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Collection of Plans for the Woburn Organic Manuring Experiment

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W/RN/12 - Woburn Organic Manuring 1970 - 1974

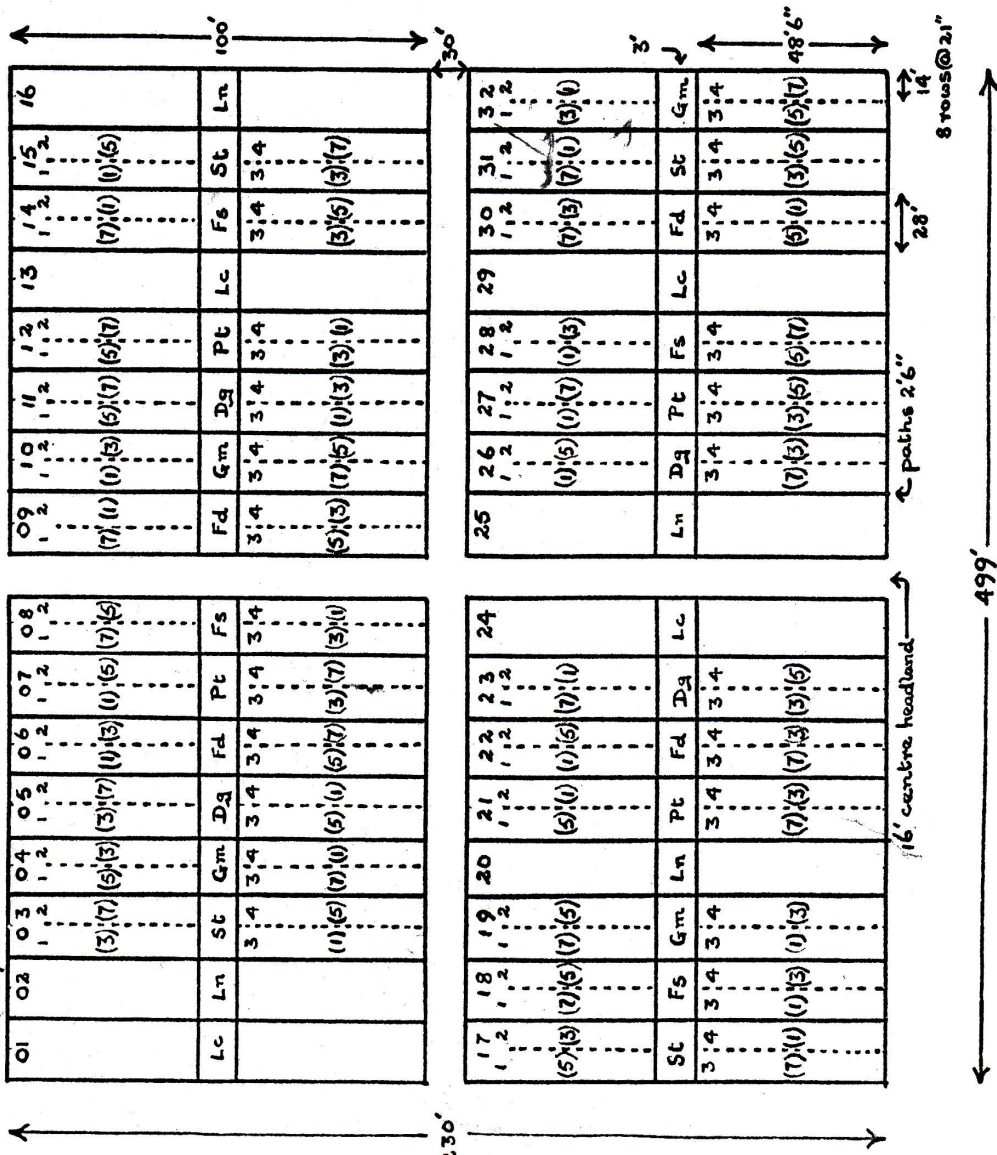
Rothamsted Research

Rothamsted Research (1966-1988) *W/RN/12 - Woburn Organic Manuring 1970 - 1974* ; Collection Of Plans For The Woburn Organic Manuring Experiment, pp 5 - 9

WOUBURN ORGANIC MANURING EXPERIMENT

1970 S. Beans & Leys

70/W/RN/12



STACKYARD 'B' 6th year 1970 20'

Sponsor: G.E.G. Mattingly Leys cut 496.

TREATMENTS per acre 874 Beans

Organic Manures 1970

Dg 20 tons F.Y.M. (3 tons DM/annum on average;
St 3 tons (DM) Straw Total nutrients
Pt 3 tons (DM) Peat balanced by
Gm Green manure PK Mg additions
1968: clover (late flowering red).

Fertilisers

Fd PKMg equivalent to FYM (High PKMg).
Fs K₂Mg equivalent to straw with P (Low PKMg).

N.B. In 1970 all plots receive 0.5 cut P₂O₅, 1.0 cut K;
as (0:14:28)

Supplementary fertilisers

Fd 0.3 cut K₂O. Lc 0.4 cut K₂O } as mural
St 0.3 cut K₂O. Ln 0.8 cut K₂O } of potash
Nitrogen to Sugar Beet 1969 (after wheat 1968)
(1)(3)(5)(7) 0.2, 0.6, 1.0, 1.4 cut N as Nitro-chalk '21.

Variety: Maris Bead. Sown at 200 lb/acre: 20 Mar

Leys: Sown: Apr 23, 1965

Lc: Mixture with clover

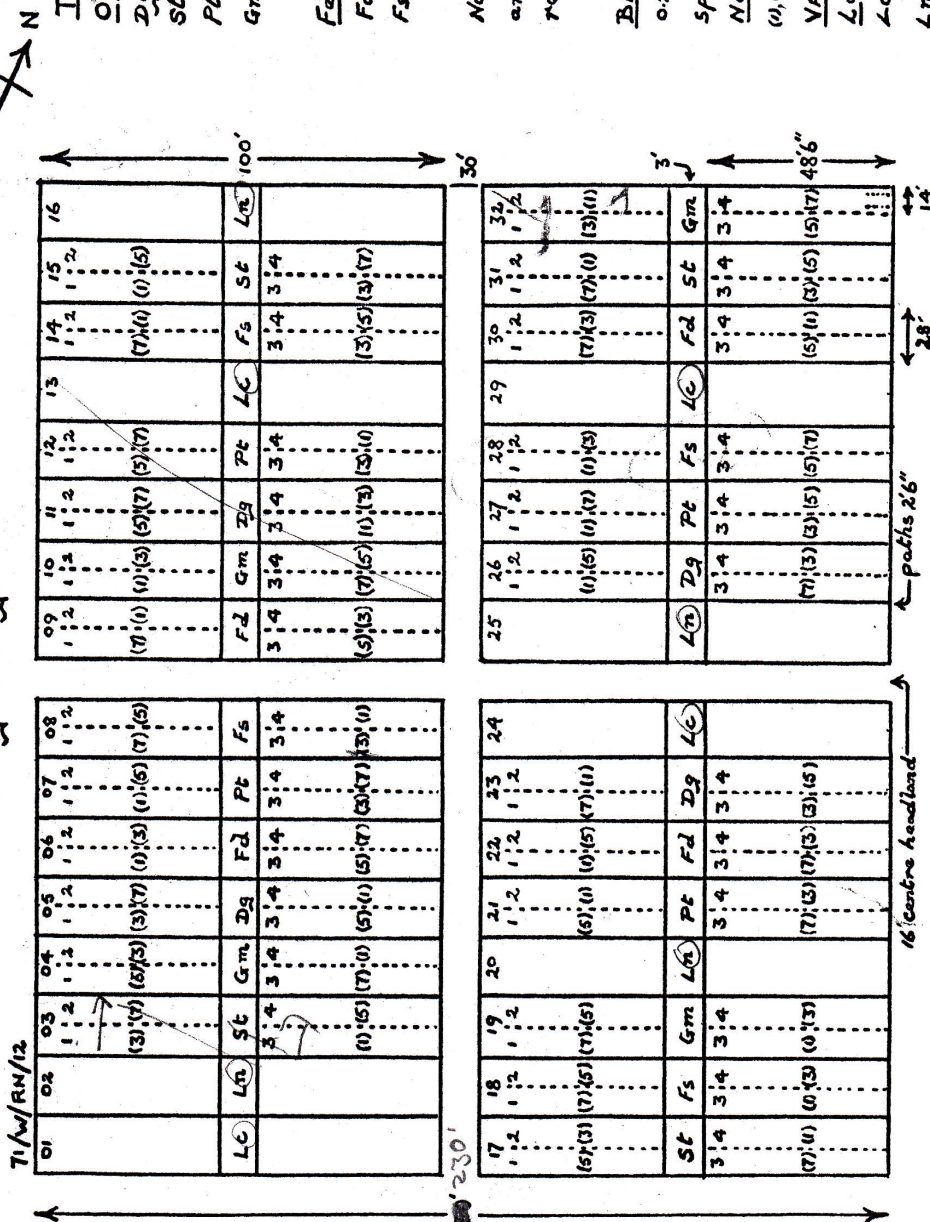
Ln: Mixture without clover, 1.0 cut N in Spring
for each cut. Leys receive PKMg manuring
annually for nutrients removed in cut grass.

Sub plot area 14' x 48'6" = 0.0156 acre

STACKYARD 'B' 7th year 1971 20'
Sponsor G.E.G. Mattingly

WOEBURN ORGANIC MANURING EXPERIMENT

1971 Rye & Leys



TREATMENTS per acre (hectare)

Organic Manures 1971

Dg 10 tons (25 tonnes) FYM (3 tons DM/annum on average)
St 3 tons (7.5 tonnes) (DM) Straw } Total nutrients
Pt 3 tons (7.5 tonnes) (DM) Peat } balanced by PKMg
Gm Green manure } additions to equal Fs
1970: clover (late flowering red).

Fertilisers

Fd P, K, Mg equivalent to Dg (High PKMg).
Fs K, Mg equivalent to straw with P (Low PKMg)

Note: Additional P and Mg are applied in autumn and spring to balance nutrients differentially removed by previous crops.

BASAL NITROGEN TO RYE

0.25 cwt (31 kg) N as 'Nitro-chalk' 21 top dressed in spring.

Nitrogen to sugar beet 1969 (after W. wheat 1968)

(1), (3), (5), (7) 0.2, 0.6, 1.0, 1.4 cwt (23, 75, 125, 175 kg) as Nitro-chalk 21
VARIETY: King II: 17 Oct. (No nitrogen to beans 1970)

Leys: Sown: Apr 23, 1965

Lc: Mixture with clover

Ln: Mixture without clover, 10 cwt (125 kg) N in Spring & for each cut. Leys receive PKMg manuring annually for nutrients removed in cut grass.

Sub plot area: 14' x 48' = 0.0156 acre (0.0063 ha)

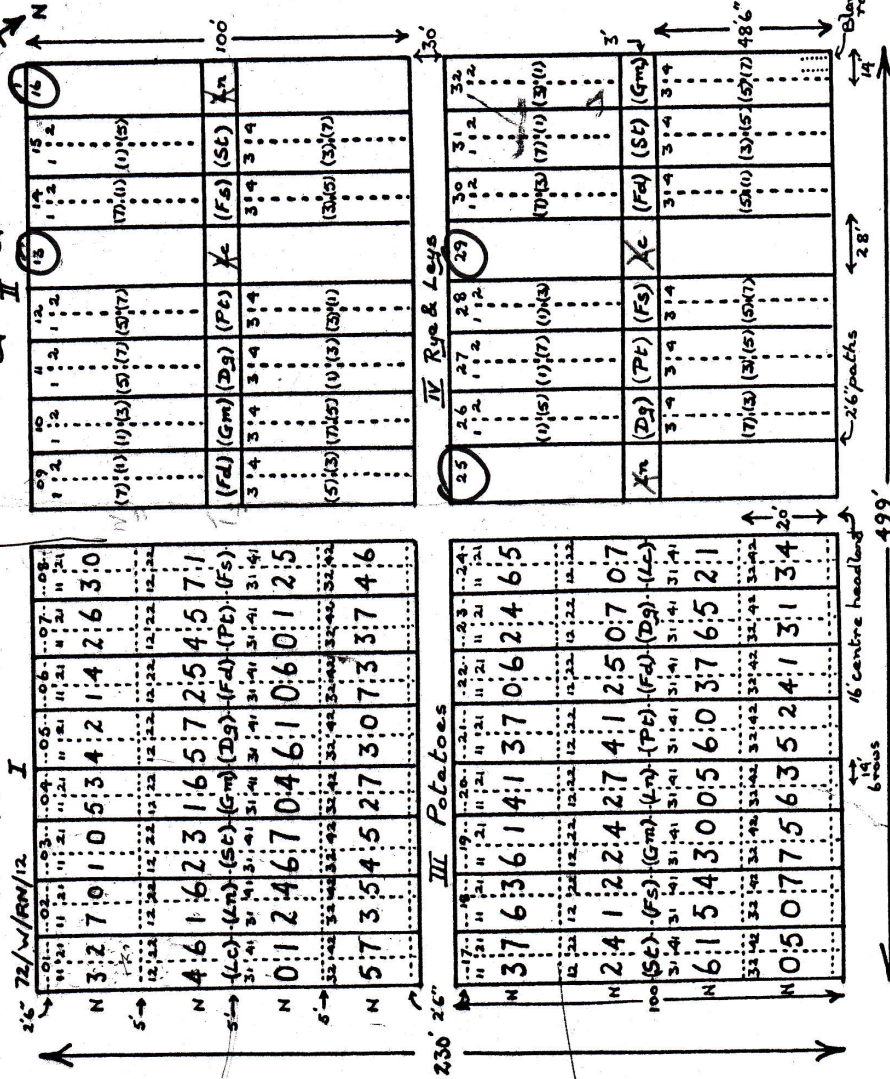
STACKYARD 'B' 8th year 1972 21

Sponsor G.E.G. Mattingly

WOBURN ORGANIC MANURING EXPERIMENT

Rye & Leys

Potatoes



TREATMENTS per acre (hectare)

Residues of Organic Manures applied annually 1965-71

(Dg)	4 tons (10 tonnes) (DM) FYM
(St)	3 tons (7.5 tonnes) (DM) straw
(Pt)	3 tons (7.5 tonnes) (DM) peat
(Gm)	Green Manure

Total nutrients balanced by PKMg additions to equal Fs.

1971: Late flowering Red Clover : 22 Apr * (16 tons (40 tonnes) F.M.)

Fertilisers

(Fd) P, K, Mg equivalent to Dg (High PKMg)
 (Fs) K, Mg equivalent to straw with P (Low PKMg)
 Note: P, K, Mg are applied in autumn and spring in addition, to balance nutrients differentially removed by previous crops

Nitrogen to Potatoes 1972

(Dg)	183 cut (100kg) P ₂ O ₅ as superphosphate, 192 cut (200kg) K ₂ O as muriate of potash
(St)	ploughed in in autumn, and rotay cultivated at the same amount in spring, with 0.79 cut (99kg) MgO as Epsom Salts

Nitrogen to Sugar beet 1969 (after W. Wheat 1968) as Nitro-Chalk 21

(Dg)	0.2, 0.6, 1.0, 1.4 cut (55, 75, 125, 175)
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BASAL MANURING per acre (hectare)

Blocks I and III Potatoes

183 cut (100kg) P₂O₅ as superphosphate, 192 cut (200kg) K₂O as muriate of potash

ploughed in in autumn, and rotay cultivated at the same amount in spring, with 0.79 cut (99kg) MgO as Epsom Salts

Blocks II and IV Rye

400b (448kg) (0.14:28), 0.3 cut (38kg) MgO as Epsom Salts and 0.3 cut (40kg) N as Nitro-chalk 21 in spring

Leys: Sown: Apr 23, 1965, Blocks I & III ploughed autumn 1971

LC: Mixture with clover. L7: Mixture without clover 400b (448kg) (0.14:28), 0.3 cut (38kg) MgO as Epsom Salts, to L7 only, 1.0 cut (126kg) N as Nitro-chalk 21 in spring and after each cut.

Sub-plot area Potatoes: 14' x 20' = 0.0064 acre (0.0026 ha)

Sub-plot area Rye: 14' x 48' = 0.0156 acre (0.0063 ha)

204

STACKYARD 'B' 1973

Sponsor: G.E. & Mattingly

9th year

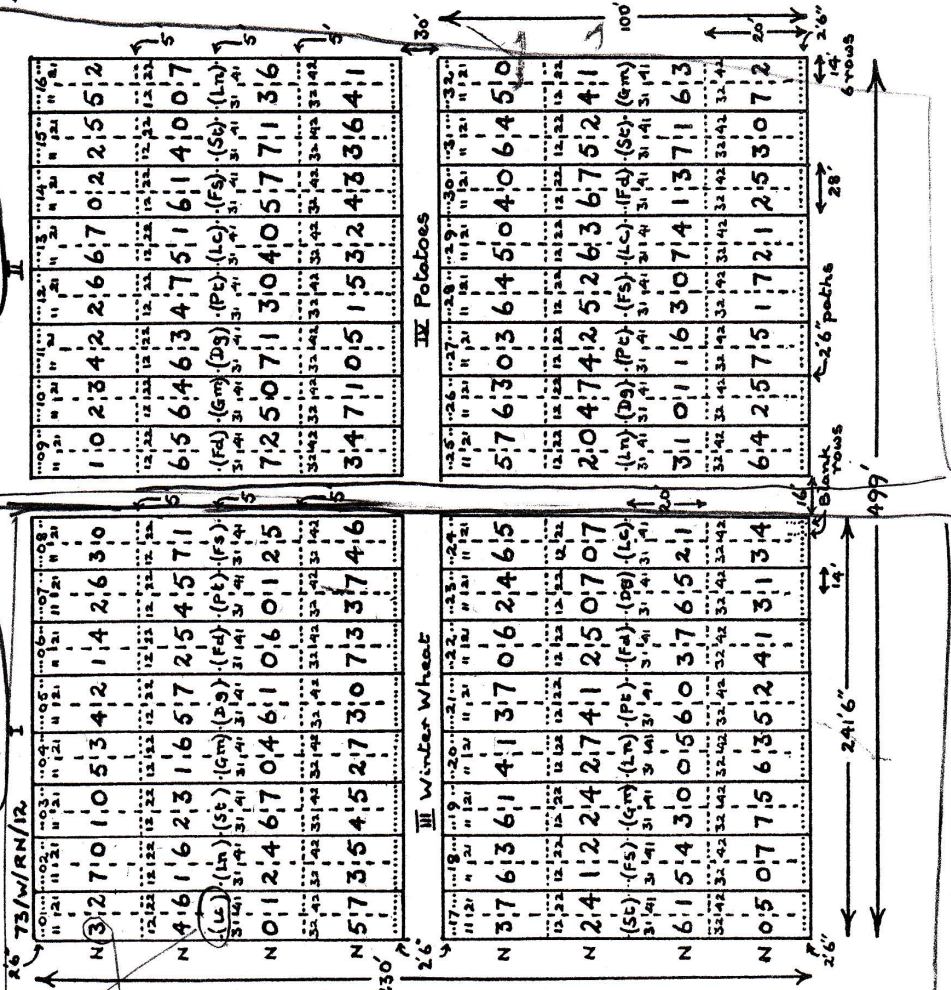
WOBURN ORGANIC MANURING EXPERIMENT

573775

573776

Winter Wheat

Potatoes



TREATMENTS per acre (hectare)

Residues of Organic Manures (applied annually 1965-71) and Ley (sow 1965)

(Dg) 4 tons (10 tonnes) (DM) FYM, (16 tons [40 tonnes] FYM)

(St) 3 tons (7.5 tonnes) (DM) Straw

(Pt) 3 tons (7.5 tonnes) (DM) peat

(Gm) Green Manure 1972 Blocks II & IV Essex Broad Red Clover

(Le) Grass-clover ley ploughed up 1971 Blocks I & III

(Ln) Grass ley with N 1972 Blocks II & IV

Fertilisers

(Fd) P, K, Mg equivalent to Dg (High PKMg)

(Fs) K, Mg equivalent to straw with P (Low PKMg)

Note: P, K, Mg are applied in autumn and spring in addition to balance nutrients differentially removed by previous crops

Nitrogen to Winter Wheat 1973

N0-N0-N0, N1-0-0, N2-0-0, N3-0-0, N4-0-0, N5-1-0, N6-1-0, N7-1-0, N8-1-0, N9-1-0, N10-1-0, N11-1-0, N12-1-0, N13-1-0, N14-1-0, N15-1-0, N16-1-0, N17-1-0, N18-1-0, N19-1-0, N20-1-0, N21-1-0, N22-1-0, N23-1-0, N24-1-0, N25-1-0

(0 25 50 75 100 125 150 175 kg N)

Nitrogen to Potatoes 1973

N0-N0-N0, N1-0-0, N2-0-0, N3-0-0, N4-0-0, N5-1-0, N6-1-0, N7-1-0, N8-1-0, N9-1-0, N10-1-0, N11-1-0, N12-1-0, N13-1-0, N14-1-0, N15-1-0, N16-1-0, N17-1-0, N18-1-0, N19-1-0, N20-1-0, N21-1-0, N22-1-0, N23-1-0, N24-1-0, N25-1-0

(0 50 100 150 200 250 300 350 kg N)

BASAL MANURING per acre (hectare)

Blocks II & IV Potatoes - Pentland Crown Planted: 6-7 Apr

183 cut (230 kg) P₂O₅ as superphosphate, 192 cut (240 kg) K₂O as muriate of

potash ploughed in in autumn, and rotary cultivated in at the 60 ME

amount in spring with 0.79 cut (100 kg) MgO as Epsom salt + balancing

P & Mg differentially removed by rye in 1972

Blocks I & III Winter Wheat - Cappelle @ 175 lb (196 kg) Date: 24 Nov

Sub-plot area

14' x 20' = 0.0064 acre (0.0026 ha.)

WOBURN ORGANIC MANURING EXPERIMENT

STACKYARD 'B' 1974

Sponsor: G.E. & Mattingly

10th year

Sugar beet

Winter Wheat

	00	01	02	03	04	05	06	07	08
11	21	11	21	11	21	11	21	11	21
3	2	7	0	1	0	5	3	4	2
12	12	12	12	12	12	12	12	12	12
4	6	1	6	2	3	1	6	5	7
13	13	13	13	13	13	13	13	13	13
5	1	2	4	6	7	0	4	6	1
14	14	14	14	14	14	14	14	14	14
6	1	2	4	6	7	0	4	6	1
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7	3	5	4	5	2	7	3	0	7
16	16	16	16	16	16	16	16	16	16
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17	17	17	17	17	17	17	17	17	17
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18	18	18	18	18	18	18	18	18	18
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