

FIELD EXPERIMENTS 1969

Serial No. B.1.
Stat. File 20 IV
Field Penns Land

CROP: Spring wheat

EXPERIMENT: Take-All and Cultivations

TREATMENTS AND LAYOUT:

6 Randomised blocks

All combinations of

- 1. Cultivations: Ploughed early
Ploughed late
Rotavated early
- 2. Nitrogen: 40, 80 units N /acre

Plot Size: Treatment: 50 yards x 12 feet

Harvest: 118'8" x 78"

Manuring with dates of :
Nitrogen Top dressing: 13 May

Date of ~~Variety~~:

Initial Take-All Assessment: 12 September
 Early Ploughing: 24 September
 Rotavating: 22nd October
 Late Ploughing: 19 November
 Drilling: 25 March Rothwell Sprite, 224 lbs/acre
 Take-All Assessment: 8-9 July
 Combining: 5 September

Remark:
Previous crops: 1968: Barley
1967: Barley

It was intended to sow winter wheat, but due to the very wet winter of 1968, drilling was delayed and spring wheat had to be used instead.

Spring Wheat

1969

Take-All and Cultivations

Yield grain at 15% moisture (cwts/acre)

Cultivations	Nitrogen (units/acre)		Means ± 0.64
	40	80	
Ploughed early	21.5	25.4	23.4
Ploughed late	20.0	26.8	23.4
Rotovated	14.8	20.1	17.5
Means	18.8	24.1	
	± 0.52		

S.E. per plot = 2.23 or 10.38%

Winter wheat

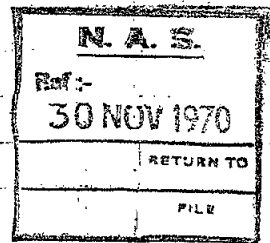
1969

Cultivations and Take-All

Grain nitrogen %

	Units N/Acre		
	40	80	
P.E.	1.99	2.19	2.09
^L P.E.	2.02	2.23	2.13
R.E.	2.02	2.21	2.12
	2.01	2.21	

Marlborough Agricultural Station 1969



Winter wheat take-all and cultivations trial

TAKE-ALL SCORES

Sampled 8-9 July 1969, growth stage 10.5.2 - 10.5.3
20 samples per plot at approx. 2 yard intervals down each plot, each sample consisting of approx. 1 foot of drill row
Samples dried, and later washed and separated into individual tillers for examination of roots.

Take-all incidence = per cent tillers with take-all on roots

Take-all severity = per cent roots infected on infected tillers

Factors

Cultivation (C) C1 = ploughed early
 C2 = ploughed late
 C3 = rotavated early

Nitrogen (N) N1 = 40 units/acre
 N2 = 80 units/acre

Blocks (R)

TAKE-ALL INCIDENCE

		R1	R2	R3	R4	R5	R6	MEAN	
C1	N1	87.59	74.19	63.25	70.19	81.10	83.60	76.65	73.19
	N2	64.67	74.84	73.17	64.47	66.58	74.65	69.73	
C2	N1	73.72	80.70	93.43	67.98	68.63	80.84	77.55	73.43
	N2	73.09	85.74	68.27	47.94	66.65	74.19	69.31	
C3	N1	92.87	87.33	71.07	87.22	77.50	83.77	83.29	83.09
	N2	75.19	84.16	88.05	83.51	85.82	80.60	82.89	
MEAN		77.86	81.16	76.20	70.22	74.38	79.60	76.57	
									N1 79.17
									N2 73.98

Analysis of Variance

	d.f.	S.S.	M.S.	F
Blocks	5	463.3353	92.6670	1.349
C	2	765.4024	382.7012	5.571 **
N	1	242.2692	242.2692	3.527
CN	2	105.5486	52.7743	0.768
Err	25	1717.1330	68.6853	
Total	35	3293.6883		

Coefficient of Variation 10.8%

LSD between C means : * 6.97
 ** 9.43
 *** 12.60

TRACE-ALL SEVERITY

		R1	R2	R3	R4	R5	R6	MEAN		
C1	N1	63.37	50.67	41.61	48.18	58.75	57.81	53.40	50.12	
	N2	41.69	47.75	45.08	45.12	47.96	53.39	46.83		
C2	N1	59.42	52.07	73.50	48.06	48.75	52.47	55.71	51.37	
	N2	48.09	56.84	42.94	38.34	45.30	50.67	47.03		
C3	N1	68.33	67.02	60.06	59.11	61.16	64.80	63.41	61.10	
	N2	50.33	61.48	56.74	69.66	54.93	59.55	58.78		
MEAN		58.20	55.97	53.32	51.41	52.81	56.45	54.19		
									N1	57.51
									N2	55.82

Analysis of Variance

	df.	S.S.	m.s.	F	
Blocks	5	118.117	23.623	0.477	
C	2	867.201	433.601	8.756	**
N	1	395.214	395.214	7.981	*
CN	2	24.624	12.310	0.249	
Error	25	1238.002	49.520		
Total	35	2643.155			

Coefficient of Variation 13.0%

LSD between C means :

- * 5.92
- ** 8.01
- *** 10.70