

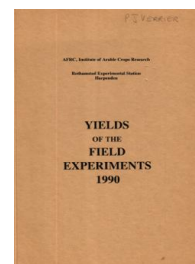
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90/W/CS/347 Green Crops for Set-aside - W. Wheat, Ryegrass, Clover

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90/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 blocks of 6 plots.

Whole plot dimensions: 6.5 x 26.0.

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

Treatments in first year:

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: Manure: N at 100 kg as 'Nitram' to RY+N RE plots only.

W. wheat: Manures: N at 40 kg and at 160 kg as 'Nitram'. Weedkillers: Isoproturon at 1.5 kg with isoxaben at 75 g in 200 l. Bromoxynil at 0.34 kg and clopyralid at 0.07 kg with fluroxypyr at 0.15 kg in 220 l. Flamprop-M-isopropyl at 0.60 kg in 300 l. Fungicides: Propiconazole at 0.12 kg with chlorothalonil at 0.50 kg in 300 l.

Seed: Perennial ryegrass: Melle, sown at 15 kg and resown at same rate.
Perennial ryegrass and white clover: Melle, sown at 15 kg and Huia at 4 kg, resown at same rate.
W. wheat: Mercia, sown at 150 kg.

Cultivations, etc.:-

All crops except w. wheat and tumbledown: Ploughed: 30 Aug, 1989.
Rolled: 1 Sept. Rotary harrowed with crumbler attached, twice, seed sown, rolled: 6 Sept. Spike harrowed and seed resown: 15 Mar, 1990. N applied: 21 Mar. Cut: 17 May, 5 July and 24 Oct.
Cuttings removed from RY+CL RE and RY+N RE plots: 14 June, 12 July and 7 Nov.
Tumbledown plots: Topped: 17 May, 5 July and 7 Nov, 1990.

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Cultivations, etc.:-

W. wheat: Ploughed: 30 Aug, 1989. Rolled: 1 Sept. Rotary harrowed with crumbler attached: 25 Sept. Seed sown: 26 Sept. Isoproturon and isoxaben applied: 11 Dec. N applied: 21 Mar, 1990 and 17 Apr. Bromoxynil, clopyralid and fluroxypyr applied: 28 Apr. Flamprop-M-isopropyl applied: 17 May. Fungicides applied: 23 May. Combine harvested: 7 Aug.

Previous crops: S. barley 1988, w. oats 1989.

NOTE: Assessments were made of numbers and species of seeds in the soil in autumn, of soil nitrogen in autumn and spring and of plant numbers and plant cover in spring and autumn.

GRASS

1ST CUT (17/5/90) DRY MATTER TONNES/HECTARE

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

CROPS	RY+CL RE	RY+N RE	Mean
	2.87	4.17	3.52

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

CROPS
0.391

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	5	0.677	19.2

1ST CUT MEAN DM% 21.9

2ND CUT (5/7/90) DRY MATTER TONNES/HECTARE

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

CROPS	RY+CL RE	RY+N RE	Mean
	1.02	1.20	1.11

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

CROPS
0.138

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	5	0.239	21.6

2ND CUT MEAN DM% 28.4

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GRASS

3RD CUT (24/10/90) DRY MATTER TONNES/HECTARE

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

CROPS	RY+CL RE	RY+N RE	Mean
	0.64	0.84	0.74

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

CROPS
0.115

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	5	0.200	27.0

3RD CUT MEAN DM% 28.4

TOTAL OF 3 CUTS DRY MATTER TONNES/HECTARE

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

CROPS	RY+CL RE	RY+N RE	Mean
	4.53	6.21	5.37

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

CROPS
0.299

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	5	0.518	9.6

TOTAL OF 3 CUTS MEAN DM% 26.2

PLOT AREA HARVESTED 0.00264

WHEAT

GRAIN TONNES/HECTARE 7.60

GRAIN MEAN DM% 89.4

PLOT AREA HARVESTED 0.00572