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89/W/CS/336 Set-aside Study - W. Wheat, Forage Rape, Ryegrass, *Trefoil*

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89/W/CS/336

SET-ASIDE STUDY

Object: To compare different treatments of land temporarily withdrawn from arable cropping and to study their effects on nitrate leaching and on subsequent wheat crops - Woburn Horsepool.

Sponsors: R.D. Prew, E.T.G. Bacon, M.V. Hewitt, D.P. Yeoman, J.F. Jenkyn, R.J. Gutteridge, W. Powell, J. Ashby.

Associate sponsors: D.L.O. Smith, I. Shield.

The first year, w. wheat, forage rape, ryegrass and trefoil.

Design: 3 randomised blocks of 7 plots.

Whole plot dimensions: 10.0 x 24.0.

Treatments:

LAND TRT	Land treatment, after s. wheat 1988:
CA WW	Cultivated in autumn, sown to w. wheat
CA RA	Cultivated in autumn, sown to ryegrass in autumn, topped in spring
SA CA FA	Straw chopped and spread in autumn, cultivated in autumn, sown to forage rape in autumn, topped in spring
CA CS	Cultivated in autumn, cultivated in spring
SA CS	Straw chopped and spread in autumn, cultivated in spring
WT	Weeds topped
WT CS TS	Weeds topped, cultivated in spring, trefoil sown in spring, topped

NOTE: Yields were taken from CA WW only.

Standard applications, seed and cultivations, etc.:-

CA WW: S. wheat straw baled and carted: 8 Sept, 1988. Ploughed: 12 Sept. Rotary harrowed: 13 Sept. Rotary harrowed, seed sown: 4 Oct. N applied at 180 kg as 'Nitram': 21 Apr, 1989. Weedkillers: Bromoxynil at 0.34 kg and clopyralid at 0.07 kg with mecoprop at 2.5 kg in 220 l applied: 3 May. Fungicides: Propiconazole at 0.12 kg in 220 l applied: 12 June. Combine harvested: 8 Aug.

CA RA: S. wheat straw baled and carted: 8 Sept, 1988. Ploughed: 12 Sept. Rotary harrowed, Italian ryegrass sown at 30 kg, harrowed: 13 Sept. Topped: 4 May, 1989 and 27 June.

SA CA FA: S. wheat straw chopped: 9 Sept, 1988. Ploughed: 12 Sept. Rotary harrowed, Giant forage rape sown at 8.0 kg, harrowed: 13 Sept. Topped: 4 May, 1989 and 27 June.

CA CS: S. wheat straw baled and carted: 8 Sept, 1988. Ploughed: 12 Sept. Spring-tine cultivated: 29 Mar, 1989. Shallow cultivated with thistle bar: 26 June.

SA CS: S. wheat straw chopped: 9 Sept, 1988. Cultivated with sweep tines 7 cm deep: 3 May, 1989 and 12 June.

WT: S. wheat straw baled and carted: 8 Sept, 1988. Topped: 4 May, 1989 and 27 June.

89/W/CS/336

Standard applications, seed and cultivations, etc.:-

WT CS TS: S. wheat straw baled and carted: 8 Sept, 1988. Weeds topped, ploughed: 29 Mar, 1989. Rotary harrowed with crumbler attached, rolled, spike harrowed with crumbler attached, trefoil, inoculated Rhizobium, sown at 10 kg, rolled: 15 May.
Previous crops: Potatoes 1987, s. wheat 1988.

NOTE: Assessments of soil N, dry matter and plant cover were made in autumn, spring and summer.

GRAIN TONNES/HECTARE

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

LAND TRT	CA WW
	2.86
MEAN DM%	88.8
PLOT AREA HARVESTED	0.00732