

Grower Summary

FV 202g

Field Vegetables: An evaluation of autumn/winter cauliflower, spring cabbage cultivars and other winter Brassica crops.

Annual 2016

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Project title:	Field Vegetables: An evaluation of autumn/winter cauliflower, spring cabbage cultivars and other winter Brassica crops.
Project number:	FV 202g
Project leader:	Bill Herring, Duchy College
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Previous report:	Annual report
Key staff:	Bill Herring Malcolm Millar Ellis Luckhurst
Location of project:	Trevarnon Farm, Gwithian, Cornwall.
Industry representative:	Ellis Luckhurst
Date project commenced:	1 st April 2014
Date project completed (or expected completion date):	30 th June 2017

Grower summary

Headline

- The introduction of new autumn and winter cauliflower cultivars has again increased Grade 1 marketable product where initiation of curds was not impacted by the cool night temperatures in August, which was very unusual at that time of the year. Some new introductions being over 10% above standard cultivars, based on 25315 plants/hectare (10249/acre) for the autumn cultivars and 21193 plants/hectare (8580/acre) for the winter cultivars.
- Potential income can be increased by £95/ha for every additional 1% Class 1 marketed. This is a real possibility with many producers now on a fixed price for their produce.

Background

Duchy College working in partnership with eight national seed houses and local growers have carried out the evaluation of commercially available autumn, winter cauliflower and spring greens cultivars over the past 20 years.

Initially introduced into the Confidential/Screening trials and then within the commercially available trials, each cultivar has been recorded and evaluated year on year. With the improvement in plant breeding and new cultivars being introduced these need to be assessed alongside current and established varieties in order to compare yields and quality of produce.

With improved uniformity, disease resistance and curd protection the need to compare with current cultivars is even more important in order to plan the production of the crop to meet changing market requirements and provide the best returns to the grower.

Results

The following cultivars are of most interest to the industry. Some are new introductions to compliment cultivars that have been grown as the standard cultivars for specific production periods.

The cauliflower trials were transplanted on the 9th and 17th July 2015, similar to previous seasons. Most commercial growers transplant from late June to early August.

Many of the late autumn cultivars performed well despite the weather conditions, as can be seen in Table 1.

Results over several seasons will need to be considered when selecting cultivars for production. Full information on all cultivars can be found in the Full Trial Report.

Comments on curd protection, leaf colour, disease resistance/susceptibility, uniformity, curd colour and density, suitability for various markets, defects and ease of harvesting are found in the Appendices.

The spring greens trial was planted into good conditions on the 9th September 2015 and produced high quality greens, some being harvested in January and the later cultivars in March 2016.

Autumn Cauliflower 2015 Top performing cultivars

A number of autumn cultivars also produced large curds. (6/tray).

Transplanted at 25315 plants/hectare (10249/acre) on 9th July 2015

Please refer to the Full Trial Report for further details.

Table 1. Autumn Cauliflower 2015 Top performing cultivars

Seed House	Cultivar	% Class 1	Trays/hectare (acre) Class 1 (8/tray)	Heading period 10 – 90% dates
Clause	Rafale	84	2438 (987)	06.10.15 - 14.10.15
Clause	Naruto	91	1996 (808)	08.10.15 - 13.10.15
Sakata	Jericho	83	2438 (987)	08.10.15 - 15.10.15
Sakata	Amadine	88	2468 (999)	08.10.15 - 17.10.15
Rijk Zwaan	26 - 407	85	2532 (1025)	10.10.15 - 24.10.15
Clause	Optimist	81	2374 (961)	13.10.15 - 27.10.15
Monsanto	5982	96	2300 (931)	26.10.15 - 02.11.15

Winter Cauliflower 2015 – 16 Top performing cultivars

Typically harvesting from early November to April. Most commercial cultivars grown produce a minimum of 70% marketable crop with some cultivars producing 70% + Class 1 cauliflower at the beginning and end of this harvest period, in a typical season.

Yields will vary as there were two transplanting dates (9th and 17th July 2015). Plant spacings were the same for each cultivar within the trials.

Some cultivars also produced larger curds that are included on the table below.

Transplanted at 21193 plants/hectare (8580/acre)

Please refer to the Full Trial Report for further details.

Table 2. Winter Cauliflower 2015 – 16 Top performing cultivars

Seed House	Cultivar	% Class 1	Trays/hectare (acre)		Heading period 10 – 90% dates
			Class 1 (8/tray)	(6/tray)	
Enza	Anique	92	847(343)	2124(860)	22.10.15 - 27.10.15
Enza	Rafique	94	1731(701)	961(389)	26.10.15 - 02.11.15
Clause	Galiote	83	1166(472)	1359(550)	29.10.15 - 05.11.15
Elsoms	Telde	83	1600(648)	766(310)	29.10.15 - 14.11.15
Clause	Diwan	88	1489(603)	1104(447)	02.11.15 - 07.11.15
Elsoms	Belot	87	1855(751)	620(251)	05.11.15 - 17.11.15
Enza	Agility	86	1260(510)	1561(632)	05.11.15 - 12.11.15
Clause	Triomphant	88	2020(818)	398(161)	12.11.15 - 19.11.15
Elsoms	Paciano	55	1442(584)		22.11.15 - 10.12.15
Clause	CLX 33422	65	1712(693)		27.11.15 - 10.12.15
Monsanto	Terminillo	54	1324(536)	133(54)	02.12.15 - 07.12.15
Clause	Jubarte	62	1647(667)		02.12.15 - 13.12.15
A L Tozer	FT 1018	51	1354(548)		15.12.15 - 26.12.15
Nickerson	Trevaskis	60	1591(644)		19.12.15 - 29.12.15
Monsanto	5697	61	1608(651)		19.12.15 - 29.12.15
Clause	Fleet	45	1183(479)		27.12.15 - 11.01.16
Monsanto	Carantic	42	1089(441)		31.12.15 - 16.01.16
A L Tozer	FT 2067	34	902(365)		02.01.16 - 27.01.16
Clause	CLX 33518	57	1489(603)		17.03.16 - 03.04.16
A L Tozer	FT 2072	59	1193(483)	487(197)	07.04.16 - 25.04.16

Late heading Winter Cauliflower 2014-15 Top performing cultivars

These plots were transplanted on the 9th July 2015 aiming to head in the period of April through to late May 2016. Over recent seasons there has been a shortage of cauliflower for this period which has resulted in the increase of imported produce to maintain supply to the various market outlets. Although fixed price returns to the grower over this heading period are not guaranteed there is scope to aim for this market share.

The cool nights in the previous autumn did not have an impact on the later heading cauliflower in regards initiation of the curds and in the main cultivars were harvested within their expected harvesting slots. However some cultivars suffered from the very wet autumn, resulting in plants wilting, poor re-growth in the spring and subsequently poor marketable yields.

Transplanted at 21193 plants/hectare (8580/acre)

Some cultivars also produced larger curds which are included in the table below.

Please refer to the 'Full Trial Report' for further details.

Table 3. Late heading Winter Cauliflower 2014-15 Top performing cultivars

Seed House	Cultivar	% Class 1	Trays/hectare (acre)		Heading period 10 – 90% dates
			Class 1 (8/tray)	(6/tray)	
Elsoms	Douglas	58	1536(622)		04.04.16 - 25.04.16
Elsoms	Fletcher	73	1932(782)		02.05.16 - 23.05.16
Elsoms	Cartagena	67	1544(625)	282(114)	12.05.16 - 28.05.16
A L Tozer	FT 3007	75	1383(560)	785(318)	16.05.16 - 04.06.16
A L Tozer	FT 3060 (Flugga)	77	1472(596)	736(298)	16.05.16 - 04.06.16
Vilmorin	Alpionis	65	1351(547)	494(200)	16.05.16 - 06.06.16
A L Tozer	FT 3069 (Godrevy)	51	830(366)	830(336)	29.05.16 - 06.06.16
A L Tozer	FT 3042 (Dungeness)	53	1126(456)	363(147)	28.05.16 - 13.06.16
A L Tozer	FT 3059 (Skerryvore)	62	978(396)	531(215)	02.06.16 - 08.06.16
Nickerson	VT 3004	72	1457(590)	576(233)	02.06.16 - 09.06.16

The trials were undertaken at Trevarnon Farm, Gwithian, Cornwall. The soil type being a sandy clay loam. The site is south facing and is part of a farm rotation based around Brassicas, cereals and grass break crops.

The farm has traditionally grown Brassica crops supplying both the multiple and local markets.

The trial itself is treated as a commercial crop undergoing similar field operations as the commercially grown crops. The cultivars are harvested twice a week on a similar basis as commercial crops on the farm.

Main conclusions

All of the cultivars that have performed well during 2015 – 16 are commercially available to growers, each with their own characteristics, traits and qualities. The large number of cultivars available enables growers to select suitable cultivars for their production systems, which vary from farm to farm and area to area. The cultivars available ensure continuous supply complimenting each other throughout the production period. However there is a continuous need to improve output and quality especially in the production period between late December and early February where yields can be lower. There have been a number of new introductions over this period which have performed very well alongside established cultivars.

Trials have also been undertaken where a number of confidential cultivars from a range of seed companies have been assessed with some new named cultivars being introduced into the commercially available cultivar trials for 2015 -16 and a number to follow in subsequent years. There is renewed interest in the late heading cultivars for the heading period of April and into mid-May.

Table 4. Spring Green cultivars 2015 – 16

Seed house	Cultivar
Monsanto	Winter Supreme
A L Tozer	Winter Green
Hazera	Winter Jewel
Nickerson	Kempsy
Monsanto	Winter Special

Table 5. Spring Green cultivars 2015 – 16 Results

Seed House Cultivar	Comments and observations on 19.01.2016	Transplanting Date	Harvest dates	Pack out yield Trays/hectare (acre) (10 bags x 550grams)
Monsanto Winter Supreme	Very leafy. Paler inner leaf.	10.09.15	19.01.2016	1541 (624)

	Dark green outer leaves. Very Uniform. Upright frame. Good greens. Some tip burn (8%)		10.03.2016	1593 (645)
A. L. Tozer Wintergreen (Traditional open pollinated variety)	Crinkled leaf type. Variable size plants/greens. Dark green leaf. Leggy.	10.09.15	19.01.2016	1234 (502)
			10.03.2016	1383 (560)
Hazera Winter Jewel	Compact. Very Uniform. Paler inner leaf. Low growing. Will heart up if not cut as a green. Ringspot on outer leaves. Good late greens.	10.09.15	10.03.16	1087 (440)
Nickerson Kempsy	Uniform. Medium height. Slightly crinkled leaf. Mid green in colour. Good greens. Some ringspot on outer leaves.	10.09.15	19.01.2016	1304 (528)
			10.03.2016	1420 (575)
Monsanto Winter Special	Compact leaf and stem. Dark green leaf. Very uniform. Heavy cabbage greens. Easy to cut. Not as tall as Winter Supreme.	10.09.15	19.01.2016	1482 (600)
			10.03.2016	1154 (625)