

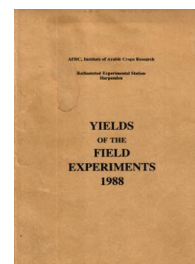
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88/R/RA/7 Forms and Times of N - W. Oilseed Rape

Rothamsted Research

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88/R/RA/7

WINTER OILSEED RAPE

FORMS AND TIMES OF N

Object: To compare the effects of single and divided dressings of urea and 'Nitro-Chalk' on the yield of 2 varieties of w. oilseed rape - Whittlocks.

Sponsors: R.J. Darby, M.V. Hewitt.

Design: 2 randomised blocks of 2 plots split into 15 sub plots.

Whole plot dimensions: 30.0 x 31.0.

Treatments: All combinations of:-

Whole plots

1. **VARIETY** Variety:

ARIANA
MIKADO

Sub plots

2. **N FORM** Forms of nitrogen fertilizer:

AMM NIT Ammonium nitrate (as 'Nitro-Chalk')
UREA Prilled urea

3. **N TIME** Times of applying a total dressing of 200 kg N:

4 - - -	All on 22 Feb, 1988
3 1 - -	Three quarters on 22 Feb, one quarter on 17 Mar
3 - 1 -	Three quarters on 22 Feb, one quarter on 6 Apr
2 2 - -	Half on 22 Feb, half on 17 Mar
2 - 2 -	Half on 22 Feb, half on 6 Apr
2 1 1 -	Half on 22 Feb, quarter on 17 Mar, quarter on 6 Apr
1 1 1 1	One quarter on 22 Feb and 17 Mar and 6 Apr and 26 Apr

plus two extra treatments

EXTRA

NONE AR No nitrogen fertilizer ARIANA
NONE MI No nitrogen fertilizer MIKADO

Basal applications: Weedkillers: Paraquat at 0.40 kg ion in 200 l.
Metazachlor at 1.2 kg in 200 l. Desiccant (to **VARIETY** ARIANA only):
Diquat at 0.60 kg ion with a wetting agent ('Enhance' at 0.50 l) in
520 l.

Seed: Dressed gamma HCH, thiram and fenpropimorph, sown at 8.0 kg.

88/R/RA/7

Cultivations, etc.: - Paraquat applied: 8 Sept, 1987. Heavy spring-tine cultivated: 14 Sept. Rotary harrowed, seed sown: 15 Sept. Metazachlor applied: 1 Oct. Combine harvested (**VARIETY MIKADO**), desiccant with wetting agent applied (**VARIETY ARIANA**): 20 July, 1988. Combine harvested (**VARIETY ARIANA**): 27 July. Previous crops: W. wheat 1986, w. barley 1987.

NOTE: Percentages of oil and N in the grain were measured.

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

N FORM N TIME	AMM NIT	UREA	Mean
4 - - -	3.45	3.53	3.49
3 1 - -	3.52	3.33	3.43
3 - 1 -	3.43	3.24	3.33
2 2 - -	3.40	3.19	3.30
2 - 2 -	3.37	3.39	3.38
2 1 1 -	3.41	3.13	3.27
1 1 1 1	3.57	3.44	3.51
Mean	3.45	3.32	3.39

VARIETY N TIME	ARIANA	MIKADO	Mean
4 - - -	3.04	3.94	3.49
3 1 - -	2.87	3.98	3.43
3 - 1 -	2.82	3.84	3.33
2 2 - -	2.73	3.86	3.30
2 - 2 -	2.85	3.91	3.38
2 1 1 -	2.73	3.81	3.27
1 1 1 1	3.00	4.01	3.51
Mean	2.87	3.91	3.39

VARIETY N FORM	ARIANA	MIKADO	Mean
AMM NIT	2.97	3.94	3.45
UREA	2.76	3.88	3.32
Mean	2.87	3.91	3.39

N TIME	N FORM VARIETY	AMM NIT ARIANA	MIKADO	UREA ARIANA	MIKADO
4 - - -		2.94	3.97	3.14	3.91
3 1 - -		3.03	4.01	2.71	3.96
3 - 1 -		3.02	3.84	2.63	3.85
2 2 - -		2.83	3.98	2.64	3.75
2 - 2 -		2.80	3.94	2.90	3.88
2 1 1 -		3.03	3.80	2.44	3.83
1 1 1 1		3.11	4.02	2.88	4.00
EXTRA	NONE AR	NONE MI	Mean		
	2.10	2.61	2.35		

GRAND MEAN 3.32

88/R/RA/7

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

EXTRA	N TIME	N FORM	
0.282	0.141	0.075	
N TIME	N TIME*	N FORM*	N TIME*
N FORM	VARIETY	VARIETY	N FORM
			VARIETY
0.199	0.199	0.106	0.282

* Within the same level of **VARIETY** only

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP.SP	28	0.282	8.5
MEAN DM%	78.6		
SUB PLOT AREA HARVESTED	0.00345		