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64/R/BA/C/14 Paraquat - Spring Wheat

Rothamsted Research

Rothamsted Research (1965) *64/R/BA/C/14 Paraquat - Spring Wheat ; Yields Of The Field Experiments 1964*, pp 173 - 174 - DOI: <https://doi.org/10.23637/ERADOC-1-160>

64/C/14.1

PARAQUAT EXPERIMENT

(BA)

A comparison of methods of preparing a seedbed for spring wheat following a grass and clover ley, and an investigation of the effect of paraquat on soil fauna - Pastures 1964, the first year.

Design: 4 randomised blocks of 8 plots each, plots being split into 4 for the application of N.

Area of each sub plot: 0.0145. Area harvested: 0.0064.

Treatments: All combinations of:-

1. Seedbed preparation: No paraquat, plough, roll and disc (P), paraquat application followed by either ploughing, rolling and disc-harrowing (GP), or by rotary cultivation (GR), or by sod seeding (G).
The paraquat was applied at 2 lb ion in 40 gals.
2. Seed dressing: Fungicide only (-), insecticide and fungicide (I).
3. Nitrogen (to sub plots): None (NO), 0.3 (N1), 0.6 (N2), 0.9 (N3) cwt N as 'Nitro-Chalk'.

NOTE: (1) A further sub plot at the east end of each plot received 0.6 cwt N as 'Nitro-Chalk' and an insecticide mixture of 4 lb diazinon and 10 lb chlordane in 160 gals. No yields were taken.

Basal dressing: 2 cwt compound fertiliser (0:20:20) combine drilled.

Cultivations, etc.: G, GP and GR plots sprayed with paraquat: Feb 28, 1964. P and GP plots ploughed: Mar 5. P and GP plots rolled in tandem: Mar 6. P and GP plots disced twice: Mar 7 and Mar 9. GR plots rotary cultivated: Mar 10. Seed drilled at 3 bushels: Apr 1. 'Nitro-Chalk' applied: Apr 7. Sprayed with mecoprop/2,4-D (Methoxone Extra at 6 pints in 40 gals): May 15. Combine harvested: Sept 1. Variety: Opal. Previous crop: 6 year grass and clover ley.

- NOTES: (2) Plant counts were taken early in the season and the percentage cover by weeds was estimated after harvest.
- (3) The sod seeded (G) plots, the remainder of one block and one other plot (PI) were sown by a drill modified for sod seeding, but this drill tended to sink in on the cultivated plots, consequently the rest of the experiment was sown with the normal farm drill.

Standard errors per plot. Grain:

Whole plot: 3.54 or 11.5% (21 d.f.)

Sub plot: 3.11 or 10.1% (72 d.f.)

64/C/14.2

SUMMARY OF RESULTS

SPRING WHEAT

GRAIN

	P	GP	GR	G	Mean
Mean	39.3	37.4	32.8	13.5	30.7
		(±1.25)			
-	38.3	34.8	36.1	12.6	30.5
I	40.3	40.1	29.4	14.4	31.0
		(±1.77)			(±0.88)
		(1) and (2)			(±0.55)
NO	33.3	30.4	25.9	9.3	24.7
N1	38.8	36.4	33.7	12.5	30.3
N2	40.2	39.2	33.7	14.5	31.9
N3	45.1	43.7	37.8	17.7	36.1
	NO	N1	N2	N3	
-	24.6	30.5	30.8	36.0	
I	24.9	30.2	33.0	36.1	
		(3) and (4)			

Mean D.M. %: 85.4

- (1) ±1.10 For use in vertical and interaction comparisons.
- (2) ±1.57 For use in horizontal and diagonal comparisons.
- (3) ±0.78 For use in horizontal and interaction comparisons.
- (4) ±1.11 For use in vertical and diagonal comparisons.

NOTE: The paraquat failed to kill the old turf and the low yields of the 'G' plots were due to the competition of the grass.