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Yields of the Field Experiments 1973

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73/R&W/CS/88 - Fertiliser & Fym - Wheat

Rothamsted Research

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73/R/CS/88 and 73/W/CS/88

FERTILISER AND FYM

Object: To study the residual effects of a range of rates of NPK fertiliser and FYM applied to potatoes on the yield of winter wheat - Rothamsted, Great Knott I (R) and Woburn, Warren Field I (W).

Sponsor: F.V. Widdowson.

The second year, winter wheat.

For previous year see 72/RW/CS/88(t).

Design: 3 randomised blocks of 18 plots.

Whole plot dimensions: 4.27 x 16.2. Area harvested: 0.00217.

Treatments: All combinations of:-

Whole plots: 1. Farmyard manure to potatoes in 1972 (tonnes): FYM

	(R)	(W)		(R)	(W)
	None	None		0	0
	53	73		53	73

2. N and PK fertilisers to potatoes in 1972 to give rates of nitrogen* (kg N):

	188	188
	377	377
	565	565

NRESID

3. Times of applying PK fertilisers to potatoes:

	All in autumn 1971	Autumn
	All in spring 1972	Spring
	Half in autumn, half in spring	Aut/Spng

TIME

Sub plots: 4. Nitrogen fertiliser to wheat in 1973 (kg N):

	None	0
	63	63

N

* the ratio of N:P2O5:K2O was 1:1.5:1.5 for all NRESID treatments.

Basal applications:

Great Knott I (R): Weedkiller: Dicamba, mecoprop and MCPA ('Tetralix Plus' at 7 l in 220 l).

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Warren Field I (W): Weedkiller: Ioxynil at 0.63 kg plus mecoprop at 1.9 kg in 280 l.

Seed: Great Knott I (R): Cappelle, sown at 200 kg.
Warren Field I (W): Cappelle, sown at 190 kg.

Cultivations, etc.:-

Great Knott I (R): Deep-tine cultivated twice: 23 Oct, 1972. Power harrowed: 25 Oct. Seed sown: 26 Oct. N applied: 13 Apr, 1973. Weedkiller applied: 26 Apr. Combine harvested: 22 Aug.
Warren Field I (W): Deep-tine cultivated: 19 Oct, 1972. Seed sown 24 Oct. N applied: 19 Apr, 1973. Weedkiller applied: 26 Apr. Combine harvested: 22 Aug.

Standard errors per plot. Grain, tonnes/hectare.

Great Knott I (R): Whole plot: 0.429 or 7.0% (34 d.f.)
Sub plot: 0.688 or 11.2% (36 d.f.)
Warren Field I (W): Whole plot: 0.385 or 8.1% (34 d.f.)
Sub plot: 0.471 or 9.9% (36 d.f.)

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TABLES OF MEANS

GREAT KNOTT I (R)

GRAIN: TONNES/HECTARE

	NRESID			TIME			N		Mean
	188	377	565	Autumn	Spring	Aut/Spng	0	63	
FYM									
0	7.26	5.95	5.62	6.16	6.12	6.55	6.44	6.11	6.27
53	6.69	5.59	5.66	5.79	6.07	6.07	6.17	5.78	5.98
			NRESID						
			188	6.89	6.82	7.21	7.21	6.74	6.97
			377	5.53	5.84	5.93	5.96	5.58	5.77
			565	5.50	5.62	5.79	5.75	5.52	5.64
						TIME			
						Autumn	6.13	5.82	5.97
						Spring	6.35	5.84	6.09
						Aut/Spng	6.44	6.18	6.31
Mean							6.31	5.95	6.13

STANDARD ERRORS OF DIFFERENCES

FYM	NRESID	TIME	N	FYM NRESID	FYM TIME	NRESID TIME	FYM N	NRESID N	TIME N
0.117	0.143	0.143	0.132	0.202	0.202	0.248	0.177	0.216	0.216
Except when comparing means with same level of									
FYM							0.187		
NRESID								0.229	
TIME									0.229

Mean D.M. % 83.6

73/R/CS/88 and 73/W/CS/88

GREAT KNOTT I (R)

STRAW: TONNES/HECTARE

	NRESID			TIME			N		Mean
	188	377	565	Autumn	Spring	Aut/Spng	0	63	
FYM									
0	7.11	9.28	9.22	8.56	8.36	8.69	8.34	8.73	8.54
53	8.73	9.38	9.39	9.30	9.01	9.18	9.07	9.26	9.16
			NRESID						
			188	8.18	7.45	8.11	7.35	8.48	7.92
			377	9.21	9.28	9.51	9.28	9.38	9.33
			565	9.40	9.32	9.19	9.49	9.12	9.30
						TIME			
						Autumn	8.74	9.12	8.93
						Spring	8.56	8.81	8.69
						Aut/Spng	8.82	9.05	8.93
Mean							8.71	8.99	8.85

Mean D.M. % 84.0

T3/R/CS/88 and T3/W/CS/88

WARREN FIELD I (W)

GRAIN: TONNES/HECTARE

	NRESID			TIME			N		Mean
	188	377	565	Autumn	Spring	Aut/Spng	0	63	
FYM									
0	5.35	5.25	3.71	4.75	5.00	4.55	4.84	4.70	4.77
T3	5.68	4.84	3.87	4.56	4.82	5.01	5.02	4.57	4.80
			NRESID						
			188	5.66	5.43	5.46	4.94	6.09	5.52
			377	4.60	5.40	5.13	5.58	4.50	5.04
			565	3.71	3.92	3.74	4.26	3.32	3.79
						TIME			
						Autumn	4.83	4.48	4.66
						Spring	5.03	4.80	4.91
						Aut/Spng	4.92	4.64	4.78
Mean							4.93	4.64	4.78

STANDARD ERRORS OF DIFFERENCES

FYM	NRESID	TIME	N	FYM NRESID	FYM TIME	NRESID TIME	FYM N	NRESID N	TIME N
0.105	0.128	0.128	0.091	0.182	0.182	0.222	0.139	0.170	0.170
Except when comparing means with same level of									
FYM							0.128		
NRESID								0.157	
TIME									0.157

Mean D.M. % 83.2

73/R/CS/88 and 73/W/CS/88

WARREN FIELD I (W)

STRAW: TONNES/HECTARE

	NRESID			TIME			N		Mean
	188	377	565	Autumn	Spring	Aut/Song	0	63	
FYM									
0	5.68	6.71	6.69	6.35	6.62	6.31	6.12	6.73	6.43
73	6.09	6.93	6.48	6.54	6.43	6.54	6.57	6.43	6.50
			NRESID						
			188	6.38	5.76	5.81	5.04	6.93	5.98
			377	6.54	6.74	7.18	7.05	6.59	6.82
			565	6.41	7.08	6.28	6.95	6.22	6.59
						TIME			
						Autumn	6.25	6.64	6.44
						Spring	6.38	6.67	6.52
						Aut/Song	6.41	6.44	6.42
Mean							6.35	6.58	6.46

Mean D.M. % 88.4