

**Project title:** **Field Vegetables: An evaluation of autumn/winter cauliflower, spring cabbage cultivars and other winter brassica varieties**

**Project number:** FV 462

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**Key staff:** NIAB, PGRO, ADAS, Duchy College

**Location of project:** Trevarnon Farm, Gwithian, Cornwall

**Industry Representative:** Ellis Luckhurst

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*The results and conclusions in this report are based on an investigation conducted over a one-year period. The conditions under which the experiments were carried out and the results have been reported in detail and with accuracy. However, because of the biological nature of the work it must be borne in mind that different circumstances and conditions could produce different results. Therefore, care must be taken with interpretation of the results, especially if they are used as the basis for commercial product recommendations.*

## Brassica Trials

### Brassica Trials Cornwall 2019 -20

#### Results summary

#### Autumn Cauliflower Variety Trial

7 varieties transplanted on the 15<sup>th</sup> and 24<sup>th</sup> July 2019. 25315/Ha (10249/Acre)

Transplanted into good ground conditions resulting in very good establishment. High % cut out of Grade 1 produce from all varieties.

Seed house	Variety	Average 50% cut date	% Class 1	Crates/Ha size 8	Crates/Ha Size 6
Elsoms	Skywalker	10.10.19	88	1993	1054
Sakata	Jericho	15.10.19	94	2119	1139
Sakata	Denton	20.10.19	90	2309	718
Sakata	Amandine	21.10.19	93	2909	42
Rijk Zwaan	Milandes	22.10.19	90	2719	168
Sakata	CAU 02944	29.10.19	84	2564	126
Bayer	SV 5965	03.11.19	88	2658	170

#### Autumn Cauliflower averages

The influence of growing conditions and weather patterns impacts growth, harvesting periods and quality of product, therefore averages of performance over several seasons provides a more accurate guide to assist in crop planning and projected yields.

25315/Ha (10249/Acre)

Seed house	Variety	Average 50% cut date	% Class 1	Class 1 Marketable Heads/Ha	Seasons in Trials
Sakata	Denton	12 <sup>th</sup> October	92	23032	2
Elsoms	Skywalker	12 <sup>th</sup> October	90	22775	2
Sakata	Jericho	16 <sup>th</sup> October	89	22479	5
Sakata	Amandine	20 <sup>th</sup> October	88	22407	6
Clause	Navalo	21 <sup>st</sup> October	81	19929	6
Enza Zaden	Anique	24 <sup>th</sup> October	90	21207	5
Rijk Zwaan	Milandes	26 <sup>th</sup> October	89	22442	3
Sakata	CAU 02944	31 <sup>st</sup> October	85	21176	2
Bayer	SV 5965	3 <sup>rd</sup> November	85	21544	4

## **Winter Cauliflower Variety Trial**

34 varieties from 7 seed houses transplanted on the 15<sup>th</sup> and 24<sup>th</sup> July 2019 21192/Ha (8580/Acre). Transplanted into good ground conditions resulting in very good establishment. Harvest period from early November to the end of March.

The early varieties in November were 7 – 10 days ahead of normal harvesting periods with high % Grade 1 produce. However the early December heading varieties were on average 10 days later than expected but still producing good yields. This trend followed into January. With well above average temperatures in February and March the crop was 7 – 10 days earlier than anticipated but still producing good yields of Grade 1 produce.

The wettest Autumn for over 35 years resulted in difficult harvesting conditions on some farms with some disease on the leaf of the crops but this has not affected yields of late Summer and Winter Cauliflower.

## **Cauliflower Confidential plots**

Observations and records of over 100 new lines from a range of seed houses covering the harvest period of Mid October to Late May, produced a number of excellent new varieties in the pipeline at various stages of development. Further Trials in 2020-21 will confirm the viability of some of these lines.



## Winter Cauliflower Variety Trial Summary results 2019-20

21192/Ha (8580/Acre)

Seed house	Variety	Average 50% cut date	% Class 1	Crates/Ha size 8	Crates/Ha Size 6
Rijk Zwaan	Tramont	6.11.19	84	1776	600
Elsoms	Telde	7.11.19	86	2166	141
Bayer	SV 9582	12.11.19	87	2198	141
Clause	Diwan	12.11.19	92	2304	178
Clause	16-5006	18.11.19	90	2275	141
Elsoms	Lot 1795060	18.11.19	82	1800	494
Elsoms	Belot	30.11.19	67	1758	37
Elsoms	Maginot	03.12.19	80	2094	37
Syngenta	SGC 5073	23.12.19	82	2119	72
Clause	Triomphant	26.12.19	82	1882	390
Syngenta	C4044	30.12.19	80	2040	106
Elsoms	Paciano	05.01.20	71	1724	212
Clause	Jeroboam	09.01.20	69	1751	72
Elsoms	Baterno	09.01.20	76	1855	212
Syngenta	Alpen	09.01.20	69	1828	0
Syngenta	5086	23.01.20	68	1749	146
Vilmorin	Trevaskis	30.01.20	80	1988	178
Clause	Brick	06.02.20	74	1828	178
Bayer	SV5697	06.02.20	81	2119	91
Elsoms	Lannion	09.02.20	74	1874	106
Syngenta	5092	12.02.20	70	1642	284
Syngenta	Clemen	15.02.20	78	1909	212
Bayer	Carantic	15.02.20	77	1927	141
Clause	16-6021	18.02.20	71	1620	329
Clause	Mengwenn	18.02.20	77	1981	716
Elsoms	Gernoa	21.02.20	67	1796	37
Vilmorin	Stromness	03.03.20	93	2092	494
Elsoms	Isadora	06.03.20	87	2225	37
Vilmorin	Parotis	10.03.20	83	2119	106
Elsoms	Tempest	10.03.20	74	1909	72
Vilmorin	Vedis	13.03.20	74	1803	212
Elsoms	Almeria	13.03.20	85	1618	847
Vilmorin	AK2706	20.03.20	78	1640	637
Elsoms	Vogue	17.03.20	84	1670	741

### Winter Cauliflower averages (One to seven years)

The influence of growing conditions and weather patterns impacts growth, harvesting periods and quality of product, therefore averages of performance over several seasons provides a more accurate guide to assist in crop planning and projected yields.

21192/Ha (8580/Acre).

A 5% increase in yield of Winter Cauliflower produces an additional gross income of £486/Ha (£197/acre).

Seed house	Variety	Average 50% cut date	% Class 1	Class 1 Marketable Heads/Ha	Seasons in Trials
Bayer	5982	28 <sup>th</sup> October	87	17477	7
Clause	Diwan	1 <sup>st</sup> November	79	16529	7
Clause	Triumphant	2 <sup>nd</sup> December	73	15711	7
Elsoms	Paciano	22 <sup>nd</sup> December	60	12528	7
Clause	Jeroboam	24 <sup>th</sup> December	73	15375	6
Syngenta	Alpen	11 <sup>th</sup> January	68	14469	5
Hazera	Trevaskis	22 <sup>nd</sup> January	77	16297	7
Bayer	5697	31 <sup>st</sup> January	75	15953	7
Clause	Brick	31 <sup>st</sup> January	67	14156	7
Bayer	Carantic	4 <sup>th</sup> February	77	16282	7
Elsoms	Lannion	6 <sup>th</sup> February	79	16635	3
Clause	Redoutable	8 <sup>th</sup> February	68	14486	6
Clause	Mengwenn	19 <sup>th</sup> February	84	17892	4
Vilmorin	Parotis	2 <sup>nd</sup> March	71	14884	6
Syngenta	Clemen	3 <sup>rd</sup> March	86	18287	6
Clause	Mascaret	6 <sup>th</sup> March	75	15939	6
Elsoms	Almeria	14 <sup>th</sup> March	85	18238	3
Vilmorin	Vedis	16 <sup>th</sup> March	78	17174	3
Elsoms	Douglas	1 <sup>st</sup> April	68	14580	3
Elsoms	Vogue	2 <sup>nd</sup> April	82	17351	4
Clause	Aureo	15 <sup>th</sup> April	86	18334	2
Vilmorin	Arletis	18 <sup>th</sup> April	91	19330	1
Elsoms	Fletcher	24 <sup>th</sup> April	85	18151	5
Elsoms	Cartagena	1 <sup>st</sup> May	73	15398	5

## Late Winter Cauliflower Variety Trial 2019-20

7 varieties from 4 seed houses transplanted on the 15<sup>th</sup> and 24<sup>th</sup> July 2019 21192/Ha (8580/Acre). Transplanted into good ground conditions resulting in very good establishment. The projected harvest period being from April to the end of May, however excellent growing conditions in February and March resulted in the later heading varieties harvesting up to 3 weeks earlier than expected.

21192/Ha (8580/Acre).

Seed house	Variety	Average 50% cut date	% Class 1	Crates/Ha size 8	Crates/Ha Size 6
Bayer	Tenfold	24.03.20	74	1430	706
Elsoms	Douglas	05.04.20	72	1875	40
Clause	Aureo	13.04.20	87	1986	425
Elsoms	Fletcher	16.04.20	93	2304	212
Vilmorin	Arletis	18.04.20	91	1828	778
Elsoms	Cartagena	21.04.20	72	1484	563
Elsoms	Seth	27.04.20	72	1299	813

## Spring Greens Variety Trial

Five varieties from 3 seed houses. Module raised plants that were transplanted 05.09.2019 into good conditions.

5 row beds 50cms between rows and 20cms in the rows. 31000/Acre

The extremely wet autumn impacted on the establishment and subsequent growth of some cultivars.

Harvested on 28.03.2020

Seed House /Cultivar	Comment	Average weight of marketable green
<b>Monsanto Winter Supreme</b>	Very uniform. Very good greens. 90% crop marketed. Compact.	363 grams
<b>A. L. Tozer Wintergreen</b>	Variable sized greens. Losses due to poor establishment and waterlogging. 70% crop marketed.	224 grams
<b>Nickerson Kempsey</b>	Uniform. 76% crop marketed. Losses due to poor establishment and waterlogging. Good Greens. Easy to pack.	268 grams
<b>Monsanto Winter Special</b>	Very uniform. Very good greens. Dark green. Short nodes. 93% of crop marketed.	391 grams
<b>Elsoms Antonio</b>	Very uniform. Dark green leaves. Excellent looking greens however ran to seed. Crops transplanted earlier and later on neighboring farms did not run to seed, which highlights that transplanting dates are critical for this new introduction.	

