

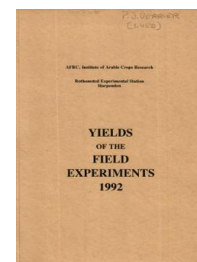
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# Yields of the Field Experiments 1992

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## Sunflowers

### Rothamsted Research

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92/R/SU/1

SUNFLOWERS

VARIETIES & DISEASE

**Object:** To assess early maturing varieties of sunflowers and their susceptibility to *Botrytis cinerea* and other fungal diseases - Great Knott I.

**Sponsors:** V.J. Church, H.A. McCartney.

**Design:** 6 randomised blocks of 4 plots.

**Whole plot dimensions:** 3.66 x 10.0.

**Treatments:**

**VARIETY:** Varieties:

AVANTE  
ALLEGRO  
SAM 301  
SAM 313

**Experimental diary:**

25-Aug-91 : B : Straw chopped.  
31-Oct-91 : B : Ploughed. (start)  
07-Nov-91 : B : Ploughed. (finish)  
21-Feb-92 : B : PK as (0:18:36) at 940 kg.  
27-Apr-92 : B : NPK as (12:20:20) at 380 kg.  
          : B : Heavy spring-tine cultivated.  
04-May-92 : B : Spring-tine cultivated.  
05-May-92 : B : Treflan at 2.3 l in 260 l, spring-tine cultivated.  
06-May-92 : B : Rotary harrowed.  
06-May-92 : T : **VARIETY** AVANTE: Seed, dressed, drilled at 14 seeds per square metre.  
          : T : **VARIETY** ALLEGRO: Seed, dressed, drilled at 14 seeds per square metre.  
          : T : **VARIETY** SAM 301: Seed, dressed, hand sown at 14 seeds per square metre.  
          : T : **VARIETY** SAM 313: Seed, dressed, hand sown at 14 seeds per square metre.  
07-May-92 : B : Rolled.  
13-May-92 : B : Rotalin at 1.6 l in 400 l.  
21-Aug-92 : B : **VARIETY** AVANTE, ALLEGRO: Reglone at 3.0 l with Farmon Blue at 0.33 l in 330 l.  
26-Aug-92 : T : **VARIETY** SAM 313: Reglone at 3.0 l with Farmon Blue at 0.33 l in 330 l.  
28-Aug-92 : T : **VARIETY** AVANTE, ALLEGRO: Cut by hand, threshed by stationary combine harvester.  
04-Sep-92 : T : **VARIETY** SAM 313: Cut by hand, threshed by stationary combine harvester.  
07-Sep-92 : T : **VARIETY** SAM 301: Reglone at 3.0 l with Farmon Blue at 0.33 l in 330 l.

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**Experimental diary:**

14-Sep-92 : T : VARIETY SAM 301: Cut by hand, threshed by stationary combine harvester.

Previous crops: W. barley 1990, w. wheat 1991.

**NOTE:** Crop was assessed for growth stage from emergence to desiccation. Incidence of *Botrytis cinerea* as assessed from early July to desiccation. Airborne spores were monitored with a Burkard spore trap. Seed moisture was assessed during seed development, oil content was measured at harvest.

**GRAIN (AT 90% DRY MATTER) TONNES/HECTARE**

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

VARIETY	
AVANTE	2.91
ALLEGRO	3.06
SAM 301	2.93
SAM 313	3.07
Mean	2.99

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

VARIETY
0.056

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

Stratum	d.f.	s.e.	cv%
BLOCK	5	0.032	1.1
BLOCK.WP	15	0.098	3.3

GRAIN MEAN DM% 75.7

PLOT AREA HARVESTED 0.00150

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SUNFLOWERS

FUNGICIDE AND GROWTH STAGE

**Object:** To test fungicides to control *Botrytis cinerea* applied in relation to growth stage of sunflowers - Great Knott I.

**Sponsors:** V.J. Church, H.A. McCartney.

**Design:** 4 randomised blocks of 8 plots.

**Whole plot dimensions:** 3.66 x 10.

**Treatments:** All combinations of:-

1. **GS 4.2** Prochloraz and chlorothalonil applied at growth stage 4.2:  
  
NONE  
APPLIED
2. **GS 4.5** Prochloraz and chlorothalonil applied at growth stage 4.5:  
  
NONE  
APPLIED
3. **GS 5.1.1** Prochloraz and chlorothalonil applied at growth stage 5.1.1:  
  
NONE  
APPLIED

**Experimental diary:**

25-Aug-91 : B : Straw chopped.  
30-Oct-91 : B : Ploughed. (start)  
07-Nov-91 : B : Ploughed. (finish)  
21-Feb-92 : B : PK as (0:18:36) at 940 kg.  
27-Apr-92 : B : NPK as (12:20:20) at 380 kg.  
27-Apr-92 : B : Heavy spring-tine cultivated.  
04-May-92 : B : Spring-tine cultivated twice.  
05-May-92 : B : Treflan at 2.3 l in 260 l.  
05-May-92 : B : Spring-tine cultivated, rotary harrowed. Primo, dressed, drilled at 13 seeds per square metre.  
07-May-92 : B : Rolled.  
13-May-92 : B : Rotalin at 1.6 l in 400 l.  
09-Jul-92 : T : **GS 4.2 APPLIED:** Chiltern Chlorothalonil 500 at 2.0 l in 220 l.  
09-Jul-92 : T : **GS 4.2 APPLIED:** Sportak 45 at 1.1 l in 220 l.  
22-Jul-92 : T : **GS 4.5 APPLIED:** Chiltern Chlorothalonil 500 at 2.0 l in 220 l.  
22-Jul-92 : T : **GS 4.5 APPLIED:** Sportak 45 at 1.1 l in 220 l.  
06-Aug-92 : T : **GS 5.1.1 APPLIED:** Chiltern Chlorothalonil 500 at 2.0 l in 220 l.

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**Experimental diary:**

06-Aug-92 : T : **GS 5.1.1 APPLIED**: Sportak 45 at 1.1 l in 220 l.  
21-Aug-92 : B : Reglone at 3.0 l with Farmon Blue at 0.33 l in 330 l.  
01-Sep-92 : B : Cut by hand, threshed by stationary combine harvester.

Previous crops: W. barley 1990, w. wheat 1991.

- NOTES:** (1) One plot was sown to a different variety because of a seed shortage. The yield of this plot with treatment combination **GS 4.2 APPLIED**, **GS 4.5 APPLIED** was not measured. An estimated value was used in the analysis.
- (2) Crop was assessed for growth stage from emergence to desiccation. Incidence of *Botrytis cinerea* was assessed. Seed moisture was assessed during seed development and oil content measured at harvested.



92/R/SU/2

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

<b>GS 4.5</b>	NONE	APPLIED	Mean		
<b>GS 4.2</b>					
NONE	2.77	2.74	2.75		
APPLIED	2.74	2.80	2.77		
Mean	2.76	2.77	2.76		
<b>GS 5.1.1</b>	NONE	APPLIED	Mean		
<b>GS 4.2</b>					
NONE	2.77	2.73	2.75		
APPLIED	2.82	2.72	2.77		
Mean	2.80	2.73	2.76		
<b>GS 5.1.1</b>	NONE	APPLIED	Mean		
<b>GS 4.5</b>					
NONE	2.73	2.78	2.76		
APPLIED	2.86	2.67	2.77		
Mean	2.80	2.73	2.76		
<b>GS 4.5</b>	NONE	APPLIED			
<b>GS 4.2</b>	NONE	APPLIED	NONE	APPLIED	
NONE	2.74	2.80	2.81	2.67	
APPLIED	2.73	2.76	2.91	2.68	

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

<b>GS 4.2</b>	<b>GS 4.5</b>	<b>GS 5.1.1</b>	<b>GS 4.2</b>
			<b>GS 4.5</b>
0.028	0.028	0.028	0.040
<b>GS 4.2</b>	<b>GS 4.5</b>	<b>GS 4.2</b>	
<b>GS 5.1.1</b>	<b>GS 5.1.1</b>	<b>GS 4.5</b>	
		<b>GS 5.1.1</b>	
0.040	0.040	0.056	

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	20	0.080	2.9

GRAIN MEAN DM% 83.1

PLOT AREA HARVESTED 0.00150