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# Yields of the Field Experiments 1980

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## 80/R/CS/200 and 80/W/CS/200 Factors Affecting Yield

### Rothamsted Research

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80/R/CS/200 and 80/W/CS/200

FACTORS AFFECTING YIELD

Object: To study some of the factors limiting yield of grass, clover and lucerne - Rothamsted (R), Pastures and Woburn (W), Butt Furlong.

Sponsors: J.M. Day, I.F. Henderson, J.F. Jenkyn, A.E. Johnston, B.J. Legg, J. McEwen, R.T. Plumb, A.M. Spaul, J.F. Witty.

The fourth year, ryegrass, white clover, lucerne.

For previous years see 77-79/R&W/CS/200.

Design: Single replicate of 2 plots split into 50.

Whole plot dimensions: Pastures (R): 23.8 x 24.5.  
Butt Furlong (W): 22.3 x 24.5.

Treatments: Combinations of:-

Whole plots

|             |  |
|-------------|--|
| 1. IRRIGATN | Irrigation:  |
| NONE        | None   |
| FULL        | Irrigated to reduce a soil moisture deficit of 25 mm to zero |

Sub plots

2. TREATMNT      Treatments, combinations of:

Species:

Ryegrass, S.23, (RG)  
Ryegrass, S.23 + Clover, Blanca (GB)  
Ryegrass, S.23 + Clover, S.100 (GS)  
Clover, Blanca (CL)  
Lucerne, Vertus (LU)

Cutting frequencies:

Three times (3)  
Six times (6)

Amounts of nitrogen fertiliser (kg N total per annum, applied as (25:0:16)):

0, 100, 200, 300, 400, 500, 600 (N0, N1, N2, N3, N4, N5, N6)

Times of applying nitrogen fertiliser:

Not applied (--), N0 only  
Divided equally between cuts (DE)  
In spring only (SP)  
Half in spring, half in summer (SS)

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Control of pathogens:

None (-)  
Controlled (C)

The following combinations are tested:

|          |                       |                       |
|----------|-----------------------|-----------------------|
| RG6N0--- | GB3N0--- (duplicated) | CL3N0--- (duplicated) |
| RG6N1DE- | GB3N1DE-              | CL3N2DE- "            |
| RG6N2DE- | GB3N2DE-              | CL3N0--C "            |
| RG6N3DE- | GB3N3DE-              | CL3N2DEC "            |
| RG6N4DE- | GB3N4DE-              |                       |
| RG6N5DE- |                       | LU3N0--- "            |
| RG6N6DE- | GB3N0--C              | LU3N0--C "            |
|          | GB3N1DEC              |                       |
| GB6N0--- | GB3N2DEC              |                       |
| GB6N1DE- | GB3N3DEC              |                       |
| GB6N2DE- | GB3N4DEC              |                       |
| GB6N3DE- |                       |                       |
| GB6N4DE- | GB3N1SP- (duplicated) |                       |
|          | GB3N1SS- "            |                       |
| GS6N0--- | GB3N2SS "             |                       |
| GS6N1DE- |                       |                       |
| GS6N2DE- | RG3N2DE- "            |                       |
| GS6N3DE- | RG3N2DEC "            |                       |
| GS6N4DE- |                       |                       |

- NOTES: (1) Pathogen control consisted of:- (1) Aldicarb at 10 kg applied in the spring except to LU which received phorate at 5.0 kg, (2) benomyl foliar spray at 0.56 kg + phorate at 5.0 kg, applied as granules, after each cut, (3) four additional benomyl foliar sprays at 0.56 kg in winter, (4) Methiocarb at 0.48 kg, as pellets, applied at monthly intervals from October.
- (2) Irrigation was applied as follows (mm water):

Pastures (R)

|         |       |
|---------|-------|
| 9 May   | 25    |
| 17 May  | 25    |
| 19 May  | 25    |
| 24 May  | 25    |
| 4 June  | 25    |
| 13 June | 25    |
| 7 Aug   | 12.5  |
| 29 Aug  | 12.5  |
| 8 Sept  | 12.5  |
| Total   | 187.5 |



80/R/CS/200 and 80/W/CS/200

Butt Furlong (W)

|         |      |
|---------|------|
| 6 May   | 25   |
| 7 May   | 12.5 |
| 15 May  | 25   |
| 19 May  | 25   |
| 23 May  | 25   |
| 12 June | 25   |
| 23 July | 12.5 |
| 7 Aug   | 12.5 |
| 28 Aug  | 12.5 |
| 3 Sept  | 12.5 |

Total 187.5

- (3) NO plots received 192 kg K<sub>2</sub>O, as muriate of potash, after the fourth cutting occasion.

Standard applications:

Pastures (R) All plots: Manures: (0:14:28) at 1070 kg. Weedkillers: Propyzamide at 0.70 kg in 700 l to CL and LU plots only. Dicamba with mecoprop and MCPA (as 'Tetralex Plus' at 4.2 l) in 340 l to RG plots only.

Butt Furlong (W) All plots: Manures: Magnesian limestone at 2.5 t, (0:14:28) at 1070 kg. Propyzamide at 0.70 kg in 700 l to CL and LU plots only. Dicamba with mecoprop and MCPA (as 'Tetralex Plus' at 4.2 l) in 340 l to RG plots only.

- Seed: S23 Perennial ryegrass alone sown at 20 kg.  
S23 Perennial ryegrass sown at 10 kg either with Blanca white clover sown at 4 kg or with S.100 white clover at 4 kg.  
Blanca white clover alone sown at 4 kg.  
Lucerne, Vertus sown at 10 kg, inoculated with Rhizobium.

Pastures (R) sown: 20 May, 1977.

Butt Furlong (W) sown: 23 May, 1977.

Cultivations, etc.:-

Pastures (R): Propyzamide applied: 5 Oct, 1979. PK applied: 12 Oct. Benomyl applied: 1 Nov, 4 Dec, 7 Jan, 1980, 11 Feb. NK applied: 4 Mar. NK, benomyl and phorate applied: 13 May, 10 June, 8 July, 5 Aug, 2 Sept. Benomyl and phorate applied: 30 Sept. Aldicarb applied to all C plots except LU and phorate to C plots of LU: 11 Mar. Weedkillers applied to RG plots: 11 Apr. '6 cut' plots cut: 13 May, 10 June, 8 July, 5 Aug, 2 Sept, 30 Sept. '3 cut' plots cut: 10 June, 5 Aug, 30 Sept.

Butt Furlong (W): Propyzamide applied: 5 Oct, 1979. Magnesian limestone applied: 31 Oct. Benomyl applied: 1 Nov, 4 Dec, 8 Jan, 1980, 12 Feb. PK applied: 11 Feb. NK applied: 4 Mar. Aldicarb applied to all C plots except LU and phorate to C plots of LU: 7 Mar. Weedkillers applied to RG plots: 11 Apr. NK, benomyl and phorate applied: 14 May, 11 June, 9 July, 6 Aug, 3 Sept. Benomyl and phorate applied: 1 Oct. '6 cut' plots cut: 14 May, 11 June, 9 July, 6 Aug, 3 Sept, 1 Oct. '3 cut' plots cut: 11 June, 6 Aug, 1 Oct.

NOTE: Assessments of pests and diseases were made during the season. Nitrogen percentages of crop produce were measured.

80/R/CS/200 PASTURES (R)

1ST CUTTING OCCASION (13/5/80) DRY MATTER TONNES/HECTARE

\*\*\*\*\* TABLES OF MEANS \*\*\*\*\*

| IRRIGATN<br>TREATMNT | NONE | FULL | MEAN |
|----------------------|------|------|------|
| RG6N0---             | 0.10 | 0.09 | 0.09 |
| RG6N1DE-             | 0.09 | 0.08 | 0.09 |
| RG6N2DE-             | 0.24 | 0.53 | 0.38 |
| RG6N3DE-             | 0.89 | 1.13 | 1.01 |
| RG6N4DE-             | 2.38 | 2.40 | 2.39 |
| RG6N5DE-             | 1.80 | 3.41 | 2.61 |
| RG6N6DE-             | 2.46 | 3.62 | 3.04 |
| GB6N0---             | 2.10 | 2.18 | 2.14 |
| GB6N1DE-             | 2.54 | 2.29 | 2.42 |
| GB6N2DE-             | 2.75 | 2.67 | 2.71 |
| GB6N3DE-             | 2.70 | 2.86 | 2.78 |
| GB6N4DE-             | 2.89 | 2.62 | 2.75 |
| GS6N0---             | 1.10 | 2.37 | 1.74 |
| GS6N1DE-             | 1.20 | 2.42 | 1.81 |
| GS6N2DE-             | 1.48 | 2.50 | 1.99 |
| GS6N3DE-             | 2.22 | 2.90 | 2.56 |
| GS6N4DE-             | 2.54 | 3.17 | 2.86 |
| MEAN                 | 1.73 | 2.19 | 1.96 |

1ST CUTTING OCCASION MEAN DM% 23.0

\* USE STANDARD ERRORS ON FOLLOWING PAGES ONLY TO COMPARE TREATMNT LEVELS  
GB3N0---,GB3N1SP-,GB3N1SS-,GB3N2SS-,RG3N2DE-,RG3N2DEC,  
CL3N0---,CL3N2DE-,CL3N0--C,CL3N2DEC,LU3N0---,LU3N0--C  
AND WITHIN THE SAME LEVEL OF IRRIGATN.

80/R/CS/200 PASTURES (R)  
 2ND CUTTING OCCASION (10/6/80) DRY MATTER TONNES/HECTARE  
 \*\*\*\*\* TABLES OF MEANS \*\*\*\*\*

| IRRIGATN<br>TREATMNT | NONE | FULL | MEAN |
|----------------------|------|------|------|
| RG6N0---             | 0.31 | 0.60 | 0.45 |
| RG6N1DE-             | 0.82 | 1.16 | 0.99 |
| RG6N2DE-             | 1.78 | 2.25 | 2.01 |
| RG6N3DE-             | 1.78 | 3.37 | 2.58 |
| RG6N4DE-             | 2.01 | 4.03 | 3.02 |
| RG6N5DE-             | 2.52 | 2.72 | 2.62 |
| RG6N6DE-             | 2.21 | 3.85 | 3.03 |
| GB6N0---             | 1.76 | 3.06 | 2.41 |
| GB6N1DE-             | 1.98 | 3.51 | 2.74 |
| GB6N2DE-             | 2.16 | 3.81 | 2.99 |
| GB6N3DE-             | 2.77 | 2.94 | 2.86 |
| GB6N4DE-             | 2.44 | 4.31 | 3.37 |
| GS6N0---             | 1.62 | 2.88 | 2.25 |
| GS6N1DE-             | 2.21 | 3.50 | 2.85 |
| GS6N2DE-             | 2.32 | 2.77 | 2.55 |
| GS6N3DE-             | 2.14 | 3.17 | 2.65 |
| GS6N4DE-             | 2.36 | 4.17 | 3.26 |
| GB3N0---             | 3.97 | 4.57 | 4.27 |
| GB3N1DE-             | 4.21 | 3.61 | 3.91 |
| GB3N2DE-             | 4.04 | 4.18 | 4.11 |
| GB3N3DE-             | 4.35 | 5.95 | 5.15 |
| GB3N4DE-             | 4.50 | 5.35 | 4.93 |
| GB3N0--C             | 4.76 | 6.52 | 5.64 |
| GB3N1DEC             | 6.58 | 6.97 | 6.77 |
| GB3N2DEC             | 6.24 | 6.34 | 6.29 |
| GB3N3DEC             | 7.56 | 6.82 | 7.19 |
| GB3N4DEC             | 7.58 | 7.33 | 7.45 |
| GB3N1SP-             | 5.47 | 6.14 | 5.80 |
| GB3N1SS-             | 4.72 | 5.68 | 5.20 |
| GB3N2SS-             | 5.23 | 5.87 | 5.55 |
| RG3N2DE-             | 2.81 | 4.88 | 3.85 |
| RG3N2DEC             | 4.39 | 5.55 | 4.97 |
| CL3N0---             | 2.27 | 4.10 | 3.19 |
| CL3N2DE-             | 1.98 | 3.40 | 2.69 |
| CL3N0--C             | 2.55 | 4.30 | 3.42 |
| CL3N2DEC             | 2.56 | 4.57 | 3.57 |
| LU3N0---             | 7.01 | 7.43 | 7.22 |
| LU3N0--C             | 6.63 | 7.59 | 7.11 |
| MEAN                 | 3.64 | 4.67 | 4.16 |

\*\*\*\*\* STANDARD ERRORS OF DIFFERENCES OF MEANS \*\*\*\*\*

| TABLE | TREATMNT* | IRRIGATN*<br>TREATMNT |
|-------|-----------|-----------------------|
| ----- | -----     | -----                 |
| SED   | 0.368     | 0.521                 |

\*\*\*\*\* STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION \*\*\*\*\*

| STRATUM | DF | SE    | CV%  |
|---------|----|-------|------|
| WP.SP   | 24 | 0.521 | 12.5 |

2ND CUTTING OCCASION MEAN DM% 16.9



80/R/CS/200 PASTURES (R)

3RD CUTTING OCCASION (8/7/80) DRY MATTER TONNES/HECTARE

\*\*\*\*\* TABLES OF MEANS \*\*\*\*\*

| IRRIGATN<br>TREATMNT | NONE | FULL | MEAN |
|----------------------|------|------|------|
| RG6N0---             | 0.19 | 0.36 | 0.28 |
| RG6N1DE-             | 0.37 | 0.46 | 0.41 |
| RG6N2DE-             | 1.30 | 1.09 | 1.19 |
| RG6N3DE-             | 1.34 | 1.20 | 1.27 |
| RG6N4DE-             | 1.75 | 1.28 | 1.52 |
| RG6N5DE-             | 2.32 | 1.91 | 2.12 |
| RG6N6DE-             | 1.95 | 1.88 | 1.91 |
| GB6N0---             | 1.65 | 1.71 | 1.68 |
| GB6N1DE-             | 1.88 | 1.73 | 1.81 |
| GB6N2DE-             | 1.79 | 1.54 | 1.66 |
| GB6N3DE-             | 1.93 | 1.54 | 1.73 |
| GB6N4DE-             | 1.84 | 1.69 | 1.77 |
| GS6N0---             | 0.58 | 1.29 | 0.94 |
| GS6N1DE-             | 1.28 | 1.56 | 1.42 |
| GS6N2DE-             | 1.35 | 1.59 | 1.47 |
| GS6N3DE-             | 1.83 | 1.43 | 1.63 |
| GS6N4DE-             | 1.74 | 1.25 | 1.49 |
| MEAN                 | 1.48 | 1.38 | 1.43 |

3RD CUTTING OCCASION MEAN DM% 14.4

80/R/CS/200 PASTURES (R)  
 4TH CUTTING OCCASION (5/8/80) DRY MATTER TONNES/HECTARE  
 \*\*\*\*\* TABLES OF MEANS \*\*\*\*\*

| IRRIGATN<br>TREATMNT | NONE | FULL | MEAN |
|----------------------|------|------|------|
| RG6N0---             | 0.08 | 0.23 | 0.15 |
| RG6N1DE-             | 0.34 | 0.47 | 0.41 |
| RG6N2DE-             | 1.53 | 1.47 | 1.50 |
| RG6N3DE-             | 2.82 | 2.18 | 2.50 |
| RG6N4DE-             | 3.76 | 3.23 | 3.49 |
| RG6N5DE-             | 3.60 | 2.84 | 3.22 |
| RG6N6DE-             | 3.75 | 2.56 | 3.16 |
| GB6N0---             | 2.32 | 2.13 | 2.22 |
| GB6N1DE-             | 2.63 | 2.35 | 2.49 |
| GB6N2DE-             | 2.82 | 2.44 | 2.63 |
| GB6N3DE-             | 2.73 | 2.48 | 2.60 |
| GB6N4DE-             | 3.84 | 2.51 | 3.18 |
| GS6N0---             | 1.77 | 2.19 | 1.98 |
| GS6N1DE-             | 1.85 | 2.41 | 2.13 |
| GS6N2DE-             | 2.63 | 2.59 | 2.61 |
| GS6N3DE-             | 2.95 | 2.71 | 2.83 |
| GS6N4DE-             | 3.60 | 2.68 | 3.14 |
| GB3N0---             | 3.46 | 3.23 | 3.34 |
| GB3N1DE-             | 4.25 | 3.13 | 3.69 |
| GB3N2DE-             | 3.38 | 2.81 | 3.10 |
| GB3N3DE-             | 4.30 | 3.12 | 3.71 |
| GB3N4DE-             | 5.50 | 3.40 | 4.45 |
| GB3N0--C             | 3.78 | 4.18 | 3.98 |
| GB3N1DEC             | 4.63 | 4.08 | 4.36 |
| GB3N2DEC             | 5.44 | 4.44 | 4.94 |
| GB3N3DEC             | 5.05 | 4.94 | 4.99 |
| GB3N4DEC             | 4.71 | 5.29 | 5.00 |
| GB3N1SP-             | 3.85 | 3.60 | 3.72 |
| GB3N1SS-             | 3.63 | 3.09 | 3.36 |
| GB3N2SS-             | 3.38 | 3.12 | 3.25 |
| RG3N2DE-             | 4.14 | 3.28 | 3.71 |
| RG3N2DEC             | 4.85 | 3.65 | 4.25 |
| CL3N0---             | 2.66 | 2.68 | 2.67 |
| CL3N2DE-             | 2.63 | 2.63 | 2.63 |
| CL3N0--C             | 3.66 | 3.89 | 3.78 |
| CL3N2DEC             | 4.63 | 3.42 | 4.03 |
| LU3N0---             | 5.97 | 5.54 | 5.75 |
| LU3N0--C             | 5.75 | 5.49 | 5.62 |
| MEAN                 | 3.63 | 3.20 | 3.41 |

\*\*\*\*\* STANDARD ERRORS OF DIFFERENCES OF MEANS \*\*\*\*\*

| TABLE | TREATMNT* | IRRIGATN*<br>TREATMNT |
|-------|-----------|-----------------------|
| ----- | -----     | -----                 |
| SED   | 0.275     | 0.389                 |

\*\*\*\*\* STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION \*\*\*\*\*

| STRATUM | DF | SE    | CV%  |
|---------|----|-------|------|
| WP.SP   | 24 | 0.389 | 11.4 |

4TH CUTTING OCCASION MEAN DM% 16.7



80/R/CS/200 PASTURES (R)

5TH CUTTING OCCASION (2/9/80) DRY MATTER TONNES/HECTARE

\*\*\*\*\* TABLES OF MEANS \*\*\*\*\*

| IRRIGATN<br>TREATMNT | NONE | FULL | MEAN |
|----------------------|------|------|------|
| RG6NO---             | 0.06 | 0.30 | 0.18 |
| RG6N1DE-             | 0.41 | 0.39 | 0.40 |
| RG6N2DE-             | 1.21 | 0.76 | 0.99 |
| RG6N3DE-             | 1.19 | 1.54 | 1.36 |
| RG6N4DE-             | 1.50 | 2.41 | 1.95 |
| RG6N5DE-             | 1.93 | 2.09 | 2.01 |
| RG6N6DE-             | 0.93 | 1.79 | 1.36 |
| GB6NO---             | 1.33 | 1.33 | 1.33 |
| GB6N1DE-             | 1.51 | 1.57 | 1.54 |
| GB6N2DE-             | 1.39 | 1.27 | 1.33 |
| GB6N3DE-             | 1.41 | 1.14 | 1.28 |
| GB6N4DE-             | 1.14 | 1.45 | 1.30 |
| GS6NO---             | 1.09 | 1.18 | 1.13 |
| GS6N1DE-             | 1.28 | 1.23 | 1.26 |
| GS6N2DE-             | 1.14 | 1.49 | 1.31 |
| GS6N3DE-             | 1.33 | 1.72 | 1.52 |
| GS6N4DE-             | 1.73 | 1.94 | 1.83 |
| MEAN                 | 1.21 | 1.39 | 1.30 |

5TH CUTTING OCCASION MEAN DM% 15.1

80/R/CS/200 PASTURES (R)  
 6TH CUTTING OCCASION (30/9/80) DRY MATTER TONNES/HECTARE  
 \*\*\*\*\* TABLES OF MEANS \*\*\*\*\*

| IRRIGATN<br>TREATMNT | NONE | FULL | MEAN |
|----------------------|------|------|------|
| RG6N0---             | 0.07 | 0.24 | 0.15 |
| RG6N1DE-             | 0.29 | 0.58 | 0.44 |
| RG6N2DE-             | 1.06 | 1.20 | 1.13 |
| RG6N3DE-             | 1.30 | 1.67 | 1.48 |
| RG6N4DE-             | 1.17 | 1.80 | 1.49 |
| RG6N5DE-             | 0.98 | 1.54 | 1.26 |
| RG6N6DE-             | 0.94 | 1.88 | 1.41 |
| GB6N0---             | 0.56 | 1.10 | 0.83 |
| GB6N1DE-             | 0.40 | 1.09 | 0.75 |
| GB6N2DE-             | 0.58 | 1.37 | 0.98 |
| GB6N3DE-             | 0.55 | 1.32 | 0.94 |
| GB6N4DE-             | 0.72 | 1.23 | 0.97 |
| GS6N0---             | 1.00 | 1.09 | 1.05 |
| GS6N1DE-             | 1.02 | 1.28 | 1.15 |
| GS6N2DE-             | 1.17 | 1.41 | 1.29 |
| GS6N3DE-             | 1.17 | 1.41 | 1.29 |
| GS6N4DE-             | 1.33 | 1.19 | 1.26 |
| GB3N0---             | 1.53 | 1.81 | 1.67 |
| GB3N1DE-             | 1.99 | 1.54 | 1.76 |
| GB3N2DE-             | 1.85 | 1.89 | 1.87 |
| GB3N3DE-             | 2.23 | 2.44 | 2.33 |
| GB3N4DE-             | 1.95 | 2.12 | 2.03 |
| GB3N0--C             | 1.33 | 2.39 | 1.86 |
| GB3N1DEC             | 1.75 | 2.34 | 2.05 |
| GB3N2DEC             | 1.74 | 2.57 | 2.15 |
| GB3N3DEC             | 2.07 | 2.01 | 2.04 |
| GB3N4DEC             | 2.24 | 2.74 | 2.49 |
| GB3N1SP-             | 1.43 | 2.11 | 1.77 |
| GB3N1SS-             | 1.83 | 1.93 | 1.88 |
| GB3N2SS-             | 1.91 | 1.96 | 1.94 |
| RG3N2DE-             | 2.72 | 2.81 | 2.77 |
| RG3N2DEC             | 2.66 | 2.87 | 2.77 |
| CL3N0---             | 1.13 | 1.54 | 1.33 |
| CL3N2DE-             | 1.28 | 1.87 | 1.57 |
| CL3N0--C             | 1.22 | 2.17 | 1.70 |
| CL3N2DEC             | 1.85 | 2.18 | 2.02 |
| LU3N0---             | 2.50 | 2.36 | 2.43 |
| LU3N0--C             | 2.87 | 2.86 | 2.86 |
| MEAN                 | 1.55 | 1.89 | 1.72 |

\*\*\*\*\* STANDARD ERRORS OF DIFFERENCES OF MEANS \*\*\*\*\*

| TABLE | TREATMNT* | IRRIGATN*<br>TREATMNT |
|-------|-----------|-----------------------|
| ----- | -----     | -----                 |
| SED   | 0.140     | 0.198                 |

\*\*\*\*\* STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION \*\*\*\*\*

| STRATUM | DF | SE    | CV%  |
|---------|----|-------|------|
| WP.SP   | 24 | 0.198 | 11.5 |

6TH CUTTING OCCASION MEAN DM% 16.4

80/R/CS/200 PASTURES (R)  
 TOTAL OF 6 CUTTING OCCASIONS DRY MATTER TONNES/HECTARE  
 \*\*\*\*\* TABLES OF MEANS \*\*\*\*\*

| IRRIGATN<br>TREATMNT | NONE  | FULL  | MEAN  |
|----------------------|-------|-------|-------|
| RG6N0---             | 0.81  | 1.82  | 1.31  |
| RG6N1DE-             | 2.32  | 3.14  | 2.73  |
| RG6N2DE-             | 7.13  | 7.29  | 7.21  |
| RG6N3DE-             | 9.31  | 11.09 | 10.20 |
| RG6N4DE-             | 12.56 | 15.15 | 13.85 |
| RG6N5DE-             | 13.15 | 14.51 | 13.83 |
| RG6N6DE-             | 12.24 | 15.58 | 13.91 |
| GB6N0---             | 9.72  | 11.51 | 10.62 |
| GB6N1DE-             | 10.93 | 12.54 | 11.74 |
| GB6N2DE-             | 11.49 | 13.10 | 12.29 |
| GB6N3DE-             | 12.09 | 12.28 | 12.19 |
| GB6N4DE-             | 12.87 | 13.82 | 13.34 |
| GS6N0---             | 7.16  | 11.01 | 9.08  |
| GS6N1DE-             | 8.84  | 12.40 | 10.62 |
| GS6N2DE-             | 10.09 | 12.36 | 11.23 |
| GS6N3DE-             | 11.64 | 13.34 | 12.49 |
| GS6N4DE-             | 13.29 | 14.39 | 13.84 |
| GB3N0---             | 8.96  | 9.60  | 9.28  |
| GB3N1DE-             | 10.45 | 8.28  | 9.37  |
| GB3N2DE-             | 9.28  | 8.89  | 9.08  |
| GB3N3DE-             | 10.88 | 11.52 | 11.20 |
| GB3N4DE-             | 11.94 | 10.87 | 11.41 |
| GB3N0--C             | 9.87  | 13.09 | 11.48 |
| GB3N1DEC             | 12.95 | 13.40 | 13.18 |
| GB3N2DEC             | 13.43 | 13.35 | 13.39 |
| GB3N3DEC             | 14.68 | 13.77 | 14.22 |
| GB3N4DEC             | 14.53 | 15.36 | 14.94 |
| GB3N1SP-             | 10.74 | 11.84 | 11.29 |
| GB3N1SS-             | 10.19 | 10.71 | 10.45 |
| GB3N2SS-             | 10.52 | 10.95 | 10.74 |
| RG3N2DE-             | 9.67  | 10.98 | 10.32 |
| RG3N2DEC             | 11.90 | 12.07 | 11.99 |
| CL3N0---             | 6.05  | 8.33  | 7.19  |
| CL3N2DE-             | 5.90  | 7.91  | 6.90  |
| CL3N0--C             | 7.44  | 10.36 | 8.90  |
| CL3N2DEC             | 9.04  | 10.18 | 9.61  |
| LU3N0---             | 15.47 | 15.33 | 15.40 |
| LU3N0--C             | 15.25 | 15.93 | 15.59 |
| MEAN                 | 10.32 | 11.44 | 10.88 |

\*\*\*\*\* STANDARD ERRORS OF DIFFERENCES OF MEANS \*\*\*\*\*

| TABLE | TREATMNT* | IRRIGATN*<br>TREATMNT |
|-------|-----------|-----------------------|
| ----- | -----     | -----                 |
| SED   | 0.535     | 0.757                 |

\*\*\*\*\* STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION \*\*\*\*\*

| STRATUM | DF | SE    | CV% |
|---------|----|-------|-----|
| WP.SP   | 24 | 0.757 | 7.0 |

TOTAL OF 6 CUTTING OCCASIONS MEAN DM% 16.8 SUB PLOT AREA HARVESTED 0.00038

80/W/CS/200 BUTT FURLONG (W)

1ST CUTTING OCCASION (14/5/80) DRY MATTER TONNES/HECTARE

\*\*\*\*\* TABLES OF MEANS \*\*\*\*\*

| IRRIGATN<br>TREATMNT | NONE | FULL | MEAN |
|----------------------|------|------|------|
| RG6N0---             | 0.10 | 0.17 | 0.13 |
| RG6N1DE-             | 0.29 | 0.34 | 0.32 |
| RG6N2DE-             | 0.36 | 0.73 | 0.54 |
| RG6N3DE-             | 0.86 | 1.42 | 1.14 |
| RG6N4DE-             | 1.67 | 1.98 | 1.82 |
| RG6N5DE-             | 1.76 | 2.84 | 2.30 |
| RG6N6DE-             | 2.51 | 2.66 | 2.58 |
| GB6N0---             | 1.46 | 2.71 | 2.09 |
| GB6N1DE-             | 2.05 | 2.45 | 2.25 |
| GB6N2DE-             | 2.02 | 2.29 | 2.16 |
| GB6N3DE-             | 1.74 | 3.11 | 2.42 |
| GB6N4DE-             | 2.26 | 2.63 | 2.45 |
| GS6N0---             | 0.52 | 2.62 | 1.57 |
| GS6N1DE-             | 0.89 | 2.08 | 1.49 |
| GS6N2DE-             | 1.07 | 2.13 | 1.60 |
| GS6N3DE-             | 1.48 | 1.68 | 1.58 |
| GS6N4DE-             | 2.07 | 2.62 | 2.35 |
| MEAN                 | 1.36 | 2.03 | 1.69 |

1ST CUTTING OCCASION MEAN DM% 27.0



80/W/CS/200 BUTT FURLONG (W)  
 2ND CUTTING OCCASION (11/6/80) DRY MATTER TONNES/HECTARE  
 \*\*\*\*\* TABLES OF MEANS \*\*\*\*\*

| IRRIGATN<br>TREATMNT | NONE | FULL | MEAN |
|----------------------|------|------|------|
| RG6NO---             | 0.19 | 0.61 | 0.40 |
| RG6N1DE-             | 0.50 | 1.34 | 0.92 |
| RG6N2DE-             | 1.07 | 2.09 | 1.58 |
| RG6N3DE-             | 1.47 | 3.44 | 2.45 |
| RG6N4DE-             | 2.00 | 4.08 | 3.04 |
| RG6N5DE-             | 2.22 | 4.49 | 3.36 |
| RG6N6DE-             | 2.45 | 4.35 | 3.40 |
| GB6NO---             | 1.33 | 2.95 | 2.14 |
| GB6N1DE-             | 1.64 | 3.04 | 2.34 |
| GB6N2DE-             | 1.34 | 3.04 | 2.19 |
| GB6N3DE-             | 1.84 | 2.88 | 2.36 |
| GB6N4DE-             | 2.08 | 3.10 | 2.59 |
| GS6NO---             | 1.12 | 2.91 | 2.02 |
| GS6N1DE-             | 1.41 | 3.58 | 2.50 |
| GS6N2DE-             | 1.47 | 3.30 | 2.38 |
| GS6N3DE-             | 1.75 | 4.17 | 2.96 |
| GS6N4DE-             | 2.15 | 3.82 | 2.99 |
| GB3NO---             | 2.64 | 4.30 | 3.47 |
| GB3N1DE-             | 3.01 | 4.12 | 3.57 |
| GB3N2DE-             | 3.45 | 4.97 | 4.21 |
| GB3N3DE-             | 2.85 | 4.80 | 3.82 |
| GB3N4DE-             | 3.44 | 4.53 | 3.99 |
| GB3NO--C             | 3.85 | 6.42 | 5.14 |
| GB3N1DEC             | 4.58 | 6.02 | 5.30 |
| GB3N2DEC             | 5.07 | 8.27 | 6.67 |
| GB3N3DEC             | 4.70 | 6.62 | 5.66 |
| GB3N4DEC             | 5.61 | 7.34 | 6.47 |
| GB3N1SP-             | 3.11 | 4.59 | 3.85 |
| GB3N1SS-             | 3.41 | 4.21 | 3.81 |
| GB3N2SS-             | 3.52 | 4.24 | 3.88 |
| RG3N2DE-             | 1.80 | 3.99 | 2.89 |
| RG3N2DEC             | 2.93 | 5.32 | 4.13 |
| CL3NO---             | 1.07 | 3.92 | 2.49 |
| CL3N2DE-             | 1.48 | 3.47 | 2.48 |
| CL3NO--C             | 2.33 | 5.38 | 3.86 |
| CL3N2DEC             | 2.99 | 5.24 | 4.11 |
| LU3NO---             | 6.18 | 7.20 | 6.69 |
| LU3NO--C             | 6.45 | 7.29 | 6.87 |
| MEAN                 | 2.77 | 4.49 | 3.63 |

\*\*\*\*\* STANDARD ERRORS OF DIFFERENCES OF MEANS \*\*\*\*\*

| TABLE | TREATMNT* | IRRIGATN*<br>TREATMNT |
|-------|-----------|-----------------------|
| ----- |           |                       |
| SED   | 0.351     | 0.497                 |

\*\*\*\*\* STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION \*\*\*\*\*

| STRATUM | DF | SE    | CV%  |
|---------|----|-------|------|
| WP.SP   | 24 | 0.497 | 13.7 |

2ND CUTTING OCCASION MEAN DM% 15.2

80/W/CS/200 BUTT FURLONG (W)

3RD CUTTING OCCASION (9/7/80) DRY MATTER TONNES/HECTARE

\*\*\*\*\* TABLES OF MEANS \*\*\*\*\*

| IRRIGATN<br>TREATMNT | NONE | FULL | MEAN |
|----------------------|------|------|------|
| RG6N0---             | 0.23 | 0.27 | 0.25 |
| RG6N1DE-             | 0.62 | 0.79 | 0.70 |
| RG6N2DE-             | 1.51 | 1.21 | 1.36 |
| RG6N3DE-             | 2.52 | 1.37 | 1.95 |
| RG6N4DE-             | 3.27 | 1.77 | 2.52 |
| RG6N5DE-             | 3.04 | 1.92 | 2.48 |
| RG6N6DE-             | 3.58 | 2.21 | 2.89 |
| GB6N0---             | 2.03 | 1.84 | 1.94 |
| GB6N1DE-             | 2.41 | 1.71 | 2.06 |
| GB6N2DE-             | 2.47 | 1.94 | 2.20 |
| GB6N3DE-             | 2.75 | 1.76 | 2.25 |
| GB6N4DE-             | 2.82 | 1.62 | 2.22 |
| GS6N0---             | 0.71 | 1.72 | 1.21 |
| GS6N1DE-             | 0.95 | 1.55 | 1.25 |
| GS6N2DE-             | 2.07 | 1.55 | 1.81 |
| GS6N3DE-             | 2.38 | 1.55 | 1.97 |
| GS6N4DE-             | 2.45 | 2.12 | 2.29 |
| MEAN                 | 2.11 | 1.58 | 1.84 |

3RD CUTTING OCCASION MEAN DM% 14.2

80/W/CS/200 BUTT FURLONG (W)  
 4TH CUTTING OCCASION (6/8/80) DRY MATTER TONNES/HECTARE  
 \*\*\*\*\* TABLES OF MEANS \*\*\*\*\*

| IRRIGATN<br>TREATMNT | NONE | FULL | MEAN |
|----------------------|------|------|------|
| RG6N0---             | 0.00 | 0.13 | 0.06 |
| RG6N1DE-             | 0.40 | 0.59 | 0.49 |
| RG6N2DE-             | 1.33 | 1.19 | 1.26 |
| RG6N3DE-             | 2.33 | 1.85 | 2.09 |
| RG6N4DE-             | 2.92 | 2.73 | 2.83 |
| RG6N5DE-             | 2.60 | 3.57 | 3.09 |
| RG6N6DE-             | 3.06 | 2.99 | 3.03 |
| GB6N0---             | 2.11 | 2.08 | 2.09 |
| GB6N1DE-             | 2.46 | 1.74 | 2.10 |
| GB6N2DE-             | 2.31 | 1.83 | 2.07 |
| GB6N3DE-             | 2.59 | 1.92 | 2.26 |
| GB6N4DE-             | 2.31 | 1.89 | 2.10 |
| GS6N0---             | 1.40 | 2.00 | 1.70 |
| GS6N1DE-             | 1.21 | 2.19 | 1.70 |
| GS6N2DE-             | 1.87 | 2.61 | 2.24 |
| GS6N3DE-             | 2.44 | 2.64 | 2.54 |
| GS6N4DE-             | 2.63 | 3.00 | 2.82 |
| GB3N0---             | 3.43 | 3.02 | 3.23 |
| GB3N1DE-             | 3.68 | 2.71 | 3.20 |
| GB3N2DE-             | 3.24 | 2.89 | 3.06 |
| GB3N3DE-             | 3.71 | 2.76 | 3.24 |
| GB3N4DE-             | 3.38 | 2.44 | 2.91 |
| GB3N0--C             | 4.08 | 4.38 | 4.23 |
| GB3N1DEC             | 4.44 | 4.16 | 4.30 |
| GB3N2DEC             | 4.04 | 3.51 | 3.78 |
| GB3N3DEC             | 5.91 | 3.93 | 4.92 |
| GB3N4DEC             | 4.32 | 4.86 | 4.59 |
| GB3N1SP-             | 3.07 | 2.56 | 2.81 |
| GB3N1SS-             | 3.91 | 2.14 | 3.03 |
| GB3N2SS-             | 4.27 | 2.44 | 3.36 |
| RG3N2DE-             | 4.21 | 3.25 | 3.73 |
| RG3N2DEC             | 4.97 | 5.13 | 5.05 |
| CL3N0---             | 2.63 | 2.51 | 2.57 |
| CL3N2DE-             | 2.50 | 2.63 | 2.57 |
| CL3N0--C             | 3.78 | 3.12 | 3.45 |
| CL3N2DEC             | 3.60 | 3.10 | 3.35 |
| LU3N0---             | 5.77 | 4.52 | 5.15 |
| LU3N0--C             | 5.68 | 5.41 | 5.54 |
| MEAN                 | 3.33 | 2.93 | 3.13 |

\*\*\*\*\* STANDARD ERRORS OF DIFFERENCES OF MEANS \*\*\*\*\*

| TABLE | TREATMNT* | IRRIGATN*<br>TREATMNT |
|-------|-----------|-----------------------|
| ----- |           |                       |
| SED   | 0.247     | 0.349                 |

\*\*\*\*\* STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION \*\*\*\*\*

| STRATUM | DF | SE    | CV%  |
|---------|----|-------|------|
| WP.SP   | 24 | 0.349 | 11.2 |

4TH CUTTING OCCASION MEAN DM% 15.0

80/W/CS/200 BUTT FURLONG (W)

5TH CUTTING OCCASION (3/9/80) DRY MATTER TONNES/HECTARE

\*\*\*\*\* TABLES OF MEANS \*\*\*\*\*

| IRRIGATN<br>TREATMNT | NONE | FULL | MEAN |
|----------------------|------|------|------|
| RG6N0---             | 0.00 | 0.07 | 0.04 |
| RG6N1DE-             | 0.46 | 0.60 | 0.53 |
| RG6N2DE-             | 0.79 | 1.08 | 0.93 |
| RG6N3DE-             | 1.39 | 1.86 | 1.63 |
| RG6N4DE-             | 1.65 | 1.80 | 1.72 |
| RG6N5DE-             | 1.54 | 1.76 | 1.65 |
| RG6N6DE-             | 2.13 | 1.70 | 1.92 |
| GB6N0---             | 1.66 | 1.61 | 1.63 |
| GB6N1DE-             | 1.53 | 1.24 | 1.38 |
| GB6N2DE-             | 1.58 | 1.32 | 1.45 |
| GB6N3DE-             | 1.64 | 1.44 | 1.54 |
| GB6N4DE-             | 1.60 | 1.35 | 1.47 |
| GS6N0---             | 1.24 | 1.51 | 1.38 |
| GS6N1DE-             | 1.14 | 1.39 | 1.27 |
| GS6N2DE-             | 1.16 | 1.42 | 1.29 |
| GS6N3DE-             | 1.53 | 1.38 | 1.45 |
| GS6N4DE-             | 1.81 | 1.64 | 1.72 |
| MEAN                 | 1.34 | 1.36 | 1.35 |

5TH CUTTING OCCASION MEAN DM% 17.0



80/W/CS/200 BUTT FURLONG (W)  
 6TH CUTTING OCCASION (1/10/80) DRY MATTER TONNES/HECTARE  
 \*\*\*\*\* TABLES OF MEANS \*\*\*\*\*

| IRRIGATN<br>TREATMNT | NONE | FULL | MEAN |
|----------------------|------|------|------|
| RG6N0---             | 0.06 | 0.06 | 0.06 |
| RG6N1DE-             | 0.39 | 0.40 | 0.39 |
| RG6N2DE-             | 0.70 | 0.83 | 0.76 |
| RG6N3DE-             | 1.01 | 1.33 | 1.17 |
| RG6N4DE-             | 0.98 | 1.51 | 1.24 |
| RG6N5DE-             | 0.91 | 1.69 | 1.30 |
| RG6N6DE-             | 1.33 | 1.55 | 1.44 |
| GB6N0---             | 0.65 | 0.80 | 0.72 |
| GB6N1DE-             | 0.75 | 0.48 | 0.61 |
| GB6N2DE-             | 0.69 | 0.75 | 0.72 |
| GB6N3DE-             | 0.73 | 0.74 | 0.73 |
| GB6N4DE-             | 0.85 | 0.85 | 0.85 |
| GS6N0---             | 0.85 | 0.85 | 0.85 |
| GS6N1DE-             | 0.76 | 0.88 | 0.82 |
| GS6N2DE-             | 0.73 | 1.09 | 0.91 |
| GS6N3DE-             | 0.87 | 1.24 | 1.06 |
| GS6N4DE-             | 1.07 | 1.57 | 1.32 |
| GB3N0---             | 1.37 | 1.28 | 1.32 |
| GB3N1DE-             | 1.35 | 1.38 | 1.37 |
| GB3N2DE-             | 1.54 | 1.69 | 1.62 |
| GB3N3DE-             | 1.59 | 1.19 | 1.39 |
| GB3N4DE-             | 1.24 | 1.49 | 1.36 |
| GB3N0--C             | 2.22 | 2.35 | 2.29 |
| GB3N1DEC             | 1.84 | 2.46 | 2.15 |
| GB3N2DEC             | 2.48 | 1.96 | 2.22 |
| GB3N3DEC             | 2.47 | 2.89 | 2.68 |
| GB3N4DEC             | 2.81 | 2.89 | 2.85 |
| GB3N1SP-             | 1.18 | 1.19 | 1.18 |
| GB3N1SS-             | 1.45 | 1.06 | 1.25 |
| GB3N2SS-             | 1.42 | 1.32 | 1.37 |
| RG3N2DE-             | 2.30 | 2.58 | 2.44 |
| RG3N2DEC             | 2.41 | 3.37 | 2.89 |
| CL3N0---             | 1.36 | 1.41 | 1.38 |
| CL3N2DE-             | 1.14 | 1.23 | 1.19 |
| CL3N0--C             | 2.08 | 1.96 | 2.02 |
| CL3N2DEC             | 2.18 | 1.95 | 2.06 |
| LU3N0---             | 3.52 | 2.72 | 3.12 |
| LU3N0--C             | 3.27 | 3.00 | 3.14 |
| MEAN                 | 1.56 | 1.62 | 1.59 |

\*\*\*\*\* STANDARD ERRORS OF DIFFERENCES OF MEANS \*\*\*\*\*

| TABLE | TREATMNT* | IRRIGATN*<br>TREATMNT |
|-------|-----------|-----------------------|
| ----- | -----     | -----                 |
| SED   | 0.188     | 0.266                 |

\*\*\*\*\* STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION \*\*\*\*\*

| STRATUM | DF | SE    | CV%  |
|---------|----|-------|------|
| WP.SP   | 24 | 0.266 | 16.7 |

6TH CUTTING OCCASION MEAN DM% 16.7

80/W/CS/200 BUTT FURLONG (W)  
 TOTAL OF 6 CUTTING OCCASIONS DRY MATTER TONNES/HECTARE  
 \*\*\*\*\* TABLES OF MEANS \*\*\*\*\*

| IRRIGATN<br>TREATMNT | NONE  | FULL  | MEAN  |
|----------------------|-------|-------|-------|
| RG6N0---             | 0.58  | 1.31  | 0.94  |
| RG6N1DE-             | 2.67  | 4.06  | 3.36  |
| RG6N2DE-             | 5.75  | 7.12  | 6.44  |
| RG6N3DE-             | 9.57  | 11.27 | 10.42 |
| RG6N4DE-             | 12.49 | 13.86 | 13.18 |
| RG6N5DE-             | 12.07 | 16.27 | 14.17 |
| RG6N6DE-             | 15.05 | 15.46 | 15.25 |
| GB6N0---             | 9.23  | 11.97 | 10.60 |
| GB6N1DE-             | 10.85 | 10.66 | 10.75 |
| GB6N2DE-             | 10.40 | 11.17 | 10.78 |
| GB6N3DE-             | 11.29 | 11.84 | 11.57 |
| GB6N4DE-             | 11.91 | 11.45 | 11.68 |
| GS6N0---             | 5.84  | 11.61 | 8.72  |
| GS6N1DE-             | 6.37  | 11.67 | 9.02  |
| GS6N2DE-             | 8.37  | 12.10 | 10.23 |
| GS6N3DE-             | 10.45 | 12.67 | 11.56 |
| GS6N4DE-             | 12.18 | 14.78 | 13.48 |
| GB3N0---             | 7.44  | 8.60  | 8.02  |
| GB3N1DE-             | 8.05  | 8.22  | 8.13  |
| GB3N2DE-             | 8.23  | 9.54  | 8.89  |
| GB3N3DE-             | 8.15  | 8.75  | 8.45  |
| GB3N4DE-             | 8.06  | 8.46  | 8.26  |
| GB3N0--C             | 10.15 | 13.15 | 11.65 |
| GB3N1DEC             | 10.85 | 12.64 | 11.75 |
| GB3N2DEC             | 11.59 | 13.75 | 12.67 |
| GB3N3DEC             | 13.09 | 13.44 | 13.26 |
| GB3N4DEC             | 12.74 | 15.09 | 13.91 |
| GB3N1SP-             | 7.36  | 8.33  | 7.85  |
| GB3N1SS-             | 8.77  | 7.41  | 8.09  |
| GB3N2SS-             | 9.22  | 8.00  | 8.61  |
| RG3N2DE-             | 8.32  | 9.82  | 9.07  |
| RG3N2DEC             | 10.32 | 13.82 | 12.07 |
| CL3N0---             | 5.05  | 7.83  | 6.44  |
| CL3N2DE-             | 5.12  | 7.34  | 6.23  |
| CL3N0--C             | 8.20  | 10.46 | 9.33  |
| CL3N2DEC             | 8.77  | 10.29 | 9.53  |
| LU3N0---             | 15.46 | 14.44 | 14.95 |
| LU3N0--C             | 15.41 | 15.70 | 15.55 |
| MEAN                 | 9.30  | 10.73 | 10.01 |

\*\*\*\*\* STANDARD ERRORS OF DIFFERENCES OF MEANS \*\*\*\*\*

| TABLE | TREATMNT* | IRRIGATN*<br>TREATMNT |
|-------|-----------|-----------------------|
| ----- | -----     | -----                 |
| SED   | 0.545     | 0.771                 |

\*\*\*\*\* STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION \*\*\*\*\*

| STRATUM | DF | SE    | CV% |
|---------|----|-------|-----|
| WP.SP   | 24 | 0.771 | 7.7 |

TOTAL OF 6 CUTTING OCCASIONS MEAN DM% 16.2 SUB PLOT AREA HARVESTED 0.00038