ROTHAMSTED RESEARCH

Yields of the Field Experiments 1987

Full Table of Content

87/W/RN/13 Intensive Cereals - W. Wheat

Rothamsted Research

Rothamsted Research (1988) *87/W/RN/13 Intensive Cereals - W. Wheat ;* Yields Of The Field Experiments 1987, pp 68 - 69 **- DOI: https://doi.org/10.23637/ERADOC-1-37**

87/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 22nd year, w. wheat.

For previous years see 'Details' 1973 and 74-86/W/RN/13.

Design: 4 randomised blocks of 6 plots split into 6.

Treatments: Until 1977 the experiment tested all phases of the five-course rotation: ley, potatoes, cereal, cereal, cereal and continous cereal. From 1977 to 1980 all phases were cropped with cereal. The experiment was in two halves, one in which the cereal was w. wheat, sown on part of the site of the classical wheat experiment 1877-1954 and one in which the cereal was s. barley, sown on part of the site of the classical barley experiment 1877-1954. From 1981 the experiment was used to establish grass/clover leys of different durations for tests on w. wheat in 1987. Plots not in ley were sown to w. wheat on both halves of the experiment. All leys were ploughed for 1987 and the site sown to w. wheat with all combinations of the following treatments:

Whole plots

1. LEY AGE Length of ley:

   1 YEAR
   2 YEARS
   3 YEARS
   4 YEARS
   5 YEARS
   6 YEARS

Sub plots

2. N Nitrogen fertilizer in 1987 (kg N) as 'Nitro-Chalk':

   0
   50
   100
   150
   200
   250

https://doi.org/10.23637/ERADOC-1-37

87/W/RN/13

Standard applications: Manures: (0:18:36) at 560 kg. Mn at 0.16 kg as manganese sulphate in 240 l applied with the prochloraz, carbendazim and growth regulator. Weedkillers: Glyphosate at 1.4 kg in 200 l. Chlortoluron at 5.6 kg in 200 l. Clopyralid at 0.07 kg, bromoxynil at 0.34 kg with mecoprop at 2.5 kg in 240 l. Fungicides: Prochloraz at 0.34 kg with carbendazim at 0.13 kg. Fenpropimorph at 0.75 kg with chlorothalonil at 0.75 kg in 200 l. Propiconazole at 0.12 kg with carbendazim and maneb (as 'Septal' at 2.5 kg) in 200 l. Growth regulator: Chlormequat at 1.1 kg. Insecticide: Carbofuran at 7.5 kg. Molluscicide: Methiocarb at 0.22 kg.

Seed: Mercia, sown at 190 kg.

Cultivations, etc.:- Ploughed and rolled: 17 July, 1986. Subsoiled with 25 cm wings on tines 30 cm deep and 70 cm apart, in two directions at right angles: 28 Aug. Glyphosate applied: 16 Sept. Methiocarb applied: 18 Sept. PK applied, carbofuran applied, rotary harrowed with crumbler attached, seed sown: 25 Sept. Chlortoluron applied: 9 Oct. Mn, prochloraz, carbendazim, chlormequat applied: 14 Apr, 1987. Clopyralid, bromoxynil and mecoprop applied subsequently: 14 Apr. N applied: 23 Apr. Fenpropimorph and chlorothalonil applied: 5 June. Propiconazole, carbendazim and maneb applied: 29 June. Combine harvested: 1 Sept.

GRAIN TONNES/HECTARE

***** Tables of means *****

N	0	50	100	150	200	250	Mean
LEY AGE							
1 YEAR	4.86	6.33	7.94	7.96	7.99	8.51	7.27
2 YEARS	5.82	8.22	8.73	8.87	9.01	9.08	8.29
3 YEARS	7.72	8.60	8.85	9.36	9.18	9.36	8.84
4 YEARS	8.37	8.94	8.85	9.28	9.43	8.96	8.97
5 YEARS	8.37	8.94	8.85	9.28	9.06	9.22	8.95
6 YEARS	8.24	8.63	8.62	8.77	8.16	8.99	8.57
Mean	7.23	8.28	8.64	8.92	8.81	9.02	8.48

*** Standard errors of differences of means ***

Table	LEY AGE	N	LEY AGE N
s.e.d.	0.271	0.158	0.445
Except when comparing means with the same level(s) of LEY AGE			0.387

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	15	0.383	4.5
BLOCK.WP.SP	90	0.547	6.5

GRAIN MEAN DM% 82.6

SUB PLOT AREA HARVESTED 0.00165

https://doi.org/10.23637/ERADOC-1-37