ROTHAMSTED RESEARCH

Yields of the Field Experiments 1978

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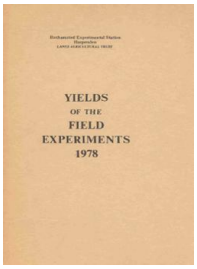

78/W/RN/13 Intensive Cereals - Wheat, Barley

Rothamsted Research

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78/W/RN/13

INTENSIVE CEREALS

Object: To study the effects of intensive cereal cropping on yield, incidence of soil-borne pathogens and organic matter in the soil - Woburn Stackyard I.

Sponsors: A.E. Johnston, J. McEwen.

The 13th year, winter wheat, barley.

For previous years see 'Details' 1973 and 74-77/W/RN/13.

Design: For each experiment: 2 randomised blocks of 6 plots, split into 4. ALDICARB tested on blocks.

Whole plot dimensions: 8.53 x 20.4.

Treatments:-
One experiment on winter wheat on part of the site of the classical wheat experiment 1877-1954
One experiment on barley on part of the site of the classical barley experiment 1877-1954
Factors tested on both experiments are the same but crop and nitrogen rates differ. All combinations of:-

Blocks

1. ALDICARB — Aldicarb, cumulative to 1977 dressing, worked into the seedbed (kg):

0
10

Whole plots

2. PREVCROP — Previous crops:

	1972	1973	1974	1975	1976	1977
C/L/P/C	C	C	C	L	P	C
L/P/C/C	C	C	L	P	C	C
P/C/C/C	C	L	P	C	C	C
C/C/C/C	L	P	C	C	C	C
C/C/L/C	P	C	C	C	L	C
C/C/C/C	C	C	C	C	C	C

Ley = 1 year ley P = Potatoes C = Cereal: wheat or barley. All plots in cereal from 1977.

Sub plots

3. N — Nitrogen fertiliser (kg N as 'Nitro-Chalk 25'):

Wheat	Barley
63	50
126	100
189	150
252	200

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Standard applications:
Wheat: Manures: (0:20:20) at 310 kg, combine drilled. Weedkillers: Methabenzthiazuron at 1.5 kg in 280 l. Mecoprop, bromoxynil and ioxynil ('Brittox' at 3.5 l in 280 l).
Barley: Manures: (0:20:20) at 300 kg, combine drilled. Weedkillers: Mecoprop, bromoxynil and ioxynil ('Brittox' at 2.5 l in 280 l). Fungicide: Tridemorph at 0.53 kg applied with the weedkillers.

Seed: Wheat: Cappelle, sown at 210 kg.
Barley: Porthos, dressed with ethirimol, sown at 160 kg.

Cultivations, etc.:- All plots ploughed: 27 Sept, 1977.
Wheat: Aldicarb applied, rotary cultivated: 24 Oct, 1977. Spring-tine cultivated, seed sown: 25 Oct. Methabenzthiazuron applied: 29 Oct. N applied: 7 Apr, 1978. Mecoprop, bromoxynil and ioxynil applied: 10 May. Combine harvested: 25 Aug.
Barley: Spring-tine cultivated: 9 Mar, 1978. Aldicarb applied, rotary cultivated, spring-tine cultivated with crumbler attached, seed sown: 3 Apr. N applied, weedkillers and fungicide applied: 15 May. Combine harvested: 23 Aug.

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WHEAT

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

PREVCROP ALDICARB	C/L/P/C	L/P/C/C	P/C/C/C	C/C/C/C	C/C/L/C	C/C/C/C	MEAN
0	4.26	4.26	3.88	3.81	4.36	3.94	4.08
10	4.06	3.92	3.74	3.44	3.62	3.18	3.66
MEAN	4.16	4.09	3.81	3.62	3.99	3.56	3.87

N ALDICARB	63	126	189	252	MEAN
0	3.42	4.32	4.36	4.23	4.08
10	3.15	3.95	3.66	3.87	3.66
MEAN	3.29	4.14	4.01	4.05	3.87

N PREVCROP	63	126	189	252	MEAN
C/L/P/C	3.52	4.71	4.39	4.01	4.16
L/P/C/C	3.76	4.22	4.01	4.38	4.09
P/C/C/C	3.21	3.98	4.06	3.99	3.81
C/C/C/C	2.98	3.65	3.95	3.91	3.62
C/C/L/C	3.35	4.33	3.84	4.43	3.99
C/C/C/C	2.90	3.94	3.83	3.58	3.56
MEAN	3.29	4.14	4.01	4.05	3.87

N		63	126	189	252
ALDICARB	PREVCROP				
0	C/L/P/C	3.45	4.56	4.51	4.51
	L/P/C/C	3.92	4.79	4.49	3.83
	P/C/C/C	2.83	3.98	3.98	4.73
	C/C/C/C	3.47	3.70	4.29	3.77
	C/C/L/C	3.29	4.73	4.73	4.70
	C/C/C/C	3.57	4.18	4.18	3.83
10	C/L/P/C	3.59	4.87	4.26	3.51
	L/P/C/C	3.59	3.65	3.52	4.92
	P/C/C/C	3.60	3.97	4.14	3.25
	C/C/C/C	2.50	3.59	3.60	4.05
	C/C/L/C	3.41	3.93	2.96	4.17
	C/C/C/C	2.23	3.69	3.49	3.33

GRAIN MEAN DM% 82.4

SUB PLOT AREA HARVESTED 0.00277

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BARLEY

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

PREVCROP / ALDICARB	C/L/P/C	L/P/C/C	P/C/C/C	C/C/C/C	C/C/L/C	C/C/C/C	MEAN
0	5.00	5.00	4.63	4.35	4.07	3.81	4.48
10	4.75	4.94	4.65	3.95	4.80	4.20	4.55
MEAN	4.88	4.97	4.64	4.15	4.43	4.01	4.51

N / ALDICARB	50	100	150	200	MEAN
0	3.02	4.61	5.22	5.05	4.48
10	2.87	4.74	5.17	5.42	4.55
MEAN	2.94	4.67	5.20	5.24	4.51

N / PREVCROP	50	100	150	200	MEAN
C/L/P/C	3.56	5.04	5.73	5.17	4.88
L/P/C/C	3.82	5.06	5.28	5.72	4.97
P/C/C/C	3.05	4.75	5.37	5.39	4.64
C/C/C/C	1.97	4.59	5.18	4.87	4.15
C/C/L/C	2.94	4.47	5.01	5.32	4.43
C/C/C/C	2.34	4.13	4.62	4.94	4.01
MEAN	2.94	4.67	5.20	5.24	4.51

ALDICARB / N / PREVCROP	50	100	150	200
0 C/L/P/C	4.06	4.89	6.06	5.00
L/P/C/C	3.85	5.28	5.46	5.39
P/C/C/C	3.30	4.46	5.21	5.54
C/C/C/C	2.39	4.76	5.23	5.03
C/C/L/C	2.49	4.21	4.85	4.72
C/C/C/C	2.05	4.08	4.51	4.62
10 C/L/P/C	3.06	5.20	5.40	5.35
L/P/C/C	3.78	4.84	5.09	6.05
P/C/C/C	2.79	5.04	5.53	5.24
C/C/C/C	1.55	4.42	5.12	4.71
C/C/L/C	3.38	4.74	5.17	5.91
C/C/C/C	2.63	4.18	4.73	5.27

GRAIN MEAN DM% 77.6

SUB PLOT AREA HARVESTED 0.00277

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