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## Yields of the Field Experiments 1974

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### 74/R/CS/148 Slow-release N - Potatoes

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74/R/CS/148

SLOW-RELEASE N

Object: To compare a slow-release form of nitrogen with a conventional form, at a range of rates, using potatoes as the test crop - Pastures.

Sponsors: D. Cox, T.M. Addiscott.

The first year, potatoes.

Design: 2 randomised blocks of 18 plots.

Whole plot dimensions: 4.27 x 16.2. Area harvested: 0.00230.

Treatments: All combinations of:-

| 1. Form of nitrogen fertiliser:                   | N FORM  |
|---|---------|
| 'Gold N', sulphur-coated urea                     | Gold N  |
| 'Nitro-Chalk', ammonium nitrate/calcium carbonate | Nitro C |
| 2. Rate of nitrogen fertiliser (kg N):            | N RATE  |
| None  | 0       |
| 50  | 50      |
| 100   | 100     |
| 150   | 150     |
| 200   | 200     |
| 250   | 250     |
| 300   | 300     |
| 350   | 350     |
| 400   | 400     |

Basal applications: Manures: (0:20:20) at 800 kg, muriate of potash at 270 kg. Weedkillers: Linuron at 1.2 kg and paraquat at 0.42 kg ion in 450 l. Fungicide: Mancozeb at 1.3 kg in 450 l on two occasions. Insecticide: Demeton-s-methyl at 0.25 kg applied with mancozeb on first occasion.

Seed: Pentland Crown.

Cultivations, etc.:- Ploughed: 23 Nov, 1973. Spring-tine cultivated: 17 Apr, 1974. Basal manures applied: 25 Apr. N treatments applied: 26 Apr. Spike rotary cultivated, seed planted: 30 Apr. Weedkiller applied: 21 May. Grubbed: 19 June. Rotary ridged: 21 June. Fungicide and insecticide applied: 11 July. Fungicide applied: 2 Aug. Haulm mechanically destroyed: 16 Sept. Sprayed with undiluted BOV at 220 l: 17 Sept. Lifted: 30 Oct.

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Previous crops: Barley 1972, wheat 1973.

NOTES: Leaf samples were taken on 3 July for N determinations. Scores for tuber formation were made on 18 June. Visual scores for senescence were made on 13 Sept.

Standard error per plot.

Total tubers, tonnes/hectare: 2.97 or 4.6% (18 d.f.)

TABLES OF MEANS

|                              | N RATE |      |      |      |      |      |      |      |      | Mean |
|------------------------------|--------|------|------|------|------|------|------|------|------|------|
|                              | 0      | 50   | 100  | 150  | 200  | 250  | 300  | 350  | 400  |      |
| TOTAL TUBERS: TONNES/HECTARE |        |      |      |      |      |      |      |      |      |      |
| N FORM                       |        |      |      |      |      |      |      |      |      |      |
| Gold N                       | 57.3   | 61.4 | 61.7 | 65.4 | 68.8 | 68.4 | 68.4 | 66.3 | 64.7 |      |
| Nitro C                      | 60.1   | 65.3 | 67.3 | 69.5 | 67.3 | 68.0 | 65.8 | 69.5 | 66.6 |      |
| Mean                         | 51.1   | 58.7 | 63.3 | 64.5 | 67.4 | 68.0 | 68.2 | 67.1 | 67.9 | 64.0 |

STANDARD ERRORS OF DIFFERENCES

| N FORM | N RATE | N FORM<br>N RATE |
|--------|--------|------------------|
| 1.05   | 2.10   | 2.97             |

PERCENTAGE WARE: 3.81 CM (1.5 INCH) RIDDLE

| N FORM  |      |      |      |      |      |      |      |      |      |      |
|---------|------|------|------|------|------|------|------|------|------|------|
| Gold N  | 99.2 | 99.4 | 99.4 | 99.2 | 99.4 | 99.2 | 99.3 | 98.8 | 99.2 |      |
| Nitro C | 99.2 | 99.3 | 99.2 | 99.2 | 99.1 | 99.3 | 99.2 | 99.1 | 99.2 |      |
| Mean    | 98.8 | 99.2 | 99.3 | 99.3 | 99.2 | 99.2 | 99.3 | 99.3 | 98.9 | 99.2 |