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RESEARCH

Collection of Plans for the Woburn Organic Manuring Experiment

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W/RN/12 - Woburn Organic Manuring 1985 - 1989

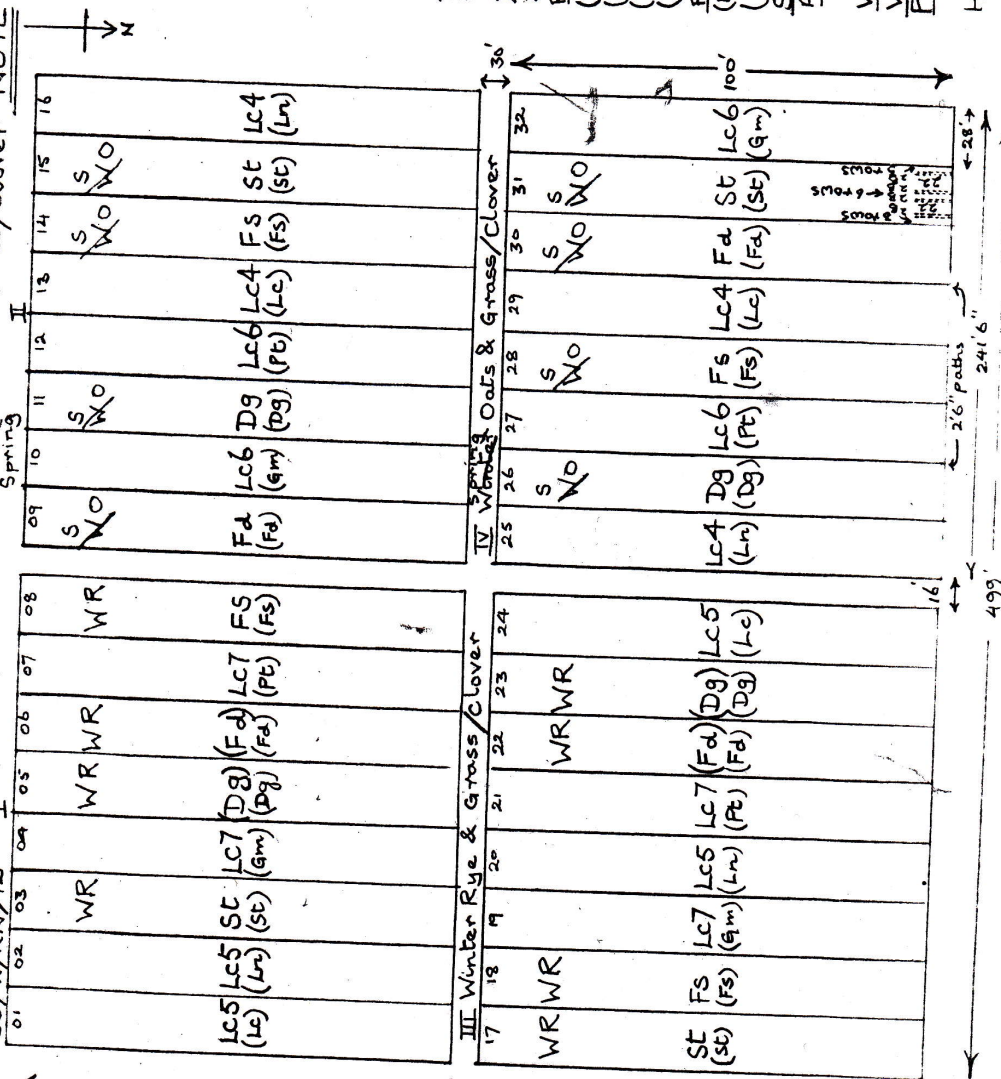
Rothamsted Research

Rothamsted Research (1966-1988) *W/RN/12 - Woburn Organic Manuring 1985 - 1989* ; Collection Of Plans For The Woburn Organic Manuring Experiment, pp 20 - 24

WOBURN
 85/W/EN/12
 Winter Rye & Grass/Clover
 Winter Oats & Grass/Clover
 Spring

ORGANIC MANURING EXPERIMENT
 * 21st year
 S Oats replaced
 failed W Oats 18.485.

STACKYARD 'B' 1985
 Sponsor: A.E. Johnston



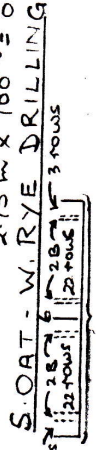
TREATMENTS per hectare (acre)
 Organic Manures
 Dg 50 tonnes (20 tons) FYM (No P, K or Mg as fertilizer)
 St 7.5 tonnes (3 tons) Straw to all series
 Lc7, Lc6 (Pt & Gm) Grass/Clover ley { Blocks I & III sown June 1979
 { Blocks II & IV sown April 1980
 Lc5, Lc4 (Lc & Ln) Grass/Clover ley { Blocks I & III sown May 1981
 { Blocks II & IV sown April 1982

Fertilizer (F)
 Fd* 1556kg (1388lb) of (0:18:36), 400kg (557lb) Kieserite
 approximately equivalent to PKMg in Dg
 St 700kg (644lb) of (0:20:20), 200kg (178lb) Kieserite
 Fs 778kg (694lb) of (0:18:36), 200kg (178lb) Kieserite, 1/2 rate of 100 plots
 * One half before ploughing & one half after ploughing
 Blocks I & III (plots not in ley)

WR Winter Rye Variety: Arimo Sown at: 200lb/2aok
 Blocks II & IV (plots not in ley)
 SO Spring Oats Variety: Trafalgar Sown at: 175lb (196kg) Date: 24 Oct
 Residues of Organic Manures (applied annually 1965-71) & Ley (Sown 1965)

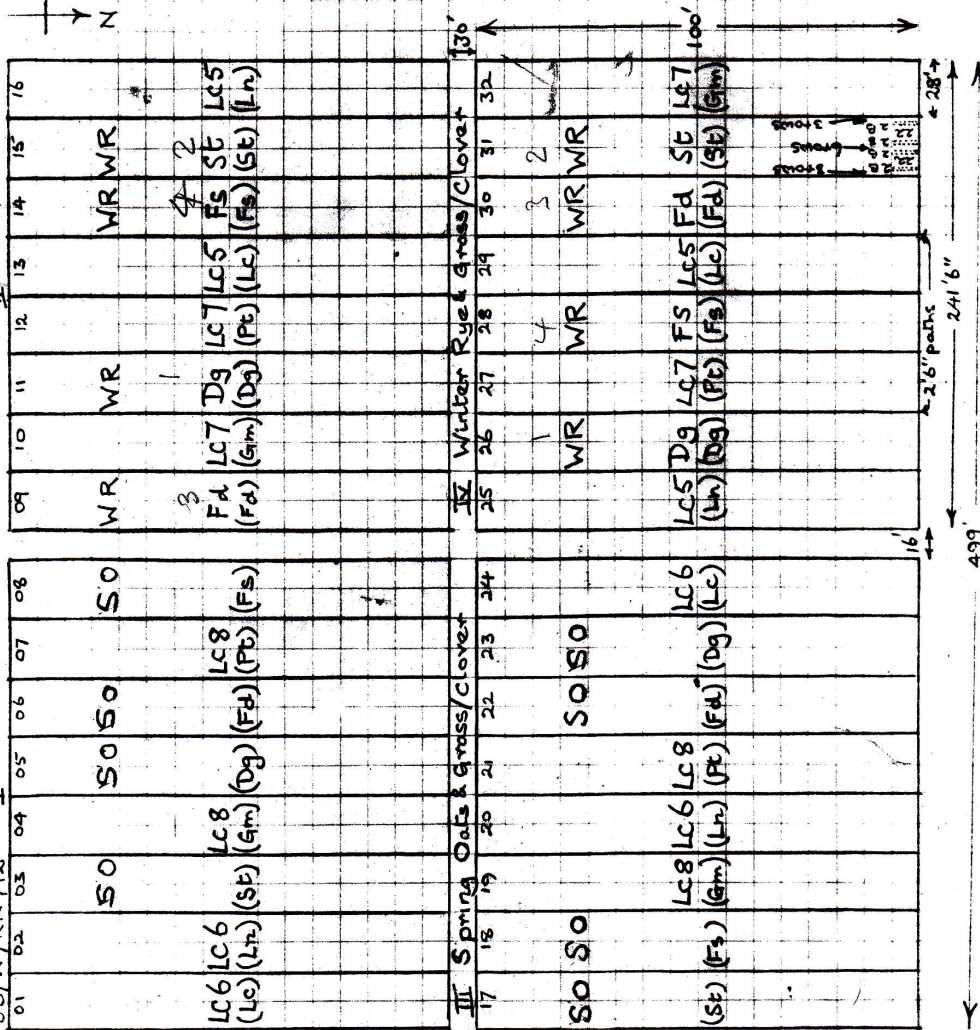
(Dg) 40 tonnes (16 tons) FYM. (St) 7.5 tonnes (3 tons) (Dm) Straw
 (Pt) 7.5 tonnes (3 tons) (Dm) Peat. (Gm) Green Manure
 (Lc) Grass/Clover ley { Ploughed up 1971 Blocks I & III
 (Ln) Grass ley with N { 1972 Blocks II & IV
 Residues of Fertilizers (applied annually 1965-71)
 (Fd) P, K, Mg equivalent 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 778kg (694lb) of (0:18:36), 200kg (178lb) Kieserite
 Do be applied in autumn/winter

W. Rye - Blocks I & III 30 kg N as 'Nitro-Chalk' in Spring
 W. Oats - Blocks II & IV 50 kg N as 'Nitro-Chalk' in Spring
 PLOT AREA
 28' x 100' = 0.0643 acre (0.0260 ha)
 Harvested S. Oats - W. Rye Eastern strip of each Plot 1985
 2.75m x 100' = 0.0207 acre (0.0084 ha)



2 drill widths 64 rows
 @ 12.5cm = 8m

WOBBURN ORGANIC MANURING EXPERIMENT
86/H/RN/12 I Winter Rye & Grass/Clover

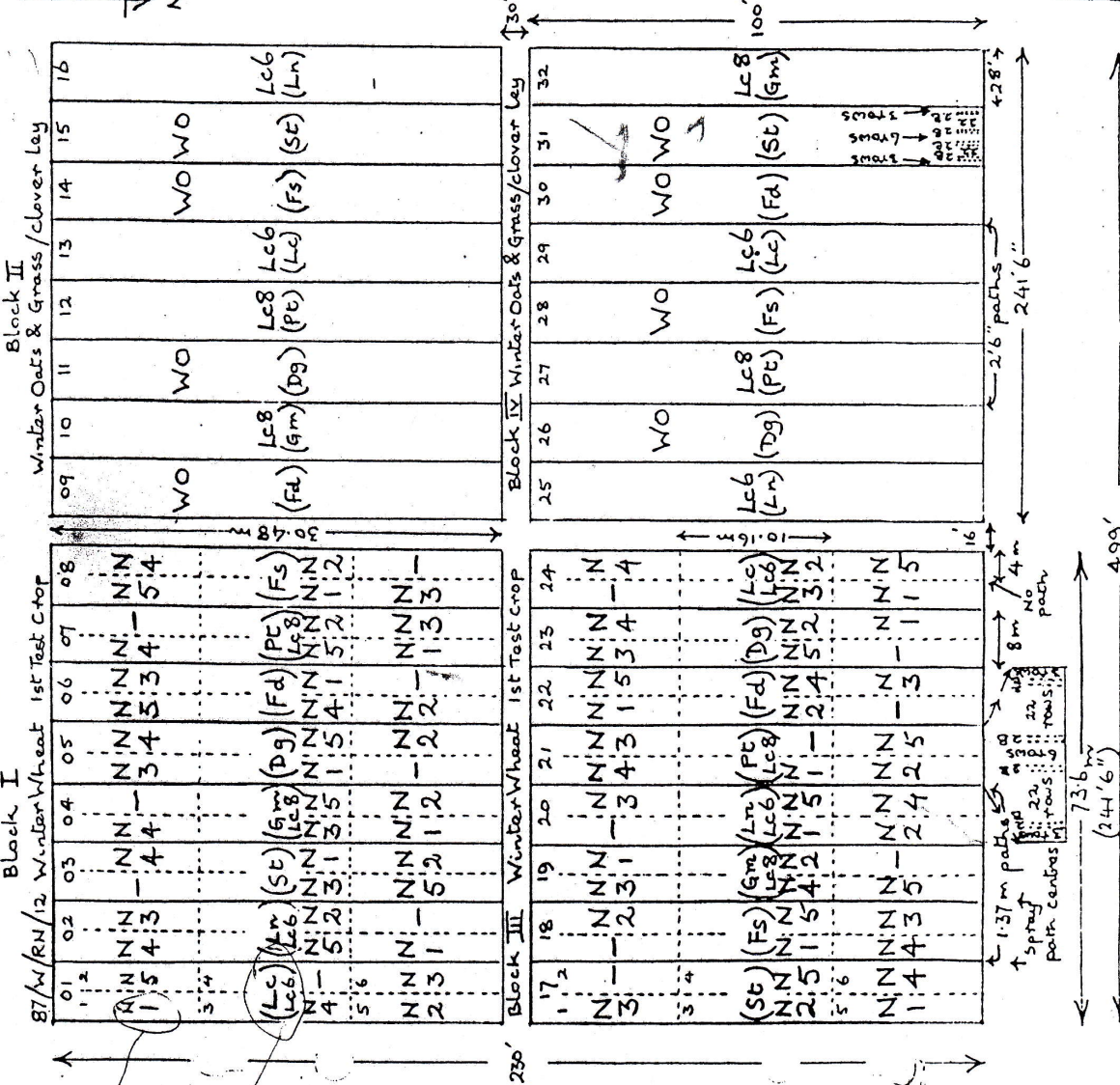


22nd year
STACKYARI B 1986
Sponsor: A.E. Johnston

TREATMENTS per hectare (acre)
Organic Manures Dg & ST to be applied for W. Rye Series II & IV only
Dg 50 tonnes (20 tons) FYM
St 7.5 tonnes (3 tons) Straw
LC8, LC7 (Lr & Gm) Grass/Clover ley [Blocks I & III sown June 1979
[Blocks II & IV sown April 1980
[Blocks I & III sown May 1981
[Blocks II & IV sown April 1982
LC6, LC5 (Lc & Lr) Grass/Clover ley [Blocks I & III sown June 1979
[Blocks II & IV sown April 1980
Fertilizer to be applied for W. Rye Series II & IV only
Fd* 155 kg (138 lb) of (0:18:36) 400kg (357 lb) Kieserite
approximately equivalent to PKMg in Dg
St 585 kg (522 lb) of (0:24:24) 200kg (178 lb) Kieserite
Fs 718 kg (694 lb) of (0:18:36) 200kg (178 lb) Kieserite, 1/2 rate of Fd
* One half before ploughing & one half after ploughing
Blocks I & III (plots not in ley) 180 kg
SO Spring Oats Variety: Dula Sown: 10 Feb Date: 10 Apr
Blocks II & IV (plots not in ley) 284 kg
W.R. Winter Rye Variety: Animo Sown: at 500 lb / Date: 13 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
(Pd) 7.5 tonnes (3 tons) (DM) Peat (Gm) Green Manure
(Lc) Grass/Clover Ley Ploughed Blocks I & III 1971
(Ln) Grass ley with N up Blocks II & IV 1972
Residues of Fertilizers (applied annually 1965-71)
(Fd) PKMg equivalent to Dg (High PK Mg)
(Fs) K Mg equivalent to Straw with P (Low PK Mg)
STANDARD MANURING per hectare (acre)
All blocks: Lc 778kg (694 lb) of (0:18:36), 200kg (178 lb) Kieserite
to be applied in autumn/winter
S.Oats Blocks I & III: 90kg N as Nitram in Spring
W.Rye Blocks II & IV: 30kg N as Nitram in Spring
PLOT AREA 28x100' = 0.0643 acre (0.0260 ha)
Harvested S.Oats - W.Rye 2.75m x 100 = 0.0207 acre (0.0084 ha)
S.OATS - W.RYE DRILLING
rows 2 drill widths 64 rows @ 12.5m = 8m

WOBURN ORGANIC MANURING EXPERIMENT

23rd year STACKYARD B 1987
Sponsor: A.E. Johnston



TREATMENTS per hectare (acre)
BLOCKS I & III - 1st Test Crop Winter Wheat
 Residues of Organic Manures (Applied in two pl)
 (Dg) FYM (250t.) } Applied in 1981-
 (St) Straw } (St) 1981-
 (Gm) Green Manure } (Gm) (Lc8) Ley (c
 (Pt) Peat } (Pt) (Lc8) 1979 -
 Residues of Fertilizer
 (Fd) P, K, Mg equivalent to Dg rate Applied annually
 (Fs) K, Mg equivalent to straw with P and 1981 -
 (late period 1/2 Dg rate)
Leys
 (Lc) Clover/grass ley } 1965-71 (Lc6) } Both clov
 (Ln) Grass ley with N (Lc6) } 1981-
 Sub Plots N treatments in spring kg ha.
 - N1, N2, N3, N4, N5 = 0, 50, 100, 150, 200, 25
STANDARD APPLICATIONS Winter Wheat only
 Carbofuran at 7.5 kg/ha broadcast in the seedbed.
 (standard rate) must be applied 7-14 days before sowing, repi
VARIETY : Mercia Sown at Date:
BASAL MANURING per hectare
 (0:18:36) at 556 kg. Manganese, foliar applic
BLOCKS II & IV - Winter Oats
 Residues of Organic Manures (applied annually)
 (Dg) FYM (St) Straw
 (Lc) clover/grass ley, (Ln) Grass Ley with N pl
 Residues of Fertilizer
 (Fd) P, K, Mg equivalent to Dg Applied annua
 (Fs) P, K, Mg equivalent to 1/2 Dg and 1982-
STANDARD MANURING per hectare
 Lc8 (Gm), Lc6 (Ln) } 778 kg (0:18:36)
 Lc8 (Pt), Lc6 (Ln) } 200 kg (Kasevite) of
 WO Winter Oats ; kg N as N from in spri
VARIETY : Penarth Sown at
PLOT AREA
 Blocks I & III 8m x 30.48m = 0.0244ha
 Blocks II & IV 9.8' x 100' = 0.0643 acre (c
 Sowing date of W. wheat to be the same as for RN/13 Inter
 Plots drilled without paths between sub-plots, paths
 just before. No application to allow for maximum sampling

Woburn 24th Year Stackyard 'B' 1988 204

ORGANIC MANURING EXPERIMENT Block II Winter Wheat 1st test crop

Block I		Block II	
Potatoes		Wheat	
88/W/RN/12	Potatoes 2nd test crop	09	10
01/2	03	11	12
04	05	13	14
06	07	15	16
08	09		
10	11		
12	13		
14	15		
16	17		
18	19		
20	21		
22	23		
24	25		
26	27		
28	29		
30	31		
32	33		
34	35		
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70	71		
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84	85		
86	87		
88	89		
90	91		
92	93		
94	95		
96	97		
98	99		
100	101		

Block III		Block IV	
Potatoes		W. Wheat	
11	12	13	14
15	16	17	18
19	20	21	22
23	24	25	26
27	28	29	30
31	32	33	34
35	36	37	38
39	40	41	42
43	44	45	46
47	48	49	50
51	52	53	54
55	56	57	58
59	60	61	62
63	64	65	66
67	68	69	70
71	72	73	74
75	76	77	78
79	80	81	82
83	84	85	86
87	88	89	90
91	92	93	94
95	96	97	98
99	100	101	102
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139	140	141	142
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147	148	149	150
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307	308	309	310
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315	316	317	318
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351	352	353	354
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463	464	465	466
467	468	469	470
471	472	473	474
475	476	477	478
479	480	481	482
483	484	485	486
487	488	489	490
491	492	493	494
495	496	497	498
499	500	501	502
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519	520	521	522
523	524	525	526
527	528	529	530
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535	536	537	538
539	540	541	542
543	544	545	546
547	548	549	550
551	552	553	554
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563	564	565	566
567	568	569	570
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575	576	577	578
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587	588	589	590
591	592	593	594
595	596	597	598
599	600	601	602
603	604	605	606
607	608	609	610
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623	624	625	626
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687	688	689	690
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695	696	697	698
699	700	701	702
703	704	705	706
707	708	709	710
711	712	713	714
715	716	717	718
719	720	721	722
723	724	725	726
727	728	729	730
731	732	733	734
735	736	737	738
739	740	741	742
743	744	745	746
747	748	749	750
751	752	753	754
755	756	757	758
759	760	761	762
763	764	765	766
767	768	769	770
771	772	773	774
775	776	777	778
779	780	781	782
783	784	785	786
787	788	789	790
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835	836	837	838
839	840	841	842
843	844	845	846
847	848	849	850
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967	968	969	970
971	972	973	974
9			

WOUBURN ORGANIC MANURING EXPERIMENT 25TH YEAR STACKYARD 'B' 1989 204

Sponsors: A.L. Johnson, P.R. Poulton
 TREATMENTS to Potatoes (P) and Winter Wheat (W)
 Residues of Organic Manures

(Dg) FYM annually 1965-71 and 1981-85
 (St) Straw annually 1965-71 and 1981-85
 (Gn) Green Manure annually 1965-71 then (Lc8) Ley (clover/grass) 1979-86 (W) 1980-87 (P)
 (Pt) Peat annually 1985-71 then (Lc8) 1979-86 (W) 1980-87 (P)
 Residues of Fertilisers
 (Fd) P, K, Mg equivalent to (Dg) rate, annually 1965-71 and 1981-86 (W) 7 (F) K Mg equivalent to straw with P, annually 1965-71 then 1/2 Dg rate, 1981-86 (P) 7 (W) 7

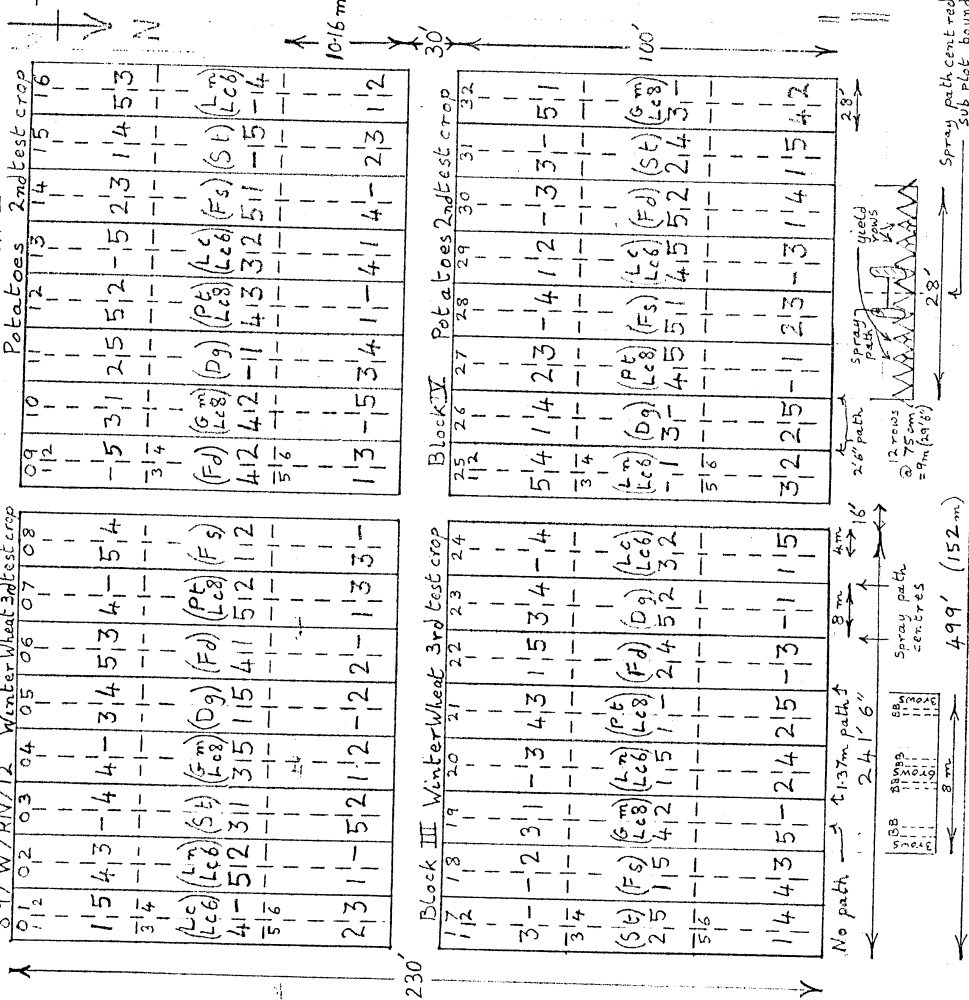
Leys
 (Lc) Clover/grass Ley 1965-71 then (Lc6) 1981-6 (W) 7 (P) - clover grass ley
 (Ln) Grass ley with N

SUB PLOTS N Treatments Kg ha⁻¹
 -1, 2, 3, 4, 5. 0, 70, 140, 210, 280, 350. (P)
 -1, 2, 3, 4, 5. 0, 50, 100, 150, 200, 250. (W)

STANDARD APPLICATIONS per hectare
 Manures: (O:18:36) @ 1390 kg and Mg as kieserite @ 667 kg (P)
 (O:18:36) @ 556 kg (W)
 Manganese foliar application in spring (W)
 Nematicides to potato seedbed: Oxamyl @ 5.0 kg (P)
 Carbosulfan @ 7.5 kg, Draxa pellets (standard rate) must be applied 7-14 days before sowing, repeated with seed (W)

VARIETIES: Pentland Crown (P)
 Mercia (W) Sown @ 165 kg/ha on 31 Oct 1988

SUB PLOT AREA: 14' x 30' = 0.0039 ha (Dimensions shown depend on crop)
 Sowing date of Potatoes to be the same for RN/13
 Plots drilled without paths between sub-plots. Cross paths to be cut just before N application to allow for maximum sampling area before then.



Block I		Block II	
1st test crop	2nd test crop	1st test crop	2nd test crop
09	10	11	12
12	13	14	15
16	17	18	19
20	21	22	23
24	25	26	27
28	29	30	31
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864	865	866	867
868	869	870	871
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876	877	878	879
880	881	882	883
884	885	886	887
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896	897	898	899
900	901	902	903
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908	909	910	911
912	913	914	915
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920	921	922	923
924	925	926	927
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936	937	938	939
940	941	942	943
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948	949	950	951
952	953	954	955
956	957	958	959
960	961	962	963
964	965	966	967
968	969	970	971
972	973	974	975
976	977	978	979
980	981	982	983
984	985	986	987
988	989	990	991
992	993	994	995
996	997	998	999
1000	1001	1002	1003