Grower Summary

FV 340b

Vining peas: Extension of variety evaluation trials

Annual ***2016***

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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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Project title:	Vining peas: Extension of variety evaluation trials
Project number:	FV 340b
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Report:	Annual report , 2016
Previous report:	FV 340a final report
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Date project commenced:	01/03/2015
Date project completed **(or expected completion date):**	28/02/2018

GROWER SUMMARY

Headline

This project will provide 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 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 – 2015

Variety Name	**Leaf Type**	**Source**	**Maturity (± days cv. Avola)**
Aloha	C	van Waveren, Germany	0
CS-430AF(Tomahawk)	SL	Crites Seed, USA	0
Sherwood	C	Seminis Vegetable Seeds, France	0
Avola	C	Seminis Vegetable Seeds, France	0
Beverly	C	van Waveren, Germany	+ 1
Kiss	C	van Waveren, Germany	+ 2
Cargo	C	van Waveren, Germany	+ 2
05S52738A	SL	Limagrain, UK	+ 4
CS- 437F	C	Crites Seed, USA	+ 5
D 85178	C	Syngenta Seeds, France	+ 7
SV0957QF	SL	Seminis Vegetable Seeds, France	+ 7
Payton	SL	Pure Line Seeds, USA	+ 7
CS-426AF	SL	Crites Seed, USA	+ 7
PFR 13-A21	C	Plant & Food Research Ltd, New Zealand	+ 8
05S52323A	SL	Limagrain, UK	+ 9
06S57317A	SL	Limagrain, UK	+ 9
Vivado(D85410)	C	Syngenta Seeds, France	+ 9
Oasis	C	Limagrain, UK	+ 9
D 175161	SL	Syngenta Seeds, France	+ 9
PFR 13-A37	SL	Plant & Food Research Ltd, New Zealand	+ 9
Standana	SL	Nunhems Seeds, Netherlands	+11
Maurice	SL	Seminis Vegetable Seeds, France	+11
CS-438AF	SL	Crites Seed, USA	+11
06S60830A	SL	Limagrain, UK	+11
04S51315A	SL	Limagrain, UK	+12
Ambassador	C	van Waveren, Germany	+12
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 vulnerability 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 will be published annually in the PGRO publication The Vining Pea Growers Guide. Data from the Nocton trials will be 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 Hurn, South Lincolnshire. OS Ref: TF402269. Manor Farm, Holbeach Hurn, Spalding, PE12 8LR.

Downy Mildew Trials:
Colne Fen Farm near Chatteris, Cambs OS Ref: TL 369832
Holbeach St Marks, Lincs OS Grid Ref TF365343

Table 2. Yield (% of cv. Oasis), Size grade (% of cv. Oasis), Haulm length and Standing ability – Manor Farm 2015

Variety	@TR100					@TR120		
	Yield % of Oasis	% in size grades L	M	S	VS	Yield % of Oasis	Haulm length cm	Standing Ability 9=erect 1=lodged
Oasis	100 (8.48t/ha)	40	46	12	2	100 (11.49t/ha)	68	2
Aloha						81-	62	3
CS-430AF(Tomahawk)						96	64	2
Sherwood						82-	59	3
Avola						73-	66	2
Beverly						86	61	2
Kiss	102	25	55	18	2	76-	66	2
Cargo	93	19	78	2	1	84-	62	2
05S52738A	76-	17	48	28	7	58-	62	6
CS- 437F	70-	32	45	19	4	59-	66	2
D 85178	81	25	60	14	1	60-	66	2
SV0957QF	118	42	49	8	1	90	69	6
Payton	81	19	57	21	3	60-	59	4
CS-426AF	108	32	57	10	1	80-	72	4
PFR 13-A21	98	30	51	17	2	76	64	2
05S52323A	108	26	53	18	3	95	72	4
06S57317A	108	47	46	6	1	82-	76	6
Vivado(D85410)	107	35	51	13	1	79-	72	2
D 175161	46-	3	20	43	34	51-	72	7
PFR 13-A37	91	29	53	16	2	91	96	8
Standana	86	21	59	18	2	86	92	6
Maurice	116	30	47	19	4	86	72	4
CS-438AF	93	24	55	18	3	92	82	5
06S60830A	99	27	52	18	3	77-	68	2
04S51315A	86	51	34	12	3	92	72	4
Ambassador	80	37	40	19	4	64-	82	3

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
Varieties (cv.) given in order of maturity (see Table 1).

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 2015 – Tables 2 &3

A very hot period and a clash in vining in late June / early July meant that three early varieties together with Avola were not harvested at TR100 stage, but harvested at TR120 stage only.

Tomahawk gave the highest yield of the early maturing varieties when compared to Oasis.

Oasis (the yield standard) gave a 3t/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.

Several varieties gave higher yields than Oasis at TR100 including Kiss, SV0957QF, CS426AF, 05S52323A, 06S57317A, Vivado, and Maurice. None however, gave statistically significantly higher yields than Oasis.

06S57317A gave peas with the darkest colour, both in the raw state and after freezing.

Semi-leafless PFR 13-A37 had the best standing ability and the longest haulm in the trial.

Although levels of downy mildew infection were relatively low in 2015, there were some varietal differences. CS 448AF was susceptible, while Maurice and Vivado showed good field resistance

Main Conclusions

Varieties were evaluated in standard Vining Pea Main Trials at Holbeach in 2014 and 2015.

Eight varieties Tomahawk, Aloha, Kiss, Payton, CS-426AF, Vivado, Standana and Maurice completed two years of evaluation in 2015.

Oasis (the yield standard) gave very high yields in 2014. In 2014 the yield difference from TR100 to TR120 was 0.37t/ha, but in 2105 it was 3t/ha. Only one variety, Maurice gave higher yields than Oasis over this 2 year series. Maturities for Oasis ranged from +15 (2014) to +9 (2015).

Aloha (Wav 834) (van Waveren) matured at the same time as Avola. Yields were 3% higher than Avola at TR100 and produce a little smaller, medium-large size grade.

Tomahawk (CS-430AF) (Crites Seed) was semi-leafless and matured at the same time as Avola. Yields were statistically significantly lower than Oasis at TR100, but only 4% lower at TR120. A similar yield pattern was seen in 2014. Produce was medium-large size grade, smaller than Avola.

Kiss (Wav 895) (van Waveren) also matured at the same time as Avola. Yields were 5% higher than Avola at TR120. Produce was a little smaller than Avola, medium-large size grade.

Payton (PLS 167) (Pure Line Seeds) was semi-leafless and matured 4 days before Oasis. Yields of medium size grade peas were 19% lower than Oasis at TR100. At TR120 yields were statistically significantly lower than Oasis.

CS-426AF (Crites Seed) was semi-leafless and matured 3 days before Oasis. Yields were 8 and 9% lower than Oasis at TR100 and TR120 respectively. Produce was medium-large size grade, smaller than Oasis.

Vivado (D 85410) (Syngenta) matured one day before Oasis. Yields were 13% lower than Oasis at TR100 and statistically significantly lower at TR120. Produce was a little smaller than Oasis.

Standana (Nunhems) was semi-leafless and matured one day later than Oasis. Yields were 13% lower than Oasis at TR100. Produce was much smaller than Oasis, medium size grade. Haulm was long, similar to Ambassador, but standing ability was amongst the best in these trials.

Maurice (Seminis Vegetable Seeds) was semi-leafless and matured 2 days later than Oasis. Overall yields were the highest in trial at TR100, 6% higher than Oasis. At TR120 yields were 7% lower than Oasis. This was a similar yield pattern to 2014. Produce was smaller than Oasis, medium-large size grade. Standing ability was amongst the best in these trials.