



Grower Summary

FV 340b

Vining peas: Extension of variety evaluation trials

Annual 2017

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The results and conclusions in this report may be based on an investigation conducted over one year. Therefore, care must be taken with the interpretation of the results.

Use of pesticides

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Before using all pesticides check the approval status and conditions of use.

Read the label before use: use pesticides safely.

Further information

If you would like a copy of the full report, please email the AHDB Horticulture office (hort.info.@ahdb.org.uk), quoting your AHDB Horticulture number, alternatively contact AHDB Horticulture at the address below.

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AHDB Horticulture is a Division of the Agriculture and Horticulture Development Board.

Project title: Vining peas: Extension of variety evaluation trials

Project number: FV 340b

Project leader: Stephen Belcher, PGRO

Report: Annual report , 2017

Previous report: FV 340a final report

Key staff: S. Belcher, S. Johnson, J.Nash, Dr L. Wiesel

Location of project: Trevethoe Farm
Holbeach St Marks
Spalding. Lincs. PE12 8EX

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Date project commenced: 01/03/2015

Date project completed 28/02/2018
(or expected completion date):

GROWER SUMMARY

Headline

This project provides vining pea growers with independent, relevant and accurate trials evaluations on vining pea varieties, so that a considered and informed variety choice can be made.

Background

Through funding from seed houses and PGRO vining pea levy, vining pea varieties are evaluated at one site. After year one (Preliminary Trial stage) varieties may progress to the Main Trial Stage, where after two further years of evaluation they may be added to the PGRO Descriptive List of Vining Pea Varieties. Currently these trials are located near Nocton, mid-Lincolnshire, but this represents only a proportion of the vining pea production area. Funding by AHDB Horticulture allows a duplicate standard size Main Trial to be sown on a different soil type and location near Holbeach, S. Lincolnshire. After two years of evaluation varieties may be added to a Descriptive List of vining pea varieties for this area / soil type

Variety Trial Results

For full and comprehensive results please refer to the full trials report.

Table 1. Varieties, leaf type, source and approximate maturity - 2016

Variety Name	Leaf Type	Source	Maturity (± days Avola)
Beverly	C	van Waveren, Germany	- 2
Avola	C	Seminis Vegetable Seeds, France	0
Sherwood	C	Seminis Vegetable Seeds, France	0
Cargo	C	van Waveren, Germany	+ 3
LG Element (05S52738A)	SL	Limagrain, UK	+ 3
D165618	SL	Syngenta Seeds, France	+ 4
D165621	SL	Syngenta Seeds, France	+ 4
07S51368A	SL	Limagrain, UK	+ 4
CS-437F	C	Crites Seed, USA	+ 5
D165613	SL	Syngenta Seeds, France	+ 5
D85607	C	Syngenta Seeds, France	+ 6
SV0957QF	SL	Seminis Vegetable Seeds, France	+ 6
05S52323A	SL	Limagrain, UK	+ 7
LG Guardian (06S57317A)	SL	Limagrain, UK	+ 7
D95389	C	Syngenta Seeds, France	+ 8
06S55519A	SL	Limagrain, UK	+ 8
Valido(Wav4241)	C	van Waveren, Germany	+ 8
D175161	SL	Syngenta Seeds, France	+ 8
PLS 196	SL	Pure Line Seeds, USA	+ 9
Oasis	C	Limagrain, UK	+ 9
Vidor(Wav4361)	C	van Waveren, Germany	+ 9

CS-445AF	SL	Crites Seed, USA	+ 9
Ambassador	C	van Waveren, Germany	+11
LG Galileo (04S51315A)	SL	Limagrain, UK	+12
06S60830A	SL	Limagrain, UK	+13
C=Conventional-leaved; SL=Semi-leafless			

Financial Benefits

New vining pea varieties in trial represent improvements in either yield, size-grade, colour, uniformity and disease resistance compared with varieties such as Avola, Bikini and Ambassador which have been grown for very many years. Improvements in colour avoid deductions in payment, which can be up to 5%. Growers, processors, retailers and consumers are likely to benefit from these improvements.

The data will provide additional data for the Descriptive List of Vining Peas – Holbeach, which is published annually in the PGRO publication 'The Vining Pea Growers Guide'. Data from the Nocton trials is published in separate table. This booklet will also be available for distribution to all AHDB Horticulture pea levy payers. This work will benefit all vining pea growers interested in adopting new improved varieties.

Trial site details

Variety Trial Site: Fertile light silt soil in a commercial crop of Vining Peas, near Holbeach St Marks, South Lincolnshire. OS Ref: TF368319. Trevethoe Farm, Holbeach St Marks, Spalding, PE12 8EX.

Downy Mildew Trials:

Grange Farm, near Nocton, Lincs, LN4 2AQ, OS Ref: TF036638

Moor farm, near Stubton, Lincs, NG23 5DA, OS Grid Ref SK884910

Table 2. Percentage yield, Percentage size grade, haulm length and standing ability – 2016

Variety	@TR100				@TR120		Haulm length cm	Standing Ability 9=erect 1=lodged
	Yield % of Oasis	% in size grades L M S VS				Yield % of Oasis		
Beverly	55	34	38	23	5	57	36	2
Avola	36	50	32	14	4	29	62	2
Sherwood	71	33	37	25	5	75	58	2
Cargo	92	40	54	5	1	77	55	2
LG Element (05S52738A)	106	22	54	22	2	88	49	6
D165618	93	40	49	10	1	78	60	6
D165621	68	38	48	13	1	57	59	5
07S51368A	82	38	50	11	1	69	58	6
CS-437F	66	31	49	18	2	71	63	4
D165613	80	33	46	18	3	70	58	6
D85607	67	21	53	22	4	85	64	4
SV0957QF	91	33	55	11	1	94	60	4
05S52323A	106	24	54	19	3	90	61	4
LG Guardian (06S57317A)	82	24	56	18	2	72	61	4

D95389	85 ⁻	3	30	54	13	82 ⁻	68	4
06S55519A	74 ⁻	33	56	10	1	66 ⁻	65	6
Valido(Wav4241)	66 ⁻	24	51	20	5	67 ⁻	58	3
D175161	53 ⁻	2	24	48	26	58 ⁻	66	7
PLS 196	98	42	44	11	3	113	70	4
Oasis	100	40	50	9	1	100	62	2
	(8.46t/ha)					(10.49t/ha)		
Vidor(Wav4361)	94	37	48	13	2	97	62	2
CS-445AF	99	54	35	9	2	84 ⁻	54	4
Ambassador	84	43	40	14	3	68 ⁻	82	6
LG Galileo (04S51315A)	99	56	31	10	3	94	78	8
06S60830A	86	30	46	20	4	81 ⁻	74	6

KEY: Yield: ⁻ Significantly less than Oasis @ P = 0.05

Size grades: L = large > 10.2mm; M = medium 8.75 - 10.2mm; S = small 7.5 - 8.75mm; VS = very small < 7.5mm

Full information on all varieties can be found in the Full Trial Report.

None of the varieties were found to be unsuitable for UK production.

Standard Pea Main Trial, Holbeach 2016 – Tables 2 & 3

Beverly was the earliest maturing variety, 2 days before Avola, whilst 06S60830A was the latest, 4 days later than Oasis. Oasis matured 9 days later than Avola in this trial.

Oasis, the yield standard gave a 2.03t/ha yield increase from TR100 to TR120. Several varieties that gave higher yields than Oasis at TR100 did not yield as well at TR120 when compared to Oasis. PLS 196 was an exception to this and was the highest yielding (113%) variety at TR120.

In the early maturing group of varieties, Avola gave very low yields. 05S52738A gave slightly higher yields (106%) than Oasis at TR100, but yields were lower at TR120 (88%). Cargo yielded 92% of Oasis at TR100.

Overall, 05S52323A and 05S52738A gave the highest yields in the trial (106% of Oasis at TR100) and were closely followed by PLS 196, CS-445AF and 04S51315A. None, however gave statistically higher yields than Oasis.

04S51315A had very good standing ability followed by D175161.

Several varieties showed good field tolerance to downy mildew infection in 2016 including Beverly, Cargo, D165613, D165621, D85607, D95389, Vidor and Vivado.

Summary

Varieties were evaluated in standard Vining Pea Main Trials in 2015 and 2016.

After the withdrawal of 05S52323A and 06S60830A, six varieties Beverly, Cargo, LG Element, CS-437F, LG Guardian, and LG Galileo completed two years of evaluation in 2016.

At TR100 Oasis (the yield standard) gave very similar yields in both years of trials. At TR120 yields were 1.0t/ha higher in 2015 than 2016. Maturities for Oasis at TR100 were 9 days later than Avola in both years.

Sherwood, an early maturing replacement for Avola matured at the same time as Avola at TR100.

Beverly (van Waveren) matured one day before Avola. Yields were higher than Avola, but not statistically significantly so. Produce was large-medium size grade, smaller than Avola. Haulm was shorter than Avola and standing ability was poor, similar to Avola (2).

Cargo (van Waveren) matured three days later than Avola. Yields were lower than Oasis, but were significantly higher than Avola at TR100 and TR120. Produce had 65% of the peas in medium size grade at TR100. Standing ability was poor, similar to Avola (2).

LG Element (05S52738A) (Limagrain UK) was semi-leafless and matured 4 days later than Avola. Yields were lower, but not significantly lower than Oasis. Produce was mostly medium size grade, smaller than Avola. Standing ability was average-good (6).

CS-437F (Crites Seed) matured 5 days later than Avola. Yields were significantly lower than Oasis. Produce was medium-large size grade, similar to Oasis. Standing ability was poor with a score of 3.

LG Guardian (06S57317A) (Limagrain UK) was semi-leafless and matured one day before Oasis. Yields at 95%, were only a little lower than Oasis at TR100 and produce was of a similar size, medium-large size grade. Standing ability was average (5).

LG Galilaeo (04S51315A) (Limagrain UK) was semi-leafless and matured 3 days later than Oasis. Yields at 92% and 93% were a little lower than Oasis at TR100 and TR120. Produce was larger than Oasis, large-medium size grade. Standing ability was average-good (6).