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## Yields of the Field Experiments 1990

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### 90/R/SU/2 Row Spacings and Seed Rates - Sunflowers

#### Rothamsted Research

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90/R/SU/2

SUNFLOWERS

ROW SPACINGS AND SEED RATES

**Object:** To study the effects of three row spacings and three seed rates on growth, disease and yield of sunflowers - Great Harpenden I.

**Sponsors:** V.J. Church, C.J. Rawlinson.

**Design:** 4 randomised blocks of 9 plots.

**Whole plot dimensions:** Wide and narrow rows: 3.0 x 10.0  
Medium rows: 3.04 x 10.0.

**Treatments:** All combinations of:-

- |             |                         |
|-------------|-------------------------|
| 1. ROW SPAC | Spacing between rows:   |
| NARROW      | 25 cm                   |
| MEDIUM      | 38 cm                   |
| WIDE        | 50 cm                   |
| 2. POPULATN | Seeds sown per hectare: |
| 80          | 80,000                  |
| 120         | 120,000                 |
| 160         | 160,000                 |

**NOTE:** Plants were netted against birds from sowing until harvest.

**Basal applications:** Manures: (13:13:21) at 380 kg. Weedkillers: Trifluralin at 1.1 kg in 200 l. Linuron at 0.50 kg in 200 l. Desiccant: Diquat at 0.60 kg ion applied with a wetting agent, 'Vassgrow' at 0.22 l, in 220 l. Irrigation: 22 mm on each of two occasions.

**Seed:** Vincent.

**Cultivations, etc.:-** Ploughed: 1 Sept, 1989. Rolled: 4 Sept. Deep-tine cultivated: 24 Nov. Spring-tine cultivated, NPK applied: 12 Mar, 1990. Trifluralin applied, spring-tine cultivated twice: 24 Apr. Seed sown: 26 Apr. Linuron applied: 1 May. Irrigation applied: 3 and 25 May. Desiccant applied: 5 Sept. Hand harvested: 12 Sept. Previous crops: W. wheat 1988 and 1989.

**NOTE:** Plant heights and head diameters were measured and plants counted at maturity. Botrytis was assessed in late summer.

90/R/SU/2

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

POPULATN	80	120	160	Mean
ROW SPAC				
NARROW	3.17	3.55	3.03	3.25
MEDIUM	3.25	3.28	2.85	3.13
WIDE	3.43	3.26	3.18	3.29
Mean	3.28	3.37	3.02	3.22

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

ROW SPAC	POPULATN	ROW SPAC POPULATN
0.127	0.127	0.220

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	24	0.311	9.7

GRAIN MEAN DM% 76.3

PLOT AREA HARVESTED NARROW	0.00125
PLOT AREA HARVESTED MEDIUM	0.00114
PLOT AREA HARVESTED WIDE	0.00150