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# Yields of the Field Experiments 1991

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## Sunflowers

### Rothamsted Research

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91/R/SU/1

SUNFLOWERS

VARIETIES AND BOTRYTIS

**Object:** To study the incidence of *Botrytis cinerea* on two varieties of sunflower and to compare their yields in the absence of fungicide treatment - Great Harpenden I.

**Sponsors:** V.J. Church, B.D.L. Fitt.

**Design:** 8 randomised blocks of 2 plots.

**Whole plot dimensions:** 3.5 x 10.0.

**Treatments:**

**VARIETY** Varieties:

S 47

ALLEGRO

**Basal applications:** Manures: (0:16:36) at 980 kg. (12:20:20) at 380 kg.  
Weedkillers: Trifluralin at 1.1 kg in 200 l. Linuron at 0.48 kg in 200 l.

**Seed:** Varieties, sown at 12 seeds per square metre.

**Cultivations, etc.:-** First PK applied: 3 Sept, 1990. Ploughed: 11 Dec.  
NPK applied: 11 Apr, 1991. Heavy spring-tine cultivated: 24 Apr.  
Rotary harrowed, trifluralin applied, rotary harrowed, seed sown, rolled: 29 Apr. Linuron applied: 9 May. Hand harvested: 9 Sept.  
Previous crops: W. barley 1989 and 1990.

**NOTE:** Selected plants were monitored daily for growth stage and for disease from flowering to harvest. Numbers of *Botrytis* spores were recorded daily using a Burkard spore trap. Seed moisture content was measured at intervals after flowering.

91/R/SU/1

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

VARIETY

S 47	2.48
ALLEGRO	2.43
Mean	2.45

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

VARIETY

0.071

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	7	0.143	5.8
GRAIN MEAN DM%	71.2		
PLOT AREA HARVESTED	0.00150		

91/R/SU/2

SUNFLOWERS

BIRD REPELLANT

**Object:** To study the effects of applying two rates of a saponin, at two times, on damage by birds to and yields of sunflowers - Great Harpenden I.

**Sponsor:** V.J. Church.

**Design:** 5 x 5 quasi-complete Latin square.

**Whole plot dimensions:** 3.5 x 10.0.

**Treatments:**

**SAP R T** Rates and times of applying a saponin (as weight of quinoa husk):

NONE	None
S1 E	51 kg applied 8 Aug, 1991
S1 L	51 kg applied 28 Aug
S2 E	57 kg applied 8 Aug
S2 L	57 kg applied 28 Aug

**NOTES:** (1) On S1 plots saponin was applied as ground quinoa husk in 860 l/ha.  
(2) On S2 plots saponin was applied as ground quinoa husk as a dry dust.

**Basal applications:** Manures: (0:16:36) at 980 kg. (12:20:20) at 380 kg.  
Weedkillers: Trifluralin at 1.1 kg in 200 l. Linuron at 0.50 kg, in 400 l.

**Seed:** Allegro, sown at 9 seeds per square metre.

**Cultivations, etc.:-** First PK applied: 3 Sept, 1990. Ploughed: 11 Dec.  
NPK applied: 11 Apr, 1991. Heavy spring-tine cultivated: 24 Apr.  
Rotary harrowed, trifluralin applied, rotary harrowed, seed sown, rolled: 26 Apr. Linuron applied: 3 May. Hand harvested: 10 Sept..  
Previous crops: W. barley 1989 and 1990.

**NOTE:** Growth stage and bird damage was monitored twice weekly. Rainfall was recorded after repellent application. Disease was assessed before harvest and seed moisture measured on three occasions before harvest.

91/R/SU/2

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

SAP R T	
NONE	1.91
S1 E	2.08
S1 L	1.84
S2 E	1.80
S2 L	2.03
Mean	1.93

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

SAP R T	
	0.115

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

Stratum	d.f.	s.e.	cv%
ROW.COL	12	0.182	9.4
GRAIN MEAN DM%	62.4		
PLOT AREA HARVESTED	0.00150		