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Yields of the Field Experiments 1961

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61/R/C/1 Cereal-bean Rotations - Wheat and Barley (Test Crops)

Rothamsted Research

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61/C/1.1

CEREALS AND BEANS ROTATIONS

The effect of crop sequences on the incidence of cereal foot and root rot diseases - Great Field I 1961 - the 5th year.

Design: Three series each of 3 randomised blocks of 6 plots, starting in each of the years 1957, 1958 and 1959.

Area of each plot (acres): 0.0305. Area harvested: Winter wheat, series starting 1958 - 0.0095; series starting 1959, Spring wheat, Barley - 0.0200; Beans - 0.0191.

Treatments:

Crop sequences for each series:

1st year:	WW	SW	O	WW	B	WW
2nd year:	WW	WW	WW	O	WW	O
3rd year:	SW	SW	SW	SW	B	Be

WW = Winter wheat, SW = Spring wheat, O = Oats, B = Barley, Be = Beans.

In the 4th year the plots are split for N and all cropped with winter wheat, the series starting in 1958 falling due for this treatment this year, and receiving N at 0.5, 1.0 cwt per acre in 2 doses on Mar 22 and May 8, 1961 as 'Nitro-Chalk'.

Basal dressing: 2 cwt compound fertiliser (16% P₂O₅, 16% K₂O) per acre combine drilled with seed (placed in sideband for beans); all blocks received 23 cwt ground chalk per acre in Nov 1956 and 54 cwt per acre in Oct 1960.

Nitrogen for cereals: 0.46 cwt N as 'Nitro-Chalk' 21 per acre to spring wheat and 0.31 cwt N as 'Nitro-Chalk' 21 per acre to barley, all in seedbed.

Cultivations, etc.: Ground chalk applied: Oct 4 - 14, 1960. Ploughed: Oct 14. Winter wheat combine drilled at 3 bushels per acre: Jan 23, 1961. 'Nitro-Chalk' applied to spring wheat and barley: Mar 7. Beans placement drilled at 200 lb per acre, barley combine drilled at 2 bushels per acre, and spring wheat at 3 bushels per acre: Mar 8. Winter wheat sprayed with MCPA/TBA at 4 pints in 40 gallons per acre: May 10. Spring wheat and barley sprayed with MCPA/TBA at 4 pints in 40 gallons per acre: May 11. Beans sprayed with demeton-methyl at 12 fluid oz in 60 gallons per acre: June 14. Combine harvested: Barley - Aug 23; winter and spring wheat - Aug 31; beans - Sept 4. Varieties: Beans - Gartons Tick; winter wheat - Cappelle; spring wheat - Koga II; barley - Proctor.

Note. Estimates of plant height, % area lodged, incidence of Eyespot (*Cercospora herpotrichoides*) and Take-all (*Ophiobolus graminis*) and counts of plants and shoots were made.

61/C/1.2

Errata to "Results of the Field Experiments" 1960.

Page 60/Cd/1.1 the 6th line should read "... series starting 1958, and 1959, all cereals - 0.0200".

Standard errors per plot, Grain (at 85% dry matter):

Series starting:

1958 Winter wheat
 Whole plot: 2.03 cwt per acre or 7.1% (10 d.f.)
 Sub plot: 2.53 cwt per acre or 8.8% (12 d.f.)
 1959 Spring wheat 1.58 cwt per acre or 4.7% (6 d.f.)

Summary of Results

Grain (at 85% dry matter): cwt per acre

Series starting in 1958

Winter wheat

Crop in 1958	WW	SW	O	WW	B	WW	Mean
	WW	WW	WW	O	WW	O	
1959	SW	SW	SW	SW	B	Be	
1960							
N cwt per acre	$(\pm 1.45)^{(1)}$			$(\pm 1.56)^{(2)}$			
0.5	28.2	26.4	20.0	22.9	19.6	39.7	26.2
1.0	30.3	28.7	27.4	27.5	24.4	47.1	30.9
Mean (± 1.18)	29.3	27.6	23.7	25.2	22.0	43.4	28.5
Diff. (± 2.07)	+2.1	+2.3	+7.4	+4.6	+4.8	+7.4	+4.7
							(± 0.84)
Mean dry matter % as harvested:	85.1						

(1) for use in vertical and interaction comparisons

(2) for use in horizontal and diagonal comparisons

Grain (at 85% dry matter): cwt per acre

Series starting in 1959

Spring wheat

Crop in 1959	WW	SW	O	WW	Mean	Barley B W	Spring beans W O
	WW	WW	WW	O			
1960							
	32.7	33.4	32.3	36.7	33.8	35.3	23.9
	(± 0.90)						
Mean dry matter % as harvested:	85.9					84.7	78.1