

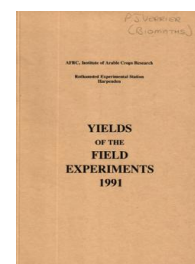
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91/W/CS/347 Green Crops for Set-aside - W. Wheat, Ryegrass, Clover

Rothamsted Research

Rothamsted Research (1992) 91/W/CS/347 *Green Crops for Set-aside - W. Wheat, Ryegrass, Clover* ; Yields Of The Field Experiments 1991, pp 93 - 95 - DOI: <https://doi.org/10.23637/ERADOC-1-46>

91/W/CS/347

GREEN CROPS FOR SET-ASIDE

Object: To obtain information on the establishment and maintenance of sown crops and unsown vegetation in a long term, up to five-year, set-aside area given no chemical inputs. Effects on soil nitrate and leaching after ploughing are also studied - Woburn, Horsepool Lane Close II.

Sponsors: R.D. Prew, E.T.G. Bacon, M.V. Hewitt, D.P. Yeoman.

Design: 6 randomised blocks of 6 plots.

Whole plot dimensions: 6.5 x 26.0.

The second year, w. wheat, ryegrass, clover.

For previous year see 90/W/CS/347.

Treatments in 1990 and 1991:

CROPS	Crops:
RY LF	Ryegrass, cuttings left in situ
RY+CL LF	Ryegrass + clover, cuttings left in situ
RY+CL RE	Ryegrass + clover, cuttings removed
RY+N RE	Ryegrass given 100 kg N in spring, cuttings removed
TU LF	Tumbledown, natural regrowth, cuttings left in situ
W WHEAT	Winter wheat

NOTE: Yields were taken from the w. wheat and from the ley plots from which cuttings were removed.

Standard applications:

All crops except w. wheat and tumbledown: Manures: P205 at 25 kg to RY+CL RE and at 39 kg to RY+N RE as 'Triple superphosphate'. K2O at 122 kg to RY+CL RE and at 223 kg to RY+N RE as 'Muriate of potash'. N at 100 kg as 'Nitram' to RY+N RE plots only.

W. wheat: Manures: N at 40 kg and on a second occasion at 160 kg as 'Nitram'. Fungicides: Fenpropimorph at 0.38 kg in 210 l and on a second occasion with chlorothalonil at 0.49 kg and flutriafol at 0.078 kg in 300 l.

Seed: W. wheat: Mercia sown at 150 kg.
Ryegrass and clover sown in 1989.

Cultivations, etc.:-

All crops except w. wheat and tumbledown: P and K applied to RY+CL RE and RY+N RE plots: 20 Feb, 1991. N applied to RY+N RE plots: 18 Mar. RY LF and RY+CL LF plots topped: 30 May, 15 July and 18 Sept. RY+CL RE and RY+N RE plots cut and produce removed: 3 June, 17 July and 16 Sept.

Tumbledown plots: Topped: 7 Nov, 1990, 30 May, 1991, 15 July and 18 Sept.

W. wheat plots: Ploughed: 21 Sept, 1990. Rotary harrowed, seed sown, rolled: 25 Sept. N applied: 18 Mar, 1991 and 17 Apr. Fenpropimorph applied: 24 Apr. Remaining fungicides applied: 20 June. Combine harvested: 20 Aug.

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NOTE: Assessments were made of soil nitrogen in autumn 1990 and spring 1991, and plant numbers and plant cover in spring and autumn 1991.

GRASS

1ST CUT (3/6/91) DRY MATTER TONNES/HECTARE

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

CROPS	RY+CL RE	RY+N RE	Mean
	1.38	5.66	3.52

*** Standard errors of differences of means ***

CROPS
0.236

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	5	0.408	11.6
1ST CUT MEAN DM%	24.6		

2ND CUT (17/7/91) DRY MATTER TONNES/HECTARE

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

CROPS	RY+CL RE	RY+N RE	Mean
	1.84	2.39	2.12

*** Standard errors of differences of means ***

CROPS
0.229

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	5	0.396	18.7
2ND CUT MEAN DM%	34.8		

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3RD CUT (16/9/91) DRY MATTER TONNES/HECTARE

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

CROPS	RY+CL RE	RY+N RE	Mean
	0.48	0.47	0.47

*** Standard errors of differences of means ***

CROPS
0.146

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	5	0.252	53.3
3RD CUT MEAN DM%	35.8		

TOTAL OF 3 CUTS DRY MATTER TONNES/HECTARE

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

CROPS	RY+CL RE	RY+N RE	Mean
	3.70	8.52	6.11

*** Standard errors of differences of means ***

CROPS
0.430

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	5	0.746	12.2
TOTAL OF 3 CUTS MEAN DM%	31.7		
PLOT AREA HARVESTED	0.00264		

WHEAT

GRAIN TONNES/HECTARE 9.254

GRAIN MEAN DM% 86.3

PLOT AREA HARVESTED 0.00546