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RESEARCH

# Collection of Plans for the Woburn Organic Manuring Experiment

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## W/RN/12 - Woburn Organic Manuring 1980 - 1984

### Rothamsted Research

Rothamsted Research (1966-1988) *W/RN/12 - Woburn Organic Manuring 1980 - 1984* ; Collection Of Plans For The Woburn Organic Manuring Experiment, pp 15 - 19

WOBURN  
80' W / RN / 100'

ORGANIC MANURING EXPERIMENT 16th year  
Sugar beet & Grass/Clover

STACKYARD B 1980  
Sponsor: G.E. Mattingly

TREATMENTS per acre (hectare)  
Residues of Organic Manures (applied annually 1965-71) & Ley (sown 1965)  
(Dg) 4 tons (10 tonnes) (D.M.) FYM, (16 tons [40 tonnes] FYM)  
(St) 3 tons (7.5 tonnes) (D.M.) Straw  
(Pt) 3 tons (7.5 tonnes) (D.M.) Peat  
(Gm) Green Manure  
(Lc) Grass-clover ley { ploughed up 1971 Blocks I & III  
(Ln) Grass ley with N { 1972 Blocks II & IV  
Residues of Fertilisers (applied annually 1965-71)  
(Fd) P, K, Mg equivalent to Dg (High P, K, Mg)  
(Fs) K, Mg equivalent to straw with P (Low P, K, Mg)  
Blocks I & III 1980  
LC (Pt & Gm) Grass/clover (sown June 1979)  
Remaining plots S. Barley - Variety - Georgie, dressed ethirimol  
Nitrogen to S. Barley  
Sown: 4 Mar @ 140 lb (57 kg)  
0 - None, 1 - 0.24, 2 - 0.48, 3 - 0.72, 4 - 0.96, 5 - 1.20, 6 - 1.44, 7 - 1.68 cwt N  
0 30 60 90 120 150 180 210 kg N  
Blocks II & IV 1980  
LC (Pt & Gm) Grass/clover (To be sown on whole plots - Spring 1980)  
Remaining plots Sugar beet - Variety - Bush Monia sown: 11 Apr  
Nitrogen to Sugar beet  
0 - None, 1 - 0.32, 2 - 0.64, 3 - 0.96, 4 - 1.27, 5 - 1.59, 6 - 1.91, 7 - 2.23 cwt N  
0 40 80 120 160 200 240 280 kg N  
BASAL MANURING per acre (hectare)  
Spring Barley - 0.9 cwt (114 kg) P<sub>2</sub>O<sub>5</sub> as superphosphate  
0.48 cwt (60 kg) K<sub>2</sub>O as Muriate of potash  
Sugar beet & 1st - 1080 lb (1210 kg) compound fertiliser (0:20:20)  
year grass/clover in autumn. 540 lb (605 kg) compound fertiliser  
(0:20:20) in the seedbed plus 357 lb (400 kg)  
Kieserite. 73 lb (8.2 kg) B<sub>2</sub>O<sub>3</sub> as Solubar in June  
for Sugar beet only. 45 lb (50 kg) Na as Nitro-chalk in  
the seedbed for 1st year ley only.  
Blocks II & IV - 2 tons (5 tonnes) Ground chalk.  
2nd year grass/ - None Autumn/Winter. 0.9 cwt (114 kg) Rosas Superphate  
Clover ley 0.48 cwt (60 kg) K<sub>2</sub>O as muriate of potash in Spring  
No N fertiliser.  
SUB - PLOT AREA 14' x 20' = 0.0064 acre (0.0026 ha)

Block	Treatment	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
I Spring Barley & Grass/Clover	(Lc)	4.5	0.7	6.7	3.1	6.1	5.4	3.1	6.1	5.4	3.1	6.1	5.4	3.1	6.1	5.4	3.1	6.1	5.4	3.1	6.1	5.4	3.1	6.1	
	(Ln)	7.6	5.3	1.0	2.0	4.2	3.2	2.0	4.2	3.2	2.0	4.2	3.2	2.0	4.2	3.2	2.0	4.2	3.2	2.0	4.2	3.2	2.0	4.2	
	(Dg)	3.5	6.3	0.6	2.0	5.2	4.7	0.4	4.7	0.4	4.7	0.4	4.7	0.4	4.7	0.4	4.7	0.4	4.7	0.4	4.7	0.4	4.7	0.4	4.7
	(Fs)	4.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
II Sugar beet & Grass/Clover	(Lc)	2.0	1.4	1.3	2.7	3.7	1.3	2.7	3.7	1.3	2.7	3.7	1.3	2.7	3.7	1.3	2.7	3.7	1.3	2.7	3.7	1.3	2.7	3.7	
	(Ln)	5.7	3.0	2.5	1.4	1.0	2.5	1.4	1.0	2.5	1.4	1.0	2.5	1.4	1.0	2.5	1.4	1.0	2.5	1.4	1.0	2.5	1.4	1.0	
	(Dg)	4.6	7.6	4.7	0.3	6.4	0.6	4.7	0.3	6.4	0.6	4.7	0.3	6.4	0.6	4.7	0.3	6.4	0.6	4.7	0.3	6.4	0.6	4.7	
	(Fs)	1.3	5.2	6.0	5.6	5.2	4.7	6.0	5.6	5.2	4.7	6.0	5.6	5.2	4.7	6.0	5.6	5.2	4.7	6.0	5.6	5.2	4.7	6.0	
III Spring Barley & Grass/Clover	(Lc)	4.0	1.4	3.6	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	
	(Ln)	5.3	6.5	5.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	
	(Dg)	7.1	5.3	1.2	7.1	5.3	1.2	7.1	5.3	1.2	7.1	5.3	1.2	7.1	5.3	1.2	7.1	5.3	1.2	7.1	5.3	1.2	7.1	5.3	1.2
	(Fs)	1.6	2.3	1.6	2.3	1.6	2.3	1.6	2.3	1.6	2.3	1.6	2.3	1.6	2.3	1.6	2.3	1.6	2.3	1.6	2.3	1.6	2.3	1.6	2.3
IV Sugar beet & Grass/Clover	(Lc)	2.0	1.4	1.3	2.7	3.7	1.3	2.7	3.7	1.3	2.7	3.7	1.3	2.7	3.7	1.3	2.7	3.7	1.3	2.7	3.7	1.3	2.7	3.7	
	(Ln)	5.7	3.0	2.5	1.4	1.0	2.5	1.4	1.0	2.5	1.4	1.0	2.5	1.4	1.0	2.5	1.4	1.0	2.5	1.4	1.0	2.5	1.4	1.0	
	(Dg)	4.6	7.6	4.7	0.3	6.4	0.6	4.7	0.3	6.4	0.6	4.7	0.3	6.4	0.6	4.7	0.3	6.4	0.6	4.7	0.3	6.4	0.6	4.7	
	(Fs)	1.3	5.2	6.0	5.6	5.2	4.7	6.0	5.6	5.2	4.7	6.0	5.6	5.2	4.7	6.0	5.6	5.2	4.7	6.0	5.6	5.2	4.7	6.0	



WOBURN 82/W/RN/12  
 WINTER WHEAT & GRASS/CLOVER  
 WINTER BEANS & GRASS/CLOVER

ORGANIC MANURING EXPERIMENT 18th year  
 STACKYARD B 1982 204  
 Sponsor: ~~George~~ Mattingly A. E. JOHNS

TREATMENTS per hectare (acre)

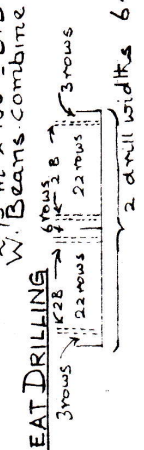
Year	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
III Winter Wheat & Grass/Clover	W	W	W	W	W	W	W	W	BE	BE	BE	BE	BE	BE	BE	BE
IV Winter Beans & Grass/Clover	St (Ln)	Lc2 (Ln)	St (Ln)	Lc4 (gm)	Dg (gm)	Fd (gm)	Lc4 (Pt)	Fs (gm)	Fd (gm)	Lc3 (gm)	Dg (gm)	Lc3 (Pt)	Lc1 (Lc)	Fs (Pt)	St (Pt)	Lc1 (Ln)

**Organic Manures**  
 Dg 50 tonnes (20 tons) FYM (No P, K, or Mg as fertilizer)  
 St 7.5 tonnes (3 tons) Straw  
 Lc4, Lc3 (Pt & gm) Grass/Clover ley { Blocks I & III sown June 1979  
 { Blocks II & IV sown April 1980  
 { Blocks I & III sown Spring 1981  
 { Blocks II & IV to be sown Spring 1982

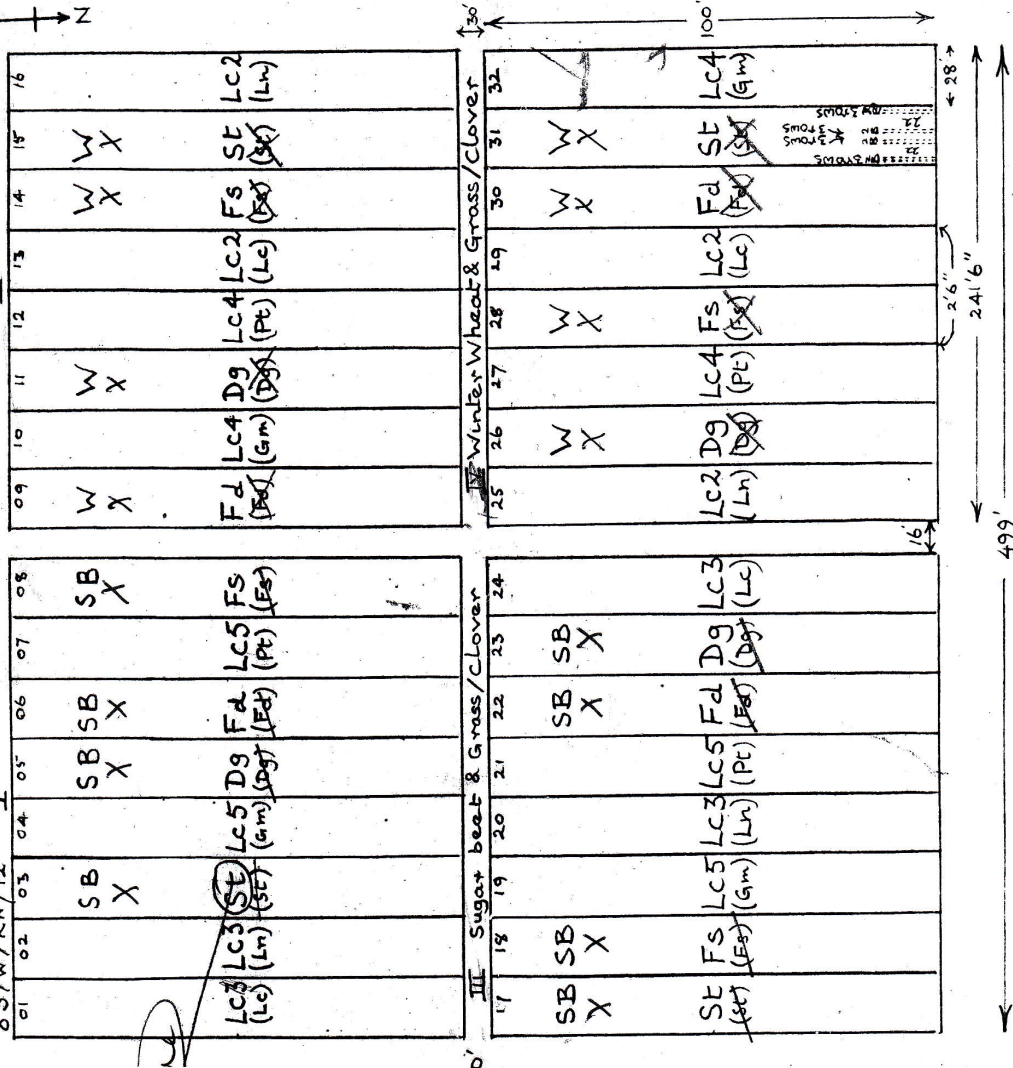
**Fertilisers**  
 Fd \* 2000kg (1784lb) of (0:14:28), 400kg (357lb) Kieserite  
 approximately equivalent to P K Mg in Dg  
 St 700kg (624lb) of (0:20:20), 200kg (178lb) Kieserite  
 Fs 1000kg (892lb) of (0:14:28), 200kg (178lb) Kieserite, 1/2 rate of Fd P lots  
 \* One half before ploughing & one half after ploughing.

Blocks I & III (plots not in ley)  
 W Winter wheat Variety: Avalon sown at 170lb (190kg) Date 10 Nov  
 Blocks II & IV (Plots not in ley)  
 BE Winter beans Variety: Throws MS sown at 220lb (247kg) Date 10 Nov  
 Residues of Organic Manures (applied annually 1965-71) & Ley (sown 1965)  
 (Dg) 40 tonnes (16 tons) FYM (St) 7.5 tonnes (3 tons) (DM) Straw  
 (Pt) 75 tonnes (3 tons) (DM) Peat (gm) Green Manure  
 (Lc) Grass/Clover ley { Ploughed up 1971 Blocks I & III,  
 (Ln) Grass ley with N 1972 Block II & IV  
 Residues of Fertilisers (applied annually 1965-71)  
 (Fd) P, K, Mg equivalent to Dg (High P, K, Mg)  
 (Fs) K, Mg equivalent to Straw with P (Low P, K, Mg)  
**STANDARD MANURING per hectare (acre)**  
 ALL blocks Lc 1000kg (892lb) of (0:14:28), 200kg (178lb) Kieserite  
 to be applied in autumn/winter  
 1st year ley only - 50kg (45lb) N as 'Nitro-chalk' in the seedbed  
 W. Wheat - Blocks I & III 150kg (134lb) N as 'Nitro-chalk' in spring

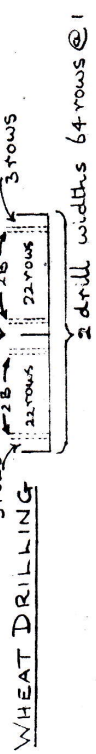
**PLOT AREA**  
 28 x 100' = 0.0643 acre (0.0260 ha)  
 Harvested W. Wheat - Eastern strip of each plot 1982  
 2.75m x 100' = 0.0207 acre (0.0084 ha)  
 W. Beans combine width x 100



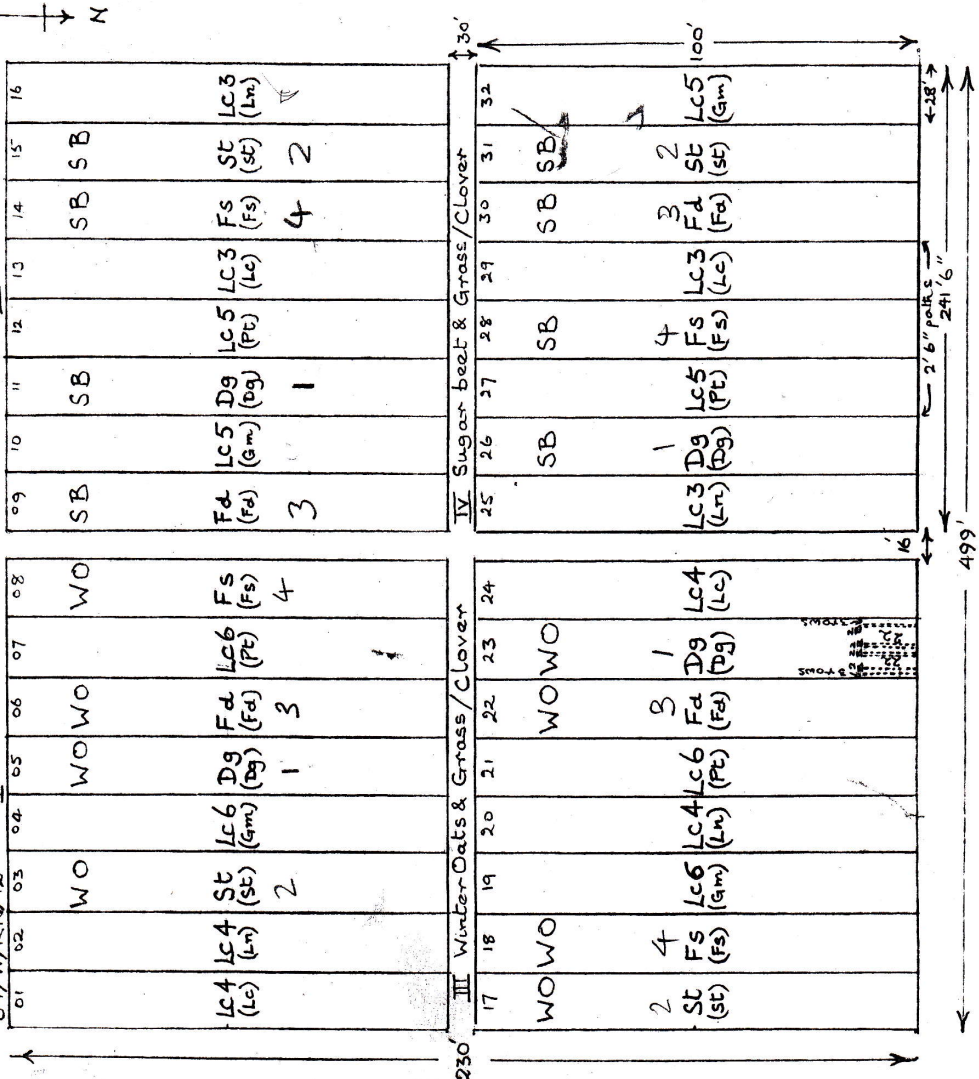
WOBURN 83/W/RN/12 I  
 Sugar beet & Grass/Clover  
 Winter Wheat & Grass/Clover  
 ORGANIC MANURING EXPERIMENT 19th year STACKYARD 'B' 1983  
 Sponsor: A. E. Johnston



TREATMENTS per hectare (acre)  
Organic Manures  
 Dg 50 tonnes (20 tons) FYM (No P, K, or Mg as fert)  
 St 7.5 tonnes (3 tons) Straw  
 Lc5, Lc 4 (Pt & Gm) Grass/Clover ley { Blocks I & II sown Jul 1979  
 { Blocks II & IV sown Apr 1980  
 { Blocks I & III sown Spr 1981  
 { Blocks II & IV sown Spr 1982  
 Lc3, Lc2 (Lc & Ln) Grass/Clover ley  
Fertiliser  
 Fd\* 1556 kg (1388 lb) of (0:18:36), 400 kg (357 lb) Kieserite  
 approximately equivalent to P K Mg in Dg  
 St 700 kg (624 lb) of (0:20:20), 200 kg (178 lb) Kieserite  
 Fs 778 kg (694 lb) of (0:18:36), 200 kg (178 lb) Kieserite, 1/2 rd  
 \* One half before ploughing & one half after ploughing  
 Blocks I & III (plots not in ley) sown at Dc  
 SB Sugar beet Variety: sown at Dc  
 Blocks II & IV (plots not in ley)  
 W Winter wheat Variety: Avalon sown at 170 lb (190 kg) Dc  
 Residues of Organic Manures (applied annually 1965-71) & Ley (S  
 (Dg) 40 tonnes (16 tons) FYM, (St) 7.5 tonnes (3 tons) (Dm) Straw  
 (Pt) 7.5 tonnes (3 tons) (Dm) Peat, (Gm) Green Manure  
 (Lc) Grass/clover ley { Ploughed up 1971 Blocks I & III,  
 (Lr) Grass ley with N { 1972 Block II & IV  
 Residues of Fertilisers (applied annually 1965-71)  
 (Fd) P, K, Mg equivalent to Dg (High P, K, Mg)  
 (Fs) K, Mg equivalent to straw with P (Low P, K, Mg)  
STANDARD MANURING per hectare (acre)  
 ALL blocks Lc 778 kg (694 lb) of (0:18:36), 200 kg (178 lb)  
 to be applied in autumn/winter  
 W Wheat-Blocks II & IV 150 kg (134 lb) N as Nitro-Chalk in spr  
 Sugar beet-Blocks I & III 150 kg (134 lb) N as Nitro-Chalk  
PLOT AREA  
 28 x 100 = 0.0643 acre (0.0260 ha)  
 Harvested W. Wheat - Eastern strip of each plot 1983  
 275m x 100 = 0.0207 acre (0.0084 ha)  
 Sugar beet



WOBURN 84/1/19/12  
 WINTER OATS & GRASS/CLOVER  
 SUGAR BEET & GRASS/CLOVER  
 ORGANIC MANURING EXPERIMENT  
 20th year  
 STACKYARD B' 1984  
 SPONSOR: A E JOHNSTON



TREATMENTS per hectare (acre)  
Organic Manures  
 Dg 50 tonnes (30 tons) FYM (No P, K, or Mg as fertilizer)  
 SB 7.5 tonnes (3 tons) Straw  
 Lc6/Lc5 (Pt & Gm) Grass/Clover ley { Blocks I & III sown June 1979  
 { Blocks II & IV sown April 1980  
 { Blocks I & III sown Spring 1981  
 { Blocks II & IV sown Spring 1982  
 Lc4, Lc3 (Lc & Ln) Grass/Clover  
Fertilizer  
 Fd\* 1556 kg (1388 lb) of (0:18:36), 400 kg (357 lb) Kieserite  
 approximately equivalent to PK Mg in Dg  
 St 700 kg (624 lb) of (0:20:20), 200 kg (178 lb) Kieserite  
 Fs 778 kg (694 lb) of (0:18:36), 200 kg (178 lb) Kieserite  
 \* One half before ploughing & one half after ploughing  
 Blocks I & III (plots not in ley)  
 WO Winter Oats. Variety: Panemina. Sown at: 1806 (20 kg) Date 10 Oct  
 Blocks II & IV (plots not in ley) (precision drilled) P, Dg  
 SB Sugar beet. Variety: Monroie. Sown at: P, Dg  
 Residues of Organic Manures (applied annually 1965-71) 811 kg (500 lbs) (Dg)  
 40 tonnes (30 tons) FYM. (St) 7.5 tonnes (3 tons) (Dm) Straw  
 (Pt) 7.5 tonnes (3 tons) (Dm) Peat. (Gm) Green Manure.  
 (Lc) Grass/Clover ley { Ploughed up 1971 Blocks I & II  
 (Ln) Grass ley with N { 1972 Blocks II & IV  
 Residues of Fertilizers (applied annually 1965-71)  
 (Fd) P, K, Mg equivalent to Dg (High P, K, Mg)  
 (Fs) K, Mg equivalent to straw with P (Low P, K, Mg)  
 STANDARD MANURING per hectare (acre)  
 ALL blocks Lc 778 kg (694 lb) of (0:18:36), 200 kg (178 lb) Kieserite  
 to be applied in autumn/winter  
 W.Oats - Blocks I & III 50 kg N as Nitro-Chalk in Spring  
 Sugar beet - Blocks II & IV 150 kg (134 lb) N as Nitro-Chalk

28' x 100' = 0.0643 acre (0.0260 ha)  
 Harvested W.Oats - Eastern strip of each plot (1984)  
 2.75m x 100' = 0.0207 acre (0.0084 ha)

