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Numerical Results of the Field Experiments 1970

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70/W/RN/6 Arable Reference Plots - W. Oats, Sugar Beet, Barley, Grass-clover Ley, Potatoes, Grass

Rothamsted Research

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ARABLE REFERENCE PLOTS

(70/W/RN/6)

Woburn Stackyard Series C 1970.

For details of previous years' results and for rates of fertiliser etc., see 'Results' 61/B/2 to 67/B/2 inclusive, 68/B/3 and 69/W/RN/6.

NOTE: The rates of nitrogen to potatoes and sugar beet are now 1.0 (N1), 2.0 (N2) cwt N as ammonium nitrate. The variety of barley is now Julia, and the variety of potatoes is Desiree.

Cultivations, etc.:-

Winter oats: Balancing Mg applied to half plots: 29 Sept, 1969.

Plots dug by hand, P and K applied: 6 Oct. Seed drilled:

16 Oct. First N applied: 17 Mar, 1970. Second N applied:

15 May. Harvested: 3 Aug.

Sugar beet: FYM applied, plots dug by hand: 9 Dec, 1969. Ground

chalk applied at 25 cwt: 20 Jan, 1970. P and K applied:

25 Feb. First N applied, plots rotary cultivated, Mg applied to half plots, seed drilled: 7 Apr. Singled, second N applied:

26 May. Sprayed with dimethoate at 4.8 fl oz in 40 gals:

17 June. Sprayed twice with menazon at 0.25 lb in 40 gals:

6 July, 29 July. Harvested: 7 Oct.

Barley: Balancing Mg applied to half plots: 2 Oct, 1969. Plots

dug by hand: 8 Dec. Ground chalk applied at 25 cwt: 20 Jan, 1970.

P and K applied: 25 Feb. First N applied, rotary cultivated,

seed drilled: 7 Apr. Second N applied: 15 May. Harvested:

14 Aug.

Grass - clover ley: Seed drilled in barley stubble: 13 Aug, 1969. P

and K applied: 8 Dec. N applied: 17 Mar, 1970. Cut three times:

29 May, 23 July, 6 Oct.

Potatoes: FYM applied, plots dug by hand: 9 Dec, 1969. P and K

applied: 25 Feb, 1970. First N applied, rotary cultivated, Mg

applied to half plots, potatoes planted: 28 Apr. Second N

applied, earthed up: 26 May. Sprayed with dimethoate at 4.8

fl oz in 40 gals: 17 June. Sprayed twice with menazon at 0.25 lb

plus captafol at 1.5 lb in 40 gals: 6 July, 29 July. Lifted all

plots except 40 and 47 (DN1PK, DN2PK): 14 Sept. Lifted plots

40 and 47: 29 Sept.

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Permanent grass: P and K fertiliser applied: 8 Dec, 1969. Ground chalk applied: 20 Jan, 1970. FYM applied: 25 Feb. N applied: 17 Mar, 29 May, 27 Aug. Cut three times: 29 May, 27 Aug, 29 Oct.

- NOTES: (1) Samples were taken for determination of dry matter for each crop and the percentage of N, P and K.
- (2) The percentage of Mg in sugar beet tops and potato tubers was determined.
- (3) The percentage of K in potato leaves was determined.
- (4) Surface soil samples were taken from each block for determination of soil pH and N, P and K in the soil.

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SUMMARY OF RESULTS

Treatment	OATS		SUGAR BEET		BARLEY	
	GRAIN cwt	STRAW cwt	ROOTS tons	TOPS tons	GRAIN cwt	STRAW cwt
None	11.1	9.6	6.79	4.32	12.1	8.6
N1	17.9	12.8	7.10	9.10	15.6	13.4
P	11.3	8.4	6.64	4.32	10.5	9.0
N1P	21.0	15.5	6.17	7.95	14.0	11.5
K	10.9	8.3	7.41	4.01	11.9	13.3
N1K	18.5	14.1	13.89	8.72	23.1	17.0
PK	9.6	8.3	7.10	3.93	14.0	11.0
N1PK	27.0	20.2	10.80	7.56	26.5	21.5
N2PK	27.8	22.6	14.35	14.89	28.1	27.7
D	18.8	14.2	13.89	7.10	18.6	15.1
N1PKD	29.4	25.6	16.51	11.27	27.6	26.1
N2PKD	32.8	28.8	17.29	15.36	32.1	23.8
Mean D.M. %:	82.6	62.2			85.0	85.6

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Treatment	LEY: DRY MATTER: CWT				POTATOES TOTAL TUBERS TONS	PERMANENT GRASS: DRY MATTER: CWT			
	1st cut	2nd cut	3rd cut	Total of 3 cuts		1st cut	2nd cut	3rd cut	Total of 3 cuts
None	7.6	4.2	6.5	18.3	3.48	8.0	2.9	3.1	14.0
N1	20.7	5.3	4.3	30.3	4.52	15.2	12.6	7.8	35.6
P	7.3	5.0	4.7	17.0	4.91	6.8	2.5	2.5	11.8
N1P	19.0	5.2	3.3	27.5	2.77	11.6	11.7	7.2	30.5
K	11.3	9.3	20.6	41.2	5.15	8.4	4.1	2.7	15.2
N1K	24.1	7.2	12.3	43.6	6.51	20.7	16.2	8.9	45.8
PK	13.5	8.9	20.2	42.6	5.68	8.8	3.3	2.5	14.6
N1PK	26.6	7.2	14.7	48.5	8.92	26.0	15.0	9.6	50.6
N2PK	33.2	8.8	12.6	54.6	7.52	26.7	20.4	12.3	59.4
D	15.0	10.4	20.2	45.6	6.91	17.4	6.9	4.1	28.4
N1PKD	28.8	8.0	16.2	53.0	13.89	29.9	18.7	12.3	60.9
N2PKD	38.6	8.7	12.3	59.6	19.44	31.7	19.8	13.9	65.4
Mean D.M. %:	32.6	33.0	20.0	28.5		33.5	29.2	24.5	29.1