This work is licensed under a Creative Commons Attribution 4.0 International License.

Thank you for using eradoc, a platform to publish electronic copies of the Rothamsted Documents. Your requested document has been scanned from original documents. If you find this document is not readible, or you suspect there are some problems, please let us know and we will correct that.

Yields of the Field Experiments

Full Table of Content

W/RN/3 Ley Arable

Rothamsted Research

Rothamsted Research (2016) *W/RN/3 Ley Arable ;* Yields Of The Field Experiments , pp 36 - 45 **- DOI: https://doi.org/10.23637/ERADOC-1-249**

This work is licensed under a Creative Commons Attribution 4.0 International License.

16/W/RN/3

LEY/ARABLE

Object: To compare the effects on soil fertility of rotations with or without leys – Woburn, Stackyard D.

Sponsors: A. J. Macdonald

The 79th year, leys, w. beans, w. wheat, w. rye

For previous years see 'Details' 1967 & 1973 and Yield Books for 74-15/W/RN/3.

Design: 5 series of 8 plots, split for treatments other than rotations.

Whole plot dimensions: 8.53 x 40.7

Treatments: All phases of four five-course rotations were originally present:

ROTATION

LEY	Clover/grass ley:	L, L, L, P, W
CLO	All legume ley:	SA, SA, SA, P, W until 1971 then CL, CL, CL, P, W.
A	Arable with roots:	P, R, C, P, W until 1971 then P, B, B, P, W.
A H	Arable with hay:	P, R, H, P, W until 1971 then P, B, H, P, W.

P = potatoes, R = w. rye, C = carrots, W= w. wheat, B = s. barley, H = hay, L = clover/grass ley, SA = sainfoin ley, CL = red clover ley.

Rotations themselves followed different cycles:

On four plots in each block the rotations were repeated.
On four plots in each block arable rotations alternated every five years with ley rotations.
From 1976 all the rotations were changed on all phases except for the first and second test crops in 1976:

LN 3	(Previous LEY) LN1, LN2, LN3, W, R
LC 3	(Previous CLO) LC1, LC2, LC3, W, R
AF	(Previous A) F, F, BE, W, R
AB	(Previous A H) B, B, BE, W, R

From 1988 rotations AF and AB are replaced by AM and ABe respectively. Phased in at the beginning of each treatment crop sequence.

AM	R, BE, M, W, R
ABe	R, M, BE, W, R

LN1 to LN3 = three-year grass ley with N, 1st year to 3rd year,
LC= clover/grass ley, no N, BE = beans (s. oats until 1980), F = fallow,
M = forage maize

https://doi.org/10.23637/ERADOC-1-249

This work is licensed under a Creative Commons Attribution 4.0 International License.

16/W/RN/3

Plots hitherto in alternating rotations were changed to test eight-year leys and two test crops:

LLN LLN1, LLN2, LLN3, LLN4, LLN5, LLN6, LLN7, LLN8, W, R
LLC LLC1, LLC2, LLC3, LLC4, LLC5, LLC6, LLC7, LLC8, W, R
LLN1 to LLN8 = eight year grass ley with nitrogen, first year to eighth year, similarly for LLC – clover/grass ley, no nitrogen

The new scheme started by sowing these new leys in spring 1976 on four phases and in spring 1977 on the fifth phase (2nd test crop in 1976).

In 1992 w. rye (R) replaced s. barley (B) as the second test crop. Yields are taken from the leys, arable treatment crops and the test crops.

From 2007 plots previously in the 1st cycle of testing eight-year leys followed by two arable test crops (i.e. those plots which were changed to eight-year ley treatments in 1976 or 1977) changed to a three-year arable rotation followed by two arable test crops. Plots were "phased in" but joined the relevant point in the rotation. From 2008 the second cycle 8-yr grass and grass/clover leys changed to 3-yr grass or grass/clover leys respectively. They were phased in between 2008 and 2012.
LLN/AO (Previously 1st cycle, 8-yr grass ley) R, BE, O, W, R
LLC/ABe (Previously 1st cycle, 8-yr grass/clover ley) R, O, BE, W, R
LLC/LC3 (Previously 2nd cycle, 8-yr grass ley) Lc 1, Lc 2, Lc 3, W, R
LLN/LN3 (Previously 2nd cycle, 8-yr grass/clover ley) Ln 1, Ln 2, Ln 3, W, R

From 2009 W oats (O) replaced forage maize (M) in the AM and ABe rotations on block III and were phased in on blocks V, IV, II and I in subsequent years. The AM treatment was re-named AM/AO.

Treatments to first test crop w. wheat, all combinations of:

Whole plots:

1. **ROTATION** Rotations before wheat:

   LLN 8
   LN 3
   LLC 8
   LC 3
   LLC/LC3 not yet in phase
   LLN/LN3 not yet in phase
   LLN/AO not yet in phase
   LLC/ABe not yet in phase
   AM/AO
   ABe

1/ 2 plots:

2. **NSPLIT(FYM res)** Farmyard manure residues, last applied 1960s:
   Split N v single N dressing to wheat, tested 2001-5

   Nsplit (noFYM)
   Nsingle(FYM)

1/8 plots:

https://doi.org/10.23637/ERADOC-1-249

This work is licensed under a Creative Commons Attribution 4.0 International License.

16/W/RN/3

3. **N** Nitrogen fertilizer as split dressings in spring 2015 (kg N) as 34.5% N:

0	0	
80	40 + 40	) to be applied
160	40 + 120	) late-February/early-March
240	40+ 200	) and mid-April

Treatments to second test crop w. rye, all combinations of:
Whole plots:

1. **ROTATION** Rotations before first test crop:
   LLN8
   LN 3
   LLC 8
   LC 3
   LLC/LC3 not yet in phase
   LLN/LN3 not yet in phase
   LLN/AO not yet in phase
   LLC/ABe not yet in phase
   AM/AO
   ABe

1/ 2 plots:

2. **NSPLIT (FYM res)** Farmyard manure residues, last applied 1960s:
   N split to wheat (no FYM)
   N single to wheat (FYM)

   1/8 plots:

3. **N** Nitrogen fertilizer in spring 2013 (kg N) as 34.5%:
   0
   50
   100
   150

Treatments to leys:
FYM RES Farmyard manure residues:

NONE
FYM 38 t on each occasion, last applied 1960s.

NOTE: Corrective K dressings (kg K_2O ha^{-1}) as muriate of potash, applied where necessary to first test crop w. wheat and long-term leys in the wheat block, applied 2015 (see date below).

Continuous rotations	No FYM	FYM Res
Before wheat	Half plots	Half plots
ABe/Be	380	310
AO/O	370	350
LLn/AO	130	230
LLn/ABe	120	150
LLn/Ln3	20	50
Ln3	50	-
None to other plots.		

https://doi.org/10.23637/ERADOC-1-249

This work is licensed under a Creative Commons Attribution 4.0 International License.

16/W/RN/3

Experimental Diary

Date		Application	Rate	Units
ALL				
11/11/2015	a	Ploughed; Thrown South-East	-	-
12/11/2015	a	Power harrowed	-	-
26/05/2016	a	Cut paths	-	-
11/07/2016	a	Cut paths	-	-
12/07/2016	a	Cut paths	-	-
15/08/2016	a	Combined; Commercial combine swathed rest of the plots	-	-
19/08/2016	a	Removed all bales	-	-
08/09/2016	a	Baled Straw	-	-
12/09/2016	a	Removed bales	-	-
Grass ley and clover/grass leys (first year leys)				
27/10/2015	f	Applied Nitro Chalk; Plots 23,24,29,30. (Grass/clover leys)	92	kg/ha
27/10/2015	f	Applied Nitro Chalk; Plots 25,26,31,32. (Grass Leys)	185	kg/ha
27/10/2015	f	Applied Sulphate of Potash; All ley plots	140	kg/ha
27/10/2015	f	Applied TSP Fertilizer; All ley plots	213	kg/ha
19/11/2015	s	Drilled Grass and Clover plots	30	kg/ha
19/11/2015	s	Drilled Grass only plots	30	kg/ha
02/03/2016	f	Applied MOP Fertiliser; All ley plots	167	kg/ha
14/04/2016	f	Applied Nitram (34.5% N) Fertiliser; Plots 25,26,31,32 (Grass leys only)	217	kg/ha
13/07/2016	a	Cut grass plots for yield	-	-
14/07/2016	a	Mowed all grass plots	-	-
14/07/2016	a	Turned grass	-	-
18/07/2016	a	Turned hay	-	-
18/07/2016	a	Rowed up and baled hay; Grass plots only	-	-
21/07/2016	f	Applied MOP Fertiliser; All ley plots	83	kg/ha
10/11/2016	a	Cut grass plots for yield (2nd Cut)	-	-
Grass ley and clover/grass leys (2nd and 3rd year leys)				
27/10/2015	f	Applied Sulphate of Potash; All ley plots	140	kg/ha
27/10/2015	f	Applied TSP Fertilizer; All ley plots	213	kg/ha
19/11/2015	a	Drilled Grass and Clover plots	30	kg/ha
19/11/2015	a	Drilled Grass only plots	30	kg/ha
02/03/2016	f	Applied MOP Fertiliser; All ley plots	167	kg/ha
14/04/2016	f	Applied Nitram (34.5% N) Fertiliser; Plots 57,58,61,62,65,66,69 and 70 (Grass Ley only)	217	kg/ha
13/07/2016	a	Cut grass plots for yield	-	-
14/07/2016	a	Mowed all grass plots	-	-
14/07/2016	a	Turned grass	-	-
18/07/2016	a	Turned hay	-	-
18/07/2016	a	Rowed up and baled hay; Grass plots only	-	-

https://doi.org/10.23637/ERADOC-1-249

This work is licensed under a Creative Commons Attribution 4.0 International License.

21/07/2016	a	Applied MOP Fertiliser; All ley plots	83	kg/ha
10/11/2016	a	Cut grass plots for yield (2nd Cut)	-	-

W Beans

27/10/2015	f	Applied TSP Fertilizer	127	kg/ha
19/11/2015	s	Drilled Wizzard Winter beans	42	seeds/m^2
23/02/2016	p	Sprayed Chex (in 200 lt/ha water volume)	0.25	lt/ha
23/02/2016	p	Sprayed Laser (in 200 lt/ha water volume)	1.25	lt/ha
23/02/2016	p	Sprayed Zarado (in 200 lt/ha water volume)	1	lt/ha
29/02/2016	f	Applied SOP	150	kg/ha
05/04/2016	p	Sprayed Troy 480 (in 241 lt/ha water volume)	3	lt/ha
23/05/2016	p	Sprayed Sprinter (in 200 lt/ha water volume)	2	lt/ha
23/05/2016	p	Sprayed San 703 (in 200 lt/ha water volume)	2	lt/ha
23/05/2016	p	Sprayed Hallmark (in 200 lt/ha water volume)	75	ml/ha
10/06/2016	p	Sprayed SAN 703 (in 200 lt/ha water volume)	2	lt/ha
30/06/2016	p	Sprayed Toledo (in 200 lt/ha water volume)	0.6	lt/ha
13/08/2016	a	Combined plots for yield	-	-

W Wheat

27/10/2015	f	Applied TSP Fertilizer	127	kg/ha
10/11/2015	f	Applied corrective K; Plot 37	0.6	kg/ha
10/11/2015	f	Applied corrective K; Plots 38 and 43	1.5	kg/ha
10/11/2015	f	Applied corrective K; Plot 47	3.6	kg/ha
10/11/2015	f	Applied corrective K; Plot 36	3.9	kg/ha
10/11/2015	f	Applied corrective K; Plot 48	4.5	kg/ha
10/11/2015	f	Applied corrective K; Plot 35	6.9	kg/ha
10/11/2015	f	Applied corrective K; Plot 45	9.2	kg/ha
10/11/2015	f	Applied corrective K; Plot 39	10.4	kg/ha
10/11/2015	f	Applied corrective K; Plot 40	11.0	kg/ha
10/11/2015	f	Applied corrective K; Plot 46	11.3	kg/ha
19/11/2015	s	Drilled Solstice tr Redigo Deter	400	seeds/m^2
29/02/2016	f	Applied SOP	150	kg/ha
31/03/2016	p	Sprayed Atlantis (in 150 lt/ha water volume)	0.4	kg/ha
31/03/2016	p	Sprayed Compitox Plus (in 150 lt/ha water volume)	1.0	lt/ha
31/03/2016	p	Sprayed Biopower (in 150 lt/ha water volume)	1.0	lt/ha
05/04/2016	p	Sprayed Sprinter (in 150 lt/ha water volume)	2.0	lt/ha
05/04/2016	p	Sprayed Toledo (in 150 lt/ha water volume)	0.3	lt/ha
11/04/2016	f	Applied 1st Nitro-chalk 27%N by hand (first of 2 doses); All Wheat Plots	148	kg/ha
27/04/2016	f	Applied 2nd Nitro-chalk 27%N by hand; Plots 332, 342, 353, 363, 372, 383, 392, 403, 412, 424, 441, 434, 452, 461, 472, 483	148	kg/ha
27/04/2016	f	Applied 2nd Nitro-chalk 27%N by hand; Plots 331, 351, 361, 343, 384, 373, 394, 401, 414, 422, 432, 444, 453, 462, 471, 484	444	kg/ha
27/04/2016	f	Applied 2nd Nitro-chalk 27%N by hand; Plots 334, 341, 354, 364, 374, 381, 393, 404, 411, 423, 431, 443, 454, 463, 474, 482	741	kg/ha
30/04/2016	p	Sprayed Sprinter (in 150 lt/ha water volume)	2	lt/ha

https://doi.org/10.23637/ERADOC-1-249

This work is licensed under a Creative Commons Attribution 4.0 International License.

30/04/2016	p	Sprayed Simba (in 150 lt/ha water volume)	20	g/ha
30/04/2016	p	Sprayed Cortez (in 150 lt/ha water volume)	0.75	lt/ha
30/04/2016	p	Sprayed Bravo 500 (in 150 lt/ha water volume)	1	lt/ha
23/05/2016	p	Sprayed Sprinter (in 150 lt/ha water volume)	2	lt/ha
23/05/2016	p	Sprayed Vortex (in 150 lt/ha water volume)	1.5	lt/ha
23/05/2016	p	Sprayed Hunter (in 150 lt/ha water volume)	1.5	lt/ha
09/06/2016	p	Sprayed Cello (in 150 lt/ha water volume)	0.6	lt/ha
09/06/2016	p	Sprayed Cyflamid (in 150 lt/ha water volume)	0.15	lt/ha
09/06/2016	p	Sprayed Hallmark (in 150 lt/ha water volume)	50	lt/ha
12/08/2016	a	Combined plots for yield; Block 3 only with Sampo	-	-
W Rye				
10/11/2015	f	Applied Chalk; Block 1 only (originally noted against W/RN/12, but considered to be in error).	5.00	t/ha
27/10/2015	f	Applied TSP Fertilizer	127	kg/ha
19/11/2015	s	Drilled Phoenix tr Kinto	300	seeds/m^2
29/02/2016	f	Applied SOP	150	kg/ha
14/04/2016	f	Applied Nitram (34.5% N) Fertiliser; Plots 17,18,19,20,21,22,27 and 28.	290	kg/ha
27/04/2016	f	Applied Nitram (34.5% N) Fertiliser by hand; Plots 012, 022, 032, 041, 052, 064, 071, 082, 092, 104, 112, 122, 131, 141, 154, 161	145	kg/ha
27/04/2016	f	Applied Nitram (34.5% N) Fertiliser by hand; Plots 014, 024, 034, 043, 054, 061, 074, 084, 094, 102, 113, 123, 134, 143, 152, 163	290	kg/ha
27/04/2016	f	Applied Nitram (34.5% N) Fertiliser by hand; Plots 011, 021, 031, 042, 051, 063, 072, 081, 091, 103, 111, 121, 132, 142, 153, 162	435	kg/ha
28/04/2016	p	Sprayed Sprinter (in 200 lt/ha water volume)	2	lt/ha
28/04/2016	p	Sprayed Ally Max (in 200 lt/ha water volume)	30	g/ha
28/04/2016	p	Sprayed Chlormequat (in 200 lt/ha water volume)	2	lt/ha
28/04/2016	p	Sprayed Cello (in 200 lt/ha water volume)	0.8	lt/ha
23/05/2016	p	Sprayed Sprinter (in 200 lt/ha water volume)	2	lt/ha
23/05/2016	p	Sprayed Keystone (in 200 lt/ha water volume)	1	lt/ha
13/08/2016	a	Combined plots for yield	-	-
W Oats				
27/10/2015	f	Applied TSP Fertilizer	127	kg/ha
19/11/2015	s	Drilled Mascani tr Kinto	400	seeds/m^2
29/02/2016	f	Applied SOP	150	kg/ha
14/04/2016	f	Applied Nitram (34.5% N) Fertiliser; Plots 49,50,53,54,71,72,73 and 74.	290	kg/ha
28/04/2016	p	Sprayed Sprinter (in 150 lt/ha water volume)	2	lt/ha
28/04/2016	p	Sprayed Simba (in 150 lt/ha water volume)	30	g/ha
28/04/2016	p	Sprayed Chlormequat (in 150lt/ha water volume)	2	lt/ha
28/04/2016	p	Sprayed Cello (in 150 lt/ha water volume)	0.8	lt/ha
28/04/2016	p	Sprayed Hatchet Extra (in 150lt/ha water volume)	0.75	lt/ha.
09/06/2016	p	Sprayed Cello (in 150 lt/ha water volume)	0.6	lt/ha
09/06/2016	p	Sprayed Cyflamid (in 150 lt/ha water volume)	0.15	lt/ha
13/08/2016	a	Combined plots for yield	-	-

https://doi.org/10.23637/ERADOC-1-249

This work is licensed under a Creative Commons Attribution 4.0 International License.

NOTE: Herbage and grain samples were taken for chemical analyses.

LEYS

1ST CUT (09-Dec-15) DRY MATTER TONNES/HECTARE

***** Tables of means *****

FYM_RES LEY	NONE	FYM	MEAN
LC1	3.73	2.20	2.96
LC2	5.24	4.87	5.06
LC3	7.04	6.34	6.69
LN1	3.02	4.02	3.52
LN2	5.34	6.05	5.70
LN3	5.48	5.52	5.50
(LLC/LC) LC1	1.84	2.21	2.03
(LLC/LC) LC2	4.97	5.05	5.01
(LLC/LC) LC3	5.52	5.53	5.52
(LLN/LN) LN1	3.99	3.69	3.84
(LLN/LN) LN2	6.51	6.42	6.46
(LLN/LN) LN3	5.70	5.38	5.54
MEAN	4.87	4.77	4.82

1ST CUT MEAN DM% 32.5

2ND CUT (09-Dec-15) DRY MATTER TONNES/HECTARE

***** Tables of means *****

FYM_RES LEY	NONE	FYM	MEAN
LC1	0.28	0.35	0.32
LC2	0.12	0.10	0.11
LC3	0.00	0.00	0.00
LN1	0.89	2.22	1.56
LN2	0.11	0.26	0.19
LN3	0.00	0.00	0.00
(LLC/LC) LC1	0.09	0.24	0.17
(LLC/LC) LC2	2.49	1.71	2.10
(LLC/LC) LC3	0.00	0.00	0.00
(LLN/LN) LN1	0.09	0.15	0.12
(LLN/LN) LN2	0.52	0.62	0.57
(LLN/LN) LN3	0.00	0.00	0.00
MEAN	0.38	0.47	0.43

2ND CUT MEAN DM% 39.7

Note: For several years the LN1-3 plots do not appear to have been receiving N after the first cut (as stipulated in the plan. This is being discussed with the farm.

https://doi.org/10.23637/ERADOC-1-249

This work is licensed under a Creative Commons Attribution 4.0 International License.

16/W/RN/3

ARABLE TREATMENT CROPS

WINTER BEANS

GRAIN (85% DRY MATTER) TONNES/HECTARE

***** Tables of means *****

FYMRES ROTATION	NONE	FYM	Mean
(AO)Be	1.73	1.58	1.66
(LLn/AO)Be	1.17	1.28	1.22
(LLc/ABe)Be	2.02	2.32	2.17
(ABe)Be	2.17	2.04	2.11
Mean	1.77	1.81	1.79

GRAIN MEAN DM% 83.1

PLOT AREA HARVESTED 0.00413

OATS

GRAIN (85% DRY MATTER) TONNES/HECTARE

***** Tables of means *****

FYMRES ROTATION	NONE	FYM	Mean
ABe	6.61	6.71	6.66
AO	7.01	6.95	6.98
LLc/ABe	6.50	6.45	6.48
LLn/AO	7.39	7.62	7.50
Mean	6.88	6.93	6.91

GRAIN MEAN DM% 84.8

PLOT AREA HARVESTED 0.00413

RYE (Extra)

GRAIN (85% DRY MATTER) TONNES/HECTARE

***** Tables of means *****

FYMRES ROTATION	NONE	FYM	Mean
(ABe)R	5.41	5.85	5.63
(AO)R	6.21	5.64	5.93
(LLn/AO)R	6.73	7.09	6.91
(LLc/ABe)R	6.35	6.50	6.43
Mean	6.17	6.27	6.22

GRAIN MEAN DM% 85.5

https://doi.org/10.23637/ERADOC-1-249

This work is licensed under a Creative Commons Attribution 4.0 International License.

PLOT AREA HARVESTED 0.00413

16/W/RN/3

W. WHEAT

Grain tonnes/hectare

***** Tables of means *****

FYMRES	none	FYM	Mean
ROTATION			
(AO)W	4.72	5.69	5.20
(ABe)W	5.84	6.06	5.95
(LLn/AO)W	4.04	5.15	4.59
(LLc/ABe)W	5.75	4.54	5.14
(LN)W	6.43	3.81	5.12
(LLN/Ln)W	6.56	7.16	6.86
(LC)W	6.58	5.60	6.09
(LLc/Lc)W	6.39	7.11	6.75
Mean	5.79	5.64	5.71

N	0	80	160	240	Mean
ROTATION					
(AO)W	0.63	5.60	7.51	7.08	5.20
(ABe)W	1.52	7.07	6.36	8.85	5.95
(LLn/AO)W	0.35	6.14	5.82	6.06	4.59
(LLc/ABe)W	1.15	6.85	7.16	5.42	5.14
(LN)W	1.99	6.12	5.59	6.77	5.12
(LLN/Ln)W	3.32	7.50	8.07	8.54	6.86
(LC)W	4.79	6.94	6.58	6.05	6.09
(LLc/Lc)W	5.26	7.36	6.89	7.49	6.75
Mean	2.38	6.70	6.75	7.03	5.71

N	0	80	160	240	Mean
FYMRES					
none	2.49	6.67	6.50	7.49	5.79
FYM	2.26	6.73	6.99	6.57	5.64
Mean	2.38	6.70	6.75	7.03	5.71

N	0	80	160	240
ROTATION FYMRES				
(AO)W none	0.49	5.06	7.14	6.19
FYM	0.78	6.15	7.88	7.97
(ABe)W none	1.74	6.61	4.65	10.36
FYM	1.30	7.53	8.08	7.34
(LLn/AO)W none	0.28	5.72	4.06	6.08
FYM	0.42	6.56	7.57	6.03
(LLc/ABe)W none	0.72	7.00	8.04	7.23
FYM	1.57	6.71	6.27	3.60
(LN)W none	3.23	6.57	7.93	8.01
FYM	0.76	5.68	3.25	5.54
(LLN/Ln)W none	3.45	7.13	7.37	8.27
FYM	3.19	7.86	8.77	8.82
(LC)W none	4.81	7.41	7.88	6.23
FYM	4.77	6.46	5.29	5.88
(LLc/Lc)W none	5.22	7.84	4.92	7.58
FYM	5.31	6.89	8.85	7.39

Grain mean DM% 86.2

Plot area harvested 0.00192

https://doi.org/10.23637/ERADOC-1-249

This work is licensed under a Creative Commons Attribution 4.0 International License.

16/W/RN/3

W. RYE

Grain tonnes/hectare

***** Tables of means *****

FYMRES	none	FYM	Mean
ROTATION			
(AO)R	5.24	5.09	5.16
(ABe)R	6.09	5.56	5.83
(LLn/AO)R	5.53	6.09	5.81
(LLc/ABe)R	6.97	5.81	6.39
(Ln)R	6.31	6.55	6.43
(LLn/Ln)R	6.42	7.77	7.10
(Lc)R	6.89	5.94	6.41
(LLc/Lc)R	7.61	6.92	7.26
Mean	6.38	6.22	6.30

N	0	50	100	150	Mean
ROTATION					
(AO)R	1.84	5.11	6.70	7.00	5.16
(ABe)R	1.95	5.46	8.53	7.35	5.83
(LLn/AO)R	2.44	5.93	6.86	7.99	5.81
(LLc/ABe)R	2.87	6.48	7.89	8.33	6.39
(Ln)R	3.37	6.13	7.51	8.72	6.43
(LLn/Ln)R	4.22	6.92	8.66	8.60	7.10
(Lc)R	3.38	6.71	8.08	7.48	6.41
(LLc/Lc)R	4.74	6.53	9.14	8.65	7.26
Mean	3.10	6.16	7.92	8.01	6.30

N	0	50	100	150	Mean
FYMRES					
none	3.16	6.15	7.79	8.42	6.38
FYM	3.04	6.17	8.05	7.60	6.22
Mean	3.10	6.16	7.92	8.01	6.30

	N	0	50	100	150
ROTATION	FYMRES				
(AO)R	none	1.89	5.02	6.41	7.63
	FYM	1.79	5.21	6.99	6.37
(ABe)R	none	2.30	6.04	8.43	7.60
	FYM	1.61	4.89	8.64	7.11
(LLn/AO)R	none	2.16	5.89	5.81	8.26
	FYM	2.73	5.98	7.92	7.72
(LLc/ABe)R	none	3.61	6.62	8.48	9.17
	FYM	2.13	6.34	7.30	7.48
(Ln)R	none	3.54	5.83	7.03	8.86
	FYM	3.21	6.43	7.98	8.58
(LLn/Ln)R	none	3.54	5.91	7.97	8.27
	FYM	4.89	7.92	9.35	8.93
(Lc)R	none	3.64	6.72	8.48	8.72
	FYM	3.12	6.70	7.69	6.25
(LLc/Lc)R	none	4.64	7.19	9.72	8.89
	FYM	4.84	5.87	8.56	8.40

Grain mean DM% 82.5

Plot area harvested 0.00192

https://doi.org/10.23637/ERADOC-1-249