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89/R/CS/326 and 89/W/CS/326 Amounts of Straw - W. Wheat

Rothamsted Research

Rothamsted Research (1990) *89/R/CS/326 and 89/W/CS/326 Amounts of Straw - W. Wheat* ; Yields Of The Field Experiments 1989, pp 90 - 92 - DOI: <https://doi.org/10.23637/ERADOC-1-40>

89/R/CS/326 and 89/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 third year, w. wheat.

For previous years see 87-88/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 previous annual dressings:

| | | R | W |
|----------|-------------------|------|------|
| NONE | None | - | - |
| NORMAL | Normal | 3.3 | 5.8 |
| 2 NORMAL | Twice normal | 6.6 | 11.6 |
| 4 NORMAL | Four times normal | 13.2 | 23.2 |

NOTES: (1) Straw treatments were applied on 2 Sept (R), 5 Sept (W) and chopped by trailed straw chopper and spread on 5 Sept, 1988 (R), 7 Sept (W).

(2) At Rothamsted straw was incorporated by 'I.E.R. Mixaplough' on 14 Sept. At Woburn it was heavy-tine cultivated in to 10 cm twice on 21 Sept, spring-tined with crumbler attached on 21 Oct.

Basal applications:

Great Knott III (R): Manures: Magnesian limestone at 5.0 t.

(0:18:36) at 920 kg. 'Nitram' at 120 kg followed by 580 kg.

Weedkillers: Paraquat at 0.60 kg ion in 200 l. Isoproturon at 2.5 kg in 200 l. Metsulfuron-methyl at 6.0 g with fluroxypyr at 0.15 kg in 200 l. Fungicides: Chlorothalonil at 1.0 kg in 200 l. Propiconazole at 0.12 kg with tridemorph at 0.52 kg in 200 l.

Far Field I (W): Manures: (0:18:36) at 920 kg. 'Nitram' at 120 kg followed by 590 kg. Weedkillers: Glyphosate at 1.1 kg in 220 l. Paraquat at 0.80 kg ion in 220 l. Isoproturon at 1.5 kg in 220 l. Fungicides: Chlorothalonil at 1.0 kg in 220 l. Propiconazole at 0.12 kg with tridemorph at 0.52 kg in 220 l.

Seed: Rendezvous, sown at 180 kg.

89/R/CS/326 and 89/W/CS/326

Cultivations, etc.:-

Great Knott III (R): Magnesian limestone applied: 6 Sept, 1988.
Ploughed: 14 Sept. PK applied: 29 Sept. Paraquat applied:
18 Oct. Rotary harrowed, seed sown, harrowed: 19 Oct.
Isoproturon applied: 29 Oct. N applied: 21 Feb, 1989 and 14 Apr.
Metsulfuron-methyl and fluroxypyr applied: 15 Apr. Chlorothalonil
applied: 19 May. Propiconazole and tridemorph applied: 20 June.
Combine harvested: 5 Aug.

Far Field I (W): PK applied: 16 Sept, 1988. Subsoiled with tines
140 cm apart, 40 cm deep: 20 Sept. Rolled: 3 Oct. Paraquat
applied: 19 Oct. Spring-tine cultivated with crumbler attached,
seed sown, harrowed: 21 Oct. Isoproturon applied: 8 Dec. N
applied: 8 Mar, 1989 and 28 Apr. Chlorothalonil applied: 23 May.
Propiconazole and tridemorph applied: 22 June. Combine harvested:
4 Aug.

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

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

GRAIN TONNES/HECTARE

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

| STRAW | |
|----------|------|
| NONE | 7.42 |
| NORMAL | 7.33 |
| 2 NORMAL | 7.39 |
| 4 NORMAL | 7.24 |
| Mean | 7.35 |

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

STRAW
0.193

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

| Stratum | d.f. | s.e. | cv% |
|---------------------|---------|-------|-----|
| BLOCK.WP | 9 | 0.273 | 3.7 |
| GRAIN MEAN DM% | 87.0 | | |
| PLOT AREA HARVESTED | 0.00299 | | |

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

GRAIN TONNES/HECTARE

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

| STRAW | |
|----------|------|
| NONE | 7.72 |
| NORMAL | 7.43 |
| 2 NORMAL | 7.45 |
| 4 NORMAL | 7.60 |
| Mean | 7.55 |

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

STRAW
0.337

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

| Stratum | d.f. | s.e. | cv% |
|---------------------|---------|-------|-----|
| BLOCK.WP | 6 | 0.413 | 5.5 |
| GRAIN MEAN DM% | 86.9 | | |
| PLOT AREA HARVESTED | 0.00434 | | |