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Yields of the Field Experiments 1967

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67/R/ER/C/17 Rate of Action of P Fertilisers 1966-67 - Barley and Ryegrass

Rothamsted Research

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67/c/17.1

BARLEY FOLLOWED BY RYEGRASS

(ER)

The rate of action of P fertilisers, Delharding, 1967, the second year.

Design: 3 replicates of 7 x 2 x 2 plus 2 plots per block without P, in 6 blocks of 16 plots.

Area of each plot:	Area harvested:
Barley: 0.0018	0.0009
Ryegrass: 0.0018	0.0006

Treatments 1966 and 1967: No P (0) (2 plots per block) and all combinations of:-

1. Phosphatic fertilisers:
 - Triple superphosphate (S)
 - Potassium metaphosphate (K)
 - Triple superphosphate plus potassium metaphosphate* (SK)
 - Magnesium ammonium phosphate (M)
 - Triple superphosphate plus magnesium ammonium phosphate* (SM)
 - Potassium metaphosphate plus magnesium ammonium phosphate* (KM)
 - Triple superphosphate plus potassium metaphosphate plus magnesium ammonium phosphate* (SKM)

* Each material supplying half the P (one third in treatment SKM).

2. Levels of P: 12 lb (I1), 24 lb (I2) P to barley (double these rates to potatoes 1966).
3. Type of fertiliser: Powder, less than 1 mm (P), granular 1-4 mm (G).

All applied to barley with 'Nitro-Chalk', muriate of potash and kieserite in amounts adjusted to give a total of 60 lb N, 100 lb K and 25 lb Mg.

Basal applications: To barley: 60 lb N and 50 lb K (16:0:16).
To ryegrass: 90 lb N as 'Nitro-Chalk'. Weedkillers: To barley: Dichlorprop/MCPA (Cornox RK Extra at 7 pints in 50 gals), paraquat to stubble at 1 lb ion in 40 gals.

Cultivations, etc.:

Barley: Ploughed: Sept 30, 1966. Fertilisers applied, seed drilled at 160 lb: Mar 15, 1967. Weedkiller applied: May 12. Basal NK applied: May 31. Harvested green: June 30. Paraquat applied: July 4. Variety: Maris Badger.

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Ryegrass: Basal N applied, seed drilled at 60 lb: July 25, 1967.
Cut: Oct 19. Variety: Italian S22.

NOTE: For previous years' results see 'Results' 66/c/21.

Standard errors per plot. Dry matter:

Barley, green crop: 3.20 or 18.9% (60 d.f.)

Ryegrass, 1st and only cut: 1.89 or 8.9% (60 d.f.)

SUMMARY OF RESULTS

	BARLEY GREENCROP. DRY MATTER. CWT PER ACRE								Mean
	O	S	K	SK	M	SM	KM	SKM	
Mean (± 0.93)	6.3	17.7	17.8	20.1	16.7	19.7	17.1	20.2	17.0
				(± 1.31)					(± 0.43)
L1		16.8	14.8	17.3	13.1	16.7	13.6	16.1	15.5
L2		18.6	20.8	22.9	20.3	22.8	20.7	24.3	21.5
P		16.8	18.5	19.0	17.5	19.5	18.2	20.2	18.5
G		18.6	17.2	21.2	16.0	19.9	16.1	20.1	18.4

Mean D.M. %: 30.0

	RYEGRASS 1ST AND ONLY CUT. DRY MATTER.								Mean
	O	S	K	SK	M	SM	KM	SKM	
Mean (± 0.54)	14.4	21.6	22.6	23.2	21.8	22.9	21.5	22.0	21.3
				(± 0.77)					(± 0.25)
L1		19.1	20.2	21.5	20.4	21.5	19.5	19.8	20.3
L2		24.2	25.0	25.0	23.1	24.3	23.5	24.1	24.2
P		20.6	22.1	23.4	20.6	23.4	21.8	22.1	22.0
G		22.7	23.0	23.0	23.0	22.4	21.3	21.9	22.5

Mean D.M. %: 11.4