NEMACIDE	(NONE)	(ALDICARB)	Mean
FUNGCIDE[1]			
(NONE)	5.65	5.62	5.63
(TRIADIM)	5.69	5.57	5.63
Mean	5.67	5.59	5.63

NEMACIDE	(NONE)	(ALDICARB)	Mean
FUNGCIDE[2]			
(NONE)	5.54	5.61	5.58
(BENOMYL)	5.80	5.57	5.69
Mean	5.67	5.59	5.63

NEMACIDE	(NONE)	(ALDICARB)	Mean
INSCTCDE			
(NONE)	5.67	5.73	5.70
(CHLORFEN)	5.67	5.46	5.56
Mean	5.67	5.59	5.63

FUNGCIDE[1]	(NONE)		(TRIADIM)	
WEEDKLLR FUNGCIDE[2]	(NONE)	(BENOMYL)	(NONE)	(BENOMYL)
(NONE)	5.47	5.29	5.56	5.32
(GLYPHOS)	5.73	6.04	5.55	6.09

FUNGCIDE[1]	(NONE)		(TRIADIM)	
WEEDKLLR INSCTCDE	(NONE)	(CHLORFEN)	(NONE)	(CHLORFEN)
(NONE)	5.34	5.42	5.61	5.27
(GLYPHOS)	5.61	6.16	6.23	5.40

FUNGCIDE[2]	(NONE)		(BENOMYL)	
WEEDKLLR INSCTCDE	(NONE)	(CHLORFEN)	(NONE)	(CHLORFEN)
(NONE)	5.46	5.56	5.49	5.13
(GLYPHOS)	5.73	5.55	6.11	6.02

FUNGCIDE[2]	(NONE)		(BENOMYL)	
FUNGCIDE[1] INSCTCDE	(NONE)	(CHLORFEN)	(NONE)	(CHLORFEN)
(NONE)	5.38	5.82	5.57	5.77
(TRIADIM)	5.81	5.29	6.03	5.38

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96/R/CS/140

GRAIN TONNES/HECTARE

***** Tables of means *****

	FUNGCIDE[1]	(NONE)		(TRIADIM)	
WEEDKLLR	NEMACIDE	(NONE)	(ALDICARB)	(NONE)	(ALDICARB)
(NONE)		5.42	5.35	5.57	5.31
(GLYPHOS)		5.88	5.89	5.81	5.82

	FUNGCIDE[2]	(NONE)		(BENOMYL)	
WEEDKLLR	NEMACIDE	(NONE)	(ALDICARB)	(NONE)	(ALDICARB)
(NONE)		5.61	5.41	5.37	5.25
(GLYPHOS)		5.47	5.81	6.23	5.90

	FUNGCIDE[2]	(NONE)		(BENOMYL)	
FUNGCIDE[1]	NEMACIDE	(NONE)	(ALDICARB)	(NONE)	(ALDICARB)
(NONE)		5.66	5.54	5.64	5.70
(TRIADIM)		5.42	5.69	5.96	5.45

	INSCTCDE	(NONE)		(CHLORFEN)	
WEEDKLLR	NEMACIDE	(NONE)	(ALDICARB)	(NONE)	(ALDICARB)
(NONE)		5.38	5.57	5.60	5.09
(GLYPHOS)		5.95	5.89	5.74	5.82

	INSCTCDE	(NONE)		(CHLORFEN)	
FUNGCIDE[1]	NEMACIDE	(NONE)	(ALDICARB)	(NONE)	(ALDICARB)
(NONE)		5.48	5.46	5.81	5.77
(TRIADIM)		5.85	5.99	5.52	5.14

	INSCTCDE	(NONE)		(CHLORFEN)	
FUNGCIDE[2]	NEMACIDE	(NONE)	(ALDICARB)	(NONE)	(ALDICARB)
(NONE)		5.50	5.69	5.57	5.53
(BENOMYL)		5.83	5.77	5.76	5.38

*** Standard errors of differences of means ***

Margins of two factor tables	0.131
Two factor tables	0.186
Three factor tables	0.262

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
WP	6	0.371	6.6

GRAIN MEAN DM% 88.8

PLOT AREA HARVESTED 0.00105

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96/R/CS/302

EYESPOT RESISTANCE TO MBC

Object: To study the development of resistance to MBC fungicides in eyespot and the ability of resistant strains to survive, spread and infect - Meadow.

Sponsor: G.L. Bateman.

The twelfth year, w. wheat.

For previous years see 85-93,95/R/CS/302

Design: 2 randomised blocks of 4 plots split into 6 sub-plots.

Whole plot dimensions: 12.0 X 24.0.
Sub-plot dimensions: 4.5 x 6.0.

Treatments: All combinations of:-

Whole plots

1.	**FUNGCIDE**	Fungicide applied cumulatively 1985-93 and 1995-6:
	NONE	None
	CARB	Carbendazim at 0.25 kg
	PRO	Prochloraz at 0.40 kg (0.50 kg in 1993, 1995 and 1996)
	CARB+PRO	Carbendazim at 0.25 kg with prochloraz at 0.40 kg (0.50 kg in 1993, 1995 and 1996)

Sub-plots

2.	**EYE INOC**	Eyespot inoculum, applied in first year only:
	NATURAL	Natural background population (duplicated)
	W 19R 1S	Inoculated with wheat strains in proportion 19 resistant to one sensitive
	W 1R 19S	As above but one resistant to 19 sensitive
	R 19R 1S	Inoculated with rye strains, 19 resistant to one sensitive
	R 1R 19S	As above but one resistant to 19 sensitive

NOTE: The inoculum was colonized on oat seed and broadcast in October, 1984.

Experimental diary:

13-Sep-95 : B : Ploughed and furrow pressed.
28-Sep-95 : B : Rotary harrowed, Hereward, dressed Panoctine, drilled at 380 seeds per m^2.
20-Nov-95 : B : Panther at 2.0 l in 200 l.
11-Mar-96 : B : 34.5% N at 116 kg.
03-Apr-96 : **T** : **FUNGCIDE** CARB+PRO: Barclay Eyetak at 1.1 l with Tripart Defensor FL at 0.5 l in 200 l.
: **T** : **FUNGCIDE** PRO: Barclay Eyetak at 1.1 l in 200 l.
: **T** : **FUNGCIDE** CARB: Tripart Defensor FL at 0.5 l in 200 l.

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96/R/CS/302

Experimental diary:

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   11-Apr-96 : B : 34.5% N at 463 kg.
   30-Apr-96 : B : Starane 2 at 1.0 l in 200 l.
   13-May-96 : T : FUNGCIDE CARB+PRO: Barclay Eyetak at 1.1 l with Tripart
                   Defensor FL at 0.5 l in 200 l.
             : T : FUNGCIDE PRO: Barclay Eyetak at 1.1 l in 200 l.
             : T : FUNGCIDE CARB: Tripart Defensor FL at 0.5 l in 200 l.
   13-Jun-96 : B : Alto 100 SL at 0.6 l with Mallard 750 EC at 0.4 l in
                   300 l.
   09-Jul-96 : B : Wild oats pulled by hand.
   06-Aug-96 : B : Combine harvested.
```

NOTE: Samples were taken in July to assess eyespot, brown foot rot and take-all.

GRAIN TONNES/HECTARE

***** Tables of means *****

EYE INOC / FUNGCIDE	NATURAL	W 19R 1S	W 1R 19S	R 19R 1S	R 1R 19S	Mean
NONE	9.33	8.98	8.44	8.74	9.98	9.13
CARB	8.62	8.76	8.59	8.03	8.75	8.56
PRO	8.78	8.45	9.21	9.54	8.91	8.94
CARB+PRO	9.93	8.99	9.46	9.52	10.41	9.71
Mean	9.17	8.79	8.92	8.96	9.51	9.09

*** Standard errors of differences of means ***

EYE INOC	FUNGCIDE* EYE INOC	
0.301	0.601	min.rep
0.260	0.521	max-min

	EYE INOC
max-min	NATURAL any of the remainder
min.rep	Any of the remainder

* Within the same level of **FUNGCIDE** only

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	3	0.489	5.4
BLOCK.WP.SP	24	0.601	6.6

GRAIN MEAN DM% 88.3

SUB-PLOT AREA HARVESTED 0.00138

https://doi.org/10.23637/ERADOC-1-51

96/R/CS/309 and 96/W/CS/309

LONG-TERM STRAW INCORPORATION

Object: To study the effects of rotational ploughing and time of sowing after the incorporation or burning of straw on soil conditions and pests, diseases, weeds and yield of w. wheat - Rothamsted (R) Great Knott III and Woburn (W) Far Field I.

Sponsors: J.F. Jenkyn, E.T.G. Bacon, R.J. Gutteridge, W. Powell, A.D. Todd.

The twelfth year, w. wheat.

For previous years see 85-95/R & W/CS/309.

Design: 4 randomised blocks of 12 plots split into 2 sub-plots (R).
2 randomised blocks of 12 plots split into 2 sub-plots (W).

Whole plot dimensions: 9.0 x 28.0 (R).
9.0 x 30.0 (W).

Treatments: All combinations of:-

Whole plots

1. **STRAWCUL** Treatment of straw of previous crop and type of cultivation up to 1994 (before the space) and subsequently (after the space):

   BT1 BTTT
   BT1T2 CTTT
   BP2 BPPP
   BT1P2 CPPP
   CT1 CTTT
   CT1 CPTT
   CT1T2 CTPT
   CT1T2 CTTP
   CP2 CPPP
   CP2 CPTT
   CT1P2 CTPT
   CT1P2 CTTP

Sub-plots

2. **SOW DATE** Date of sowing:

   E Early
   L Late

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96/R/CS/309 and 96/W/CS/309

NOTES: (1) The following codes are used:
B Straw burnt
C Straw chopped and spread
T1 Cultivated to 10 cm depth
T1P2 Cultivated to 10 cm depth, ploughed to 20 cm
T1T2 Cultivated to 10 cm depth and again to 20 cm
P2 Ploughed to 20 cm depth
(2) From 1994 T plots were cultivated to 10 cm and P plots were ploughed to 20 cm depth.
(3) In the experimental diary only the code after the space is used. i.e. BTTT, CTTT, BPPP, CPPP, etc.

Experimental diary:

Great Knott III (R):

11-Aug-95 : **T** : **STRAWCUL** BTTT, BPPP: Straw burnt, ash incorporated with discs.
27-Sep-95 : **T** : **STRAWCUL** BTTT, CTTT, CPTT, CTPT: Heavy spring-tine cultivated.
29-Sep-95 : **T** : **STRAWCUL** BPPP, CPPP, CTTP: Ploughed.
05-Oct-95 : B : Heavy spring-tine cultivated.
06-Oct-95 : **T** : **SOW DATE** E: Rotary harrowed, Soissons, dressed Sibutol, drilled at 400 seeds per m^2.
26-Oct-95 : **T** : **SOW DATE** L: Rotary harrowed, Soissons, dressed Sibutol, drilled at 400 seeds per m^2.
30-Oct-95 : B : Avadex BW Granular at 22.5 kg.
14-Nov-95 : B : Draza at 5.5 kg.
07-Mar-96 : B : 34.5% N at 116 kg.
15-Apr-96 : B : 34.5% N at 463 kg.
25-Apr-96 : B : Ally at 30 g with Cheetah Super at 1.25 l in 200 l.
06-Jun-96 : B : Monicle at 1.0 l in 320 l.
07-Aug-96 : B : Combine harvested.

Far Field I (W):

10-Aug-95 : **T** : **STRAWCUL** BTTT, BPPP: Straw burnt, ash incorporated by spring-tine cultivator.
13-Sep-95 : **T** : **STRAWCUL** BPPP, CPPP, CTTP: Ploughed and rolled.
: **T** : **STRAWCUL** BTTT, CTTT, CPTT, CTPT: Heavy spring-tine cultivated twice.
02-Oct-95 : B : Harvest at 3.0 l in 300 l.
09-Oct-95 : B : Rotary harrowed.
: **T** : **SOW DATE** E: Soissons, dressed Sibutol, drilled at 400 seeds per m^2.
31-Oct-95 : **T** : **SOW DATE** L: Spring-tine cultivated, Soissons, dressed Sibutol, drilled at 450 seeds per m^2.
13-Nov-95 : B : Trump at 5.5 l in 200 l.
08-Mar-96 : B : 34.5% N at 116 kg.
25-Apr-96 : B : 34.5% N at 348 kg.
30-Apr-96 : B : Halo at 1.5 l in 200 l.
06-Jun-96 : B : Halo at 2.0 l in 300 l.
08-Aug-96 : B : Combine harvested.

https://doi.org/10.23637/ERADOC-1-51 *pp 14*

96/R/CS/309 and 96/W/CS/309

NOTES: Establishment counts were made in winter. Grass weeds were counted in April (R) and ears of grass weeds were counted in June (W) and July (R). Samples were taken in July to assess root and stem base diseases. At Rothamsted insect pitfall traps were placed in four plots and sampled between April and August.

96/R/CS/309 GREAT KNOTT III (R)

GRAIN TONNES/HECTARE

***** Tables of means *****

SOW DATE	E	L	Mean
STRAWCUL			
BT1 BTTT	6.33	8.37	7.35
BT1T2 CTTT	6.26	6.91	6.58
BP2 BPPP	8.53	8.50	8.51
BT1P2 CPPP	9.03	8.62	8.82
CT1 CTTT	6.08	5.76	5.92
CT1 CPTT	7.31	7.51	7.41
CT1T2 CTPT	7.94	7.21	7.58
CT1T2 CTTP	9.21	8.91	9.06
CP2 CPPP	8.81	8.30	8.55
CP2 CPTT	7.35	7.70	7.52
CT1P2 CTPT	8.60	7.81	8.21
CT1P2 CTTP	8.84	8.74	8.79
Mean	7.86	7.86	7.86

*** Standard errors of differences of means ***

STRAWCUL	SOW DATE	STRAWCUL SOW DATE
0.404	0.090	0.460

Except when comparing means with the same level(s) of STRAWCUL 0.311

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	33	0.571	7.3
BLOCK.WP.SP	36	0.440	5.6

GRAIN MEAN DM% 87.8

SUB-PLOT AREA HARVESTED 0.00644

https://doi.org/10.23637/ERADOC-1-51

96/W/CS/309 FAR FIELD I (W)

GRAIN TONNES/HECTARE

***** Tables of means *****

SOW DATE	E	L	Mean
STRAWCUL			
BT1 BTTT	7.79	6.09	6.94
BT1T2 CTTT	7.05	6.43	6.74
BP2 BPPP	8.35	7.28	7.81
BT1P2 CPPP	7.18	5.80	6.49
CT1 CTTT	7.98	7.28	7.63
CT1 CPTT	7.31	7.63	7.47
CT1T2 CTPT	7.54	6.68	7.11
CT1T2 CTTP	8.89	7.62	8.26
CP2 CPPP	7.28	6.43	6.86
CP2 CPTT	7.81	6.51	7.16
CT1P2 CTPT	6.08	5.42	5.75
CT1P2 CTTP	8.02	7.04	7.53
Mean	7.61	6.68	7.15

*** Standard errors of differences of means ***

STRAWCUL	SOW DATE	STRAWCUL SOW DATE
0.557	0.117	0.627

Except when comparing means with the same level(s) of STRAWCUL 0.406

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	11	0.557	7.8
BLOCK.WP.SP	12	0.406	5.7

GRAIN MEAN DM% 86.9

SUB-PLOT AREA HARVESTED 0.00660

https://doi.org/10.23637/ERADOC-1-51

96/R/CS/311

EFFECTS OF SHALLOW STRAW INCORPORATION

Object: To study the effects of straw incorporation by rotational ploughing, with shallow cultivation in the intervening years, on diseases and yield of winter wheat - West Barnfield I.

Sponsors: J.F. Jenkyn, R.J. Gutteridge, A.D. Todd.

The twelfth year, w. wheat.

For previous years see 85-95/R/CS/311.

Design: 6 x 4 criss-cross split into 2 sub-plots. Originally a single replicate of 3 x 2 x 2 x 2 x 2.

Whole plot dimensions: 4.5 x 12.0.

Treatments: Combinations of:-

Whole plots

1. **STRAW**	Treatments to straw of previous wheat:	
	BURNT	Burnt (duplicated)
	BALED	Baled and removed (duplicated)
	CHOPPED	Chopped and incorporated (duplicated)

Criss-cross with

2. **CULTIVTN**	Autumn cultivations since 1993, previously all shallow cultivated:	
	(S)(S)S	Shallow tine cultivated to 10 cm
	(P)(S)S	Shallow tine cultivated to 10 cm, (ploughed to 23 cm in autumn 1993)
	(S)(P)S	Shallow tine cultivated to 10 cm, (ploughed to 23 cm in autumn 1994)
	(S)(S)P	Ploughed to 23 cm, (shallow tine cultivated previously)

NOTE: Only the last letter (the treatment in 1996) is used in the experimental diary.

Experimental diary:

08-Aug-95 : **T** : **STRAW** BALED: Straw baled and removed.
08-Aug-95 : **T** : **STRAW** CHOPPED: Straw chopped with trailed chopper.
10-Aug-95 : **T** : **STRAW** BURNT: Straw burnt and ash incorporated with discs.
29-Sep-95 : B : Gramoxone 100 at 3.0 l in 200 l.
04-Oct-95 : **T** : **CULTIVTN** P: Ploughed.
: **T** : **CULTIVTN** S: Heavy spring-tine cultivated twice.
16-Oct-95 : B : Rotary harrowed twice , Soissons, dressed Sibutol, drilled at 400 seeds per m^2.
30-Oct-95 : B : Avadex BW Granular at 22.5 kg.

https://doi.org/10.23637/ERADOC-1-51

96/R/CS/311

Experimental diary:

13-Nov-95 : B : MSS Iprofile at 2.6 l with Stomp 400 SC at 2.6 l in 200 l.
07-Mar-96 : B : 34.5% N at 116 kg.
15-Apr-96 : B : 34.5% N at 493 kg.
13-Jun-96 : B : Alto 100 SL at 0.6 l with Mallard 750 EC at 0.4 l in 300 l.
08-Aug-96 : B : Combine harvested.

NOTE: Samples were taken in July to assess root and stem base diseases.

GRAIN TONNES/HECTARE

***** Tables of means *****

CULTIVTN STRAW	(S)(S)S	(P)(S)S	(S)(P)S	(S)(S)P	Mean
BURNT	8.67	8.92	8.55	8.30	8.61
BALED	8.13	8.22	8.63	8.51	8.37
CHOPPED	8.26	8.22	8.58	8.79	8.46
Mean	8.35	8.45	8.59	8.53	8.48

GRAIN MEAN DM% 86.6

SUB-PLOT AREA HARVESTED 0.00276

https://doi.org/10.23637/ERADOC-1-51

96/R/CS/323

CEREAL SEQUENCES AND TAKE-ALL

Object: To study the effects on take-all (*Gaeumannomyces graminis*) and yield of different cereals grown in various sequences - West Barnfield II.

Sponsors: R.J. Gutteridge, J.F. Jenkyn.

The ninth year, w. wheat.

For previous years see 88-95/R/CS/323

Design: 3 randomised blocks of 26 plots.

Whole plot dimensions: 3.0 x 10.0.

CROPSEQ Crop sequences (1988 to 1995 respectively), all w. wheat in 1996:

TTTTTTTT
OTTTOTTT
TOTTTOTT
TTOTTTOT
TTTOTTTO
WWWWWWWW
OWWWOWWW
WOWWWOWW
WWOWWWOW
WWWOWWWO
BBBBBBBB
OBBBOBBB
BOBBBOBB
BBOBBBOB
BBBOBBBO
WTWTWTWT
WBWBWBWB
TBTBTBTB
SBSBSBSB
WWTTTWWW
WWBBBWWW
TTBBBTTT
TTWWWTTT
BBWWWBBB
BBTTTBBB
WWSSSWWW

W = W. wheat
S = S. barley
B = W. barley
O = W. oats
T = W. triticale

NOTE: Only the last letter of the crop sequence, the crop in 1995, is used in the experimental diary.

https://doi.org/10.23637/ERADOC-1-51

96/R/CS/323

Experimental diary:

20-Jul-95 : **T** : **CROPSEQ** S, B, O: Barley and oat straw baled.
11-Aug-95 : **T** : **CROPSEQ** W: Wheat straw baled.
30-Aug-95 : **T** : **CROPSEQ** T: Triticale straw baled.
18-Sep-95 : B : PK as (0:20:32) at 300 kg.
20-Sep-95 : B : Ploughed and furrow pressed.
25-Sep-95 : B : Rotary harrowed, Mercia, dressed Sibutol, drilled at 380 seeds per m^2.
23-Oct-95 : B : Avadex BW Granular at 22.5 kg.
13-Nov-95 : B : MSS Iprofile at 2.6 l with Stomp 400 SC at 2.6 l in 200 l.
07-Mar-96 : B : 34.5% N at 87 kg.
15-Apr-96 : B : 34.5% N at 580 kg.
25-Apr-96 : B : Cheetah Super at 1.25 l with Halo at 1.5 l in 200 l.
13-Jun-96 : B : Alto 100 SL at 0.6 l with Mallard 750 EC at 0.4 l in 300 l.
19-Aug-96 : B : Combine harvested.

NOTE: Samples were taken in July to assess root and stem base diseases.

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96/R/CS/323

GRAIN TONNES/HECTARE

***** Tables of means *****

CROPSEQ	
TTTTTTTT	9.23
OTTTOTTT	8.90
TOTTTOTT	9.26
TTOTTTOT	9.04
TTTOTTTO	9.08
WWWWWWWW	8.25
OWWWOWWW	8.44
WOWWWOWW	8.86
WWOWWWOW	8.91
WWWOWWWO	9.14
BBBBBBBB	8.67
OBBBOBBB	8.35
BOBBBOBB	9.39
BBOBBBOB	9.26
BBBOBBBO	9.30
WTWTWTWT	9.05
WBWBWBWB	8.56
TBTBTBTB	7.63
SBSBSBSB	8.64
WWTTTWWW	8.28
WWBBBWWW	8.59
TTBBBTTT	9.03
TTWWWTTT	8.83
BBWWWBBB	9.02
BBTTTBBB	8.46
WWSSSWWW	7.59
Mean	8.76

*** Standard errors of differences of means ***

CROPSEQ
0.377

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	50	0.461	5.3

GRAIN MEAN DM% 89.3

PLOT AREA HARVESTED 0.00229

https://doi.org/10.23637/ERADOC-1-51

96/R/CS/326 and 96/W/CS/326

AMOUNTS OF STRAW

Object: To study the effects of different amounts of straw, incorporated into the soil, on w.wheat - Rothamsted (R) Great Knott III, Woburn (W) Far Field I.

Sponsors: N.J. Bradbury, M.J. Glendining, J.F. Jenkyn.

The tenth year, w. wheat.

For previous years see 87-95/R & W/CS/326.

Design: 4 randomised blocks of 4 plots (R).
3 randomised blocks of 4 plots (W).

Whole plot dimensions: 3.0 x 13.5 (R).
3.0 x 14.5 (W).

Treatments:

STRAW Amounts of straw incorporated into the seedbed (t per ha 85% DM), cumulative to previous annual dressings:

		R	W
NONE	None	-	-
NORMAL	Normal	9.2	7.9
2 NORMAL	Twice normal	18.4	15.8
4 NORMAL	Four times normal	36.7	31.6

Experimental diary:

Great Knott III (R):

10-Aug-95 : **T** : **STRAW** NORMAL, 2 NORMAL, 4 NORMAL: Straw applied.
: **T** : **STRAW** NONE: Straw removed.
15-Aug-95 : B : Straw chopped.
29-Sep-95 : B : Ploughed.
05-Oct-95 : B : Heavy spring-tine cultivated.
06-Oct-95 : B : Rotary harrowed, Soissons, dressed Sibutol, drilled at 400 seeds per m^2.
30-Oct-95 : B : Avadex BW Granular at 22.5 kg.
14-Nov-95 : B : Draza at 5.5 kg.
07-Mar-96 : B : 34.5% N at 116 kg.
16-Apr-96 : B : 34.5% N at 174 kg.
25-Apr-96 : B : Ally at 30 g with Cheetah Super at 1.25 l in 200 l.
06-Jun-96 : B : Monicle at 1.0 l in 320 l.
08-Aug-96 : B : Combine harvested.

Far Field I (W):

10-Aug-95 : **T** : **STRAW** NORMAL, 2 NORMAL, 4 NORMAL: Straw applied.
: **T** : **STRAW** NONE: Straw removed.
11-Aug-95 : B : Straw chopped.
13-Sep-95 : B : Ploughed. Rolled.
02-Oct-95 : B : Harvest at 3.0 l in 300 l.
09-Oct-95 : B : Rotary harrowed, Soissons, dressed Sibutol, drilled at 400 seeds per m^2.

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96/R/CS/326 and 96/W/CS/326

Experimental diary:
Far Field I (W):
13-Nov-95 : B : Trump at 5.5 l in 200 l.
08-Mar-96 : B : 34.5% N at 116 kg.
25-Apr-96 : B : 34.5% N at 348 kg.
30-Apr-96 : B : Halo at 1.5 l in 200 l.
06-Jun-96 : B : Halo at 2.0 l in 300 l.
08-Aug-96 : B : Combine harvested.

NOTE: Straw was sampled for nitrogen content, grain was sampled for nitrogen content, quality and thousand grain weights.

96/R/CS/326 GREAT KNOTT III (R)

GRAIN TONNES/HECTARE

***** Tables of means *****

	STRAW
NONE	6.92
NORMAL	7.14
2 NORMAL	7.19
4 NORMAL	7.33
Mean	7.14

*** Standard errors of differences of means ***

STRAW
0.090

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	9	0.128	1.8

GRAIN MEAN DM% 87.2

PLOT AREA HARVESTED 0.00311

https://doi.org/10.23637/ERADOC-1-51

96/W/CS/326 FAR FIELD I (W)

GRAIN TONNES/HECTARE

***** Tables of means *****

	STRAW
NONE	8.81
NORMAL	8.37
2 NORMAL	8.25
4 NORMAL	8.73
Mean	8.54

*** Standard errors of differences of means ***

STRAW
0.330

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	6	0.404	4.7

GRAIN MEAN DM% 86.4

PLOT AREA HARVESTED 0.00319

https://doi.org/10.23637/ERADOC-1-51

96/W/CS/347

GREEN CROPS FOR SET-ASIDE

Object: To obtain information on the establishment and maintenance of sown crops and unsown vegetation in three-year and five-year set-aside. Effects on soil nitrate and leaching after ploughing are also studied - Woburn, Horsepool Lane Close II.

Sponsors: E.T.G. Bacon, D.P. Yeoman, M.V. Hewitt, J.F. Jenkyn, R.J. Gutteridge.

Design: 3 randomised blocks of 6 plots split into 2 x 2 criss-cross.

Whole plot dimensions: 6.5 x 26.0.

The seventh year, w. wheat.

For previous years see 90-95/W/CS/347.

Treatments:

Test phase (second test crop after 5-year treatment phase)

Whole plots

1. **PREVCROP** Previous crop, cumulative 1990 to 1994:

(RY LF)	Ryegrass, cuttings left in situ
(RY+CL LF)	Ryegrass + clover, cuttings left in situ
(RY+CL RE)	Ryegrass + clover, cuttings removed
(RY+N RE)	Ryegrass given 100 kg N in spring, cuttings removed
(TU LF)	Tumbledown, natural regrowth, cuttings left in situ
(ARABLE)	Arable sequence w. wheat, w. wheat, w. oats, w.wheat, w. oats

Sub-plots (**WHEAT** split-plots, **N** criss-cross)

2. **WHEAT** Time of ploughing and drilling previous w. wheat crop:

(W)	Winter 1994
(S)	Spring 1995

3. **N** Fertilizer nitrogen (kg N) applied in spring cumulative to previous dressings:

NO	None
N OPT	Optimum, 40 early and 160 later

Experimental diary:

03-Oct-95 : B : Roundup at 4.0 l in 300 l.
12-Oct-95 : B : Ploughed.
19-Oct-95 : B : Rotary harrowed, Cadenza, dressed Beret 050FS, drilled at 375 seeds per m^2.
22-Nov-95 : B : Stomp 400 SC at 2.5 l with Dagger at 1.5 l in 200 l.
11-Mar-96 : **T** : **N** N OPT: 34.5% N at 116 kg.

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96/W/CS/347

Experimental diary:

30-Apr-96 : B : Halo at 1.5 l in 200 l.
02-May-96 : **T** : **N** N OPT: 27.5% N at 581 kg.
06-Jun-96 : B : Halo at 2.0 l with Mallard 750 EC at 0.5 l in 300 l.
20-Aug-96 : B : Combine harvested.

NOTE: Soil nitrogen was measured in autumn. Weeds were counted and estimates of ground cover were made in spring.

GRAIN TONNES/HECTARE

***** Tables of means *****

N	NO	NOPT	Mean
PREVCROP			
(RY LF)	5.14	8.48	6.81
(RY+CL LF)	6.24	9.44	7.84
(RY+CL RE)	6.45	8.58	7.52
(RY+N RE)	4.80	8.56	6.68
(TU LF)	4.36	8.11	6.23
(ARABLE)	4.53	8.58	6.56
Mean	5.25	8.63	6.94

WHEAT	(W)	(S)	Mean
PREVCROP			
(RY LF)	6.41	7.21	6.81
(RY+CL LF)	7.48	8.20	7.84
(RY+CL RE)	7.02	8.02	7.52
(RY+N RE)	6.51	6.85	6.68
(TU LF)	6.29	6.18	6.23
(ARABLE)	6.20	6.91	6.56
Mean	6.65	7.23	6.94

WHEAT	(W)	(S)	Mean
N			
NO	4.76	5.75	5.25
NOPT	8.55	8.71	8.63
Mean	6.65	7.23	6.94

	WHEAT	(W)		(S)	
PREVCROP	**N**	NO	NOPT	NO	NOPT
(RY LF)		4.60	8.23	5.69	8.74
(PC)		5.56	9.40	6.93	9.48
(PCR)		5.76	8.27	7.14	8.90
(RY+N RE)		4.56	8.46	5.04	8.66
(TU LF)		4.07	8.51	4.65	7.71
(ARABLE)		3.99	8.41	5.06	8.75

https://doi.org/10.23637/ERADOC-1-51

96/W/CS/347

GRAIN TONNES/HECTARE

*** Standard errors of differences of means ***

	PREVCROP	WHEAT	PREVCROP WHEAT
	1.015	0.166	1.054
Except when comparing means with the same level(s) of			
PREVCROP			0.406

	PREVCROP* N	WHEAT* N	PREVCROP* WHEAT N
	1.218	0.646	1.260
Except when comparing means with the same level(s) of			
PREVCROP	0.740		0.844
WHEAT		0.631	
N	1.060	0.187	1.108
PREVCROP.WHEAT			0.769
PREVCROP.N			0.457
WHEAT.N			1.108

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP1	10	1.243	17.9
BLOCK.WP1.SP	12	0.497	7.2
BLOCK.WP1.WP2	10	0.532	7.7
BLOCK.WP1.SP.WP2	12	0.366	5.3

GRAIN MEAN DM% 88.1

SUB-PLOT AREA HARVESTED 0.00236 or 0.00325

https://doi.org/10.23637/ERADOC-1-51

96/R/CS/355

RATES OF N AND MINERALIZATION

Object: To study the cumulative effects of rates of nitrogen fertilizer on soil mineralization capacity and yields of continuous winter wheat - Claycroft.

Sponsor: P.R. Poulton.

The sixth year, w. wheat.

For previous years see 91-95/R/CS/355.

Design: 3 randomised blocks of 7 plots.

Whole plot dimensions: 21.0 x 23.0.

Treatments:

N	Nitrogen fertilizer (kg N) as 34.5% N:
0	
50	
100	
150	
200	
250	
300	

Experimental diary:

22-Aug-95 : B : Straw chopped.
19-Sep-95 : B : Ploughed and furrow pressed.
22-Sep-95 : B : Rolled.
10-Oct-95 : B : Gramoxone 100 at 3.0 l in 260 l.
12-Oct-95 : B : Rotary harrowed.
13-Oct-95 : B : Rotary harrowed, Mercia, dressed Sibutol, drilled at 380 seeds per m^2.
17-Oct-95 : B : Draza at 5.5 kg.
23-Oct-95 : B : Avadex BW Granular at 22.5 kg.
13-Nov-95 : B : MSS Iprofile at 2.5 l with MTM Trifluralin at 2.5 l in 200 l.
16-Apr-96 : B : Topik at 125 ml with Barclay Holdup at 2.3 l and Sprayprover at 1.0 l in 200 l.
17-Apr-96 : **T** : **N** 50, 100, 150, 200, 250, 300: Nitrogen treatments applied.
12-Jun-96 : B : Monicle at 1.0 l in 300 l.
09-Jul-96 : B : Wild oats pulled by hand.
21-Aug-96 : B : Combine harvested.

NOTE: Crop samples were taken for chemical analysis.

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96/R/CS/355

GRAIN TONNES/HECTARE

***** Tables of means *****

N	
0	3.44
50	5.49
100	6.61
150	7.24
200	7.27
250	7.67
300	7.68
Mean	6.48

*** Standard errors of differences of means ***

N
0.275

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	12	0.337	5.2

GRAIN MEAN DM% 86.5

PLOT AREA HARVESTED 0.00483

https://doi.org/10.23637/ERADOC-1-51

96/W/CS/404

TAKE-ALL SEED TREATMENT

Object: To test new fungicidal seed treatments for the control of take-all (*Gaeumannomyces graminis*) - Woburn, Stackyard II.

Sponsors: G.L. Bateman, J.F. Jenkyn, R.J. Gutteridge.

Design: 6 randomised blocks of 6 plots.

Whole plot dimensions: 3.0 x 19.0.

Treatments:

SEED TRT	Seed treatment:
-	None
BF	Fuberidazole with triadimenol (Baytan Flowable)
A1	Fungicide A, rate 1
A2	Fungicide A, rate 2
B1	Fungicide B, rate 1
B2	Fungicide B, rate 2

NOTE: Fungicides A and B are under commercial development, composition undisclosed.

Experimental diary:

14-Sep-95 : B : Ploughed.
20-Oct-95 : B : Rotary harrowed.
23-Oct-95 : B : Brigadier, drilled at 375 seeds per m^2.
20-Nov-95 : B : Panther at 2.0 l in 200 l.
16-Apr-96 : B : 34.5% N at 348 kg.
30-Apr-96 : B : Halo at 1.5 l in 200 l.
06-Jun-96 : B : Silvacur at 1.0 l in 300 l.
20-Aug-96 : B : Combine harvested.

Previous crops: W. rye 1994, w. wheat 1995.

NOTE: Samples were taken in April to assess take-all and plant growth and in June to assess take-all and eyespot.

https://doi.org/10.23637/ERADOC-1-51

96/W/CS/404

GRAIN TONNES/HECTARE

***** Tables of means *****

SEED TRT	
-	7.04
BF	6.37
A1	7.24
A2	6.87
B1	7.16
B2	7.35
Mean	7.01

*** Standard errors of differences of means ***

SEED TRT
0.417

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	25	0.722	10.3

GRAIN MEAN DM% 88.4

PLOT AREA HARVESTED 0.00415

https://doi.org/10.23637/ERADOC-1-51

96/R/CS/408

MISCANTHUS SINENSIS GIGANTEUS STUDY

Object: To quantify the biomass yield potential of *Miscanthus sinensis* Giganteus - Road Piece West.

Sponsor: D.G. Christian.

The fourth year, grass.

For previous years see 94-5/R/CS/408.

Design: 3 randomised blocks of 3 plots.

Whole plot dimensions: 10.0 x 10.0.

Treatments:

N	Nitrogen fertilizer cumulative to previous dressings, kg N:
-	None
N1	60
N2	120

Experimental diary:

```
23-May-96 : B : Muriate of potash at 233 kg.
          : T : N N1, N2: 34.5% N applied.
05-Jun-96 : B : Duplosan New System CMPP at 2.5 l with Oxytril CM at
                0.9 l in 200 l.
06-Mar-97 : B : Hand harvested.
```

NOTE: Stems were sampled periodically to assess dry matter and nutrient content.

DRY MATTER TONNES/HECTARE

***** Tables of means *****

N	-	N1	N2	Mean
	13.73	11.52	12.35	12.53

*** Standard errors of differences of means ***

N
1.146

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	4	1.404	11.2

MEAN DM% 44.9 PLOT AREA HARVESTED 0.00423

https://doi.org/10.23637/ERADOC-1-51

96/R/CS/411

PANICUM STUDY

Object: To quantify the biomass yield potential of varieties of *Panicum* species - Road Piece West.

Sponsor: D.G. Christian.

The fourth year, grass.

For previous year see 94-5/R/CS/411

Design: 3 blocks of 7 x 2 plots.

Whole plot dimensions: 5.0 x 2.0.

Treatments:

1. **VARIETY**

CAVIN R	Cave in Rock
KANLOW	Kanlow
PATHFIND	Pathfinder
SUNBURST	Sunburst
FOREST B	Forest Burg
NEBR 28	NEBR 28
DAKOTAH	Dakotah

2. **N** Nitrogen fertilizer, kg N:

-	None
N1	60

Experimental diary:

04-Apr-96 : **T** : **VARIETY** KANLOW: Stefes IPU at 4.0 l in 220 l.
23-May-96 : **T** : **N** N1: 34.5% N at 174 kg.
05-Jun-96 : B : Duplosan New System CMPP at 2.5 l with Oxytril CM at 0.9 l in 200 l.
27-Nov-96 : **T** : **VARIETY** FOREST B, DAKOTAH: Hand harvested
30-Jan-97 : **T** : Hand harvested remaining varieties.

NOTE: Plants were sampled after flowering to assess stem numbers and dry matter.

https://doi.org/10.23637/ERADOC-1-51

96/R/CS/411

DRY MATTER TONNES/HECTARE

***** Tables of means *****

	N	-	N1	Mean
VARIETY				
CAVIN R		10.88	10.11	10.50
KANLOW		12.48	10.78	11.63
PATHFIND		9.91	9.01	9.46
SUNBURST		7.36	8.60	7.98
FOREST B		11.72	9.95	10.84
NEBR 28		10.56	9.27	9.92
DAKOTAH		5.40	5.37	5.38
Mean		9.76	9.01	9.39

*** Standard errors of differences of means ***

VARIETY	N	VARIETY N
1.014	0.542	1.434

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	26	1.757	18.7

MEAN DM% 67.2

PLOT AREA HARVESTED 0.00011

https://doi.org/10.23637/ERADOC-1-51

96/R/CS/420

SET-ASIDE, CULTIVATION AND CROPS

Object: To assess the levels of disease and yield of w. wheat after w. wheat and w. rape following a range of cultivations and herbicide applications to destroy natural regeneration set-aside - Meadow.

Sponsors: E.T.G. Bacon, D.P. Yeoman, M.V. Hewitt, J.F. Jenkyn, R.J. Gutteridge.

The third year, w. wheat.

For previous year see 95/R/CS/420

Design: 4 randomised blocks of 5 x 2 plots split into 2 sub-plots.

Whole plot dimensions: 12.0 x 26.0.
Sub-plot dimensions: 10.0 x 12.0.

Treatments:

Whole plots

1. **SETDESTR**		Method and time of destruction of set-aside in 1994:
	(PG)	Ploughed in May, glyphosate pre-drilling
	(PC)	Ploughed in May, cultivated in June and July
	(MP)	Minimally cultivated in May, ploughed in August
	(HP)	Herbicide in May, ploughed in August
	(-P)	Ploughed in August

Sub-plots

2. **CROP**		Crop in 1995:
	(R)	Winter rape
	(W)	Winter wheat
3. **NITROGEN**		Fertilizer nitrogen in 1995 (kg N):
	(-)	None
	(N)	160

Experimental diary:

13-Sep-95 : B : Ploughed and furrow pressed.
30-Sep-95 : B : Rotary harrowed, Genesis, dressed Sibutol, drilled at 380 seeds per m^2.
11-Mar-96 : B : 34.5% N at 116 kg.
11-Apr-96 : B : 34.5% N at 463 kg.
30-Apr-96 : B : Starane 2 at 1.0 l with Barclay Holdup at 2.3 l in 200 l.
13-Jun-96 : B : Alto 100 SL at 0.6 l with Mallard 750 EC at 0.4 l in 300 l.

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96/R/CS/420

Experimental diary:
09-Jul-96 : B : Wild oats pulled by hand.
06-Aug-96 : B : Combine harvested.

NOTE: Samples were taken in July to assess root and stem base diseases.

GRAIN TONNES/HECTARE

***** Tables of means *****

CROP SETDESTR	(R)	(W)	Mean
(PG)	8.69	8.76	8.72
(PC)	8.71	8.53	8.62
(MP)	8.58	8.30	8.44
(HP)	8.74	8.67	8.70
(-P)	9.04	8.03	8.54
Mean	8.75	8.46	8.60

NITROGEN SETDESTR	(-)	(N)	Mean
(PG)	8.92	8.52	8.72
(PC)	8.63	8.61	8.62
(MP)	8.49	8.40	8.44
(HP)	8.98	8.43	8.70
(-P)	8.28	8.80	8.54
Mean	8.66	8.55	8.60

NITROGEN CROP	(-)	(N)	Mean
(R)	8.86	8.64	8.75
(W)	8.45	8.46	8.46
Mean	8.66	8.55	8.60

	CROP	(R)		(W)	
SETDESTR	NITROGEN	(-)	(N)	(-)	(N)
(PG)		8.66	8.71	9.18	8.33
(PC)		8.77	8.65	8.49	8.57
(MP)		8.79	8.38	8.19	8.41
(HP)		9.02	8.46	8.94	8.40
(-P)		9.08	9.00	7.47	8.59

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GRAIN TONNES/HECTARE

*** Standard errors of differences of means ***

SETDESTR	CROP	NITROGEN	SETDESTR CROP
0.250	0.158	0.171	0.354

SETDESTR NITROGEN	CROP NITROGEN	SETDESTR CROP NITROGEN
0.368	0.233	0.521

Except when comparing means with the same level(s) of

SETDESTR	0.383		
CROP		0.242	
SETDESTR.CROP			0.541

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	27	0.500	5.8
BLOCK.WP.SP	30	0.765	8.9

GRAIN MEAN DM% 88.9

SUB-PLOT AREA HARVESTED 0.00230

https://doi.org/10.23637/ERADOC-1-51

96/R/CS/429

WINTER RYE AS AN ENERGY CROP

Object: To measure the effects of different levels of nitrogen fertilizer on the biomass yield of w. rye - Road Piece West.

Sponsor: D.G. Christian.

The third year, w. rye.

For previous years see 94-95/R/CS/429.

Design: 3 randomised blocks of 5 plots.

Plot dimensions: 3.0 x 15.0.

Treatments:

NITROGEN	Nitrogen fertilizer (kg N), cumulative to previous dressings:
-	None
N1	30
N2	60
N3	90
N4	120

Experimental diary:

21-Aug-95 : B : Straw baled.
08-Sep-95 : B : Ploughed.
02-Oct-95 : B : Heavy spring-tine cultivated. Rotary harrowed, Amando, undressed, drilled at 350 seeds per m^2.
30-Apr-96 : **T** : **NITROGEN** N1, N2, N3, N4: 34.5% N at 87, 174, 260 and 347 kg respectively.
21-Aug-96 : B : Combine harvested.

NOTE: Plant populations were assessed and sampled for nitrogen content in spring. Stem counts were made at anthesis and before harvest, dry matter and nutrient content was measured at anthesis. Straw weights were taken at harvest.

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96/R/CS/429

GRAIN TONNES/HECTARE

***** Tables of means *****

NITROGEN	
-	6.90
N1	6.99
N2	7.40
N3	7.51
N4	7.37
Mean	7.24

*** Standard errors of differences of means ***

NITROGEN
0.694

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	8	0.851	11.8

GRAIN MEAN DM% 87.0

PLOT AREA HARVESTED 0.00230

https://doi.org/10.23637/ERADOC-1-51

96/W/CS/435

RYEGRASS, WHEAT VOLUNTEERS AND DISEASE

Object: To study how different populations of cereal volunteers and ryegrass sown as a cover crop affect the survival of cereal diseases - Woburn, School Field.

Sponsors: J.F. Jenkyn, R.J. Gutteridge.

The second year, w. wheat.

For previous year see 95/W/CS/435

Design: 4 randomised blocks of 10 x 2 plots.

Whole plot dimensions: 6.0 x 10.0.

Treatments:

1. **CROP**		Crop, seed rate and soil inoculation in 1995:
	(R)	Ryegrass at 30 kg
	(RW)	Ryegrass at 30 kg + wheat at 50 seeds per m^2
	(RI)	Ryegrass at 30 kg + soil inoculated with *Phialophora graminicola*
	(RWI)	Ryegrass at 30 kg + wheat at 50 seeds per m^2 + soil inoculated with *P. graminicola*
	(M)	Mustard at 300 seeds per m^2
	(MW1)	Mustard at 100 seeds per m^2 + wheat at 4 seeds per m^2
	(MW2)	Mustard at 100 seeds per m^2 + wheat at 9 seeds per m^2
	(MW3)	Mustard at 100 seeds per m^2 + wheat at 50 seeds per m^2
	(MW4)	Mustard at 100 seeds per m^2 + wheat at 200 seeds per m^2
	(MW5)	Mustard at 30 seeds per m^2 + wheat at 400 seeds per m^2
2. **CULT**		Time of ploughing in 1995:
	(PE)	Early (12 May)
	(PL)	Late (17 Aug)

Experimental diary:

03-Oct-95 : B : Disced.
10-Oct-95 : B : Rotary harrowed, Hereward, dressed Fonofos Seed Treatment and Beret 050FS, drilled at 375 seeds per m^2.
20-Nov-95 : B : Panther at 2.0 l in 200 l.
08-Mar-96 : B : 34.5% N at 116 kg.
02-Apr-96 : B : Vytel Manganese at 3.0 l in 300 l.
18-Apr-96 : B : 34.5% N at 348 kg.
30-Apr-96 : B : Starane 2 at 1.0 l with Halo at 1.5 l in 200 l.
06-Jun-96 : B : Halo at 2.0 l with Mallard 750 EC at 0.5 l in 300 l.
16-Aug-96 : B : Combine harvested.

Previous crops: W. and s. rape 1993, w.wheat 1994.

NOTE: Plants were sampled to assess root and stem base diseases in April and July.

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96/W/CS/435

GRAIN TONNES/HECTARE

***** Tables of means *****

CULT CROP	(PE)	(PL)	Mean
(R)	10.16	9.91	10.03
(RW)	9.89	10.63	10.26
(RI)	10.09	10.25	10.17
(RWI)	10.61	9.01	9.81
(M)	9.16	9.72	9.44
(MW1)	10.04	10.07	10.05
(MW2)	10.01	10.04	10.02
(MW3)	9.56	9.85	9.70
(MW4)	9.77	9.70	9.74
(MW5)	9.54	9.46	9.50
Mean	9.88	9.86	9.87

*** Standard errors of differences of means ***

CROP	CULT	CROP CULT
0.482	0.215	0.681

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	57	0.963	9.8

GRAIN MEAN DM% 87.9

PLOT AREA HARVESTED 0.00437

https://doi.org/10.23637/ERADOC-1-51

96/R/CS/437

SET-ASIDE, CULTIVATION AND CROPS

Object: To measure the establishment, growth and yield of w. wheat and w. rape following a range of cultivations and herbicide applications after natural regeneration set-aside. To assess levels of soil nitrogen and weeds in the two crops and diseases in the wheat - Bylands.

Sponsors: E.T.G. Bacon, D.P. Yeoman, M.V. Hewitt, J.F. Jenkyn and R.J. Gutteridge.

The second year, w. wheat and w. rape.

Design: 3 randomised blocks of 5 x 2 plots split into 2 sub-plots.

Whole plot dimensions: 12.0 x 26.0.
Sub-plot dimensions: 10.0 x 12.0.

Treatments:

Whole plots

1. **SETDESTR** Method and time of destruction of set-aside in 1995:

(PG)	Ploughed in May, glyphosate pre-drilling
(PC)	Ploughed in May, cultivated in June and July
(MP)	Minimally cultivated in May, ploughed in August
(HP)	Herbicide in May, ploughed in August
(-P)	Ploughed in August

Sub-plots

2. **CROP** Crop in 1996:

R	Winter rape
W	Winter wheat

3. **NITROGEN** Fertilizer nitrogen in 1996 (kg N):

-	None
N	160

Experimental diary:

15-May-95 : **T** : **SETDESTR** (MP), (-P): Topped.
16-May-95 : **T** : **SETDESTR** (PG), (PC), (HP): Roundup Biactive at 4.0 l in 200 l.
25-May-95 : **T** : **SETDESTR** (PG), (PC): Ploughed.
26-May-95 : **T** : **SETDESTR** (MP): Heavy spring-tine cultivated to 10 cm.
03-Jul-95 : **T** : **SETDESTR** (PC): Heavy spring-tine cultivated to 10 cm.
03-Jul-95 : **T** : **SETDESTR** (MP): Topped, heavy spring-tine cultivated twice.
31-Jul-95 : **T** : **SETDESTR** (MP), (HP), (-P): Roundup Biactive at 4.0 l in 200 l.
16-Aug-95 : B : PK as (0:20:32) at 1407 kg.
22-Aug-95 : **T** : **SETDESTR** (MP), (HP), (-P): Ploughed.

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Experimental diary:

06-Sep-95 : **T** : **CROP** R: Rotary harrowed, Apex, dressed Lindex-Plus FS, drilled at 120 seeds per m^2.
26-Sep-95 : **T** : **CROP** W: Rotary harrowed, Genesis, dressed Sibutol, drilled at 380 seeds per m^2.
27-Sep-95 : B : Draza at 5.5 kg.
05-Oct-95 : **T** : **CROP** R: Butisan S at 1.5 l with Cyperkill 10 at 250 ml and Agral at 200 ml in 200 l.
20-Nov-95 : **T** : **CROP** W: Panther at 2.0 l in 200 l.
02-Feb-96 : **T** : **CROP** R: Benazalox at 2.3 kg in 200 l.
: **T** : **CROP** W: Birlane 24 at 2.8 l in 200 l.
28-Feb-96 : **T** : **CROP** R, **NITROGEN** N: 34.5% N at 174 kg.
08-Mar-96 : **T** : **CROP** W, **NITROGEN** N: 34.5% N at 116 kg.
09-Apr-96 : **T** : **CROP** R, **NITROGEN** N: 34.5% N at 290 kg.
11-Apr-96 : **T** : **CROP** W, **NITROGEN** N: 34.5% N at 348 kg.
: **T** : **CROP** R: Folicur at 0.5 l in 300 l.
25-Apr-96 : **T** : **CROP** R: Decis at 0.5 l in 200 l.
30-Apr-96 : **T** : **CROP** W: Starane 2 at 1.0 l with Barclay Holdup at 2.3 l in 200 l.
13-Jun-96 : **T** : **CROP** W: Alto 100 SL at 0.6 l with Mallard 750 EC at 0.4 l in 300 l.
19-Jul-96 : **T** : **CROP** R: Standon Diquat at 3.0 l with Vassgro Spreader at 390 ml in 390 l.
31-Jul-96 : **T** : **CROP** R: Combine harvested.
06-Aug-96 : **T** : **CROP** W: Combine harvested.

NOTE: Soil and plant samples were taken in November and March for nitrogen content. Weed counts were made in November and March. Wheat was sampled in April and July to assess root and stem base diseases. Grain quality was assessed at harvest.

https://doi.org/10.23637/ERADOC-1-51

96/R/CS/437

WINTER RAPE

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

***** Tables of means *****

NITROGEN	-	N	Mean
SETDESTR			
(PG)	1.38	2.29	1.84
(PC)	2.77	3.42	3.10
(MP)	2.41	3.75	3.08
(HP)	1.51	2.88	2.20
(-P)	1.43	2.52	1.97
Mean	1.90	2.97	2.44

*** Standard errors of differences of means ***

	SETDESTR	NITROGEN	SETDESTR NITROGEN
	0.477	0.179	0.555
Except when comparing means with the same level(s) of SETDESTR			0.401

GRAIN MEAN DM% 92.3 SUB-PLOT AREA HARVESTED 0.00230

WINTER WHEAT

GRAIN TONNES/HECTARE

***** Tables of means *****

NITROGEN	-	N	Mean
SETDESTR			
(PG)	5.59	8.29	6.94
(PC)	4.53	8.08	6.31
(MP)	4.36	7.60	5.98
(HP)	5.10	7.50	6.30
(-P)	4.10	7.72	5.91
Mean	4.74	7.84	6.29

*** Standard errors of differences of means ***

	SETDESTR	NITROGEN	SETDESTR NITROGEN
	0.524	0.232	0.640
Except when comparing means with the same level(s) of SETDESTR			0.519

GRAIN MEAN DM% 87.7 SUB-PLOT AREA HARVESTED 0.00230

https://doi.org/10.23637/ERADOC-1-51

96/R/CS/442

PHALARIS LINES

Object: To assess the growth and yield of *Phalaris* lines for biofuel - Road Piece West.

Sponsor: D.G. Christian.

Design: 6 randomised blocks of 15 plots.

Whole plot dimensions: 1.25 x 2.25.

Treatments:

LINES	*Phalaris* lines:
1	A
2	B
3	C
4	D
5	E
6	F
7	G
8	H
9	I
10	J
11	K
12	L
13	M
14	N
15	O

Experimental diary:

23-May-95 : **T** : **LINES** 1-15: Transplanted.
29-Apr-96 : B : Muriate of potash at 180 kg, triple superphosphate at 49 kg and 34.5% N at 348 kg.
13-May-96 : B : Duplosan New System CMPP at 2.5 l with Oxytril CM at 1.4 l in 200 l.
07-Jan-97 : **T** : Hand harvested three blocks.
05-Feb-97 : **T** : Hand harvested remaining three blocks.

NOTES: (1) Visual assessments were made of ground cover, stem height, leaf colour, date of flowering and incidence of diseases during the season.
(2) In the early harvested blocks, one plot of Line B was exchanged with one plot of Line B in the late harvested blocks.
(3) The yields presented are from the harvest on 07-Jan-97.

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96/R/CS/442

DRY MATTER TONNES/HECTARE

***** Tables of means *****

LINES	
1	10.72
2	9.65
3	1.06
4	1.28
5	9.49
6	6.39
7	10.79
8	10.14
9	8.29
10	9.71
11	9.90
12	8.51
13	9.21
14	10.08
15	6.58
Mean	8.12

*** Standard errors of differences of means ***

LINES
1.254

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	28	1.535	18.9

MEAN DM% 78.6

PLOT AREA HARVESTED 0.00020

https://doi.org/10.23637/ERADOC-1-51

96/W/CS/446

RYEGRASS, WHEAT VOLUNTEERS AND DISEASES

Object: To study how different populations of cereal volunteers and ryegrass sown as a cover crop affect the survival of cereal diseases - Woburn, White Horse.

Sponsors: J.F. Jenkyn, R.J. Gutteridge.

The first year, ryegrass, wheat and mustard.

Design: 4 randomised blocks of 10 x 2 plots.

Whole plot dimensions: 6.0 x 10.0.

Treatments:

1. **CROP**		Crop, seed rate and soil inoculation:
	R	Ryegrass at 30 kg
	RW	Ryegrass at 30 kg + wheat at 50 seeds per m^2
	RI	Ryegrass at 30 kg + soil inoculated with *Phialophora graminicola*
	RWI	Ryegrass at 30 kg + wheat at 50 seeds per m^2 + soil inoculated with *P. graminicola*
	M	Mustard at 300 seeds per m^2
	MW1	Mustard at 100 seeds per m^2 + wheat at 4 seeds per m^2
	MW2	Mustard at 100 seeds per m^2 + wheat at 9 seeds per m^2
	MW3	Mustard at 100 seeds per m^2 + wheat at 50 seeds per m^2
	MW4	Mustard at 100 seeds per m^2 + wheat at 200 seeds per m^2
	MW5	Mustard at 30 seeds per m^2 + wheat at 400 seeds per m^2
2. **CULT**		Time of ploughing:
	PE	Early (17 May)
	PL	Late (14 Aug)

Experimental diary:

22-Aug-95 : B : Disced.
05-Sep-95 : B : Ploughed.
20-Sep-95 : B : Rotary harrowed.
: **T** : Seeds sown and soil inoculated.
17-May-96 : **T** : **CULT** PE: Ploughed.
27-Jun-96 : **T** : **CULT** PL: Topped.
05-Jul-96 : **T** : **CULT** PE: Spiked rotary cultivated.
14-Aug-96 : **T** : **CULT** PL: Topped, ploughed.
: **T** : **CULT** PE: Topped
15-Aug-96 : B : Roundup at 2.0 l in 300 l.

Previous crops: S. beans 1994, w. wheat 1995.

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96/W/CS/446

NOTES: (1) Mustard variety was Tilney, wheat, Soissons and ryegrass, Borvi, all undressed.
(2) No yields were taken in 1996.
(3) soil samples were taken in May and July and bioassayed to determine the presence of *Phialophora graminicola* and *Gaeumannomyces graminis* var *tritici*. Wheat was sampled in April and July to assess root and stem base diseases.

https://doi.org/10.23637/ERADOC-1-51

96/R/CS/447

TAKE-ALL SEED TREATMENT

Object: To test fungicidal seed treatments for the control of take-all (*Gaeumannomyces graminis*) - Pennells Piece.

Sponsors: G.L. Bateman, J.F. Jenkyn, R.J. Gutteridge.

Design: 4 blocks of 6 plots.

Whole plot dimensions: 3.0 x 10.0.

Treatments:

SEED TRT	Seed treatment:
-	None
BF	Fuberidazole with triadimenol (Baytan Flowable)
A1	Fungicide A, Rate 1
A2	Fungicide A, Rate 2
B1	Fungicide B, Rate 1
B2	Fungicide B, Rate 2

NOTE: Fungicides A and B are under commercial development, composition undisclosed.

Experimental diary:

17-Aug-95 : B : Straw baled.
03-Oct-95 : B : Ploughed and furrow pressed.
19-Oct-95 : B : Rotary harrowed, Brigadier drilled at 380 seeds per m^2.
16-Apr-96 : B : 34.5% N at 347 kg.
25-Apr-96 : B : Ally at 30 g with Cheetah Super at 1.25 l in 200 l.
06-Jun-96 : B : Monicle at 1.0 l in 320 l.
08-Aug-96 : B : Roundup at 4.0 l in 300 l.
21-Aug-96 : B : Combine harvested.

Previous crops: S. wheat 1994 and 1995.

NOTE: Crop vigour was assessed and plants counted in November. Samples were taken in April and July for assessment of take-all.

https://doi.org/10.23637/ERADOC-1-51

96/R/CS/447

GRAIN TONNES/HECTARE

***** Tables of means *****

SEED	TRT
-	9.96
BF	9.26
A1	10.21
A2	9.70
B1	9.76
B2	9.68
Mean	9.76

*** Standard errors of differences of means ***

SEED	TRT
0.277	

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	15	0.391	4.0

GRAIN MEAN DM% 85.4

PLOT AREA HARVESTED 0.00227

https://doi.org/10.23637/ERADOC-1-51

96/R/CS/456

TAKE-ALL SEED TREATMENT

Object: To test fungicidal seed treatments for the control of take-all (*Gaeumannomyces graminis*) - Long Hoos V 1 + O&E N.

Sponsors: G.L. Bateman, J.F. Jenkyn, R.J. Gutteridge.

The first year, w. wheat.

Design: 4 randomised blocks of 6 plots.

Plot dimensions: 3.0 x 10.0.

Treatments:

SEED TRT	Seed treatment:
-	None
BF	Fuberidazole with triadimenol (Baytan Flowable)
A1	Fungicide A, rate 1
A2	Fungicide A, rate 2
B1	Fungicide B, rate 1
B2	Fungicide B, rate 2

NOTE: Fungicides A and B are under commercial development, composition undisclosed.

Experimental diary:

12-Aug-95 : B : Straw baled and removed.
09-Oct-95 : B : Topped.
18-Oct-95 : B : Gramoxone 100 at 3.0 l in 200 l.
19-Oct-95 : B : Heavy spring-tine cultivated, cultivated by rotary grubber. Rotary harrowed, Brigadier, dressed as treatments, drilled at 380 seeds per m^2.
16-Apr-96 : B : 34.5% N at 347 kg.
13-Jun-96 : B : Alto 100 SL at 0.6 l in 300 l.
: B : Mallard 750 EC at 0.4 l in 300 l.
09-Jul-96 : B : Wild oats pulled by hand.
21-Aug-96 : B : Combine harvested.

Previous crops: S. barley 1994, s. wheat after failed lupins 1995.

NOTE: Emergence was assessed and plant counts were made in November. Samples were taken in April to assess take-all on plant growth and in July to assess take-all and eyespot.

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GRAIN TONNES/HECTARE

***** Tables of means *****

SEED TRT	
-	9.99
BF	9.93
A1	10.03
A2	9.92
B1	10.24
B2	10.57
Mean	10.11

*** Standard errors of differences of means ***

SEED TRT
0.324

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	15	0.458	4.5

GRAIN MEAN DM% 84.9

PLOT AREA HARVESTED 0.00227

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