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Yields of the Field Experiments 1948

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48/BC/1 Green Manuring - Woburn

Rothamsted Research

Rothamsted Research (1949) 48/BC/1 *Green Manuring - Woburn* ; Yields Of The Field Experiments 1948, pp 38 - 40

48/Bc/1.1

GREEN MANURING EXPERIMENT

LB and LU - Woburn Stackyard, Series A, 1948

Treatments as given in 1936 Report, p. 203, with the exceptions that from 1946 onwards lupins replace tares, and rape replaces mustard as green manuring crops, while kale is replaced by winter cabbages as a testing crop. From 1944 onwards a top dressing of sulphate of ammonia has been applied to half the plots under barley, and in 1946 this top dressing was applied to the green manuring crops. The experiment is now in half replicate, according to the identity $I \equiv (R + C - M - F - T)DSNA$, A representing the top dressing of sulphate of ammonia.

Cultivations, etc.:

Upper Half. Cabbages

Red Clover and Italian Ryegrass undersown in barley: Apr 25, 1947. Failed owing to drought. Whole area ploughed : Nov 24 - Dec 8. Springtine harrowed: Feb 18-19, Mar 9. Harrowed: Mar 17. Rolloed: Mar 22. Rape sown, ryegrass and clover resown, sulphate of ammonia applied, harrowed in: Mar 24. Lupins drilled: Apr 2, 6. Rape plots dusted with Flea beetle dust: Apr 27. Lupin plots hoed: May 11. All plots hoed: May 20-24. Lupin plots hoed: June 8. Fallow plots cultivated: June 25. Dung and straw applied on appropriate plots, green manures rolled: June 28. Whole area ploughed: June 30. Harrowed: July 1. Basal manures and sulphate of ammonia applied, harrowed: July 2. Rolloed: July 3. Cabbages transplanted: July 5-8. Gaps filled in: July 14-15, July 31 - Aug 7. Hoed: Aug 16-20, Sept. 6-7, Oct 8. Harvested: Jan 24, Feb 11, 23, Mar:3. Variety: January King. Previous Crop: Barley.

Lower Half. Barley

Ploughed: Mar 3-9. Harrowed: Mar 9. Lime at 3 cwt. CaO per acre applied: Mar 10. Harrowed: Mar 11. Sulphate of ammonia applied to appropriate plots, seed drilled: Mar 12. Harrowed in: Mar 17. Rolloed: Mar 22. Dorset Mail Clover and Italian Ryegrass undersown on appropriate plots: Apr 16. Harrowed in: Apr 23. Whole area rolled: Apr 26. Hand weeded: June 15. Harvested: Aug 14. Variety: Plumage Archer. Previous Crop: Cabbages.

Standard errors per plot:

| | | |
|-----------|---------------|--|
| Cabbages: | total yield, | 1.175 tons per acre or 15.7% (9 d.f.) |
| | plant number, | 0.27 thousands per acre or 1.5% (9 d.f.) |
| Barley: | grain, | 2.78 cwt. per acre or 12.4% (9 d.f.) |
| | straw, | 3.26 cwt. per acre or 11.9% (9 d.f.) |

48/Bc/1.2

Upper Half - Cabbages

| Green manure crop | None | Lupins | Clover | Rape | Ryegrass | Mean |
|-----------------------|--|--------|--------|------|----------|-----------------|
| | Total Weight: tons per acre (± 0.588) | | | | | (± 0.263) |
| No Dung | 6.02 | 7.61 | 7.41 | 4.76 | 5.98 | 6.36 |
| Dung | 8.12 | 9.37 | 9.67 | 7.89 | 8.18 | 8.65 |
| No Straw | 6.47 | 8.83 | 8.37 | 6.94 | 7.31 | 7.58 |
| Straw | 7.68 | 8.15 | 8.72 | 5.70 | 6.86 | 7.42 |
| Sulph. amm. | | | | | | |
| 2 cwt./acre | 6.47 | 6.56 | 7.80 | 5.21 | 6.44 | 6.50 |
| 4 cwt./acre | 7.68 | 10.42 | 9.29 | 7.43 | 7.73 | 8.51 |
| Sulph. amm. to barley | | | | | | |
| absent | 6.20 | 8.44 | 9.26 | 6.16 | 7.24 | 7.46 |
| Present | 7.95 | 8.54 | 7.82 | 6.48 | 6.93 | 7.54 |
| Mean (± 0.415) | 7.07 | 8.49 | 8.54 | 6.32 | 7.08 | 7.50 |
| | Total number: thousands per acre (± 0.136) | | | | | (± 0.061) |
| No Dung | 17.4 | 17.6 | 17.6 | 17.3 | 17.6 | 17.5 |
| Dung | 17.5 | 17.7 | 18.0 | 17.7 | 17.7 | 17.7 |
| No Straw | 17.2 | 17.7 | 17.7 | 17.4 | 17.7 | 17.5 |
| Straw | 17.6 | 17.6 | 17.9 | 17.6 | 17.5 | 17.6 |
| Sulph. amm. | | | | | | |
| 2 cwt./acre | 17.4 | 17.7 | 17.8 | 17.5 | 17.7 | 17.6 |
| 4 cwt./acre | 17.4 | 17.7 | 17.8 | 17.6 | 17.6 | 17.6 |
| Sulph. amm. to barley | | | | | | |
| absent | 17.5 | 17.7 | 17.9 | 17.5 | 17.6 | 17.6 |
| Present | 17.4 | 17.6 | 17.8 | 17.5 | 17.6 | 17.6 |
| Mean (± 0.096) | 17.4 | 17.7 | 17.8 | 17.5 | 17.6 | 17.6 |

48/Bc/1.3

Upper Half - Cabbages

Differential Responses

| | Mean | Dung | | Straw | | Sulph. amm. | | Sulph. amm. to barley | |
|---|-------|-------|-------|-------|-------|-------------|-------|-----------------------|-------|
| | | Abs. | Pres. | Abs. | Pres. | Abs. | Pres. | Abs. | Pres. |
| Total Weight: tons per acre (± 0.531 Means ± 0.372) | | | | | | | | | |
| Dung | 2.29 | - | - | 2.30 | 2.27 | 2.33 | 2.24 | 2.36 | 2.21 |
| Straw | -0.16 | -0.14 | -0.17 | - | - | -0.01 | 0.30 | -0.28 | -0.03 |
| Sulph. amm. | 2.01 | 2.05 | 1.96 | 2.15 | 1.86 | - | - | 2.11 | 1.90 |
| Sulph. amm. to barley | 0.08 | 0.15 | 0.00 | -0.04 | 0.20 | 0.18 | -0.02 | - | - |

Total number: thousands per acre (± 0.12) Means (± 0.09)

| | | | | | | | | | |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Dung | 0.2 | - | - | 0.2 | 0.1 | 0.2 | 0.1 | 0.1 | 0.2 |
| Straw | 0.1 | 0.1 | 0.0 | - | - | 0.1 | 0.0 | 0.1 | 0.0 |
| Sulph. amm. | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | - | - | 0.0 | 0.0 |
| Sulph. amm. to barley | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | - | - |