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88/R/CS/326 and 88/W/CS/326 Amounts of Straw - W. Wheat

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88/R/CS/326 and 88/W/CS/326

AMOUNTS OF STRAW

Object: To study the effects of a range of amounts of straw incorporated into the soil on w.wheat - Rothamsted (R) Great Knott III, Woburn (W) Far Field I.

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The second year, w. wheat.

For previous year see 87/R&W/CS/326.

Design: 4 randomised blocks of 4 plots (R).
3 randomised blocks of 4 plots (W).

Whole plot dimensions: 3.0 x 13.5 (R).
3.0 x 14.5 (W).

Treatments:

STRAW Amounts of straw incorporated into seedbed (t ha 85% DM), cumulative to dressings in 1987:

		R	W
NONE	None	-	-
NORMAL	Normal	6.8	4.6
2 NORMAL	Twice normal	13.6	9.2
4 NORMAL	Four times normal	27.2	18.4

NOTES: (1) Straw was chopped by trailed straw chopper and spread on 21 Aug, 1987 (R), 21 Sept (W). Straw treatments were applied on 21 Aug (R), 10 Sept (W).

(2) At Rothamsted straw was incorporated by 'I.E.R. Mixaplough' on 4 Sept. At Woburn it was heavy-tine cultivated in to 10 cm twice on 3 Oct, power harrowed with crumbler attached on 29 Oct.

Basal applications:

Great Knott III (R): Manures: 'Nitram' at 116 kg followed by 580 kg. Weedkillers: Paraquat at 0.60 kg ion in 200 l. Tri-allate at 2.2 kg. Isoproturon at 2.1 kg in 200 l. Fluroxypyr at 0.20 kg in 200 l applied with the prochloraz and carbendazim. Fungicides: Prochloraz at 0.40 kg and carbendazim at 0.15 kg. Propiconazole at 0.12 kg and tridemorph at 0.25 kg in 200 l. Carbendazim at 0.25 kg, maneb at 1.6 kg with propiconazole at 0.12 kg in 200 l.

Far Field I (W): Manures: 'Nitram' at 116 kg followed by 580 kg. Weedkillers: Glyphosate at 1.1 kg in 200 l, followed by 0.27 kg in 200 l, followed by 1.1 kg in 200 l. Isoproturon at 2.1 kg with bromoxynil at 0.20 kg, ioxynil at 0.20 kg and mecoprop at 1.6 kg in 220 l. Fungicides: Propiconazole at 0.12 kg with tridemorph at 0.25 kg in 220 l.

Seed: Mission, sown at 180 kg (R), 200 kg (W).

88/R/CS/326 and 88/W/CS/326

Cultivations, etc.:-

Great Knott III (R): Paraquat applied: 29 Sept, 1987. Spring-tine cultivated: 23 Oct. Seed sown, harrowed: 24 Oct. Tri-allate applied: 8 Dec. N applied: 24 Feb, 1988 and 22 Apr. Isoproturon applied: 17 Mar. Fluroxypyr, prochloraz and carbendazim applied: 6 May. Propiconazole and tridemorph applied: 3 June. Carbendazim, maneb and propiconazole applied: 23 June. Combine harvested: 25 Aug.

Far Field I (W): Glyphosate applied: 25 Sept, 1987. Heavy spring-tine cultivated twice to 10 cm: 3 Oct. Glyphosate applied: 22 Oct. Power harrowed with crumbler attached: 29 Oct. Spring-tine cultivated: 7 Dec. Spike harrowed with crumbler attached, seed sown: 9 Dec. N applied: 8 Mar, 1988 and 3 May. Isoproturon, bromoxynil, ioxynil and mecoprop applied: 26 Apr. Fungicides applied: 22 June. Glyphosate applied: 16 Aug. Combine harvested: 25 Aug.

- NOTES:** (1) Establishment counts and dry weights were determined (R only). Shoot numbers and dry weight at growth stage 30, dry weights and fertile ear numbers after anthesis and harvest index were measured at both sites.
(2) Foliar diseases and foot and root rots were assessed in summer.

88/R/CS/326 GREAT KNOTT III (R)

GRAIN TONNES/HECTARE

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

STRAW	
NONE	6.76
NORMAL	6.89
2 NORMAL	6.95
4 NORMAL	6.93
Mean	6.88

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

STRAW
0.182

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	9	0.257	3.7
GRAIN MEAN DM%	79.8		
PLOT AREA HARVESTED	0.00310		

88/W/CS/326 FAR FIELD I (W)

GRAIN TONNES/HECTARE

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

STRAW	
NONE	5.58
NORMAL	5.27
2 NORMAL	5.15
4 NORMAL	5.39
Mean	5.34

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

STRAW
0.342

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	6	0.419	7.8
GRAIN MEAN DM%	83.3		
PLOT AREA HARVESTED	0.00442		