

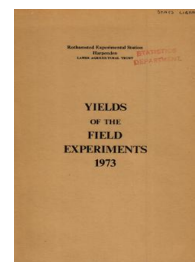
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73/R/CS/41 - Cultivations & Soil Invertebrates - Old Grass, New Grass

Rothamsted Research

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73/R/CS/41

CULTIVATIONS AND SOIL INVERTEBRATES

Object: To study the effects of cultivations on yields of grass and on populations of soil animals - Road Piece.

Sponsor: C.A. Edwards.

The fifth year, old grass, new grass.

For previous years see 69/R/CS/41(t), 70/R/CS/41(t) and 71-72/R/CS/41.

Design: 4 blocks of 8 plots randomisation restricted.

Whole plot dimensions: 6.40 x 7.32. Area harvested: 0.00074.

Treatments: Cultivations and reseeded:	CULTIVTN
No treatments, to old grass (two plots per block)	O
Grass ploughed up:-	
In spring 1969, reseeded after fewest cultivations needed to produce a seedbed	SF
In spring 1969, reseeded after many seedbed cultivations	SM
In autumn 1969, reseeded spring 1970 after many seedbed cultivations	AM
Every spring since 1969, reseeded each year after fewest cultivations needed to produce a seedbed	SFR
Every spring since 1969, reseeded each year after many seedbed cultivations	SMR
Every autumn since 1969, reseeded every following spring after many seedbed cultivations	AMR

Seeds mixture for 1973: Parts by weight: New Zealand White Clover, 1; S 48 Timothy, 3; S 215 Meadow Fescue, 6. Mixture sown at 22 kg.

Basal applications: Manures: (0:14:28) at 500 kg in autumn, (25:0:16) at 440 kg in spring, (25:0:16) at 220 kg after each cut except the last.

73/R/CS/41

Cultivations, etc.:— Basal PK applied: 17 Nov, 1972. AMR plots ploughed: 11 Dec. SMR and SFR plots ploughed: 21 Feb, 1973. Basal NK fertiliser applied: 21 Feb. Discd AMR and SMR plots four times, SFR plots twice: 27 Mar. Power harrowed all plots to be sown: 28 Mar. Seed hand sown and harrowed in: 29 Mar. AMR, SMR and SFR plots sprayed with benazolin with 2, 4-DE and MCPA ('Legume Extra' 7.0 l in 220 l): 31 May. AMR, SMR and SFR plots cut twice: 4 July and 12 Sept, other plots cut three times: 22 May, 4 July and 12 Sept. NK applied to all plots except AMR, SMR and SFR: 25 May and to all plots: 4 July.

NOTE: Soil cores were taken for total fauna and quadrats were sampled on each plot for earthworms.

Standard errors per plot. Dry matter, tonnes/hectare:

1st cut:	0.457 or 11.8% (13 d.f.)
2nd cut:	0.551 or 28.4% (22 d.f.)
3rd cut:	0.332 or 10.7% (22 d.f.)
Total of 3 cuts:	0.534 or 6.4% (13 d.f.)

73/R/CS/41

TABLES OF MEANS

DRY MATTER: TONNES/HECTARE

	CULTIVIN					CULTIVIN			
	O*	SF	SM	AM	Mean	SFR	SMR	AMR	Mean
1st cut	4.00	3.28	3.42	4.66	3.87				
2nd cut	1.80	1.98	2.33	1.95	1.97	1.96	1.93	1.74	1.94*
3rd cut	2.45	2.53	2.59	2.41	2.49	4.03	4.16	4.26	3.11*
Total of 3 cuts	8.24	7.79	8.34	9.03	8.33				

STANDARD ERRORS OF DIFFERENCES

CULTIVIN

	O v Any of remainder	Between remainder
1st cut	0.280	0.323
2nd cut	0.337	0.390
3rd cut	0.204	0.235
Total of 3 cuts	0.327	0.377

Mean D.M. %	1st cut	16.5
	2nd cut	23.5
	3rd cut	33.4
	Total of 3 cuts	24.5

* Grand mean