

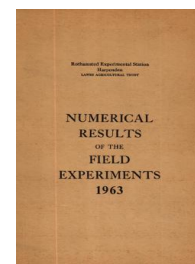
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# Yields of the Field Experiments 1963

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## 63/R/CW/B/10 Weedkiller-cultivation Rotation

### Rothamsted Research

Rothamsted Research (1964) *63/R/CW/B/10 Weedkiller-cultivation Rotation* ; Yields Of The Field Experiments 1963, pp 117 - 121 - DOI: <https://doi.org/10.23637/ERADOC-1-183>

63/B/10.1

CULTIVATION - WEEDKILLER ROTATION

(CW)

Great Harpenden I 1963, the third year

A comparison of weed control by various cultivation methods and by pre-emergence weedkillers.

For previous history, rotation treatments etc., see 'Numerical Results of the Field Experiments' 61/B/10 and 62/B/10.

Area harvested (acres): Winter beans - 0.0201. Spring wheat, potatoes, barley - 0.0107.

The weedkiller used on potatoes is now a mixture of 2 lb prometryne and 0.75 lb paraquat in 40 gallons per acre. X and Y treatments for potatoes were identical.

Basal dressings per acre: Spring wheat and barley: 2.5 cwt compound fertiliser, 20% N, 10% P<sub>2</sub>O<sub>5</sub>, 10% K<sub>2</sub>O. Potatoes and beans, as 1961.

Operations in 1963

Note: Spring wheat was again sown instead of winter wheat.

Cultivations, etc.:

Winter beans: R plots rotary cultivated, T plots rigid-tine cultivated 3 times: Oct 22, 1962. R plots rotary cultivated second time: Oct 23. P and reserve plots ploughed: Oct 25. T, P and reserve plots spring-tine cultivated twice: Oct 29, Nov 30. Seed drilled at 275 lb per acre, all plots spring-tine cultivated: Dec 1. X and Y\* plots sprayed with simazine: Dec 19. Y\* plots sprayed with simazine: Apr 19, 1963. M and reserve plots tractor hoed twice: May 21, May 29. All plots sprayed with menazon at 5.6 fluid oz in 40 gallons per acre: June 22. Combine harvested: Oct 5. Variety: Pedigree.

Spring wheat: Sprayed with dalapon at 7.4 lb in 40 gallons per acre: Oct 20, 1962 and again at 3.7 lb in 40 gallons per acre: Oct 30. T plots rigid-tine cultivated twice, P and reserve plots ploughed: Apr 3, 1963. T, P and reserve plots spring-tine cultivated: Apr 18. R plots rotary cultivated, T, P and reserve plots spring-tine harrowed, seed drilled at 3 bushels per acre: Apr 19. Rolled: May 8. H sub plots and reserve plots sprayed with methoxychloro-benzoic acid/MCPA (MBA/MCPA) at 4 pints in 40 gallons per acre: June 6. Combine harvested: Sept 19. Variety: Jufy I.

Potatoes: R plots rotary cultivated, T plots rigid-tine cultivated twice: Oct 22, 1962. P and reserve plots ploughed: Oct 25. T, P and reserve plots spring-tine cultivated: Apr 25, 1963. R plots

\* half-rate

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rotary cultivated: Apr 27. Basal compound fertiliser applied: Apr 30. T, P and reserve plots spring-tine cultivated, seed machine planted: May 3. Rolled: May 6. X and Y plots sprayed with prometryne at 2 lb plus paraquat at 0.75 lb in 40 gallons per acre, M plots chain harrowed: May 31. M and reserve plots grubbed: June 7. M and reserve plots mechanically weeded and grubbed: June 17. Reserve plots earthed up: June 26. M and ME sub-plots earthed up (round and pointed ridges), E sub-plots of X and Y plots grubbed twice and earthed up: June 28. Sprayed with maneb at 1.2 lb in 20 gallons per acre: July 19. Sprayed with copper oxychloride fungicide at 2.3 lb Cu in 20 gallons per acre: Sept 4. Sprayed with undiluted BOV at 16 gallons per acre: Sept 13. Lifted: Oct 23. Variety: Majestic.

Barley: All plots spring-tine cultivated twice: Nov 27, 1962, Mar 27, 1963. T plots rigid-tine cultivated: Apr 3. P and reserve plots ploughed: Apr 4. All plots except R plots disc-harrowed: Apr 11. R plots rotary cultivated, P and reserve plots spring-tine cultivated: Apr 19. T, P and reserve plots spring-tine harrowed, seed drilled at 2 bushels per acre: Apr 20. Rolled: May 8. H sub-plots and reserve plots sprayed with methoxychloro-benzoic acid/MCPA (MBA/MCPA) at 4 pints in 40 gallons per acre: June 6. Combine harvested: Sept 7. Variety: Proctor.

Standard errors per plot:

Winter beans, grain (at 85% dry matter): 3.63 cwt per acre or 10.9%  
(9 d.f.)

Spring wheat, grain (at 85% dry matter):

Whole plot: 2.42 cwt per acre or 6.6% (15 d.f.)

Sub plot: 2.00 cwt per are or 5.4% (18 d.f.)

Potatoes, total tubers:

Whole plot: 0.752 tons per acre or 5.5% (15 d.f.)

Sub plot: 0.456 tons per acre or 3.3% (18 d.f.)

Barley, grain (at 85% dry matter):

Whole plot: 1.91 cwt per acre or 4.5% (12 d.f.)

Sub plot: 3.28 cwt per acre or 7.8% (15 d.f.)

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Summary of Results

Beans, grain (at 85% dry matter): cwt per acre

| Treatment after planting | Initial cultivation |         |      | Mean    |
|--------------------------|---------------------|---------|------|---------|
|                          | P                   | R       | T    |         |
|                          |                     | (±2.57) |      | (±1.48) |
| M                        | 39.1                | 27.5    | 31.5 | 32.7    |
| X                        | 33.8                | 33.9    | 29.7 | 32.4    |
| Y                        | 33.0                | 32.5    | 34.8 | 33.4    |
| Mean (±1.48)             | 35.3                | 31.3    | 32.0 | 32.8    |

Reserve plots: 36.5 (±1.82)

General mean: 33.5

Mean dry matter % as harvested: 68.2

Spring wheat, grain (at 85% dry matter): cwt per acre

|                          | Initial cultivation |          |      | Mean         |
|--------------------------|---------------------|----------|------|--------------|
|                          | P                   | R        | T    |              |
| Mean (±0.99)             | 36.3                | 36.7     | 35.6 | 36.2         |
| <u>Treatment in 1962</u> |                     |          |      |              |
| M (±1.71)                | 35.4                | 36.4     | 36.4 | 36.1 (±0.99) |
| X (±1.21)                | 36.8                | 36.8     | 35.2 | 36.2 (±0.70) |
| <u>Spray in 1963</u>     |                     | (±1.14)* |      |              |
| -                        | 37.5                | 36.3     | 35.4 | 36.4         |
| H                        | 35.2                | 37.1     | 35.7 | 36.0         |
| Diff (±1.15)             | -2.3                | +0.8     | +0.3 | -0.4 (±0.67) |

Reserve plots: 38.8 (±0.99)

General mean: 36.8

Mean dry matter % as harvested: 79.0

\* For use in horizontal and diagonal comparisons only

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Potatoes

| Treatment after planting           | Initial cultivation |       |       | Mean           | Not earthed up | Earthed up  |
|------------------------------------|---------------------|-------|-------|----------------|----------------|-------------|
|                                    | P                   | R     | T     |                |                |             |
| <u>Total tubers: tons per acre</u> |                     |       |       |                |                |             |
|                                    |                     |       |       |                | (±0.186)(1)    | (±0.293)(2) |
| M (±0.532)                         | 14.58               | 13.37 | 13.88 | 13.94 (±0.307) | 13.90          | 13.98       |
| X (±0.376)                         | 13.40               | 13.90 | 13.84 | 13.70 (±0.217) | 13.48          | 13.94       |
|                                    |                     |       |       |                | (±0.132)(1)    | (±0.262)(2) |
| Mean (±0.307)                      | 13.79               | 13.72 | 13.85 | 13.79          |                |             |
| Reserve plots:                     | 13.77 (±0.307)      |       |       |                |                |             |
| General mean:                      | 13.78               |       |       |                |                |             |

Percentage ware (1.5 inch riddle)

|      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|
| M    | 94.8 | 95.6 | 95.8 | 95.4 | 95.1 | 95.7 |
| X    | 95.0 | 94.8 | 95.2 | 95.0 | 94.7 | 95.2 |
| Mean | 94.9 | 95.1 | 95.4 | 95.1 |      |      |

Reserve plots: 95.9  
 General mean: 95.3

- (1) For use in vertical and interaction comparisons  
 (2) For use in horizontal and diagonal comparisons

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Barley, grain (at 85% dry matter): cwt per acre

|                          | Initial cultivation |                 |      | Mean                   |
|--------------------------|---------------------|-----------------|------|------------------------|
|                          | P                   | R               | T    |                        |
| Mean ( $\pm 0.78$ )      | 42.9                | 39.8            | 41.9 | 41.5                   |
| <u>Treatment in 1962</u> |                     | ( $\pm 1.35$ )  |      | ( $\pm 0.78$ )         |
| M                        | 42.8                | 39.2            | 43.6 | 41.8                   |
| X                        | 41.4                | 40.8            | 41.6 | 41.2                   |
| Y                        | 44.6                | 39.4            | 40.5 | 41.5                   |
| <u>Spray in 1963</u>     |                     | ( $\pm 1.22$ )* |      |                        |
| -                        | 42.8                | 40.7            | 40.2 | 41.2                   |
| H                        | 43.0                | 38.8            | 43.6 | 41.8                   |
| Diff ( $\pm 1.89$ )      | +0.2                | -1.9            | +3.4 | +0.6<br>( $\pm 1.09$ ) |

Reserve plots: 44.0 ( $\pm 0.78$ )

General mean: 42.1

Mean dry matter % as harvested: 71.8

\* For use in horizontal and diagonal comparisons