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Collection of Plans for the Woburn Organic Manuring Experiment

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W/RN/12 - Woburn Organic Manuring 1975 - 1979

Rothamsted Research

Rothamsted Research (1966-1988) *W/RN/12 - Woburn Organic Manuring 1975 - 1979* ; Collection Of Plans For The Woburn Organic Manuring Experiment, pp 10 - 14

WOBBURN ORGANIC MANURING EXPERIMENT

Barley

75 N/RN/12	01	02	03	04	05	06	07	08
1.2	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.4
3.2	3.1	3.0	2.9	2.8	2.7	2.6	2.5	2.4
4.6	4.5	4.4	4.3	4.2	4.1	4.0	3.9	3.8
(Lc)	(Lm)	(St)	(Gm)	(Dg)	(F4)	(Pt)	(Fs)	(Lc)
0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
5.7	5.6	5.5	5.4	5.3	5.2	5.1	5.0	4.9

III Barley

75 N/RN/12	01	02	03	04	05	06	07	08
1.2	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.4
3.2	3.1	3.0	2.9	2.8	2.7	2.6	2.5	2.4
4.6	4.5	4.4	4.3	4.2	4.1	4.0	3.9	3.8
(Lc)	(Lm)	(St)	(Gm)	(Dg)	(F4)	(Pt)	(Fs)	(Lc)
0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
5.7	5.6	5.5	5.4	5.3	5.2	5.1	5.0	4.9

Sugar beet

75 N/RN/12	01	02	03	04	05	06	07	08
1.2	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.4
3.2	3.1	3.0	2.9	2.8	2.7	2.6	2.5	2.4
4.6	4.5	4.4	4.3	4.2	4.1	4.0	3.9	3.8
(Lc)	(Lm)	(St)	(Gm)	(Dg)	(F4)	(Pt)	(Fs)	(Lc)
0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
5.7	5.6	5.5	5.4	5.3	5.2	5.1	5.0	4.9

IV Sugar beet

75 N/RN/12	01	02	03	04	05	06	07	08
1.2	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.4
3.2	3.1	3.0	2.9	2.8	2.7	2.6	2.5	2.4
4.6	4.5	4.4	4.3	4.2	4.1	4.0	3.9	3.8
(Lc)	(Lm)	(St)	(Gm)	(Dg)	(F4)	(Pt)	(Fs)	(Lc)
0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
5.7	5.6	5.5	5.4	5.3	5.2	5.1	5.0	4.9

11th year

STACKYARD B 1975

Sponsor: G.E.G. Mattingly

TREATMENTS per acre (hectare)

Residues of Organic Manures (applied annually 1965-71) and Lay (50N/95S)

(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

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

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

Fertilisers

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

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

Nitrogen to Barley 1975 Blocks I & II

No - None, N1-0.2, N2-0.4, N3-0.6, N4-0.8, N5-1.0, N6-1.19, N7-1.39 cwt N/100
0 25 50 75 100 125 150 175 kg/ha N/100

Nitrogen to Sugar beet 1975 Blocks II & IV

No - None, N1-0.3, N2-0.6, N3-0.9, N4-1.3, N5-1.6, N6-1.9, N7-2.2 cwt N/100
0 40 80 120 160 200 240 280 kg/ha N/100

VARIETIES

Blocks I & II Barley - Julia Sown at: 140 lb (157 kg) Date: 4 Mar

Blocks II & IV Sugar beet - Klein E sown at: 5 lb (5.6 kg) Date 29 Apr

BASAL MANURING per acre (hectare)

Sugar beet - 0.9 cwt (114 kg) P₂O₅ as superphosphate, 1.4 t (180 kg) K₂O as
muriate of potash ploughed in in autumn. 510 lb (572 kg) compound

fertiliser (0:20:20), 89 lb (100 kg) MgO as Epsom salts in the seed bed
7.3 lb (8.2 kg) B₂O₃ as 'Solubor' in June. 2 tons (5 tonnes) chalk

Barley - 255 lb (286 kg) compound fertiliser (0:20:20) c.d.

Sub-plot area

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

WOBURN 12th year STACKYARD B 1976 204
Sponsor: G.E.G. Mattingly

ORGANIC MANURING EXPERIMENT
Barley II

76/14/RN/12 Winter Oats I

	01	02	03	04	05	06	07	08
1	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
2	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
3	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
4	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
5	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
6	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
7	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
8	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
9	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
10	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2

	09	10	11	12	13	14	15	16
1	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
2	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
3	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
4	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
5	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
6	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
7	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
8	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
9	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
10	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2

III Winter Oats

	17	18	19	20	21	22	23	24
1	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
2	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
3	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
4	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
5	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
6	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
7	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
8	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
9	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
10	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2

IV Barley

	25	26	27	28	29	30	31	32
1	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
2	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
3	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
4	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
5	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
6	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
7	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
8	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
9	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2
10	1.0	2.3	4.2	2.6	6.7	0.2	2.5	5.2

TREATMENTS per acre (hectare)

Residues of Organic Manures (applied annually 1963-71) and Ley (Season 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

(Lc) Grass-clover ley { ploughed up 1971 Blocks I & II

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

Fertilisers

(Fd) PK, Mg equivalent to Dg (High PK Mg)

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

Nitrogen to Barley 1975 Blocks I & II

No-Norm, N1-0.2, N2-0.4, N3-0.6, N4-0.8, N5-1.0, N6-1.19, N7-1.39 cat N on

0 25 50 75 100 125 150 175 kg Nitro-chalk 25

Residues of Nitrogen to Barley 1975 Blocks I & II W. Oct 1975

(O) -Norm (p) -0.2 (2) -0.4 (3) -0.6 (4) -0.8 (5) -1.0 (6) -1.19 (7) -1.39 cat N

0 25 50 75 100 125 150 175 kg N

VARIETIES (202 kg)

Blocks I & II Winter Oats - Peniarth sown at 10 lb Date: 27 Oct

Blocks III & IV Barley - Julia sown at 145 lb (162 kg) Date: 8 Mar

BASAL MANURING per acre (hectare)

Winter Oats - 270 lb (303 kg) compound fertiliser (0:20:20) c.p

Spring Barley - 260 lb (291 kg) compound fertiliser (0:20:20) c.p

SUB-PLOT AREA

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

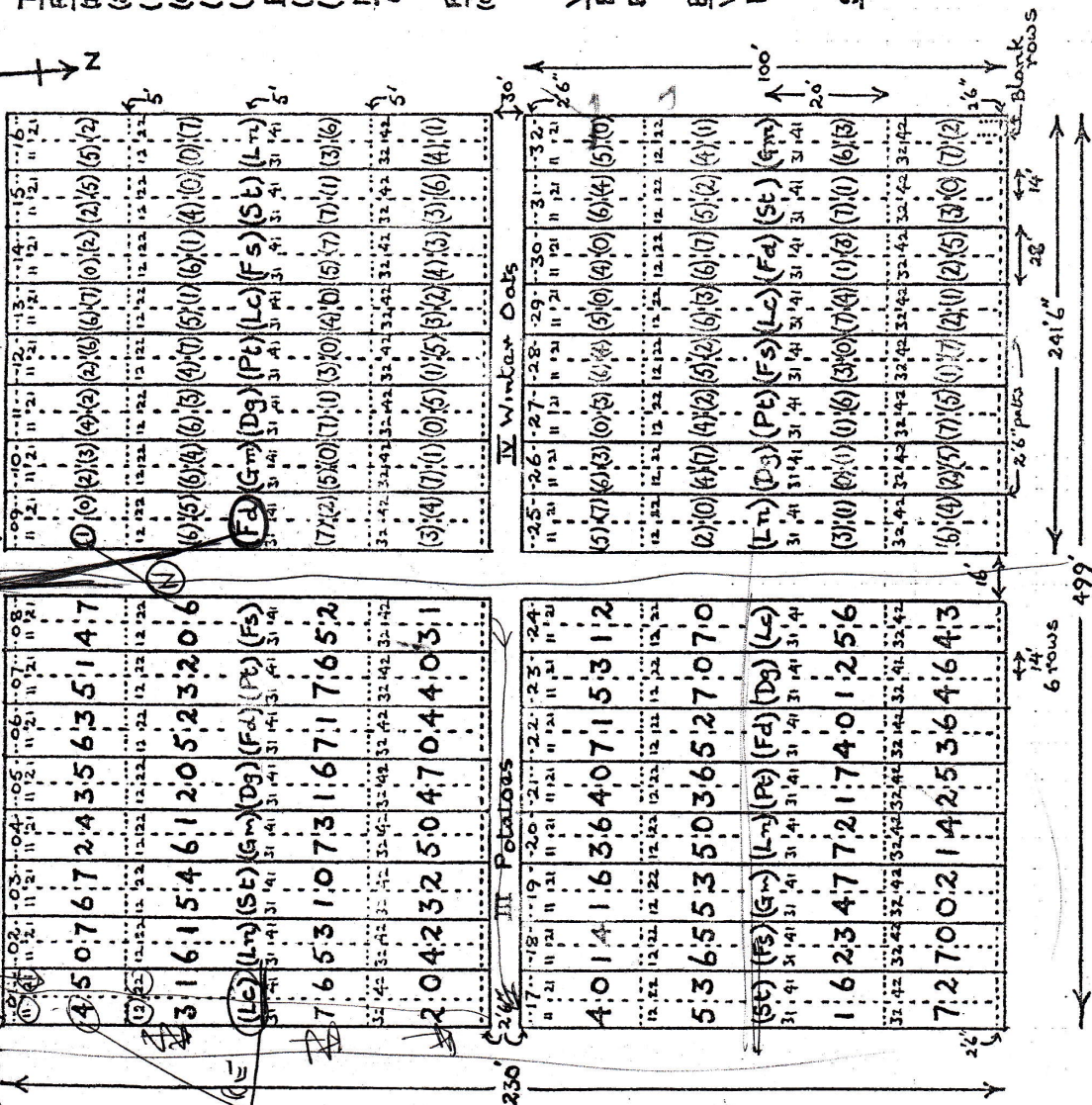
WOBURN 1971/72
ORGANIC MANURING EXPERIMENT
13th year
STACKYARD B' 1977
201
Sponsor: G.E.G. Mattingly

TREATMENTS per acre (hectare)
Residues of Organic Manures (applied annually 1965-71) & lay down (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
Fertilisers
(Fd) P, K, Mg equivalent to Dg (High PKMg)
(Fs) K, Mg equivalent to Straw with P (Low PKMg)
Nitrogen to Potatoes 1971 Blocks I & III
O-None, 1-0.6, 2-1.19, 3-1.19, 4-2.39, 5-2.99, 6-3.58, 7-4.18, 8-4.78
Residues of Nitrogen to Barley 1976 Blocks II & IV w.o. Oct 1977
(O)-None, (1)-0.2, (2)-0.4, (3)-0.6, (4)-0.8, (5)-1.0, (6)-1.19, (7)-1.39, 8-1.59
0 25 50 75 100 125 150 175 kg N

VARIETIES
Blocks I & III Potatoes - Pentland Crown Planted:
Blocks II & IV Winter Oats - Peniarth sown @ 180 lb (82) Date: 8 Nov

BASAL MANURING per acre (hectare)
Winter Oats - 260 lb (291 kg) compound fertiliser (0:20:20) CPO
Potatoes - 1020 lb (1143 kg) compound fertiliser (0:20:20) IN autumn, 1075 lb (1205 kg) compound fertiliser (0:20:20) IN the seedbed plus 336 lb (377 kg) Kieserite

SUB-PLOT AREA
14' x 20' = 0.0064 acre (0.0026 ha)



ORGANIC MANURING EXPERIMENT 14th year
Potatoes

WOBURN Winter Wheat

78 W/RN/12, I																78 W/RN/12, II															
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24								
11	12	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11								
4	5	0	7	2	4	3	5	1	4	6	7	5	4	3	5	2	0	1	4	7	4	1	3								
12	22	12	12	12	12	12	12	12	22	12	22	12	22	12	22	12	22	12	22	12	22	12	22								
3	6	1	5	4	6	1	2	0	5	2	3	2	0	6	1	0	5	2	3	2	0	6	1								
(Lc)	(Ln)	(St)	(Gm)	(Dg)	(Fd)	(Pl)	(Fs)	(Fd)	(Gm)	(Dg)	(Pl)	(Lc)	(Fs)	(St)	(Ln)	(Ln)	(Dg)	(Pl)	(Fs)	(Lc)	(Fd)	(St)	(Gm)								
3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4								
7	6	5	3	1	0	7	3	1	6	7	1	7	6	5	2	0	5	2	7	0	6	4	1								
33	42	32	42	32	42	32	42	32	42	32	42	32	42	32	42	32	42	32	42	32	42	32	42								
2	0	4	2	3	2	5	0	4	7	0	4	0	3	1	4	3	0	6	7	2	6	2	4								
26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"								
III Winter Wheat																IV Potatoes															
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40								
11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11								
4	0	1	4	1	6	3	6	2	0	1	4	7	4	1	3	2	0	1	4	7	4	1	3								
12	12	12	12	12	12	12	12	12	22	12	22	12	22	12	22	12	22	12	22	12	22	12	22								
5	3	6	5	5	3	0	3	6	5	2	7	0	7	0	5	1	4	1	0	2	5	3	6								
(St)	(Fs)	(Gm)	(Ln)	(Pl)	(Dg)	(Fd)	(Lc)	(Ln)	(Dg)	(Pl)	(Fs)	(Lc)	(Fd)	(St)	(Gm)	(Ln)	(Dg)	(Pl)	(Fs)	(Lc)	(Fd)	(St)	(Gm)								
3	1	4	3	1	4	3	1	3	1	4	3	1	4	3	1	3	1	4	3	1	4	3	1								
1	6	2	3	4	7	7	2	1	7	4	0	1	2	5	6	4	6	7	6	6	1	4	7								
32	42	32	42	32	42	32	42	32	42	32	42	32	42	32	42	32	42	32	42	32	42	32	42								
7	2	7	0	0	2	1	4	1	3	5	2	0	2	6	0	5	6	5	2	4	7	0	5								
26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"	26"								
Blank rows																Blank rows															
230'																241'6"															
499'																6 rows															

TREATMENTS per acre (hectare)

Residues of Organic Manures (applied annually 1965-71) & Ley (Sown in '69) 4 tons (10 tonnes) (DM) FYM, 16 tons (40 tonnes) FYM

(5t) 3 tons (7.5 tonnes) (DM) straw

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

(gm) Green Manure

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

(Lm) Grass lay with N 1972 Blocks II & IV

Fertilisers

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

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

Nitrogen to Winter Wheat 1978 Series I & II

0-None, 1-0.24, 2-0.48, 3-0.72, 4-0.96, 5-1.20, 6-1.44, 7-1.68, 8-2.00

0 30 60 90 120 150 180 210 kg N

Nitrogen to Paraffins 1978 Series II & IV

0-None, 1-0.9, 2-1.9, 3-1.9, 4-2.9, 5-2.9, 6-3.8, 7-4.8, 8-5.8, 9-6.8, 10-7.8, 11-8.8, 12-9.8, 13-10.8, 14-11.8, 15-12.8, 16-13.8, 17-14.8, 18-15.8, 19-16.8, 20-17.8, 21-18.8, 22-19.8, 23-20.8, 24-21.8, 25-22.8, 26-23.8, 27-24.8, 28-25.8, 29-26.8, 30-27.8, 31-28.8, 32-29.8, 33-30.8, 34-31.8, 35-32.8, 36-33.8, 37-34.8, 38-35.8, 39-36.8, 40-37.8, 41-38.8, 42-39.8, 43-40.8, 44-41.8, 45-42.8, 46-43.8, 47-44.8, 48-45.8, 49-46.8, 50-47.8, 51-48.8, 52-49.8, 53-50.8, 54-51.8, 55-52.8, 56-53.8, 57-54.8, 58-55.8, 59-56.8, 60-57.8, 61-58.8, 62-59.8, 63-60.8, 64-61.8, 65-62.8, 66-63.8, 67-64.8, 68-65.8, 69-66.8, 70-67.8, 71-68.8, 72-69.8, 73-70.8, 74-71.8, 75-72.8, 76-73.8, 77-74.8, 78-75.8, 79-76.8, 80-77.8, 81-78.8, 82-79.8, 83-80.8, 84-81.8, 85-82.8, 86-83.8, 87-84.8, 88-85.8, 89-86.8, 90-87.8, 91-88.8, 92-89.8, 93-90.8, 94-91.8, 95-92.8, 96-93.8, 97-94.8, 98-95.8, 99-96.8, 100-97.8, 101-98.8, 102-99.8, 103-100.8, 104-101.8, 105-102.8, 106-103.8, 107-104.8, 108-105.8, 109-106.8, 110-107.8, 111-108.8, 112-109.8, 113-110.8, 114-111.8, 115-112.8, 116-113.8, 117-114.8, 118-115.8, 119-116.8, 120-117.8, 121-118.8, 122-119.8, 123-120.8, 124-121.8, 125-122.8, 126-123.8, 127-124.8, 128-125.8, 129-126.8, 130-127.8, 131-128.8, 132-129.8, 133-130.8, 134-131.8, 135-132.8, 136-133.8, 137-134.8, 138-135.8, 139-136.8, 140-137.8, 141-138.8, 142-139.8, 143-140.8, 144-141.8, 145-142.8, 146-143.8, 147-144.8, 148-145.8, 149-146.8, 150-147.8, 151-148.8, 152-149.8, 153-150.8, 154-151.8, 155-152.8, 156-153.8, 157-154.8, 158-155.8, 159-156.8, 160-157.8, 161-158.8, 162-159.8, 163-160.8, 164-161.8, 165-162.8, 166-163.8, 167-164.8, 168-165.8, 169-166.8, 170-167.8, 171-168.8, 172-169.8, 173-170.8, 174-171.8, 175-172.8, 176-173.8, 177-174.8, 178-175.8, 179-176.8, 180-177.8, 181-178.8, 182-179.8, 183-180.8, 184-181.8, 185-182.8, 186-183.8, 187-184.8, 188-185.8, 189-186.8, 190-187.8, 191-188.8, 192-189.8, 193-190.8, 194-191.8, 195-192.8, 196-193.8, 197-194.8, 198-195.8, 199-196.8, 200-197.8, 201-198.8, 202-199.8, 203-200.8, 204-201.8, 205-202.8, 206-203.8, 207-204.8, 208-205.8, 209-206.8, 210-207.8, 211-208.8, 212-209.8, 213-210.8, 214-211.8, 215-212.8, 216-213.8, 217-214.8, 218-215.8, 219-216.8, 220-217.8, 221-218.8, 222-219.8, 223-220.8, 224-221.8, 225-222.8, 226-223.8, 227-224.8, 228-225.8, 229-226.8, 230-227.8, 231-228.8, 232-229.8, 233-230.8, 234-231.8, 235-232.8, 236-233.8, 237-234.8, 238-235.8, 239-236.8, 240-237.8, 241-238.8, 242-239.8, 243-240.8, 244-241.8, 245-242.8, 246-243.8, 247-244.8, 248-245.8, 249-246.8, 250-247.8, 251-248.8, 252-249.8, 253-250.8, 254-251.8, 255-252.8, 256-253.8, 257-254.8, 258-255.8, 259-256.8, 260-257.8, 261-258.8, 262-259.8, 263-260.8, 264-261.8, 265-262.8, 266-263.8, 267-264.8, 268-265.8, 269-266.8, 270-267.8, 271-268.8, 272-269.8, 273-270.8, 274-271.8, 275-272.8, 276-273.8, 277-274.8, 278-275.8, 279-276.8, 280-277.8, 281-278.8, 282-279.8, 283-280.8, 284-281.8, 285-282.8, 286-283.8, 287-284.8, 288-285.8, 289-286.8, 290-287.8, 291-288.8, 292-289.8, 293-290.8, 294-291.8, 295-292.8, 296-293.8, 297-294.8, 298-295.8, 299-296.8, 300-297.8, 301-298.8, 302-299.8, 303-300.8, 304-301.8, 305-302.8, 306-303.8, 307-304.8, 308-305.8, 309-306.8, 310-307.8, 311-308.8, 312-309.8, 313-310.8, 314-311.8, 315-312.8, 316-313.8, 317-314.8, 318-315.8, 319-316.8, 320-317.8, 321-318.8, 322-319.8, 323-320.8, 324-321.8, 325-322.8, 326-323.8, 327-324.8, 328-325.8, 329-326.8, 330-327.8, 331-328.8, 332-329.8, 333-330.8, 334-331.8, 335-332.8, 336-333.8, 337-334.8, 338-335.8, 339-336.8, 340-337.8, 341-338.8, 342-339.8, 343-340.8, 344-341.8, 345-342.8, 346-343.8, 347-344.8, 348-345.8, 349-346.8, 350-347.8, 351-348.8, 352-349.8, 353-350.8, 354-351.8, 355-352.8, 356-353.8, 357-354.8, 358-355.8, 359-356.8, 360-357.8, 361-358.8, 362-359.8, 363-360.8, 364-361.8, 365-362.8, 366-363.8, 367-364.8, 368-365.8, 369-366.8, 370-367.8, 371-368.8, 372-369.8, 373-370.8, 374-371.8, 375-372.8, 376-373.8, 377-374.8, 378-375.8, 379-376.8, 380-377.8, 381-378.8, 382-379.8, 383-380.8, 384-381.8, 385-382.8, 386-383.8, 387-384.8, 388-385.8, 389-386.8, 390-387.8, 391-388.8, 392-389.8,

VARIETIES

Block I & III Winter Wheat - Morris Huntsman sown at: 1906 (213 kg)

Block II & IV Potatoes - Pentland Crown Planted: 24 Apr. Date: 14 Nov

BASAL MANURING per acre (hectare)

Winter Wheat - 0.9 cwt/114 kg P₂O₅ as superphosphate

0.48 cwt (60 kg) K_2O as Muriate of potash

Potatoes - 1080 lb (1210 kg) compound fertiliser (0120120)

in autumn, 1080 lb/12,0 kg) compound fertilizer

(0:20:20) in the seabed plus 372 lb (417 kg)

Kieserite

SUB-PLOT AREA

$$14' \times 20' = 0.0064 \text{ acre (0.0026 ha)}$$

