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Sunflowers

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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.

92/R/SU/1

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

92/R/SU/2

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.

92/R/SU/2

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 *****

GS 4.5	NONE	APPLIED	Mean		
GS 4.2					
NONE	2.77	2.74	2.75		
APPLIED	2.74	2.80	2.77		
Mean	2.76	2.77	2.76		
GS 5.1.1	NONE	APPLIED	Mean		
GS 4.2					
NONE	2.77	2.73	2.75		
APPLIED	2.82	2.72	2.77		
Mean	2.80	2.73	2.76		
GS 5.1.1	NONE	APPLIED	Mean		
GS 4.5					
NONE	2.73	2.78	2.76		
APPLIED	2.86	2.67	2.77		
Mean	2.80	2.73	2.76		
	GS 4.5	NONE	APPLIED	NONE	APPLIED
GS 4.2	GS 5.1.1	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 ***

GS 4.2	GS 4.5	GS 5.1.1	GS 4.2
			GS 4.5
0.028	0.028	0.028	0.040
GS 4.2	GS 4.5	GS 4.2	
GS 5.1.1	GS 5.1.1	GS 4.5	
		GS 5.1.1	
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