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## Yields of the Field Experiments 1973

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### 73/R/CS/86 - Weedkiller & Aqueous N - Old Grass

#### Rothamsted Research

Rothamsted Research (1974) 73/R/CS/86 - *Weedkiller & Aqueous N - Old Grass* ; Yields Of The Field Experiments 1973, pp 229 - 234 - DOI: <https://doi.org/10.23637/ERADOC-1-98>

73/R/CS/86

WEEDKILLER AND AQUEOUS N

Object: To study the effects of a range of rates of solid or liquid nitrogen fertilizer in combination with a range of rates of hormone weedkiller, on weed control and yield of old grass - Ver.

Sponsors: S.C.R. Freeman, A. Penny.

The second year, old grass.

For previous year see 72/R/CS/86(t).

Design: 3 randomised blocks of 28 plots.

Whole plot dimensions: 2.74 x 1.37. Area harvested: 0.00002.

Treatments (applied per cut): All combinations of:-

1. Form of nitrogen:

|  |        |
|--|--------|
|  | FORM   |
| Solid, as 'Nitro-Chalk' 21% N  | Solid  |
| Liquid, as urea/ammonium nitrate 26% N, alone<br>or mixed with the weedkiller (using fan<br>jet size 00) | Liquid |

2. Rate of nitrogen (kg N):

|       |         |
|-------|---------|
|       | NPERCUT |
| 37.7  | 37.7    |
| 75.3  | 75.3    |
| 113.0 | 113.0   |

3. Weedkiller (dichloprop/MCPA, kg total a.e.)  
(using fan jet size 00)

|      |               |
|------|---------------|
|      | WEEDKILLR(00) |
| None | 0.0           |
| 1.4  | 1.4           |
| 2.8  | 2.8           |
| 4.2  | 4.2           |

together with four treatments all given liquid fertiliser, urea/ammonium nitrate, at 113 kg N per cut, using fan jet size 1. Weedkiller (dichloprop/MCPA, kg total a.e.) - EXTRA:

|      |              |
|------|--------------|
|      | WEEDKILLR(1) |
| None | 0.0          |
| 1.4  | 1.4          |
| 2.8  | 2.8          |
| 4.2  | 4.2          |

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NOTE: The weedkiller was applied in 337 l where solid fertiliser was used. The liquid fertiliser (with or without weedkiller) was applied as a spray at 112, 225 and 337 l for the three rates tested.

Basal applications: Manures: (0:14:28) at 630 kg.

Cultivations, etc.: - Basal PK broadcast: 8 Dec, 1972. Treatments applied: 10 Apr, 1973 repeated 2 July. Grass cut: 6 June, 3 Sept.

NOTE: (1) Scores were made of foliar scorch after first and second treatments.  
(2) The yield of weeds at the second cut was measured.  
(3) The % N in the herbage was measured.

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

|                  |                          |
|------------------|--------------------------|
| 1st cut:         | 0.600 or 10.0% (54 d.f.) |
| 2nd cut:         | 0.478 or 11.3% (54 d.f.) |
| Total of 2 cuts: | 0.872 or 8.5% (54 d.f.)  |

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TABLES OF MEANS

DRY MATTER: TONNES/HECTARE

1ST CUT

|        | NPERCUT |       |       | WEEDKLLR(00) |      |      |      | Mean |
|--------|---------|-------|-------|--------------|------|------|------|------|
|        | 37.7    | 75.3  | 113.0 | 0.0          | 1.4  | 2.8  | 4.2  |      |
| FORM   |         |       |       |              |      |      |      |      |
| Solid  | 5.49    | 6.62  | 6.84  | 6.42         | 6.52 | 6.30 | 6.03 | 6.32 |
| Liquid | 4.77    | 5.82  | 6.27  | 5.43         | 5.53 | 5.75 | 5.77 | 5.62 |
|        | NPERCUT |       |       |              |      |      |      |      |
|        |         | 37.7  |       | 5.27         | 5.03 | 5.11 | 5.11 | 5.13 |
|        |         | 75.3  |       | 6.20         | 6.40 | 6.36 | 5.92 | 6.22 |
|        |         | 113.0 |       | 6.31         | 6.64 | 5.61 | 6.68 | 6.56 |
|        |         | Mean  |       | 5.93         | 6.02 | 6.02 | 5.90 | 5.97 |

| FORM   | NPERCUT | WEEDKLLR(00) |      |      |      |
|--------|---------|--------------|------|------|------|
|        |         | 0.0          | 1.4  | 2.8  | 4.2  |
| Solid  | 37.7    | 5.91         | 5.51 | 5.50 | 5.03 |
|        | 75.3    | 6.75         | 6.81 | 6.76 | 6.17 |
|        | 113.0   | 6.62         | 7.22 | 6.63 | 6.90 |
| Liquid | 37.7    | 4.63         | 4.54 | 4.72 | 5.19 |
|        | 75.3    | 5.66         | 5.99 | 5.95 | 5.66 |
|        | 113.0   | 6.00         | 6.06 | 6.58 | 6.46 |

EXTRA

| WEEDKLLR(1) |      |      |      |      |
|-------------|------|------|------|------|
| 0.0         | 1.4  | 2.8  | 4.2  | Mean |
| 6.76        | 6.01 | 6.05 | 6.83 | 6.41 |

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DRY MATTER: TONNES/HECTARE

2ND CUT

|        | NPERCUT |       |       | WEEDKLLR(00) |      |      |      | Mean |
|--------|---------|-------|-------|--------------|------|------|------|------|
|        | 37.7    | 75.3  | 113.0 | 0.0          | 1.4  | 2.8  | 4.2  |      |
| FORM   |         |       |       |              |      |      |      |      |
| Solid  | 4.16    | 4.33  | 4.21  | 4.24         | 4.39 | 4.34 | 3.96 | 4.24 |
| Liquid | 3.82    | 4.43  | 4.27  | 4.25         | 4.20 | 4.03 | 4.22 | 4.18 |
|        | NPERCUT |       |       |              |      |      |      |      |
|        |         | 37.7  |       | 3.91         | 3.95 | 4.15 | 3.96 | 3.99 |
|        |         | 75.3  |       | 4.57         | 4.54 | 4.34 | 4.08 | 4.38 |
|        |         | 113.0 |       | 4.26         | 4.40 | 4.07 | 4.25 | 4.24 |
|        |         | Mean  |       | 4.24         | 4.30 | 4.19 | 4.09 | 4.21 |

| FORM   | NPERCUT | WEEDKLLR(00) |      |      |      |
|--------|---------|--------------|------|------|------|
|        |         | 0.0          | 1.4  | 2.8  | 4.2  |
| Solid  | 37.7    | 4.02         | 4.33 | 4.44 | 3.85 |
|        | 75.3    | 4.66         | 4.46 | 4.38 | 3.83 |
|        | 113.0   | 4.05         | 4.38 | 4.21 | 4.21 |
| Liquid | 37.7    | 3.79         | 3.56 | 3.86 | 4.07 |
|        | 75.3    | 4.48         | 4.62 | 4.31 | 4.32 |
|        | 113.0   | 4.46         | 4.42 | 3.92 | 4.28 |

EXTRA

| WEEDKLLR(1) |      |      |      |      |
|-------------|------|------|------|------|
| 0.0         | 1.4  | 2.8  | 4.2  | Mean |
| 4.26        | 4.44 | 4.18 | 4.41 | 4.32 |

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DRY MATTER: TONNES/HECTARE

TOTAL OF 2 CUTS

|        | NPERCUT |       |       | WEEDKILL(00) |       |       |       | Mean  |
|--------|---------|-------|-------|--------------|-------|-------|-------|-------|
|        | 37.7    | 75.3  | 113.0 | 0.0          | 1.4   | 2.8   | 4.2   |       |
| FORM   |         |       |       |              |       |       |       |       |
| Solid  | 9.65    | 10.95 | 11.05 | 10.67        | 10.91 | 10.64 | 10.00 | 10.55 |
| Liquid | 8.59    | 10.25 | 10.55 | 9.68         | 9.73  | 9.78  | 9.99  | 9.80  |
|        | NPERCUT |       |       | WEEDKILL(00) |       |       |       |       |
|        |         | 37.7  |       | 9.18         | 8.98  | 9.26  | 9.07  | 9.12  |
|        |         | 75.3  |       | 10.77        | 10.94 | 10.70 | 9.99  | 10.60 |
|        |         | 113.0 |       | 10.57        | 11.04 | 10.68 | 10.92 | 10.80 |
|        |         | Mean  |       | 10.17        | 10.32 | 10.21 | 9.99  | 10.17 |

| FORM   | NPERCUT | WEEDKILL(00) |       |       |       |
|--------|---------|--------------|-------|-------|-------|
|        |         | 0.0          | 1.4   | 2.8   | 4.2   |
| Solid  | 37.7    | 9.93         | 9.85  | 9.94  | 8.88  |
|        | 75.3    | 11.41        | 11.27 | 11.13 | 10.00 |
|        | 113.0   | 10.67        | 11.60 | 10.85 | 11.11 |
| Liquid | 37.7    | 8.43         | 8.11  | 8.58  | 9.26  |
|        | 75.3    | 10.14        | 10.61 | 10.27 | 9.98  |
|        | 113.0   | 10.47        | 10.48 | 10.51 | 10.74 |

EXTRA

| WEEDKILL(1) |       |       |       |       |
|-------------|-------|-------|-------|-------|
| 0.0         | 1.4   | 2.8   | 4.2   | Mean  |
| 11.02       | 10.45 | 10.23 | 11.23 | 10.73 |

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STANDARD ERRORS OF DIFFERENCES

| FORM                | NPERCUT                     | WEEDKLLR | EXTRA | FORM<br>NPERCUT | FORM<br>WEEDKLLR |
|---------------------|-----------------------------|----------|-------|-----------------|------------------|
| 1ST CUT             |                             |          |       |                 |                  |
| 0.142               | 0.173                       | 0.200    | 0.490 | 0.245           | 0.283            |
| NPERCUT<br>WEEDKLLR | FORM<br>NPERCUT<br>WEEDKLLR |          |       |                 |                  |
| 0.347               | 0.490                       |          |       |                 |                  |
| Grand mean          | 6.03                        |          |       |                 |                  |
| Mean D.M. %         | 20.6                        |          |       |                 |                  |
| 2ND CUT             |                             |          |       |                 |                  |
| 0.113               | 0.138                       | 0.159    | 0.390 | 0.195           | 0.225            |
| 0.276               | 0.390                       |          |       |                 |                  |
| Grand mean          | 4.22                        |          |       |                 |                  |
| Mean D.M. %         | 29.6                        |          |       |                 |                  |
| TOTAL OF 2 CUTS     |                             |          |       |                 |                  |
| 0.206               | 0.252                       | 0.291    | 0.712 | 0.356           | 0.411            |
| 0.503               | 0.712                       |          |       |                 |                  |
| Grand mean          | 10.25                       |          |       |                 |                  |
| Mean D.M. %         | 25.1                        |          |       |                 |                  |