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Yields of the Field Experiments 1981



Full Table of Content

81/W/RN/16 Effects of Deep Pk - S. Barley

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81/W/RN/16

EFFECTS OF DEEP PK

Object: To study the residual effects of subsoiling and of incorporating a large dressing of PK in either the subsoil or topsoil, on yields and nutrient uptakes of s. barley - Woburn Butt Furlong.

Sponsor: J. McEwen.

The eighth year, s. barley.

For previous years see 74-80/W/RN/16.

Design: 4 series of 3 randomised blocks of 4 plots with PREVCROP on series.

Whole plot dimensions: 4.27 x 2.59.

Treatments: All combinations of:-

Series

1.	PRE	VC	ROP	Previous cropping (1974-1977) (all in barley 1978, 19 1980):	79 &
	P B W B	-		W. wheat, sugar beet, s. barley, potatoes Sugar beet, s. barley, potatoes, w. wheat	
	SB	В	В	S. barley, potatoes, w. wheat, sugar beet	
	B B	В	В	Potatoes, w. wheat, sugar beet, s. barley	

Plots.

PK SUB Extra PK and subsoil treatment (applied autumn 1973):

Extra PK Subsoil (25-50 cm) treatment

-	-	-	None	None
-	-	S	None	Subsoiled
P	K	T	To topsoil (0-25 cm)	None
P	K	S	To subsoil	Subsoil ed

- NOTES: (1) The rates of P and K were 1930 kg P205, as superphosphate and 460 kg K20 as muriate of potash. These quantities, applied to subsoil, were chosen to equalize available P and K in top and subsoil.
 - (2) Subsoiling was done by spade, after removing the topsoil which was then replaced. PK to subsoil was worked in by forking.
 - (3) PK to topsoil was applied half before ploughing in autumn half soon after on the plough furrow.

Basal applications: Manures: (20:10:10) at 540 kg. Weedkillers: Patches of perennial grass weeds were treated with glyphosate (concentration 0.07 l in 10 l of water) by knapsack sprayer. Mecoprop with bromoxynil and ioxynil (as 'Brittox' at 3.5 l) with the fungicide in 280 l. Fungicide: Ethirimol (as 'Milgo E' at 0.7 l).

Seed: Georgie, dressed with ethirimol, sown at 160 kg.

81/W/RN/16

Cultivations, etc.:- Glyphosate applied: 17 Sept, 1980. Ploughed: 21 Nov. NPK applied: 20 Feb, 1981. Spring-tine cultivated with crumbler attached, seed sown: 27 Feb. 'Brittox' with the fungicide applied: 6 May. Hand harvested: 29 Aug.

GRAIN TONNES/HECTARE

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

PK SUB PREVCROP		S	PKT	PKS	MEAN
PBBB	3.96	4.06	4.01	3.92	3.99
WBBB	4.24	4.24	3.84	4.40	4.18
SBBB	2.97	2.42	3.23	3.08	2.92
BBBB	3.75	3.67	4.60	3.73	3.94
MEAN	3.73	3.60	3.92	3.78	3.76

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

TABLE	PK SUB	PREVCROP*
		PK SUB
SED	0.163	0.327

* ONLY WHEN COMPARING MEANS WITH SAME LEVELS OF PREVCROP

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

STRATUM	DF	SE	CV%
BLOCK.WP	6	0.141	3.8
BL OCK . WP . SP	24	0.400	10.6

GRAIN MEAN DM% 85.3

STRAW TONNES/HECTARE

**** TABLES OF MEANS ****

PK	SU	В		S	PKT	PKS	MEAN
PREV	CRO	P					
PB	В	В	3.12	3.28	3.07	3.43	3.23
W B	В	В	3.29	3.41	2.77	3.32	3.20
SB	В	В	2.40	2.54	2.81	2.69	2.61
B B	В	В	2.79	3.00	3.38	3.14	3.08
	MEA	N	2.90	3.06	3.01	3.15	3.03

STRAW MEAN DM% 86.4

SUB PLOT AREA HARVESTED 0.00063