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71/W/RN/4 Market Garden - Barley, Potatoes

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71/W/RN/4

MARKET GARDEN

Object: To study direct and residual effects of phosphate, applied either as fertiliser or in organic manures in the period 1942 - 67, on yields of three crops grown in rotation - Woburn Lansome I.

The second year of revised scheme, barley and potatoes.

For previous years see 'Details' 1967, 68/B/4(t), 69/W/RN/4 and 70/W/RN/4(t).

Whole plot dimensions: 8.53 x 5.18. Area harvested: 0.00074.

Superphosphate treatments (applied to whole plots with confounding of certain two and three factor interactions):-

Series A: Barley: None (0), 63 kg P2O5 (P)
Series B: Potatoes: None (0), 188 kg P2O5 (P)

Basal applications:-

Series A: Barley: Manures: 2510 kg ground chalk. 100 kg muriate of potash (60% K2O), 290 kg 'Nitro-Chalk' 21. Weedkiller: Ioxynil at 0.53 kg and mecoprop at 1.58 kg in 281 l.
Series B: Potatoes: Manures: 2510 kg ground chalk. 417 kg muriate of potash (60% K2O), 1345 kg 'Nitro-Chalk' 21, 605 kg Epsom salts (16% MgO). Weedkiller: Linuron at 1.12 kg in 371 l. Fungicide with insecticide: Mancozeb at 1.34 kg plus demeton-s-methyl at 245 g in 416 l. Fungicide: Mancozeb at 1.34 kg in 371 l.

Cultivations, etc.:

Series A: Barley: Ground chalk applied: 13 Nov, 1970. Ploughed: 14 Nov. N and K applied: 1 Mar, 1971. P treatments applied: 3 Mar. Seed drilled at 157 kg: 17 Mar. Weedkiller applied: 30 Apr. Combine harvested: 16 Aug. Variety: Julia.
Series B: Potatoes: Ground chalk applied, ploughed: 11 Sept, 1970. Deep-tine cultivated: 21 Oct. N, K and Mg applied: 30 Mar, 1971. P treatments applied, rotary cultivated, potatoes planted: 31 Mar. Weedkiller applied: 5 May. Rotary ridged: 1 June. Fungicide with insecticide applied: 28 June. Fungicide applied: 12 Aug. Haulm mechanically destroyed: 17 Sept. Sprayed with undiluted BOV at 225 l: 20 Sept. Lifted: 28 - 30 Sept. Variety: Pentland Crown.

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SUMMARY OF RESULTS

SERIES A

BARLEY

Organic		POKO		PK1		P2K2	
1942-61*	1962-67	O	P	O	P	O	P
GRAIN: TONNES/HECTARE							
O	O			5.70	5.50	4.33	6.05
S1	O					5.58**	6.18**
S2	O					5.38**	5.77**
T1	O					5.68**	5.76**
T2	O					5.61**	5.77**
D1	D1	4.78	5.64	5.65	5.46		
D2	D2	5.81	5.99	6.21	5.82		
C1	D1	5.84	5.77	4.60	6.22		
C2	D2	6.08	6.18	5.84	6.16		

STRAW: TONNES/HECTARE							
O	O			3.62	3.79	2.98	4.25
S1	O					3.95**	4.50**
S2	O					3.90**	3.89**
T1	O					3.56**	4.38**
T2	O					4.24**	3.96**
D1	D1	3.62	4.59	4.31	2.66		
D2	D2	4.26	4.57	4.25	3.96		
C1	D1	4.27	3.87	2.85	4.82		
C2	D2	4.70	4.54	3.91	4.54		

General mean: Grain: 5.67

Straw: 3.99

Mean D.M. %: Grain: 76.1

Straw: 67.2

* Last applied to Leeks 1961/62

** PK1 1962-65

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SERIES B

POTATOES

Organic			POKO		P1K1		P2K2	
1942-61	1962-64	1966-67	O	P	O	P	O	P

TOTAL TUBERS: TONNES/HECTARE

O	O	O			51.7	50.5	55.6	59.1
O	O	PT			50.8	58.2	59.0	61.7
S1	O	O	56.1*	57.9*				
S2	O	O	57.8*	60.6*				
T1	O	O	57.0*	58.0*				
T2	O	O	60.7*	62.7*				
D1	D1	D1	46.5	60.6	58.8	59.9		
D1	D1	O	49.5	58.3	58.8	56.3		
D2	D2	D2	53.2	62.0	63.5	65.4		
D2	D2	O	52.8	54.3	57.9	56.6		
C1	D1	D1	56.9	59.8	64.3	58.1		
C2	D2	D2	61.4	55.2	59.6	62.5		

% WARE: 3.81 CM (1.5 INCH) RIDDLE

O	O	O			97.2	96.5	96.9	97.1
O	O	PT			97.5	97.8	97.7	97.2
S1	O	O	98.0*	97.9*				
S2	O	O	97.7*	97.2*				
T1	O	O	97.1*	97.0*				
T2	O	O	97.9*	97.5*				
D1	D1	D1	97.4	98.7	96.9	96.4		
D1	D1	O	97.5	97.9	97.6	97.3		
D2	D2	D2	97.1	97.3	96.9	98.4		
D2	D2	O	97.1	98.0	97.6	97.8		
C1	D1	D1	97.2	97.5	97.6	97.1		
C2	D2	D2	97.5	97.1	97.2	97.5		

General mean: Total tubers: 58.1
 % ware: 97.4

* P1K1 1962-64

70/W/RN/4. Replacement for page 81.

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SERIES B

BARLEY

1942-61	Organic		POKO		PIK1		P2K2	
	1962-64	1966-67	O	P	O	P	O	P

GRAIN: CWT

O	O	O			37.0	37.1	40.0	37.6
O	O	PT			34.3	30.8	37.3	36.3
S1	O	O	36.3*	37.1*				
S2	O	O	32.1*	37.5*				
T1	O	O	42.2*	39.8*				
T2	O	O	30.0*	38.1*				
D1	D1	D1	35.0	36.9	41.3	31.0		
D1	D1	O	36.0	36.7	38.3	37.3		
D2	D2	D2	40.2	38.0	41.1	41.0		
D2	D2	O	45.5	36.4	39.3	42.1		
C1	D1	D1	38.3	42.3	43.1	44.8		
C2	D2	D2	35.0	36.6	37.4	41.4		

STRAW: CWT

O	O	O			20.2	16.1	20.7	18.2
O	O	PT			18.4	20.2	19.5	19.7
S1	O	O	20.4*	17.1*				
S2	O	O	15.2*	18.3*				
T1	O	O	22.9*	18.6*				
T2	O	O	18.0*	20.1*				
D1	D1	D1	18.7	17.7	18.9	16.3		
D1	D1	O	14.3	16.7	25.5	16.3		
D2	D2	D2	13.1	15.7	18.8	18.8		
D2	D2	O	27.2	12.7	19.7	21.0		
C1	D1	D1	18.6	20.5	23.1	22.7		
C2	D2	D2	18.2	17.9	20.4	22.3		

General mean: Grain: 37.9
 Straw: 19.1
 Mean D.M. %: Grain: 84.0
 Straw: 78.4

* PIK1 1962-64