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Numerical Results of the Field Experiments 1969

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69/W/RN/3 - Ley and Arable Rotations - Leys, Potatoes, Rye, Carrots & Barley

Rothamsted Research

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LUCERNE, DRY MATTER: CWT

	HIGHFIELD			FOSTERS		
	F	D	Mean	F	D	Mean
3rd year (Highfield 1 cut) (Fosters 2 cuts)	8.7	8.2	8.4	34.6	33.6	34.1

ALL-GRASS LEY, DRY MATTER: CWT

	HIGHFIELD			FOSTERS		
	F	D	Mean	F	D	Mean
3rd year (3 cuts)	72.9	73.9	73.4	63.0	65.4	64.2

CLOVER-GRASS LEY, DRY MATTER: CWT

	HIGHFIELD			FOSTERS		
	F	D	Mean	F	D	Mean
3rd year (3 cuts)	49.1	51.1	50.1	46.4	47.9	47.2

NOTE: F and D to potatoes 1965.

Ley 2nd year: NK applied: 9 Apr, 17 July. Cut twice: 9 June, 4 Sept.

Ley 3rd year: NK applied: 9 Apr, 17 July, 1 Aug. Grazed 7 circuits: 8 May-9 Sept.

Sainfoin 1st year: Ploughed: 15 Oct, 1968. Mg applied: 25 Mar, 1968. Seed drilled at 40 lb: 16 Apr. Cut once: 1 Aug.

Sainfoin 2nd year: Sprayed with paraquat at 0.5 lb ion in 16 gals: 10 Jan. N and K applied: 9 Apr. Cut once: 6 June. Sprayed with paraquat at 0.75 lb ion in 25 gals to kill: 9 June. Rotary cultivated: 17 June. Seed drilled at 40 lb: 27 June.

Sainfoin 3rd year: Sprayed with paraquat at 0.5 lb ion in 16 gals: 10 Jan. N and K applied: 9 Apr. Cut: 6 June. Sprayed with paraquat at 0.5 lb ion in 25 gals: 12 June. Cut: 4 Sept.

Potatoes: Ploughed: 15 Oct, 1968. Rotary cultivated: 16 Oct. Chloropicrin applied: 23 Oct. Mg applied: 25 Mar, 1969. N and PK applied: 14 Apr. Temik applied, potatoes planted: 17 Apr. Sprayed with paraquat at 0.37 lb ion plus linuron at 0.5 lb ion in 25 gals: 15 May. Sprayed with mancozeb at 1.2 lb plus demeton-s-methyl at 3.5 oz in 37 gals: 18 July. Sprayed with mancozeb at 1.2 lb in 37 gals (twice): 7 Aug, 27 Aug. Sprayed with undiluted BOV at 16 gals: 24 Sept. Lifted: 7 Oct.

Rye: Spring-tine cultivated twice: 14 Oct, 1968, 16 Oct. Seed combine drilled at 175 lb: 17 Oct. 'Nitro-Chalk' applied: 15 Apr, 1969. Seeds hay undersown at 30 lb (AH plots): 16 Apr. Combine harvested: 25 Aug.

Seeds hay: seeds undersown in rye at 30 lb: 29 Mar, 1968. N and PK applied: 14 Mar, 1969. NK applied: 17 June. Cut twice: 9 June, 4 Sept.

Carrots: Ploughed: 25 Nov, 1968. NPK applied: 15 Apr, 1969. Seed drilled at 3 lb: 16 Apr. Sprayed with linuron at 0.5 lb in 50 gals: 2 June. Sprayed with demeton-s-methyl at 3.5 oz in 30 gals: 26 June. Lifted: 19 Sept.

Test crops.

Barley, 1st test crop: Half corrective K applied: 2 Dec, 1968. Ploughed: 7 Dec. Remaining corrective K applied: 6 Mar, 1969. Seed combine drilled at 140 lb: 24 Mar. 'Nitro-Chalk' applied: 3 Apr. Sprayed with ioxynil octanoate, bromoxynil octanoate, and iso-octyl ester of dichlorprop ('Oxytril P' at 1 pt. in 25 gals): 22 May. Combine harvested: 14 Aug.

Barley 2nd test crop: Magnesian limestone applied at 40 cwt:
4 Nov, 1968. Ploughed: 18 Nov. Seed combine drilled at
140 lb: 24 Mar, 1969. Sprayed with ioxynil octanoate,
bromoxynil octanoate, and iso-octyl ester of dichlorprop
('Oxytril P' at 1 pt in 25 gals): 22 May. Combine harvested:
14 Aug.

NOTE: Soil samples were taken from potato plots monthly from
May - Sept for counts of free-living nematodes.

SUMMARY OF RESULTS

1ST TEST CROP

BARLEY

GRAIN: CWT

	NO	N1	N2	N3	N4
DO LE	39.1	37.1	34.9	34.9	
SA	38.7	38.2	37.8	21.8	
AH		31.3	35.0	32.7	30.5
AR		33.2	39.6	37.9	37.9
D1 LE	39.7	36.4	33.9	35.6	
SA	42.1	39.3	36.7	24.7	
AH		32.9	33.7	34.8	33.0
AR		38.3	41.7	34.8	35.9

Mean: 35.4
 Mean D.M. %: 84.4

1ST TEST CROP

BARLEY

STRAW: CWT

	NO	N1	N2	N3	N4
DO LE	43.0	41.5	40.7	31.2	
SA	34.5	40.4	37.8	14.8	
AH		25.7	33.6	34.4	29.3
AR		30.1	40.1	39.4	38.4
D1 LE	43.6	43.0	40.8	34.8	
SA	36.8	39.1	39.1	18.2	
AH		27.2	38.1	32.9	37.0
AR		31.1	37.9	35.5	41.0

Mean: 35.3
 Mean D.M. %: 79.4

RYE
GRAIN: CWT

	LE	SA	AH	AR	Mean
DO	35.2	35.5	30.3	26.9	32.0
D4	35.7	39.2	32.3	32.6	35.0
O	33.4	37.1	30.0	25.7	31.5
F	37.6	37.6	32.6	33.8	35.4
Mean	35.5	37.4	31.3	29.7	33.5

Mean D.M.%: 81.1

POTATOES

TOTAL TUBERS: TONS

	LE	SA	AH	AR	Mean
D0	20.05	20.23	19.01	15.70	18.75
D3*	19.96	22.43	17.88	17.58	19.46
O	19.31	19.48	15.40	15.12	17.32
F	20.70	23.19	21.49	18.16	20.89
N2	19.52	21.30	18.37	16.99	19.04
N3	19.32	21.59	17.72	16.27	18.73
N4	21.18	21.11	19.24	16.65	19.54
O	18.45	20.67	17.37	15.66	18.04
T	21.56	22.00	19.52	17.62	20.17
Mean	20.01	21.33	18.44	16.64	19.10

* FYM applied Potatoes for 1966 test crop sugar beet
 Rye for 1965 test crop sugar beet
 Hay for 1963 test crop sugar beet

POTATOES

% WARE

	LE	SA	AH	AR	Mean
D0	95.8	96.6	95.3	95.7	95.9
D3*	95.9	96.6	96.2	95.4	96.0
O	96.1	96.8	95.3	95.3	95.9
F	95.6	96.4	96.2	95.8	96.0
N2	96.4	96.9	95.5	95.2	96.0
N3	95.5	96.6	95.4	95.7	95.8
N4	95.6	96.2	96.4	95.8	96.0
O	95.9	97.2	95.8	95.9	96.2
T	95.8	95.9	95.8	95.2	95.7
Mean	95.9	96.6	95.8	95.6	95.9

* FYM applied Potatoes for 1966 test crop sugar beet
 Rye for 1965 test crop sugar beet
 Hay for 1963 test crop sugar beet