

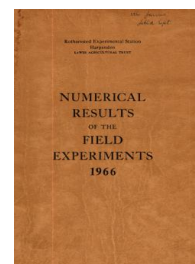
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# Yields of the Field Experiments 1966

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## 66/R/CW/B/7 Cultivation-weedkiller Rotation

### Rothamsted Research

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66/B/7.1

## CULTIVATION - WEEDKILLER ROTATION

(CW)

Great Harpenden 1966 - the 6th year

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

For previous history, rotations, treatments etc., see 'Results' 61/B/10, 62/B/10, 63/B/10, 64/B/9 and 65/B/8.

Area harvested: Beans - 0.0100, wheat, potatoes and barley - 0.0107.

Minimum cultivation plots: One plot per block (treatment B) receives minimum cultivations. (The remaining reserve plots will in future be described as treatment C). Details will vary according to conditions of soil etc. Paraquat may be used at any stage in this rotation, and special machinery maybe used for drilling these treatments if it is more suitable. In 1966 the cultivations were:-

Beans: Deep-tine cultivated, disc-harrowed, spring-tine cultivated, sprayed with simazine after drilling.

Wheat: Deep-tine cultivated, disc-harrowed, spring-tine cultivated, sprayed with the same selective weedkiller as used on H sub-plots.

Potatoes: Rotary cultivated, treated with herbicide as on X and Y plots.

Barley: Minimum cultivations necessary to produce a seedbed, sprayed with the same selective weedkiller as used on the H sub-plots.

In 1966 beans on both X and Y plots received the same treatment (simazine at 1 lb in 40 gals in spring) - these plots are denoted by S.

Potatoes on the X and Y plots received the same spray (1 lb linuron plus 0.75 lb ion paraquat in 37 gals), denoted by S. The Y plots received an additional cultivation by 'rotary ridger', which was also applied to the M plots.

### Operations in 1966

Cultivations, etc.:-

Spring beans: T plots deep-tine cultivated twice and B plots once: Oct 21, 1965. P, A and C plots ploughed: Oct 22. T plots deep-tine cultivated 3rd time and B plots 2nd time, P, T, A, B and C plots disced: Oct 26. P, T, A, B and C plots disced: Oct 30.



66/B/7.2

P, T, A and C plots spring-time cultivated twice and B plots once, R plots rotary cultivated: Mar 8, 1966. R plots rotary cultivated 2nd time, seed drilled at 200 lb: Mar 9. S plots sprayed: Mar 15. M and C plots tractor hoed 3 times: May 16, June 3 and June 13. Combine harvested: Sept 16. Variety: Pedigree Tick.

Spring wheat: T plots deep-time cultivated twice: Oct 21, 1965. P, A and C plots ploughed: Oct 22. T plots deep-time cultivated 3rd time, B plots deep-time cultivated twice, P, T, A, B and C plots disced: Oct 26. P, T, A, B and C plots disced: Oct 30. P, T, A, B, and C plots spring-time cultivated twice: Mar 8, 1966. P plots rotary cultivated: Mar 9. R plots rotary cultivated 2nd time, P, T, A, B and C plots spring-time cultivated 3rd time: Mar 14. Seed drilled at 180 lb: Mar 15. All plots rolled: Mar 21. H sub-plots and B plots sprayed with mecoprop/2,4-D (Methoxane Extra at 6 pints in 40 gals): May 13. Combine harvested: Sept 7. Variety: Klooka.

Potatoes: T plots deep-time cultivated twice, P and C plot ploughed: Dec 21, 1965. R, A and B plots rotary cultivated: Mar 23, 1966. P and C plots spring-time cultivated, T plots deep-time cultivated 3rd time: Mar 24. Basal compound fertiliser applied: Mar 31. R, A and B plots rotary cultivated, T, P and C plots spring-time cultivated twice: Apr 4. Potatoes machine planted: Apr 5. S plots sprayed: May 10. M and C plots chain-harrowed: May 14. M and C plots grubbed: May 14. M, Y and C plots rotary ridged: June 16. Sprayed 3 times with mancozeb at 1.2 lb in 37 gals: June 30, July 22 and Aug 5. Sprayed with undiluted BOV at 15 gals: Sept 8. Lifted: Sept 20. Variety: Pentland Dell.

Barley: All plots sprayed with sodium trichloroacetate at 18 lb in 40 gals: Oct 20, 1965. All plots spring-time cultivated: Oct 28. All plots sprayed 2nd time with sodium trichloroacetate at 18 lb in 40 gals: Dec 7. All plots spring-time cultivated: Dec 22. T plots deep-time cultivated: Feb 2, 1966. P and C plots ploughed: Feb 3. P, T and C plots spring-time cultivated twice, B plots once: Mar 7. R and A plots rotary cultivated, seed drilled at 155 lb: Mar 8. All plots rolled: Mar 21. H sub-plots and B plots sprayed with mecoprop/2,4-D (Methoxane Extra at 6 pints in 40 gals): May 13. Combine harvested: Aug 20.

#### Standard errors per plot.

Spring beans.	Grain, whole plot: 6.76 or 22.2% (8 d.f.)
Wheat.	Grain, whole plot: 2.97 or 8.6% (8 d.f.)
	sub plot: 3.24 or 9.4% (9 d.f.)
Potatoes.	Total tubers, whole plot: 1.782 or 11.1% (8 d.f.)
Barley.	Grain, whole plot: 2.04 or 4.7% (8 d.f.)
	sub plot: 2.79 or 6.4% (9 d.f.)

66/B/7.5

BARLEY				
GRAIN				
	P	R	T	Mean
Mean ( $\pm 0.83$ )	42.3	44.1	43.4	43.3
1965		( $\pm 1.45$ )		( $\pm 0.83$ )
M	41.2	43.8	44.3	43.1
X	40.2	45.3	43.4	43.0
Y	45.6	43.1	42.5	43.7
		(1) and (2)		( $\pm 0.66$ )
O	42.0	44.1	44.2	43.4
H	42.6	44.0	42.6	43.1
	A-	AH	BH	C
	43.9	41.8	42.4	39.4

General mean: 42.8

Mean D.M. %: 84.2

- (1) ( $\pm 1.16$ ) For use in horizontal and diagonal comparisons  
 (2) ( $\pm 1.14$ ) For use in vertical and interaction comparisons

TABLE 1				
Summary of the results of the analysis of the data from the 1960-1961 season				
Year	1960	1961	1962	1963
1960-1961	1,000	1,000	1,000	1,000
1961-1962	1,000	1,000	1,000	1,000
1962-1963	1,000	1,000	1,000	1,000
1963-1964	1,000	1,000	1,000	1,000
1964-1965	1,000	1,000	1,000	1,000
1965-1966	1,000	1,000	1,000	1,000
1966-1967	1,000	1,000	1,000	1,000
1967-1968	1,000	1,000	1,000	1,000
1968-1969	1,000	1,000	1,000	1,000
1969-1970	1,000	1,000	1,000	1,000
1970-1971	1,000	1,000	1,000	1,000
1971-1972	1,000	1,000	1,000	1,000
1972-1973	1,000	1,000	1,000	1,000
1973-1974	1,000	1,000	1,000	1,000
1974-1975	1,000	1,000	1,000	1,000
1975-1976	1,000	1,000	1,000	1,000
1976-1977	1,000	1,000	1,000	1,000
1977-1978	1,000	1,000	1,000	1,000
1978-1979	1,000	1,000	1,000	1,000
1979-1980	1,000	1,000	1,000	1,000
1980-1981	1,000	1,000	1,000	1,000
1981-1982	1,000	1,000	1,000	1,000
1982-1983	1,000	1,000	1,000	1,000
1983-1984	1,000	1,000	1,000	1,000
1984-1985	1,000	1,000	1,000	1,000
1985-1986	1,000	1,000	1,000	1,000
1986-1987	1,000	1,000	1,000	1,000
1987-1988	1,000	1,000	1,000	1,000
1988-1989	1,000	1,000	1,000	1,000
1989-1990	1,000	1,000	1,000	1,000
1990-1991	1,000	1,000	1,000	1,000
1991-1992	1,000	1,000	1,000	1,000
1992-1993	1,000	1,000	1,000	1,000
1993-1994	1,000	1,000	1,000	1,000
1994-1995	1,000	1,000	1,000	1,000
1995-1996	1,000	1,000	1,000	1,000
1996-1997	1,000	1,000	1,000	1,000
1997-1998	1,000	1,000	1,000	1,000
1998-1999	1,000	1,000	1,000	1,000
1999-2000	1,000	1,000	1,000	1,000
2000-2001	1,000	1,000	1,000	1,000
2001-2002	1,000	1,000	1,000	1,000
2002-2003	1,000	1,000	1,000	1,000
2003-2004	1,000	1,000	1,000	1,000
2004-2005	1,000	1,000	1,000	1,000
2005-2006	1,000	1,000	1,000	1,000
2006-2007	1,000	1,000	1,000	1,000
2007-2008	1,000	1,000	1,000	1,000
2008-2009	1,000	1,000	1,000	1,000
2009-2010	1,000	1,000	1,000	1,000
2010-2011	1,000	1,000	1,000	1,000
2011-2012	1,000	1,000	1,000	1,000
2012-2013	1,000	1,000	1,000	1,000
2013-2014	1,000	1,000	1,000	1,000
2014-2015	1,000	1,000	1,000	1,000
2015-2016	1,000	1,000	1,000	1,000
2016-2017	1,000	1,000	1,000	1,000
2017-2018	1,000	1,000	1,000	1,000
2018-2019	1,000	1,000	1,000	1,000
2019-2020	1,000	1,000	1,000	1,000
2020-2021	1,000	1,000	1,000	1,000
2021-2022	1,000	1,000	1,000	1,000
2022-2023	1,000	1,000	1,000	1,000
2023-2024	1,000	1,000	1,000	1,000
2024-2025	1,000	1,000	1,000	1,000
2025-2026	1,000	1,000	1,000	1,000
2026-2027	1,000	1,000	1,000	1,000
2027-2028	1,000	1,000	1,000	1,000
2028-2029	1,000	1,000	1,000	1,000
2029-2030	1,000	1,000	1,000	1,000
2030-2031	1,000	1,000	1,000	1,000
2031-2032	1,000	1,000	1,000	1,000
2032-2033	1,000	1,000	1,000	1,000
2033-2034	1,000	1,000	1,000	1,000
2034-2035	1,000	1,000	1,000	1,000
2035-2036	1,000	1,000	1,000	1,000
2036-2037	1,000	1,000	1,000	1,000
2037-2038	1,000	1,000	1,000	1,000
2038-2039	1,000	1,000	1,000	1,000
2039-2040	1,000	1,000	1,000	1,000
2040-2041	1,000	1,000	1,000	1,000
2041-2042	1,000	1,000	1,000	1,000
2042-2043	1,000	1,000	1,000	1,000
2043-2044	1,000	1,000	1,000	1,000
2044-2045	1,000	1,000	1,000	1,000
2045-2046	1,000	1,000	1,000	1,000
2046-2047	1,000	1,000	1,000	1,000
2047-2048	1,000	1,000	1,000	1,000
2048-2049	1,000	1,000	1,000	1,000
2049-2050	1,000	1,000	1,000	1,000
2050-2051	1,000	1,000	1,000	1,000
2051-2052	1,000	1,000	1,000	1,000
2052-2053	1,000	1,000	1,000	1,000
2053-2054	1,000	1,000	1,000	1,000
2054-2055	1,000	1,000	1,000	1,000
2055-2056	1,000	1,000	1,000	1,000
2056-2057	1,000	1,000	1,000	1,000
2057-2058	1,000	1,000	1,000	1,000
2058-2059	1,000	1,000	1,000	1,000
2059-2060	1,000	1,000	1,000	1,000
2060-2061	1,000	1,000	1,000	1,000
2061-2062	1,000	1,000	1,000	1,000
2062-2063	1,000	1,000	1,000	1,000
2063-2064	1,000	1,000	1,000	1,000
2064-2065	1,000	1,000	1,000	1,000
2065-2066	1,000	1,000	1,000	1,000
2066-2067	1,000	1,000	1,000	1,000
2067-2068	1,000	1,000	1,000	1,000
2068-2069	1,000	1,000	1,000	1,000
2069-2070	1,000	1,000	1,000	1,000
2070-2071	1,000	1,000	1,000	1,000
2071-2072	1,000	1,000	1,000	1,000
2072-2073	1,000	1,000	1,000	1,000
2073-2074	1,000	1,000	1,000	1,000
2074-2075	1,000	1,000	1,000	1,000
2075-2076	1,000	1,000	1,000	1,000
2076-2077	1,000	1,000	1,000	1,000
2077-2078	1,000	1,000	1,000	1,000
2078-2079	1,000	1,000	1,000	1,000
2079-2080	1,000	1,000	1,000	1,000
2080-2081	1,000	1,000	1,000	1,000
2081-2082	1,000	1,000	1,000	1,000
2082-2083	1,000	1,000	1,000	1,000
2083-2084	1,000	1,000	1,000	1,000
2084-2085	1,000	1,000	1,000	1,000
2085-2086	1,000	1,000	1,000	1,000
2086-2087	1,000	1,000	1,000	1,000
2087-2088	1,000	1,000	1,000	1,000
2088-2089	1,000	1,000	1,000	1,000
2089-2090	1,000	1,000	1,000	1,000
2090-2091	1,000	1,000	1,000	1,000
2091-2092	1,000	1,000	1,000	1,000
2092-2093	1,000	1,000	1,000	1,000
2093-2094	1,000	1,000	1,000	1,000
2094-2095	1,000	1,000	1,000	1,000
2095-2096	1,000	1,000	1,000	1,000
2096-2097	1,000	1,000	1,000	1,000
2097-2098	1,000	1,000	1,000	1,000
2098-2099	1,000	1,000	1,000	1,000
2099-2100	1,000	1,000	1,000	1,000



66/B/8.1

## CULTIVATION - WEEDKILLER ROTATION

(WCW)

A comparison of weed control by various cultivation methods and by a pre-emergence weedkiller - Woburn Great Hill I and II 1966, the seventh year.

For history, rotation, treatments etc., to barley, see 'Results' 60/B/11, 61/B/11, 62/B/11, 63/B/11, 64/B/10 and 65/B/9.

Area of each plot: 0.0482. Area harvested: Potatoes - 0.0069, barley - 0.0230.

Potatoes.

Treatments: All combinations of:-

1. Primary cultivations: Ploughed (P), rotary cultivated (R), deep-tine cultivated (T).
2. Weedkiller: None, normal cultivations (M), linuron 2 lb, plus paraquat 0.75 lb ion in 40 gals, with no cultivations (X), linuron, plus paraquat, with rotary ridging (Y).

Basal applications:

Barley: 340 lb (20:10:10) combine drilled. Weedkiller: Mecoprop/2,4-D (Methoxone Extra at 6 pints in 35 gals).

Potatoes: 10 cwt (17:11:22). Fungicide: Mancozeb 1.2 lb in 33 gals.

Haulm destroyer: Diquat (Reglone at 4 pints in 33 gals).

Cultivations, etc.:

Potatoes: T plots deep-tine cultivated (two strokes): Nov 26, 1965. P plots ploughed: Dec 14. P and T plots spring-tine cultivated, R plots rotary cultivated: Mar 23, 1966. T plots deep-tine cultivated (one stroke): Mar 24. Basal NPK applied: Mar 25. P and T plots spring-tine cultivated (twice), R plots rotary cultivated (twice), potatoes machine planted: Mar 31. All plots earthed up: Apr 1. M plots harrowed with weeder: Apr 26. M plots re-ridged: May 3. M plots ridges harrowed, X and Y plots sprayed with weedkiller: May 4. M plots harrowed with weeder: May 17. M plots grubbed: June 2. M and Y plots earthed up with rotary ridger: June 4. Fungicide applied: June 29, July 15 and Aug 4. Reglone applied: Sept 13. Haulm destroyed mechanically: Sept 16. Lifted: Sept 22. Variety: Maris Piper.