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85/W/M/1 Methods of Cover Crop Establishment - Mixed Crops

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95/W/M/1

MIXED 1

METHODS OF COVER CROP ESTABLISHMENT

Object: To examine the effectiveness of a range of methods of establishing cover crops and to measure the yield of a subsequent crop of linseed - Woburn, Great Hill Bottom I.

Sponsor: D.G. Christian.

Design: 3 randomised blocks of (2 x 4) + 1 plots, split into 2 sub-plots.

Whole plot dimensions: 6.0 x 12.0.

Sub-plot dimensions: 6.0 x 4.5.

Treatments: All combinations of:-

Whole plots

1. **COV CROP** Cover crops:

BW	Winter barley
FR	Forage rape

2. **SOWING** Method and timing of sowing:

BC	Broadcast into standing crop seven days before harvest
DC	Disced, broadcast and rolled, three days after harvest
RC	Rotary cultivated, broadcast and rolled three days after harvest
DD	Direct drilled two days after harvest

Sub-plot

3. **N** Nitrogen, kg N:

N1	None
N2	75

plus one extra treatment

Whole plot

1. **EXTRA**

ST	Stubble from previous wheat crop
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Sub-plot

2. **N EXTRA** Nitrogen, kg N:

N1	None
N2	75

95/W/M/1

Experimental diary:

08-Aug-94 : **T** : **SOWING** BC, **COV CROP** BW: Puffin broadcast at 180 kg.
 : **T** : **SOWING** BC, **COV CROP** FR: Ember broadcast at 30 kg.
 15-Aug-94 : **B** : Wheat combine harvested, straw chopped.
 18-Aug-94 : **T** : **SOWING** DC: Discd.
 : **T** : **SOWING** RC: Rotary cultivated.
 : **T** : **SOWING** DC, RC, DD, **COV CROP** BW: Puffin sown at 180 kg.
 : **T** : **SOWING** DC, RC, DD, **COV CROP** FR: Ember sown at 30 kg.
 : **T** : **SOWING** DC, RC, **COV CROP** BW, FR: Rolled.
 07-Sep-94 : **B** : Draza at 5.5 kg.
 24-Nov-94 : **T** : **COV CROP** FR: Draza at 5.5 kg.
 08-Apr-95 : **B** : Ploughed and rolled.
 11-Apr-95 : **B** : Rotary harrowed, Antares, dressed Prelude 20LF, at 600 seeds per m².
 13-Apr-95 : **B** : Rolled.
 05-May-95 : **T** : **N** N2, **N EXTRA** N2: 27% N at 278 kg.
 02-Jun-95 : **B** : Ally at 30 g in 200 l.
 : **B** : Fastac at 0.10 l in 300 l.
 22-Sep-95 : **B** : Combine harvested.

Previous crops: S. rape 1993, w. wheat 1994.

NOTE: Dry matter, plant numbers and nitrogen content in the cover crops were measured in autumn. Dry matter and nitrogen content was also measured in spring. At harvest dry matter, nitrogen content, harvest index, oil content and thousand grain weights were measured in the linseed.

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

COV CROP	BW	FR	Mean
SOWING			
BC	0.50	0.49	0.50
DC	0.57	0.59	0.58
RC	0.54	0.53	0.53
DD	0.54	0.54	0.54
Mean	0.54	0.54	0.54
N	N1	N2	Mean
SOWING			
BC	0.45	0.55	0.50
DC	0.48	0.69	0.58
RC	0.43	0.63	0.53
DD	0.44	0.64	0.54
Mean	0.45	0.63	0.54

95/W/M/1

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

N	N1	N2	Mean
COV CROP			
BW	0.45	0.63	0.54
FR	0.45	0.62	0.54
Mean	0.45	0.63	0.54
SOWING	COV CROP	N	N2
BC	BW	0.43	0.57
	FR	0.46	0.53
DC	BW	0.49	0.65
	FR	0.46	0.72
RC	BW	0.41	0.67
	FR	0.46	0.59
DD	BW	0.46	0.63
	FR	0.43	0.65
N EXTRA	N1	N2	Mean
	0.33	0.76	0.55

Grand mean 0.54

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

SOWING	COV CROP	N	SOWING
			COV CROP
0.080	0.057	0.031	0.114
SOWING	COV CROP	SOWING	
N	N	COV CROP	N
			& N EXTRA
0.092	0.065	0.130	
Except when comparing means with the same level(s) of			
SOWING	0.063		
COV CROP		0.044	
SOWING.COV CROP			0.089

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	16	0.139	25.8
BLOCK.WP.SP	18	0.109	20.1

GRAIN MEAN DM% 87.9

SUB-PLOT AREA HARVESTED 0.00099