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# Yields of the Field Experiments 1987

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ROTHAMSTED RESEARCH  
Rothamsted Experimental Station  
Harpenden  
Herts  
AL5 2JQ  
UK  
Tel: +44 (0)1494 473900  
Fax: +44 (0)1494 473901  
Email: [info@ Rothamsted.ac.uk](mailto:info@ Rothamsted.ac.uk)  
Website: <http:// Rothamsted.ac.uk>  
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## 87/R/RA/7 Forms and Times of N - W. Oilseed Rape

### Rothamsted Research

Rothamsted Research (1988) *87/R/RA/7 Forms and Times of N - W. Oilseed Rape* ; Yields Of The Field Experiments 1987, pp 232 - 234 - DOI: <https://doi.org/10.23637/ERADOC-1-37>

87/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 w. oilseed rape - Great Knott II.

Sponsor: R.J. Darby.

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

Whole plot dimensions: 30.0 x 27.0.

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 23 Feb, 1987  
3 1 - - Three quarters on 23 Feb, one quarter on 16 Mar  
3 - 1 - Three quarters on 23 Feb, one quarter on 9 Apr  
2 2 - - Half on 23 Feb, half on 16 Mar  
2 - 2 - Half on 23 Feb, half on 9 Apr  
2 1 1 - Half on 23 Feb, quarter on 16 Mar, quarter on 9 Apr  
1 1 1 1 One quarter on 23 Feb and 16 Mar and 9 Apr and 27 Apr

plus two extra treatments

EXTRA

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

NOTE: Seed was dressed with gamma HCH, thiram and fenpropimorph and sown at 8 kg on 3 Sept, 1986.

Basal applications: Weedkillers: Sodium trichloroacetate at 16 kg in 200 l. Clopyralid and propyzamide (as 'Matrikerb' at 1.6 kg) in 500 l. Bird repellent: 'Hoppit' at 3.0 l in 500 l. Desiccant: Diquat at 0.60 kg ion with a wetting agent ('Agral' at 0.50 l) in 500 l.

87/R/RA/7

Cultivations, etc.:— Heavy spring-tine cultivated, cultivated with rotary grubber: 12 Aug, 1986. Rotary harrowed: 31 Aug. Sodium trichloroacetate applied, harrowed: 1 Sept. Clopyralid and propyzamide applied: 20 Nov. Bird repellent applied: 24 Dec. Desiccant with wetting agent applied: 30 July, 1987. Combine harvested: 5 Aug. Previous crops: S. wheat 1985, w. barley 1986.

NOTE: Alternaria infection was assessed in July. Percentage of oil in grain was measured.

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

N FORM N TIME	AMM NIT	UREA	Mean
4 - - -	2.65	2.79	2.72
3 1 - -	2.77	2.74	2.76
3 - 1 -	2.61	2.76	2.68
2 2 - -	2.76	2.73	2.74
2 - 2 -	2.64	2.62	2.63
2 1 1 -	2.67	2.83	2.75
1 1 1 1	2.78	2.78	2.78

Mean 2.70 2.75 2.72

VARIETY N TIME	ARIANA	MIKADO	Mean
4 - - -	2.73	2.71	2.72
3 1 - -	2.81	2.71	2.76
3 - 1 -	2.63	2.74	2.68
2 2 - -	2.63	2.86	2.74
2 - 2 -	2.60	2.67	2.63
2 1 1 -	2.75	2.74	2.75
1 1 1 1	2.64	2.92	2.78

Mean 2.68 2.76 2.72

VARIETY N FORM	ARIANA	MIKADO	Mean
AMM NIT	2.68	2.72	2.70
UREA	2.69	2.81	2.75

Mean 2.68 2.76 2.72

87/R/RA/7

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

N FORM VARIETY N TIME	AMM NIT ARIANA	MIKADO	UREA ARIANA	MIKADO
4 - - -	2.69	2.62	2.78	2.80
3 1 - -	2.84	2.71	2.77	2.71
3 - 1 -	2.55	2.67	2.70	2.81
2 2 - -	2.66	2.85	2.59	2.87
2 - 2 -	2.60	2.68	2.59	2.66
2 1 1 -	2.83	2.52	2.68	2.97
1 1 1 1	2.59	2.96	2.68	2.88

EXTRA	NONE AR	NONE MI	Mean
	1.13	1.13	1.13

Grand mean 2.62

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

Table	EXTRA	N TIME	N FORM	
s.e.d.	0.190	0.095	0.051	
Table	N TIME N FORM	N TIME* VARIETY	N FORM* VARIETY	N TIME* N FORM VARIETY*
s.e.d.	0.134	0.134	0.072	0.190

\* Within the same level of VARIETY only

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP.SP	28	0.190	7.3

MEAN DM% 84.4

SUB PLOT AREA HARVESTED 0.00299