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Yields of the Field Experiments 1974

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74/R/CS/110 and 74/W/CS/110 Fertiliser and Fym - Wheat

74/R/CS/110 and 74/W/CS/110 Fertiliser and Fym - Wheat, Rothamsted Research (1975) *Yields Of The Field Experiments 1974*, pp 227 - 234 - DOI: <https://doi.org/10.23637/ERADOC-1-119>

74/R/CS/110 and 74/W/CS/110

FERTILISER AND FYM

Object: To study the residual effects of a range of rates of NPK fertiliser, and FYM applied to potatoes on the yields of winter wheat - Rothamsted, Stackyard (R) and Woburn, Great Hill II (W).

Sponsor: F.V. Widdowson.

The second year, winter wheat.

For previous year see 73/R&W/CS/110.

Design: 3 randomised blocks of 18 plots split into 2.

Whole plot dimensions: 4.27 x 16.2. **Sub plot area harvested:** 0.00217.

Treatments: All combinations of:-

Whole plots.	1. Farmyard manure in 1973 (tonnes) to supply 377 kg N:	FYM(73)
		(R) (W)
	None	0 0
	80 Stackyard (R), 63 Great Hill II (W)	80 63
	2. N and PK fertilisers in 1973 to give rates of nitrogen* (kg N):	N(73)
	188	188
	377	377
	565	565
	3. Times of applying PK fertilisers in 1973:	TIME(73)
	All in autumn	Autumn
	All in spring	Spring
	Half in autumn, half in spring	Aut/Sprng
Sub plots.	4. Nitrogen fertiliser to wheat in 1974 (kg N):	N 74
	None	0
	63	63

* The ratio of N:P2O5:K2O was 1:1.5:1.5 for all N(73) treatments.

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Basal applications:-

Stackyard (R): Weedkillers: Chlortoluron ('Dicurane' 80 WP at 4.5 kg in 440 l). MCPA, mecoprop and dicamba ('Banlene Plus' at 4.5 kg in 220 l).

Great Hill II (W): Weedkiller: Ioxynil at 0.63 kg plus mecoprop at 1.9 kg in 280 l.

Seed: Cappelle, dressed with dieldrin, sown at Stackyard (R) 200 kg, Great Hill II (W) 190 kg.

Cultivations, etc.:-

Stackyard (R): Deep-tine cultivated twice, power harrowed, seed sown: 26 Oct, 1973. Chlortoluron applied: 1 Nov. N applied: 16 Apr, 1974. 'Banlene Plus' applied: 30 Apr. Combine harvested: 30 Aug.

Great Hill II (W): Deep-tine cultivated twice: 29 Oct, 1973. Seed sown: 30 Oct. N applied: 18 Apr, 1974. Weedkiller applied: 20 Apr. Combine harvested: 30 Aug.

NOTE: Crop samples were taken for nitrate N analysis.

Standard errors per plot. Grain, tonnes/hectare:

Stackyard (R):	Whole plot:	0.489	or	8.1%	(34 d.f.)
	Sub plot:	0.535	or	8.8%	(36 d.f.)
Great Hill II (W):	Whole plot:	0.260	or	9.6%	(34 d.f.)
	Sub plot:	0.289	or	10.7%	(36 d.f.)

74/R/CS/110 and 74/W/CS/110

TABLES OF MEANS

STACKYARD (R)

GRAIN: TONNES/HECTARE

	N(73)			TIME(73)			N 74		Mean
	188	377	565	Autumn	Spring	Aut/Spng	0	63	
FYM(73)									
0	7.00	6.42	5.50	6.14	6.46	6.32	6.44	6.17	6.31
80	6.70	5.51	5.20	5.99	5.66	5.76	6.20	5.41	5.80
			N(73)						
			188	6.98	6.82	6.75	6.86	6.84	6.85
			377	5.82	6.10	5.97	6.37	5.56	5.96
			565	5.39	5.26	5.40	5.73	4.97	5.35
				TIME(73)					
				Autumn			6.24	5.89	6.06
				Spring			6.31	5.81	6.06
				Aut/Spng			6.42	5.67	6.04
Mean							6.32	5.79	6.06
		TIME(73)		Autumn		Spring		Aut/Spng	
		N 74	0	63	0	63	0	63	
FYM(73)		N(73)							
0		188	6.70	7.43	6.18	7.52	6.48	7.70	
		377	6.65	5.23	7.05	6.68	7.35	5.57	
		565	5.74	5.09	6.10	5.26	5.76	5.06	
80		188	7.46	6.35	7.51	6.07	6.86	5.97	
		377	5.45	5.95	5.71	4.96	6.03	4.95	
		565	5.45	5.27	5.32	4.37	6.02	4.75	

Mean D.M. % 83.8

74/R/CS/110 and 74/W/CS/110
STACKYARD (R)

STANDARD ERRORS OF DIFFERENCES

FYM(73)	N(73)	TIME(73)	N 74	FYM(73) N(73)	FYM(73) TIME(73)	N(73) TIME(73)
0.133	0.163	0.163	0.103	0.230	0.230	0.282
			FYM(73) N 74	N(73) N 74	TIME(73) N 74	FYM(73) N(73) TIME(73) N 74
			0.168	0.206	0.206	0.505
Except when comparing means with same levels of FYM(73) N(73) TIME(73) FYM(73).N(73).TIME(73)			0.146	0.178	0.178	0.437

74/R/CS/110 and 74/W/CS/110

GREAT HILL II (W)

GRAIN: TONNES/HECTARE

	N(73)			TIME(73)			N 74		Mean
	188	377	565	Autumn	Spring	Aut/Spng	0	63	
FYM(73)									
0	2.40	2.69	2.73	2.62	2.59	2.60	1.99	3.22	2.61
63	2.87	2.88	2.65	2.72	2.74	2.94	2.29	3.31	2.80
			N(73)						
			188	2.60	2.57	2.73	2.14	3.13	2.63
			377	2.88	2.64	2.84	2.14	3.43	2.79
			565	2.52	2.80	2.75	2.14	3.24	2.69
						TIME(73)			
						Autumn	2.14	3.19	2.67
						Spring	2.15	3.19	2.67
						Aut/Spng	2.13	3.42	2.77
Mean							2.14	3.26	2.70
FYM(73)	TIME(73)	Autumn	Spring	Aut/Spng					
	N 74	0	63	0	63	0	63		
	N(73)								
0	188	1.95	3.01	1.96	2.57	1.75	3.13		
	377	2.11	3.39	1.96	3.38	1.90	3.43		
	565	2.16	3.09	2.15	3.54	2.00	3.41		
63	188	2.22	3.22	2.44	3.29	2.50	3.53		
	377	2.33	3.70	2.19	3.03	2.38	3.66		
	565	2.10	2.72	2.18	3.32	2.25	3.33		

7⁴/R/CS/110 and 7⁴/W/CS/110

GREAT HILL II (W)

STANDARD ERRORS OF DIFFERENCES

FYM(73)	N(73)	TIME(73)	N 74	FYM(73) N(73)	FYM(73) TIME(73)	N(73) TIME(73)
0.071	0.087	0.087	0.056	0.123	0.123	0.150
			FYM(73) N 74	N(73) N 74	TIME(73) N 74	FYM(73) N(73) TIME(73) N 74
			0.090	0.110	0.110	0.270
Except when comparing means with same levels of FYM(73)			0.079			
N(73)				0.096		
TIME(73)					0.096	
FYM(73).N(73).TIME(73)						0.236

Mean D.M. % 82.2

74/R/CS/110 and 74/W/CS/110

GREAT HILL II (W)

STRAW: TONNES/HECTARE

	N(73)			TIME(73)			N 74		Mean
	188	377	565	Autumn	Spring	Aut/Spng	0	63	
FYM(73)									
0	1.61	1.88	1.94	1.81	1.80	1.81	1.40	2.22	1.81
63	2.11	2.04	1.99	1.95	2.10	2.09	1.77	2.33	2.05
			N(73)						
			188	1.81	1.92	1.85	1.49	2.23	1.86
			377	2.04	1.93	1.90	1.66	2.25	1.96
			565	1.79	2.00	2.10	1.59	2.34	1.97
						TIME(73)			
						Autumn	1.57	2.19	1.88
						Spring	1.61	2.30	1.95
						Aut/Spng	1.57	2.33	1.95
Mean							1.58	2.27	1.93

FYM(73)	TIME(73) N 74 N(73)	Autumn		Spring		Aut/Spng	
		0	63	0	63	0	63
0	188	1.32	2.02	1.21	1.83	1.21	2.04
	377	1.60	2.26	1.52	2.27	1.33	2.29
	565	1.39	2.28	1.53	2.43	1.46	2.55
63	188	1.64	2.24	1.78	2.87	1.79	2.36
	377	1.90	2.41	1.81	2.11	1.82	2.17
	565	1.57	1.93	1.78	2.27	1.83	2.57

Mean D.M. % 79.0