



# Evaluation of cauliflower and broccoli varieties

**Summer Harvest**  
*(November 2006 - February 2007)*



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Western Australia  
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## Introduction

This report is the first in a series of four produced from the evaluation of cauliflower and broccoli varieties conducted at the Manjimup Horticultural Research Institute during 2006 and 2007. The results are provided to allow seed suppliers, seedling nurseries, producers, packers and marketers to identify the best variety for a particular harvest period. All varieties receive exactly the same treatment throughout their growth. This has allowed the identification of agronomic requirements that may be specific to some varieties. Varieties that have specific agronomic requirements may perform better when the growing inputs are exactly tailored to suit these varieties. Contact details for participating seed companies are available in Appendix 2.

## Trial Details

### *Transplanting and Harvesting Dates*

**Table 1:** Transplant and harvest dates for cauliflower and broccoli.

	<b>Transplanting Dates</b>	<b>First Harvest Date</b>	<b>Last Harvest Date</b>
Cauliflower	14 November 2006	25 January 2007	12 February 2007
Broccoli	14 November 2006	12 January 2007	19 January 2007

Note: Not all varieties were harvested on every date. These days represent the total harvest days across all varieties.

### *Fertiliser Applications*

Fertiliser was applied both at transplanting and post transplanting. Details of fertiliser application are given below. All varieties received the same fertiliser program.

**Table 2:** Fertiliser application for all varieties.

<b>Date</b>	<b>Product</b>	<b>Rate of Application</b>	<b>Method of Application</b>
14 November 2006	Summit Spud	1400 kg/ha	Incorporated at planting
14 November 2006	All Phos	150 kg/ha	Incorporated at planting
17 November 2006	Potassium sulphate	100 kg/ha	Foliar application
18 November 2006	Ammonium nitrate	50 kg/ha	Foliar application
27 November 2006	Soluble boron	10 kg/ha	Foliar application
27 November 2006	Sodium molybdate	1 kg/ha	Foliar application
27 November 2006	Zinc sulphate	14 kg/ha	Foliar application
30 November 2006	Urea	75 kg/ha	Foliar application
6 December 2006	Calcium chelate	1 kg/ha	Foliar application
11 December 2006	Urea	100 kg/ha	Foliar application
15 December 2006	Soluble boron	10 kg/ha	Foliar application
15 December 2006	Zinc sulphate	14 kg/ha	Foliar application
22 December 2006	Potassium nitrate	100 kg/ha	Foliar application
2 January 2007	Calcium nitrate	150 kg/ha	Foliar application
9 January 2007	Calcium nitrate	150 kg/ha	Foliar application
19 January 2007	Calcium nitrate	70 kg/ha	Foliar application (cauliflower only)

**Planting**

Cauliflower were grown in a two row per 1.7m bed configuration at a within row spacing of 40cm and a between row spacing of 80cm. Broccoli were grown in a three row per 1.7m bed configuration at a within row spacing of 45cm and a between row spacing of 45cm. All varieties were grown in 5.1m x 6m plots and were surrounded by a buffer variety. At harvest, 5m of the four inner rows of each cauliflower plot and 3m of the seven inner rows of each broccoli plot were picked, which provided approximately 100 plants for assessment (50 per replicate).

**Weather Conditions**

Weather conditions were monitored daily throughout the life of the crop. Details of the weather can be found in Appendix 1. Average maximum daily temperatures were 22.5°C in November, 24.7°C in December, 25.1°C in January and 25.9°C in February. Crops were irrigated with over-head sprinklers. Irrigation was scheduled according to 100% evaporation replacement.

**Insect, Disease and Weed Control**

A monitoring program for insects and disease was conducted throughout the life of the crop and were controlled as required. Weeds were controlled prior to transplanting and post transplanting.

**Prior to harvest**

A visual assessment of vegetative vigour and plant frame was conducted at approximately ten weeks after transplanting. Varieties were given a vigour rating from one to five relative to the vigour of the control variety. Observations on plant frame size and the wrapping ability of the plant (ability of inner leaf leaves to self-cover the developing curd) were recorded. The percentage of sibs present was also noted.

**Covering**

Curds were covered as required to prevent curd discolouration. The number of covers required by each variety in addition to curds covered at harvest was recorded. Curds were covered whenever the curd was visible through the frame or if there was a risk that the curd may have become visible before harvest.

**Harvesting**

All leaves were removed from around the cauliflower curd and broccoli head during the harvesting procedure so that an accurate estimation of yield (t/ha) could be made. Harvesting occurred every three to four days as required. Harvesting is delayed as long as possible, up to when curd/head quality would decrease if delayed longer. Broccoli was cut so the stem was about the same length as the diameter of the heads, giving an evenly proportioned head width and stem length.

**Grading**

The cauliflower and broccoli were graded to allow a comparison of their yield and quality to be made. All curds and heads were assessed for total and marketable yield and quality. Marketable yield was determined by the weight of the curd or head, a quality grade score and the density of the curd or head. Colour of the curd and head was also taken into account. A marketable cauliflower curd/broccoli head was considered to be of a high standard of quality (with no visible defects or markings).

An acceptable weight for cauliflower was a curd between 0.5 and 2 kg. The curd should be a round, domed shape and creamy white to white in colour. The quality score must be five or greater and the density score two or greater. An acceptable size for broccoli heads was between 5 and 20cm in diameter and the head should be a green colour with no purple tinges. The quality score for broccoli must be five or greater and density score two or greater.

Density scores were allocated according to the following table. The quality scores are not presented in the results as they are used only to separate poor quality curds or heads in the grading data sheets from those that are of a high standard of quality. Varieties that had a large proportion of high quality curds/heads have had this noted in the results section.

**Table 3:** Density scoring system for cauliflower and broccoli.

<b>Broccoli</b>	<b>Cauliflower</b>
1 = Very open head	1 = Very open curd
2 = Reasonable density (head is closed and floret stems in middle of the head cannot be easily seen)	2 = Reasonable density (florets closed but not very close to stem underneath)
3 = Very tight head (no floret stems in the middle of the head can be seen)	3 = Very tight closed curd (florets curved underneath close to stem)

### **Storage of Product**

Cauliflower curds of a high quality standard were wrapped in paper and placed in a cardboard box which was maintained at 1°C for 14 days. Broccoli heads of a high quality standard were packed into polystyrene boxes filled with ice and then placed in cool store at 1°C for 21 days. After storage the curds and heads were removed and re-graded for after-storage quality.

## Results

The varieties were assessed prior to harvest, at harvest and post storage. The vigour of varieties was assessed relative to the control variety prior to harvest, at harvest and post storage.

**Table 4:** Pre-harvest characteristics of cauliflower and broccoli.

<b>Cauliflower variety</b>	<b>Vigour * (1 – 5)</b>	<b>% Sibs at 10 weeks after transplanting<sup>#</sup></b>	<b>No. of covers required before harvest<sup>^</sup></b>	<b>Comments<sup>@</sup></b>
Castellum	5	2	1	Large upright plant frame. Good wrapper. Average leaf cover at base.
Celsius	5	5	1	Very open plant frame. Average wrapper.
Chassiron	5	2	1	Large plant frame. Reasonable wrapper. Good, clean leaf cover at base.
Dexter	5	3	1	Medium frame. Reasonable wrapper. Average leaf cover at base.
Nova	5	0	1	Reasonable wrapper. Reasonable leaf cover at base.
Vega	5	3	0	Tall frame. Very tight wrapper. Good leaf cover at base.
581	5	4	1	Medium sized frame. Good wrapper. Good, clean leaf cover at base.
Monarch - control	5	0	0	Medium frame. Very good wrapper. Good leaf cover at base.

<b>Broccoli variety</b>	<b>Vigour * (1 – 5)</b>	<b>% Sibs at 10 weeks after transplanting<sup>#</sup></b>	<b>No. of covers required before harvest<sup>^</sup></b>	<b>Comments<sup>@</sup></b>
Agassi	5	na	na	
CLX 33504	4	na	na	
Federer	5	na	na	
Viper - control	5	na	na	

\* 1 = low vigour (less growth)  
5 = high vigour (greatest growth)

<sup>#</sup> Seed was supplied as trial samples only and may not be subject to normal quality checks.

<sup>^</sup> The number of covers prior to harvest indicates those varieties that require covering in addition to the covering procedure carried out during harvest.

<sup>@</sup> Wrapping ability refers to the ability of inner heart leaves to self-cover the developing curd from exposure to the sun.

**Table 5:** Maturity times, spread of harvest and total and marketable yield of cauliflower and broccoli at harvest.

<b>Cauliflower variety</b>	<b>Days from transplant to first harvest<sup>^</sup></b>	<b>Number of picks required (total yield)</b>	<b>Total Yield (t/ha)*</b>	<b>Marketable Yield (t/ha)<sup>#</sup></b>	<b>Difference between total and marketable yield (t/ha)</b>
Castellum	76	4	31.8	27.3	4.5
Celsius	72	3	29.7	25.4	4.3
Chassiron	76	3	30.5	23.5	7.0
Dexter	76	2	32.3	28.2	4.0
Nova	76	2	34.3	28.3	6.1
Vega	76	3	26.0	21.3	4.8
581	76	3	28.0	25.7	2.3
Monarch - control	79	4	27.8	26.6	1.3

<b>Broccoli Variety</b>	<b>Days from transplant to first harvest<sup>^</sup></b>	<b>Number of picks required (total yield)</b>	<b>Total Yield (t/ha)*</b>	<b>Marketable Yield (t/ha)<sup>#</sup></b>	<b>Difference between total and marketable yield (t/ha)</b>
Agassi	63	2	12.1	12.0	0.1
CLX 33504	59	1	13.7	10.4	3.2
Federer	63	2	12.6	12.1	0.5
Viper - control	59	2	15.5	12.0	3.5

<sup>^</sup> Days from transplant to first harvest have been averaged for the two replicates of each variety.

\* Yields may be greater in trials than commercial practice due to all curds being picked. Curds that mature early or late compared to the main harvest period may not be included in commercial yield estimates.

<sup>#</sup> Yield when curds/heads not suitable for market are removed.

**Table 6:** Characteristics of cauliflower and broccoli at harvest.

<b>Cauliflower variety</b>	<b>Average marketable curd weight (g)</b>	<b>Average marketable curd diameter (cm)</b>	<b>Density<sup>^</sup></b>	<b>Colour*</b>
Castellum	1073.6	15.6	2.7	White
Celsius	1123.2	16.0	2.8	White
Chassiron	1122.2	16.2	2.7	Creamy
Dexter	1194.0	16.0	2.8	Off white
Nova	1205.4	16.2	2.9	Off white
Vega	1030.1	15.4	2.9	White
581	1004.5	15.3	2.9	Creamy
Monarch - control	971.7	14.5	3.0	White

<b>Broccoli variety</b>	<b>Average marketable head weight (g)</b>	<b>Average marketable head diameter (cm)</b>	<b>Density<sup>^</sup></b>	<b>Colour</b>
Agassi	309.9	12.2	3.0	Green
CLX 33504	383.5	12.5	2.9	Light green
Federer	309.7	12.1	2.9	Dark green
Viper - control	361.6	13.2	2.3	Green

<sup>^</sup> Average density of total yield.

\* Off white describes a curd that has a slightly creamy colour although it is predominately white.

**Table 7:** Percentage (%) of total yield picked at each harvest\*.

<b>Cauliflower variety</b>	<b>25 Jan (72 DAT)</b>	<b>29 Jan (76 DAT)</b>	<b>1 Feb (79 DAT)</b>	<b>5 Feb (83 DAT)</b>	<b>8 Feb (86 DAT)</b>	<b>12 Feb (90 DAT)</b>	<b>Total</b>
Castellum		45	48	3	4		100
Celsius	35	61	4				100
Chassiron		59	26	15			100
Dexter		64	36				100
Nova		65	35				100
Vega		6	45	49			100
581		42	53	5			100
Monarch - control			20	11	14	55	100

<b>Broccoli variety</b>	<b>12 Jan (59)</b>	<b>16 Jan (63)</b>	<b>19 Jan (66)</b>	<b>Total</b>
Agassi		62	38	100
CLX 33504	100			100
Federer		42	58	100
Viper - control	31	69		100

\* The percentage of yield picked at each harvest has been averaged for the two replicates of each variety.

( ) Figure in brackets represents the number of days from transplanting to first harvest (days after transplanting).



**Table 8:** Cauliflower curd and broccoli head comments

<b>Cauliflower variety</b>	<b>Comments (Harvest)</b>	<b>Comments (Post-storage)*</b>
Castellum	Very good harvest quality. Marketable yield reduced by irregular curd shape (lumpy) and yellowing.	Minor loss of post storage quality due to cell deterioration.
Celsius	Good harvest quality. Marketable yield reduced by yellowing.	na
Chassiron	Reasonable harvest quality. Marketable yield reduced by irregular curd shape (lumpy) and 'riciness'.	Minor loss of post storage quality due to cell collapse.
Dexter	Very good harvest quality. Marketable yield reduced by irregular curd shape (lumpy) and yellowing.	Loss of post storage quality due to cell collapse and reduction in curd firmness.
Nova	Very good harvest quality. Marketable yield reduced by yellowing and feeding damage caused by staphylinid beetle.	Minor loss of post storage quality due to cell collapse.
Vega	Reasonable harvest quality. Marketable yield may have been reduced due to feeding damage caused by staphylinid beetle.	Excellent post storage quality.
581	Good harvest quality. Minor reduction in marketable yield due to irregular curd shape (lumpy) and yellowing.	Minor cell collapse.
Monarch - control	Good harvest quality. Minor reduction in marketable yield due to yellowing.	na

<b>Broccoli variety</b>	<b>Comments (Harvest)</b>	<b>Comments (Post-storage)*</b>
Agassi	Very good harvest quality. Very minor reduction in marketable yield due to uneven beading.	Excellent post storage quality. Minor opening of florets.
CLX 33504	Good harvest quality. Marketable yield reduced by uneven dome shape and 'purpling'.	Excellent post storage quality.
Federer	Very good harvest quality. Minor reduction in marketable yield due to uneven dome shape.	Excellent post storage quality.
Viper - control	Very good harvest quality. Marketable yield reduced by uneven dome shape.	Excellent post storage quality. Minor opening of florets.

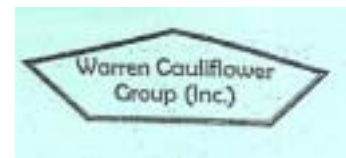
\* Collapse is the breakdown of individual 'flowers' within a floret. Discolouration of the affected 'flowers' has not yet occurred. Deterioration is the next stage from cell collapse, when the individual 'flowers' have started to turn brown or black.

## Acknowledgements

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- *Department of Agriculture and Food, Western Australia*
- *Lefroy Valley Seeds*
- *Rijk Zwaan*
- *Springall Nursery*
- *Syngenta (S&G)*
- *Terranova Seeds*
- *Warren Cauliflower Group (Inc)*

*Clause Henderson Team*



## Appendix 1

### Weather records at Manjimup Horticultural Research Institute (November 2006 – February 2007)

Monthly weather summary – November 2006

Date	Temperature Max	Temperature Min	Evaporation mm	Rain mm	Comment
1-Nov-06	17.8	8.9	2.4	0.0	Overcast, mild
2-Nov-06	16.9	10.2	3.5	0.0	Drizzle, mild
3-Nov-06	16.7	10.8	1.7	0.2	Fine, mild
4-Nov-06	21.5	12.5	5.4	0.0	Fine, warm
5-Nov-06	23.6	13.1	3.1	0.0	Windy, cloudy, warm
6-Nov-06	25.4	13.7	3.6	0.0	Windy, fine, warm
7-Nov-06	25.9	13.9	6.8	0.4	Windy, cloudy, warm
8-Nov-06	23.8	15.6	3.5	0.0	Windy, cloudy, warm
9-Nov-06	23.3	14.9	5.2	0.0	Windy, showers, warm
10-Nov-06	22.4	12.4	3.9	5.5	Windy, showers, warm
11-Nov-06	18.2	11.8	3.0	7.8	Showers, mild
12-Nov-06	16.1	11.5	2.7	2.8	Showers, mild
13-Nov-06	18.9	10.0	3.3	0.0	Fine, mild
14-Nov-06	25.4	13	5.4	0.0	Windy, fine, warm
15-Nov-06	26.5	12.6	6.6	0.0	Windy, fine, warm
16-Nov-06	29.4	14.2	7.1	0.0	Windy, showers, hot
17-Nov-06	21.0	13.1	3.4	2.8	Overcast, drizzle, warm
18-Nov-06	18.7	11.9	2.1	0.0	Fine, mild
19-Nov-06	25.2	11.3	5.4	0.2	Cloudy, overnight showers, warm
20-Nov-06	23.3	13.5	4.8	1.8	Windy, cloudy, warm
21-Nov-06	20.1	12.0	4.8	0.0	Overcast, mild
22-Nov-06	21.4	11.1	3.6	0.0	Fine, warm
23-Nov-06	28.3	12.4	7.3	0.0	Fine, warm
24-Nov-06	23.7	14.1	3.7	0.0	Overcast, warm
25-Nov-06	21.3	10.1	4.5	0.0	Fine, warm
26-Nov-06	24.4	10.1	6.2	0.0	Fine, warm
27-Nov-06	28.7	14.7	6.4	0.0	Fine, hot
28-Nov-06	27.6	13.0	6.2	0.0	Overcast, rain developing, warm
29-Nov-06	22.4	10.4	2.5	5.0	Showers, warm
30-Nov-06	17.8	11.1	4.1	7.2	Cloudy, mild

## Monthly weather summary – December 2006

Date	Temperature		Evaporation mm	Rain mm	Comment
	Max	Min			
1-Dec-06	16.9	9.4	3.4	0.2	Cloudy, mild
2-Dec-06	17.8	7.4	4.1	0.0	Fine, mild
3-Dec-06	23.8	9.1	6.6	0.0	Fine, warm
4-Dec-06	27.4	10.7	7.2	0.0	Windy, cloudy, warm
5-Dec-06	19.3	8.4	3.2	0.0	Fine, mild
6-Dec-06	20.5	7.4	5.2	0.0	Fine, warm
7-Dec-06	29.0	17.2	7.4	0.0	Cloudy, overnight showers, warm
8-Dec-06	24.4	10.5	7.3	4.2	Showers, warm
9-Dec-06	17.2	7.0	5.5	0.2	Cloudy, mild
10-Dec-06	18.5	9.0	5.0	0.0	Cloudy, mild
11-Dec-06	21.2	10.1	6.6	0.0	Cloudy, warm
12-Dec-06	27.2	11.2	6.6	0.0	Fine, hot
13-Dec-06	28.6	11.8	7.1	0.0	Cloudy, windy, hot
14-Dec-06	21.4	7.7	4.7	0.0	Fine, warm
15-Dec-06	24.2	11.3	7.8	0.0	Fine, warm
16-Dec-06	29.5	13.0	8.3	0.0	Fine, hot
17-Dec-06	34.4	13.7	7.8	0.0	Fine, very hot
18-Dec-06	26.0	14.6	5.8	0.0	Fine, warm
19-Dec-06	28.0	15.2	6.2	0.0	Fine, thundery showers, hot
20-Dec-06	31.8	15.8	4.6	0.0	Overcast drizzle, hot
21-Dec-06	17.1	9.8	0.8	0.0	Drizzle, overcast, mild
22-Dec-06	18.0	10.1	3.2	0.8	Cloudy, mild
23-Dec-06	22.6	9.4	6.7	0.2	Fine, warm
24-Dec-06	24.8	10.9	8.2	0.0	Fine, warm
25-Dec-06	25.7	11.8	9.0	0.0	Fine, warm
26-Dec-06	28.8	13.2	8.9	0.0	Fine, hot
27-Dec-06	32.2	16.0	9.6	0.0	Fine, hot
28-Dec-06	34.3	18.8	10.4	0.0	Fine, thundery showers, hot
29-Dec-06	30.1	15.5	6.7	1.0	Fine, hot
30-Dec-06	21.6	12.7	5.0	0.0	Fine, warm
31-Dec-06	23.7	12.8	6.1	0.0	Fine, warm

## Monthly weather summary – January 2007

Date	Temperature		Evaporation mm	Rain mm	Comment
	Max	Min			
1-Jan-07	30.1	14.1	8.1	0.0	Fine, hot
2-Jan-07	26.0	14.3	6.7	1.8	Rain developing, warm
3-Jan-07	15.3	10.8	0.4	19.2	Showers, cool
4-Jan-07	16.9	10.8	2.7	0.8	Overcast, windy, cool
5-Jan-07	15.8	12.1	1.9	0.2	Cloudy, cool
6-Jan-07	18.4	12.4	3.9	0.0	Fine, mild
7-Jan-07	23.8	9.9	7.4	0.0	Fine, warm
8-Jan-07	28.8	12.0	7.9	0.0	Fine, hot
9-Jan-07	24.7	13.8	7.1	0.0	Windy, showers, warm
10-Jan-07	20.0	12.2	2.8	9.0	Showers, mild
11-Jan-07	17.3	11.3	3.0	0.8	Windy, cloudy, drizzle, mild
12-Jan-07	21.1	12.3	4.7	0.0	Fine, mild
13-Jan-07	25.9	13.2	7.4	0.0	Fine, warm
14-Jan-07	31.2	14.9	7.8	0.0	Fine, hot
15-Jan-07	35.4	15.4	7.5	0.0	Drizzle, overcast, hot
16-Jan-07	18.2	9.9	3.5	1.2	Fine, mild
17-Jan-07	20.1	9.4	5.9	0.0	Fine, mild
18-Jan-07	23.4	10.1	5.7	0.0	Cloudy, isolated drizzle, warm
19-Jan-07	18.7	8.3	2.9	0.2	Overcast drizzle, mild
20-Jan-07	18.4	6.6	4.3	0.0	Fine, mild
21-Jan-07	24.4	9.4	5.9	0.0	Fine, warm
22-Jan-07	29.0	12.2	7.8	0.0	Fine, hot
23-Jan-07	27.0	14.0	6.8	0.0	Fine, hot
24-Jan-07	25.5	11.4	6.4	0.0	Fine, warm
25-Jan-07	28.5	12.8	7.6	0.0	Fine, hot
26-Jan-07	30.3	14.8	8.4	0.0	Fine, hot
27-Jan-07	32.2	15.3	9.0	0.0	Fine, hot
28-Jan-07	34.1	18.6	8.8	0.0	Fine, very hot
29-Jan-07	37.0	20.0	7.5	1.8	AM Thundery showers, hot
30-Jan-07	33.1	15.3	6.5	0.0	Fine, hot
31-Jan-07	28.5	16.5	6.7	0.0	Overcast, hot

## Monthly weather summary – February 2007

Date	Temperature		Evaporation mm	Rain mm	Comment
	Max	Min			
1-Feb-07	23.4	15.1	4.4	0.0	Fine, warm
2-Feb-07	25.6	12.1	6.8	0.0	Fine, warm
3-Feb-07	33.5	18.2	8.1	0.0	Fine, very hot
4-Feb-07	34.8	16.4	5.6	0.0	Windy, cloudy, drizzle, hot
5-Feb-07	20.6	11.6	4.1	0.0	Windy, fine, warm
6-Feb-07	23.7	10.8	7.6	0.0	Cloudy, warm
7-Feb-07	24.4	11.1	6.7	0.0	Windy, cloudy, warm
8-Feb-07	28.2	13.9	6.9	0.0	Drizzle, cloudy, warm
9-Feb-07	19.2	11.1	2.2	0.0	Fine, mild
10-Feb-07	27.2	15.9	7.4	0.0	Fine, warm
11-Feb-07	28.8	10.8	5.0	0.0	Windy, cloudy, warm
12-Feb-07	26.3	13.4	7.1	0.2	Fine, hot
13-Feb-07	23.3	11.5	6.5	0.0	Fine, warm
14-Feb-07	27.5	10.7	6.9	0.0	Fine, warm
15-Feb-07	24.2	13.9	6.3	1.0	AM Drizzle, cloudy, warm
16-Feb-07	21.2	9.2	4.1	0.4	Windy, cloudy, warm
17-Feb-07	20.2	13.3	3.5	4.0	Showers, windy, mild
18-Feb-07	18.5	7.9	3.9	0.0	Fine, mild
19-Feb-07	23.7	11.5	6.4	0.2	Cloudy, warm
20-Feb-07	24.4	11.9	5.8	0.0	Fine, warm
21-Feb-07	30.0	13.3	6.9	0.0	Fine, hot
22-Feb-07	33.0	13.6	6.9	0.0	Fine, hot
23-Feb-07	26.2	16.6	6.5	0.0	Fine, warm
24-Feb-07	24.8	15.1	5.9	0.0	Fine, warm
25-Feb-07	25.3	17.2	6.8	0.0	Fine, warm
26-Feb-07	28.9	16.8	7.2	0.0	Warm, thundery showers, hot
27-Feb-07	27.7	17.1	3.5	1.0	Cloudy, warm
28-Feb-07	31.7	16.3	6.0	1.2	Windy, showers, hot

## Appendix 2

### Seed company details:

<b>Cauliflower Variety</b>	<b>Seed Company</b>	<b>Contact Person</b>	<b>Mobile Number</b>
Castellum (formerly WA 05 – 3)	Rijk Zwaan	Dusanka Milunovic	0439 330 123
Celsius	Lefroy Valley	Alek Moreno	0418 914 714
Chassiron	Clause Henderson	Graham Adams	0400 622 314
Dexter (formerly WA 05 – 1)	Rijk Zwaan	Dusanka Milunovic	0439 330 123
Nova	Terranova seeds	Jamie Hagart	0417 930 233
Vega	Terranova seeds	Jamie Hagart	0417 930 233
581	Syngenta Seeds	Kevin Gugiatti	0408 499 990
Monarch - control	Syngenta Seeds	Kevin Gugiatti	0408 499 990

<b>Broccoli Variety</b>	<b>Seed Company</b>	<b>Contact Person</b>	<b>Mobile Number</b>
Agassi (formerly WA 05 -1B)	Rijk Zwaan	Dusanka Milunovic	0439 330 123
CLX 33504	Clause Henderson	Graham Adams	0400 622 314
Federer (formerly WA 05-2B)	Rijk Zwaan	Dusanka Milunovic	0439 330 123
Viper - control	Lefroy Valley	Alek Moreno	0418 914 714

### Important Disclaimer

The Chief Executive Officer of the Department of Agriculture and Food and the State of Western Australia accept no liability whatsoever by reason of negligence or otherwise arising from the use or release of this information or any part of it.

This document has been prepared from a cauliflower and broccoli variety evaluation trial conducted at the Manjimup Horticultural Research Institute, South Western Highway, Manjimup WA 6258. The results reflect the growth characteristics, yield, quality and density of the cauliflower and broccoli varieties as recorded at this site during the conditions of the growing period (November 2006 to February 2007).

Variations in the characteristics of the cauliflower and broccoli varieties may occur during other growth period, locations and management programs. The availability of the document does not imply suitability to other areas, growth periods or management programs and any interpretation is the responsibility of the user.