ROTHAMSTED RESEARCH

Yields of the Field Experiments 1984

Full Table of Content

84/R/CS/299 Crops and Rhizoctonia - W. Wheat, W. Barley

Rothamsted Research

Rothamsted Research (1985) *84/R/CS/299 Crops and Rhizoctonia - W. Wheat, W. Barley ;* Yields Of The Field Experiments 1984, pp 183 - 185 **- DOI: https://doi.org/10.23637/ERADOC-1-32**

84/R/CS/299

CROPS AND RHIZOCTONIA

Object: To study the effects of cropping and inoculation with Rhizoctonia isolates on subsequent infection and on yield of winter cereals - Meadow.

Sponsors: G.A. Hide, P.J. Read.

The second year, w. wheat, w. barley.

Design: 2 randomised blocks of 2 whole plots split into 4 sub plots split into 4 sub sub plots.

Whole plot dimensions: 3.0 x 43.0.

Treatments: All combinations of:-

Whole plots

1. CROP(84) Crops in 1984:

   W WHEAT
   W BARLEY

Sub plots

2. CROP(83) Crops in 1983:

FALLOW B	Fallow, cultivations as for s. barley
FALLOW P	Fallow, cultivations as for potatoes
POTATOES	Potatoes
S BARLEY	S. barley

Sub sub plots

3. INOC(83) Inoculum in 1983, applied during seedbed cultivations:

NONE	None
RHIZ C W	Rhizoctonia cerealis from wheat
RHIZ S B	Rhizoctonia solani from barley
RHIZ S P	Rhizoctonia solani from potatoes

Basal applications:
Wheat and barley: Manures: (5:14:30) at 340 kg. 'Nitro-Chalk' at 750 kg. Weedkillers: Chlortoluron at 3.5 kg in 250 l. 3, 6-dichloropicolinic acid at 0.07 kg with bromoxynil at 0.34 kg and mecoprop (as 'CMPP' at 4.2 l) in 200 l. Fungicides: Prochloraz at 0.40 kg with carbendazim at 0.15 kg in 500 l.
Wheat only: Fungicide: Propiconazole at 0.25 kg in 500 l.
Insecticide: Pirimicarb at 0.14 kg in 250 l.

Seed: W. wheat: Avalon, seed sown at 170 kg.
W. barley: Igri, seed sown at 160 kg.

https://doi.org/10.23637/ERADOC-1-32

84/R/CS/299

Cultivations, etc.:- Ploughed: 16 Sept, 1983. Heavy spring-tine cultivated: 20 Sept. NPK applied: 26 Sept. Rotary harrowed, wheat and barley sown: 27 Sept. Chlortoluron applied: 29 Sept. N applied: 6 Apr, 1984. 3, 6-dichloropicolinic acid, bromoxynil and mecoprop applied: 13 Apr. Prochloraz and carbendazim applied: 26 Apr. Propiconazole applied to wheat: 14 June. Pirimicarb applied to wheat: 26 June. Combine harvested barley: 26 July. Combine harvested wheat: 20 Aug. Previous crops: W. wheat 1981 and 1982.

NOTE: Barley plant samples were taken in late January and late May and wheat samples in early February and early June for inspection of root infections. Plant heights were measured on the last sampling occasion.

WINTER WHEAT

GRAIN TONNES/HECTARE

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

INOC(83) / CROP(83)	NONE	RHIZ C W	RHIZ S B	RHIZ S P	MEAN
FALLOW B	11.75	11.53	11.78	11.42	11.62
FALLOW P	11.24	11.10	10.86	11.36	11.14
POTATOES	11.73	11.56	11.66	11.74	11.67
S BARLEY	9.59	9.74	9.14	10.33	9.70
MEAN	11.08	10.98	10.86	11.21	11.03

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	INOC(83)	CROP(83)* INOC(83)
SED	0.182	0.364

* WITHIN THE SAME LEVEL OF CROP(83) ONLY

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP.SP	12	0.364	3.3

GRAIN MEAN DM% 88.9

SUB PLOT AREA HARVESTED 0.00234

https://doi.org/10.23637/ERADOC-1-32

84/R/CS/299

WINTER BARLEY

GRAIN TONNES/HECTARE

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

INOC(83)	NONE	RHIZ C W	RHIZ S B	RHIZ S P	MEAN
CROP(83)					
FALLOW B	9.81	9.96	9.56	9.72	9.76
FALLOW P	9.60	9.85	9.87	9.64	9.74
POTATOES	9.62	9.48	9.69	9.76	9.64
S BARLEY	9.12	9.13	8.13	8.87	8.82
MEAN	9.54	9.61	9.31	9.50	9.49

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	INOC(83)	CROP(83)* INOC(83)
SED	0.160	0.321

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP.SP	12	0.321	3.4

GRAIN MEAN DM% 83.0

SUB PLOT AREA HARVESTED 0.00234

https://doi.org/10.23637/ERADOC-1-32