

Independent evaluation of autumn and winter cauliflower, spring cabbage, and other winter Brassica crops 2017/18



Figure 1. January Open Day 2018

Action points

- **Autumn cauliflower cultivar 217740 (Enza Zaden), heading in early November, was highest yielding, with a yield of 92 per cent Class 1**
- **Winter cauliflower cultivar Vedis (Hazera), heading early April, was highest yielding with 86 per cent Class 1 with several other cultivars producing similar yields**
- **Spring cabbage cultivar Winter Special was the highest yielding with 93 per cent of the crop marketed and an average weight of 328 grams**

Introduction

Over 90 per cent of all autumn/winter cauliflower and spring cabbage produced in the UK is now sold through the supermarkets as a programmed part of their 52-week supply. Continuity of supply is paramount when producing vegetables for supermarkets to a defined specification of quality, quantity and timeliness. However, predicting the timing and yield of Brassica crops, especially cauliflower, is problematic, with crop maturity dependent on a range of

parameters, including the weather. The consequences of getting it wrong include both under and oversupply, which have to be managed at significant cost to the grower.

One of the ways in which continuity of supply can be managed is by growing a range of cultivars with different maturity times. There are new cultivar introductions most years, with at least 25–30 different cultivars grown commercially by growers to cover the harvesting period, often with at least three cultivars overlapping the same harvest window to ensure supply. When comparing commercially grown cultivars of 2007 and 2017, only five cultivars survived that period, with the remainder being superseded by new and improved cultivars. This highlights the need to continue evaluating new cultivars alongside existing ones to ensure that yields, quality of product and continuity of supply are maintained throughout the harvest period – October to late May for cauliflower and December to March for spring greens.

Any loss in competitiveness would irreparably damage the industry and displace production and associated jobs to the UK's main competitors in France, Spain and Italy. Varietal development is crucial to ensure that all home-grown produce continues to match or exceed the quality and year-round availability of imported produce with which it is in direct competition.

The 2016/17 season was exceptional, with nearly all cultivars of autumn and winter cauliflower harvested between October and June producing yields of between 10 and 20 per cent above long term seasonal averages. This was attributed to excellent planting conditions, very good cabbage root-fly control and weather conditions that were conducive to good growth with limited flushes of overproduction throughout the season. This put growers in good heart for the 2017/18 season. A 10 per cent increase in yield of winter cauliflower produces an additional gross income of £394/acre (£973/hectare).

Duchy College, funded by AHDB and working in partnership with eight national seed houses and local growers, has carried out the evaluation of commercially available autumn and winter cauliflower and spring greens cultivars over the past 23 years. With the improvement in plant breeding, uniformity, disease resistance and curd protection, there is a continual need to evaluate new cultivars being introduced alongside current and established cultivars to compare both yield and quality. The trials are being conducted at Trevarnon Farm, Gwitherian, Cornwall, on sandy clay loam, where the farm rotation is based around Brassicas, cereals and grass break crops.

Table 1. Autumn cauliflower – top performing cultivars 2017

Seed house	Cultivar	% Class 1	Trays/acre (trays/hectare) Class 1		Heading period 10 – 90% dates
			8/tray	6/tray	
Rijk Zwaan	26-440	79	893 (2,205)	154 (380)	21.10.17–29.10.17
Rijk Zwaan	26-322	82	897 (2,216)	199 (492)	23.10.17–30.10.17
Sakata	Amandine	84	910 (2,248)	226 (558)	30.10.17– 5.11.17
Enza Zaden	217740	92	931 (2,300)	195 (482)	31.10.17– 7.11.17
Monsanto	SV 5965	75	891 (2,200)	91 (225)	1.11.17– 8.11.17
Enza Zaden	217752	80	805 (1,988)	72 (178)	3.11.17–12.11.17
Monsanto	5982	84	1047 (2,586)	39 (96)	7.11.17–14.11.17
Elsoms	Telde	74	907 (2,240)	56 (138)	15.11.17– 9.11.17

Transplanted on 14.07.17. 26 cultivars from six seed houses. 10,249 plants/acre (25,315/ha)



Figure 2. Cauliflower cultivar assessment at the January Open Day 2018



Figure 3. FV 202g cauliflower trials

Table 2. Winter cauliflower – top performing cultivars 2017/18

Seed house	Cultivar	% Class 1	Trays/acre (trays/hectare) Class 1		Heading period 10–90% dates
			8/tray	6/tray	
Clause	Diwan	80	574 (1,418)	383 (946)	13.11.17–22.11.17
Clause	Bernoulli	77	600 (1,482)	298 (736)	13.11.17–26.11.17
Monsanto	SV5697	78	829 (2,048)	0	13.01.18–23.01.18
Hazera	Trevaskis	78	831 (2,052)	0	20.01.18–07.02.18
Monsanto	Carantic	83	893 (2,206)	0	31.01.18–26.02.18
Syngenta	Bretten	79	849 (2,097)	0	07.02.18–10.03.18
Clause	CLX 33611	84	902 (2,228)	0	25.02.18–13.03.18
Syngenta	Caylen	84	870 (2,149)	32 (79)	02.03.18–23.03.18
Clause	Mascaret	83	890 (2,198)	0	07.03.18–30.03.18
Elsoms	Tempest	82	724 (1,788)	197 (487)	31.03.18–09.04.18
Hazera	AK 2706	83	778 (1,922)	143 (353)	02.04.18–12.04.18
Hazera	Vedis	86	858 (2,119)	90 (222)	04.04.18–11.04.18
Clause	CLX 33518	83	885 (2,186)	0	09.04.18–12.04.18

Transplanted on 14.07.17 and 25.07.17. 29 cultivars from seven seed houses. 8,580 plants/acre (21,193/ha)



Figure 4. Cauliflower head



Figure 5. Duchy Brassica cv trials 2018

Table 3. Late winter cauliflower - top performing cultivars 2017/18

Seed house	Cultivar	% Class 1	Trays/acre (trays/hectare) Class 1		Heading period 10–90% dates
			8/tray	6/tray	
Elsoms	Vogue	73	617 (1,524)	211 (521)	05.04.18–14.04.18
Syngenta	5033	71	540 (1,334)	286 (706)	06.04.18–16.04.18
Clause	Avelmore	80	754 (1,862)	135 (333)	16.04.18–02.05.18
Clause	33612	74	658 (1,625)	180 (445)	20.04.18–30.04.18
Clause	CHF 14-0023	70	721 (1,781)	32 (79)	23.04.18–28.04.18
Elsoms	Fletcher	79	768 (1,897)	104 (257)	23.04.18–30.04.18
Elsoms	Cartagena	68	584 (1,442)	191 (472)	03.05.18–10.05.18

Transplanted on 14.07.17. 11 cultivars - from four seed houses. 8,580 plants/acre (21,193/ha)

Table 4. Spring cabbage – top performing cultivars 2017/18

Seed house	Cultivar	Comments	Average weight of marketable greens (g)
Monsanto	Winter Supreme	Very uniform. Very good greens. 86% crop marketed. Compact.	300
A. L. Tozer	Wintergreen	Variable sized greens. 73% crop marketed.	236
Nickerson	Kempsy	Uniform. Good greens. 80% crop marketed. Easy to pack.	280
Monsanto	Winter Special	Very uniform. Very good greens. Dark green. Short nodes. 93% of crop marketed.	328

Transplanted on 07.09.17. Harvested on 02.04.18. Spacing 57.2cm between rows, 20.3cm between plants. 31,000 plants/acre (76,570/ha)

All of the cultivars that performed well during 2016/17 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, complementing 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 in which yields can be lower. There have been several new introductions over this period, which have performed very well alongside established cultivars.

For these crops, consistency in yield, quality of product, harvesting periods and suitability for various end users determines which cultivars are grown year-on-year.



Figure 6. Cauliflowers in Cornwall

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Further information

To keep updated with the latest trials and results, visit the Duchy website, <https://www.cornwall.ac.uk/rosewarne-brassica-trials> and the AHDB website, horticulture.ahdb.org.uk

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