



# **PGRO Variety Trials Results 2023**

Vining Peas

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## WEATHER FOR THE 2023 SEASON.

Comments below are a summary taken from the meteorology website for the UK <https://www.metoffice.gov.uk/research/climate/maps-and-data/summaries/index>.

### **Winter**

The weather was milder than average throughout the winter. But there were two distinct cold spells in December and mid-January. December and January both had typical levels of rainfall. February was mild and drier than average.

### **Spring 2023**

The spring overall was slightly warmer than average, with alternating hot and cold spells. Many areas in the southern half of the UK had more than double their average March rainfall. The overall level for the UK was 155% of average. April rainfall totals were closer to average.

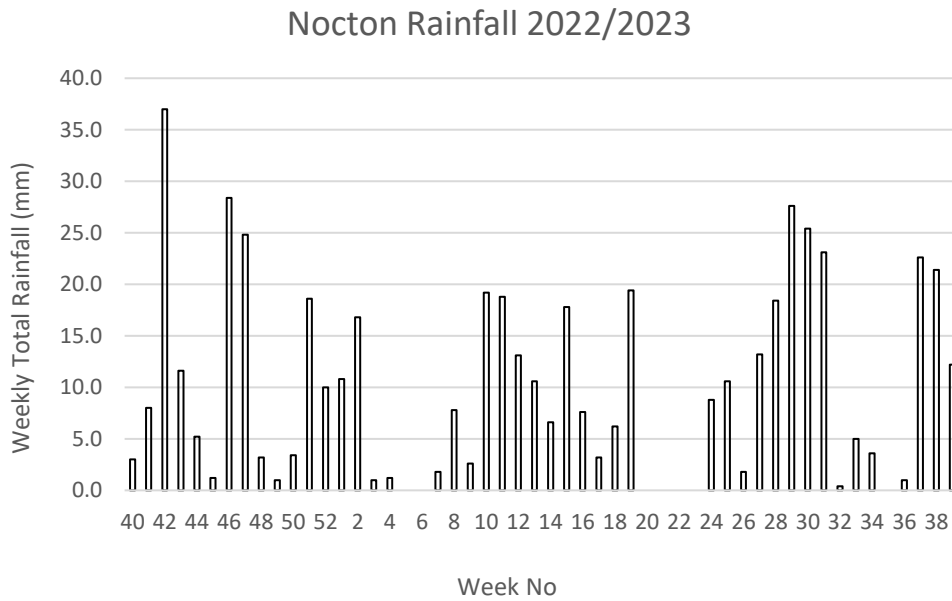
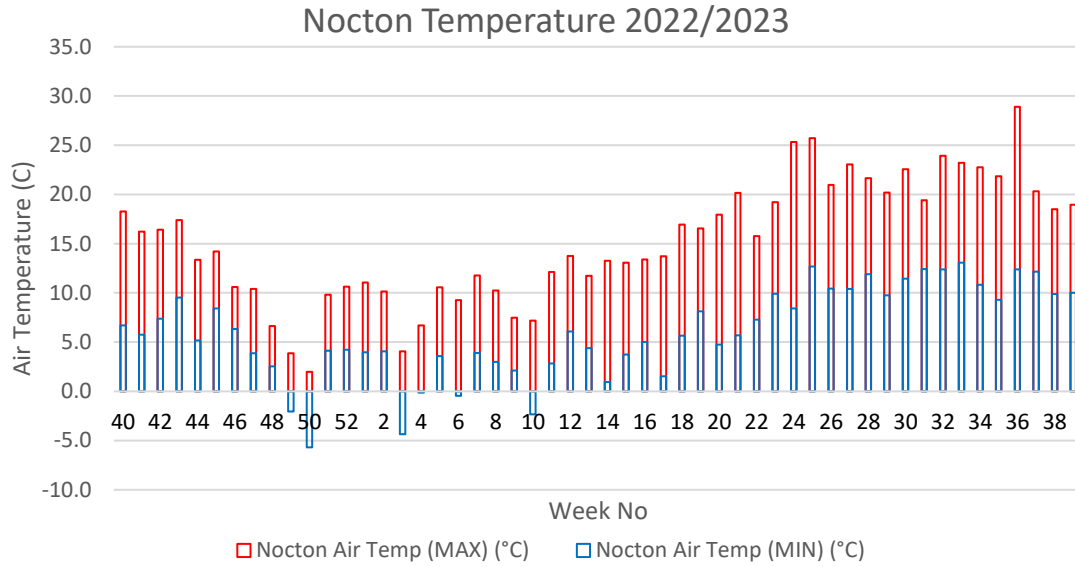
### **Summer 2023**

Maximum temperatures for summer overall were well above average. June was dry, settled and the UK's warmest on record. In contrast July and August were unsettled with a wet July and storms in August. Any prolonged spells of unbroken sunshine were mainly confined to June: the UK averaged more than 8 hours per day of sunshine in June, compared to less than 5 in both July and August.

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**METEROLOGICAL DATA - 2022 / 2023 season**



Nocton monthly rainfall totals (mm) 2022/2023

Month	2022/2023 Monthly Rainfall (mm) Nocton
October	59.4
November	59.4
December	36.2
January	29.8
February	11.0
March	62.7
April	35.4
May	25.6
June	21.2
July	86.1
August	30.6
September	57.2

## VINING PEAS

### **SUMMARY**

In **2021**, the spring was colder than average, with regular frosts in many areas, however there were warm spells at the end of March and the end of May. March rainfall totals were rather below average in most areas, this was followed by the driest April since 1980, with 28% of average rainfall for the UK. By contrast, May was very wet, characterized by bands of rain and heavy showers, with 171% of average overall.

June was generally settled and warm, with temperatures reaching 29.7 °C on the 14<sup>th</sup>. June was also drier than average with 59% of normal rainfall. Thunderstorms and showers meant that July had a more typical summer rainfall with 93% of average. The end of July was even hotter with 32.2 °C recorded on the 20<sup>th</sup> of July.

In **2022** the spring was warmer than average, particularly in March. Rainfall was low for March and April, though not as dry as the previous two seasons. May had a typical amount of rain. June, July and August were all warmer than average temperatures. There were also heatwaves where the temperature reached around 40 C. June and July also had low rainfall alongside typical sunshine.

In **2023**, the most important weather events were the very wet march that affected drilling dates and hot period in early July which co-coincided with flowering of lots of varieties and led to flowering ending sooner.

### **Standard Size Varieties, Varieties completing 3 years of trials, Nocton 2023. Tables 01 & 02 & 03**

Two varieties, Darlin and Larango completed 3 years of evaluation in 2023. These varieties were evaluated in the Standard Main Trial 2023 and had previously been evaluated in a Main and Preliminary Trial. The data is given in two tables as Darlin had its preliminary trial in 2021 and Larango started in 2020 but missed 2021, so they are compared to the controls in different three year sets.

Yields from the yield standard Oasis were lowest in 2022 (6.18 t/ha) and highest in 2021 (11.02 t/ha) at TR100. Maturity of Oasis when compared to Avola was +11 days in 2020, 2021 and 2022 but was +9 days in 2023 due to the heatwave around flowering.

**Darlin** (van Waveren) matured 1 day later than Oasis. It is a semi-leafless variety. Yields were lower than Oasis (77% for TR 100 and 86% for TR 120). Yields were highest in 2021. Produce was smaller in size than Oasis, medium-small size grade. Darlin had a very good score for standing ability (7) and had good field resistance to downy mildew.

**Larango** (Syngenta) matured 2 days later than Oasis. Yields were lower than Oasis (88% for TR 100 and 92% for TR 120). Yields were similar in 2020 and 2023 but were down in 2022. Produce was similar size to Oasis, medium-large size grade. Standing ability (4) was better than Oasis (3). Data provided by the breeder lists Larango as having a high resistance to powdery mildew.

### **Petits Pois Varieties, Varieties completing 3 years of trials, Holbeach 2023.**

No varieties completed 3 years of trials in 2023. Several varieties are due to complete in 2024.

## **TRIALS IN 2023**

### **Overall Summary**

Standard size varieties were evaluated in Main, Preliminary and Screening Trials at Nocton, Lincs. Trials of petits pois varieties were evaluated at Holbeach, South Lincolnshire.

Promising varieties from 2020 and 2021 Preliminary Trials were assessed in the Main Trial. Preliminary Trial varieties were at National List stage of testing.

Due to the loss of seed treatment options, the 2023 trials used only untreated seed. The change to untreated seed was made in 2021. This means there was less protection than in the historical dataset for damping off, downy mildew and *Ascochyta* diseases. Avola was the standard variety for maturity (Sherwood was also included as a potential replacement for Avola); Oasis was the yield standard and Ambassador was the late maturing standard. Waverex was the petits pois yield and maturity standard.

Nocton trials were drilled on 30<sup>th</sup> March and Holbeach trials on 26<sup>th</sup> April. At Nocton, the peas emerged with few losses, though some varieties became patchier over time due to disease. At Holbeach drilling conditions were good with the peas being drilled at a depth where there was still a layer of retained moisture. The peas at Holbeach emerged well and had no notable establishment issues. At Nocton, broad-leaved weeds were controlled with pre and post-emergence herbicides. Insecticides were applied to control pea aphid (*Acyrtosiphon pisum*) and pea moth (*Cydia nigricana*). At Holbeach inputs were the same as the surrounding commercial crop.

The vining pea harvest started on the 19<sup>th</sup> June and was completed on the 19<sup>th</sup> of July. Pea colour for most varieties was very good.

A sample from all trials were frozen for later colour and Brix assessments. Most varieties became a little darker in colour after freezing and defrosting than in the raw state.

### **Standard Pea Main Trial, Nocton - Tables 04 & 05**

Growth at this site was generally good though there were some individual varieties that were damaged by pythium or downy mildew. The hot flush in June led to all but the latest maturing varieties having shorter flowering periods. The weather was more consistent during harvest but the effect of temperature at flowering led to a shortened harvest window.

Yields from the standard Oasis (6.37 t/ha) was like 2022 at TR 100. However, both seasons had very hot periods around harvest. In 2021 the yield of Oasis was much higher.

Early variety BSC304 matured three days later than Avola. Bering was mature six days later than Avola. PFR 1909 and Logic were mature two days before Oasis whereas Lakeshore, CS-498AF, Invictus and Darlin were one day ahead of Oasis. Oasis received a maturity score of +9 relative to Avola as did Kotzebue and PFR1705. Ambassador and Larango all had a TR100 maturity of +10. Obigo was mature one day later. Namrata matured three days later than Oasis and was the last main trial variety to reach maturity.

Obigo was the highest yielding variety achieving 111% of Oasis's yield at TR 100 and 108% at TR 120. Larango did equally well at TR120 but was only just above Oasis at TR 100 (102%). PFR 1909 and PFR 1705 also matched or were higher than Oasis at both TR values (104%/101% and 100%/103% respectively). Darlin performed better than Oasis at TR 120 (105%) but was lower at TR 100 (92%).

CS-498AF and Darlin both produced smaller peas than most varieties, with a greater amount of small size grade at both TR100 and TR120. Standing abilities in 2023 were very variable with Avola having a score of 3.0 and Darlin achieving a perfect score of 9 on a scale of 1-9. Bering was the shortest variety.

### **Standard Pea Preliminary Trial, Nocton – Tables 06 & 07**

Seven varieties were entered into the Preliminary Trial.

Wav4120 was an early variety, maturing the day after Avola. Two Crites lines (CS-504AF and CS503AF) were also early varieties with a maturity of +3. Wav975 (+4) was the final early variety. CS-508AF and PFR1816 matured three days and one day before Oasis respectively. Oasis matured nine days after Avola. The last variety to mature was CS-517AF at three days later than Oasis.

None of the varieties had yields higher than Oasis. The best performing preliminary variety was CS-508AF (81% & 84%) it also had a standing ability score of 9. Though CS-503AF, Wav 975 and PFR 1816 also did well with yields of around 65-80 percent of Oasis. CS-506AF, CS-517AF and PFR 1816 were short in stature.

### **Standard Pea Screening Trial, Nocton – Tables 08 & 09**

Eleven Screening trial varieties were evaluated.

Avola was the first variety to mature, 9 days before Oasis. Wav 132 matured the day after Avola. There was a group of medium maturity varieties that were mature between +5 and +7 relative to Avola (CS-492AF, Wav194, Wav168, CS500F and CS-514F). PL-0266, Tirza, Finish and CS-513F all matured on the same day as Oasis and PL-0076 was one day earlier.

Several varieties yielded higher than Oasis at TR100, but only Finish outperformed it at TR120. CS-492AF, CS-500F, CS-514F and CS513F all yielded similar or better than Oasis at TR100 and then were within the 80-90% range of Oasis at TR120.

The varieties CS-492AF, PL-0076 and CS-513F stand out as having particularly good standing abilities. PL-0266 had a high percentage of peas in small size grade at both TR 100 and TR 120.

### **Petits Pois Main and Preliminary Trials, Holbeach – Tables 10 & 11**

Waverex, the yield standard, produced lower yields at TR 100 (3.23 t/ha) than in 2022 (6.74 t/ha) or 2021 (5.18 t/ha).

Two varieties matured earlier than Waverex, Atasiska and Digit at two and three days earlier respectively. Postaldo, Flovert and BSC494 had the same maturity as Waverex. PL-0001 and PLS-705 matured one day later. PL-0122 had a maturity of plus three. The latest variety to mature was Zara, six days after the maturity control.

Postaldo and BSC494 had notably higher yields than Waverex at TR100. Digit had a higher yield than Waverex at TR120 but was lower yielding at TR 100. Flovert had a yield that was only just under Waverex at TR100.

Waverex gave produce with 83% of the peas <8.75mm diameter at TR100. The screening lines PLS-705 and PL-0122 had the produce with greatest fraction under 8.75mm diameter (97% and 96%).

The average standing ability this season was 7.8 with the best standing variety being PL-0001 with 8.5.

**Varietal Susceptibility of Vining Peas to Downy Mildew (*Peronospora viciae*) - 2023**

It is important that untreated seed is entered for trials so that downy mildew susceptibility can be evaluated.

As part of the variety evaluation work 45 varieties of vining peas were sown in disease observation trials at two locations in Nocton and Fosdyke. Both trials were situated in a field with a history of pea growing. Plants were scored for infection on three occasions during the season, to include both primary systemically infected seedlings and secondary infection on the foliage. The data were combined to give an indication of the relative susceptibility to downy mildew.

Levels of downy mildew were lower in 2023 compared to 2022 and 2021, but control varieties showed high enough levels to allow a good differentiation between varieties.

Susceptible 1/2	Moderately Susceptible 3/4	Slightly Susceptible 5/6	Moderate Field Resistance 7/8	Good Field Resistance 9
	Avola	Ambassador	CS-500F	Atasiska
	Bering	BSC304	CS-503AF	CS-508AF
	BSC494	CS-498AF	CS-504AF	CS-514F
	CS-492AF	CS-517AF	CS-513F	Darlin
	Oasis	Digit	Finish	Sherwood
	PL-0266	INVICTUS	Flovert	Wav 194
	Postaldo	Kotzebue	Obigo (DGL0066)	Wav 975
		Lakeshore	PFR 1909	
		Larango	Wav 132	
		Logic	Wav 168	
		Namrata	Wav 4120	
		PFR 1705	Zara	
		PFR 1816		
		PI-0001		
		PL-0076		
		PL-0122		
		PLS-705		
		Tirza		
		Waverex		

The results of these tests and those of previous years were incorporated in the PGRO Descriptive List of Vining Pea Varieties.



**TABLE 01 – VINING PEA VARIETY EVALUATIONS.** Summary of Standard Vining Peas. Varieties completing 3 years of trials in 2021,2022,2023, Nocton. Varieties placed in order of maturity. Standard varieties underlined.

Variety	Source	1000 Seed Weight g	@ TR 100						@ TR 120						Standing Ability 9=erect 1=lodged	Pea wt. as % of total weight	Raw pea colour 1=pale 6=dark	
			Maturity (± days) Avola	Yield % of Oasis	% in size grades L M S VS				Maturity (± days) Avola	Yield % of Oasis	% in size grades L M S VS							Haulm length cm
<u>Avola</u>	<u>SVS</u>	<u>202</u>	<u>+0</u>	<u>52</u>	<u>51</u>	<u>38</u>	<u>9</u>	<u>2</u>	<u>+0</u>	<u>55</u>	<u>65</u>	<u>29</u>	<u>5</u>	<u>1</u>	<u>62</u>	<u>4</u>	<u>19</u>	<u>4.6</u>
<u>Sherwood</u>	<u>SVS</u>	<u>220</u>	<u>+1</u>	<u>54</u>	<u>30</u>	<u>47</u>	<u>19</u>	<u>4</u>	<u>+1</u>	<u>51</u>	<u>40</u>	<u>44</u>	<u>13</u>	<u>3</u>	<u>54</u>	<u>5</u>	<u>19</u>	<u>4.8</u>
<u>Oasis</u>	<u>LUK</u>	<u>181</u>	<u>+10</u>	<u>100</u>	<u>48</u>	<u>44</u>	<u>7</u>	<u>1</u>	<u>+10</u>	<u>100</u>	<u>52</u>	<u>41</u>	<u>6</u>	<u>1</u>	<u>57</u>	<u>3</u>	<u>25</u>	<u>4.6</u>
				<u>(7.85t/ha)</u>						<u>(8.34t/ha)</u>								
Darlin	(SL) vW	145	+11	77	4	36	47	13	+11	86	6	49	39	6	58	7	16	4.6
<u>Ambassador</u>	<u>vW</u>	<u>198</u>	<u>+12</u>	<u>85</u>	<u>53</u>	<u>39</u>	<u>7</u>	<u>1</u>	<u>+12</u>	<u>83</u>	<u>66</u>	<u>30</u>	<u>3</u>	<u>1</u>	<u>68</u>	<u>5</u>	<u>19</u>	<u>4.6</u>

KEY: Size grades: L = large > 10.2mm; M = medium 8.75 - 10.2mm; S = small 7.5 - 8.75mm; VS = very small < 7.5mm  
SL = Semi-leafless; Source of varieties see Appendix.

**TABLE 02 – VINING PEA VARIETY EVALUATIONS.** Summary of Standard Vining Peas. Varieties completing 3 years of trials in 2020,2022,2023, Nocton. Varieties placed in order of maturity. Standard varieties underlined.

Variety	Source	1000 Seed Weight g	@ TR 100						@ TR 120						Standing Ability 9=erect 1=lodged	Pea wt. as % of total weight	Raw pea colour 1=pale 6=dark	
			Maturity (± days) Avola	Yield % of Oasis	% in size grades L M S VS				Maturity (± days) Avola	Yield % of Oasis	% in size grades L M S VS							Haulm length cm
<u>Avola</u>	<u>SVS</u>	<u>192</u>	<u>+0</u>	<u>55</u>	<u>42</u>	<u>37</u>	<u>17</u>	<u>4</u>	<u>+0</u>	<u>59</u>	<u>62</u>	<u>32</u>	<u>5</u>	<u>1</u>	<u>55</u>	<u>4</u>	<u>19</u>	<u>4.6</u>
<u>Sherwood</u>	<u>SVS</u>	<u>213</u>	<u>+1</u>	<u>63</u>	<u>32</u>	<u>43</u>	<u>20</u>	<u>5</u>	<u>+1</u>	<u>61</u>	<u>41</u>	<u>42</u>	<u>14</u>	<u>3</u>	<u>57</u>	<u>4</u>	<u>19</u>	<u>4.9</u>
<u>Oasis</u>	<u>LUK</u>	<u>189</u>	<u>+10</u>	<u>100</u>	<u>36</u>	<u>53</u>	<u>9</u>	<u>2</u>	<u>+10</u>	<u>100</u>	<u>45</u>	<u>50</u>	<u>5</u>	<u>0</u>	<u>54</u>	<u>3</u>	<u>26</u>	<u>4.7</u>
				(6.72t/ha)						(7.19t/ha)								
<u>Ambassador</u>	<u>vW</u>	<u>198</u>	<u>+12</u>	<u>86</u>	<u>37</u>	<u>44</u>	<u>16</u>	<u>3</u>	<u>+12</u>	<u>83</u>	<u>51</u>	<u>42</u>	<u>6</u>	<u>1</u>	<u>65</u>	<u>5</u>	<u>20</u>	<u>4.6</u>
<u>Larango</u>	<u>Syn</u>	<u>190</u>	<u>+12</u>	<u>88</u>	<u>26</u>	<u>53</u>	<u>18</u>	<u>3</u>	<u>+12</u>	<u>92</u>	<u>34</u>	<u>54</u>	<u>10</u>	<u>2</u>	<u>54</u>	<u>4</u>	<u>19</u>	<u>4.5</u>

KEY: Size grades: L = large > 10.2mm; M = medium 8.75 - 10.2mm; S = small 7.5 - 8.75mm; VS = very small < 7.5mm  
SL = Semi-leafless; Source of varieties see Appendix.

**TABLE 03 - VINING PEA VARIETY EVALUATIONS.** Summary of quality data for standard pea varieties. Varieties completing 3 years of trials, Nocton 2023.

Variety	Year	Tenderometer Reading	Appearance				Brix %
			Colour (3-8)	Brightness (1-2)	Uniformity (1-5)	No. of blonds (1-5)	
Ambassador	21	94.5	6.5	1.0	3.8	1.0	13.1
	22	97.5	6.2	1.0	4.8	1.0	12.5
	23	100.5	5.3	1.0	4.5	1.0	10.6
Avola	21	92.5	6.3	1.0	4.0	1.0	12.6
	22	102.0	5.8	1.7	4.5	1.0	12.0
	23	97.5	5.0	1.0	4.0	1.0	13.0
Darlin	21	99.0	6.0	1.0	4.5	1.0	13.3
	22	99.0	6.0	1.0	4.7	1.3	15.7
	23	107.5	5.7	1.0	4.5	1.0	11.6
Larango	20	98.0	6.5	1.0	4.7	1.3	11.4
	22	100.5	6.2	1.0	4.7	1.0	15.3
	23	100.0	5.5	1.0	4.3	1.3	11.6
Oasis	21	101.5	5.8	1.0	4.0	2.0	11.3
	22	100.0	5.0	1.0	2.0	4.0	11.1
	23	104.0	5.3	1.0	4.3	1.0	10.5
Sherwood	21	100.0	6.3	1.0	4.5	1.0	12.9
	22	100.0	6.2	1.0	4.5	1.0	12.8
	23	113.0	5.3	1.0	4.5	1.0	10.8

KEY: Uniformity; Uniformity; No. of blonds: (1-5) - a high figure indicates that the variety shows the character to a high degree

Colour: a high figure indicates a darker green; Brightness: 1 = bright, 2 = dull; Brix - measured using Atago pocket refractometer PAL-1 and gives an indication of sugar content

**TABLE 04 – MAIN VINING PEA VARIETY EVALUATIONS.** Summary of agronomic data, Standard Vining Pea Main Variety Trial, Nocton – 2023

Varieties placed in order of maturity. Standard varieties underlined. All varieties sown on 30 March.

Results are means of three replicates. Target population 100 plants per m<sup>2</sup> sown in ten 15 cm rows.

Variety	Source	1000 Seed Weight g	@ TR 100							@ TR 120							Standing Ability 9=erect 1=lodged	Pea wt. as % of total weight	Raw pea colour 1=pale 6=dark
			Maturity (± days) Avola	Yield % of Oasis	% in size grades				Maturity (± days) Avola	Yield % of Oasis	% in size grades				Haulm length cm				
					L	M	S	VS			L	M	S	VS					
<u>Avola</u>	<u>SVS</u>	<u>211</u>	<u>0</u> (21/6)	<u>60</u>	<u>42</u>	<u>50</u>	<u>7</u>	<u>1</u>	<u>0</u> (23/6)	<u>71</u>	<u>57</u>	<u>40</u>	<u>3</u>	<u>0</u>	<u>62</u>	<u>3.0</u>	<u>19</u>	<u>4.6</u>	
<u>Sherwood</u>	<u>SVS</u>	<u>235</u>	<u>+2</u>	<u>54</u>	<u>27</u>	<u>51</u>	<u>18</u>	<u>4</u>	<u>+2</u>	<u>54</u>	<u>36</u>	<u>48</u>	<u>13</u>	<u>3</u>	<u>47</u>	<u>5.7</u>	<u>18</u>	<u>4.7</u>	
BSC304	(SL) Bro	157	+3	58	26	60	11	3	+2	64	30	59	9	2	54	4.0	16	4.6	
Bering	(SL) Bro	152	+6	94	17	66	16	1	+5	92	22	64	13	1	33	8.0	21	4.8	
PFR 1909	PFR	181	+7	104	60	35	4	1	+6	101	68	28	3	1	41	5.7	22	4.8	
Logic	(SL) Bro	143	+7	52	14	63	18	5	+7	70	15	62	19	4	41	6.3	19	4.6	
Lakeshore	Bro	223	+8	74	75	23	2	0	+8	89	81	18	1	0	55	4.7	26	4.5	
CS-498AF	(SL) CS	120	+8	76	2	39	48	11	+8	83	5	46	42	7	50	6.0	22	4.8	
Invictus (PFR 1601)	PFR	168	+8	77	20	66	12	2	+8	75	30	59	10	1	44	7.3	19	4.8	
Darlin	(SL) vW	144	+8	92	2	35	51	12	+8	105	5	44	45	6	52	9.0	14	4.5	
Kotzebue	(SL) Bro	219	+9	78	39	51	9	1	+9	96	50	45	5	0	58	6.7	20	4.5	
<u>Oasis</u>	<u>LUK</u>	<u>182</u>	<u>+9</u>	<u>100</u> (6.37 t/ha)	<u>62</u>	<u>30</u>	<u>7</u>	<u>1</u>	<u>+9</u>	<u>100</u> (6.52 t/ha)	<u>68</u>	<u>25</u>	<u>6</u>	<u>1</u>	<u>50</u>	<u>4.7</u>	<u>21</u>	<u>4.7</u>	
PFR 1705	PFR	178	+9	100	36	52	11	1	+9	103	55	38	6	1	45	4.0	26	4.5	
<u>Ambassador</u>	<u>vW</u>	<u>171</u>	<u>+10</u>	<u>96</u>	<u>61</u>	<u>33</u>	<u>5</u>	<u>1</u>	<u>+10</u>	<u>93</u>	<u>73</u>	<u>24</u>	<u>3</u>	<u>0</u>	<u>61</u>	<u>6.7</u>	<u>19</u>	<u>4.5</u>	
Larango (DGL0052)	Syn	193	+10	102	27	56	16	1	+10	108	40	56	4	0	57	5.3	21	4.5	
Obigo (DGL0066)	(SL) Syn	156	+11	111	15	53	30	2	+11	108	23	65	12	0	56	7.0	21	4.8	
Namrata	(SL) Bro	162	+12	48	35	42	18	5	+12	59	45	40	12	3	45	7.3	14	4.7	

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

SL = Semi-leafless; SF = Semi-fasciated

Source of varieties see Appendix.

**TABLE 05 - VINING PEA VARIETY EVALUATIONS.** Summary of quality data - Standard Vining Pea Main Variety Trial, Nocton – 2023

Variety	Tenderometer Reading	Appearance			No. of blonds (1-5)	Brix %
		Colour (3-8)	Brightness (1-2)	Uniformity (1-5)		
<u>Avola</u>	<u>97.5</u>	<u>5.0</u>	<u>1.0</u>	<u>4.0</u>	<u>1.0</u>	<u>13.0</u>
<u>Sherwood</u>	<u>113.0</u>	<u>5.3</u>	<u>1.0</u>	<u>4.5</u>	<u>1.0</u>	<u>10.8</u>
BSC304	101.5	5.3	1.0	4.5	1.0	11.0
Bering	101.5	5.3	1.0	4.5	1.0	14.5
PFR-1909	98.0	5.8	1.0	4.8	1.0	9.5
Logic	108.0	5.3	1.0	3.7	1.0	12.3
CS-498AF	117.0	5.0	1.0	3.8	1.0	11.8
Darlin	107.5	5.7	1.0	4.5	1.0	11.6
Invictus (PFR 1601)	104.0	5.2	1.0	3.8	1.0	12.3
Lakeshore	105.0	5.2	1.0	3.7	1.3	11.6
Kotzebue	99.0	5.0	1.0	4.7	1.0	11.0
<u>Oasis</u>	<u>104.0</u>	<u>5.3</u>	<u>1.0</u>	<u>4.3</u>	<u>1.0</u>	<u>10.5</u>
PFR-1705	101.0	5.8	1.0	4.8	1.0	12.4
<u>Ambassador</u>	<u>100.5</u>	<u>5.3</u>	<u>1.0</u>	<u>4.5</u>	<u>1.0</u>	<u>10.6</u>
Larango (DGL0052)	100.0	5.5	1.0	4.3	1.3	11.6
Obigo (DGL0066)	100.5	5.8	1.0	4.2	1.7	12.4
Namrata	99.0	5.3	1.0	4.0	1.0	10.9

KEY: Uniformity; Uniformity; No. of blonds; (1-5) - a high figure indicates that the variety shows the character to a high degree

Colour: a high figure indicates a darker green; Brightness: 1 = bright, 2 = dull; Brix - measured using Atago pocket refractometer PAL-1 and gives an indication of sugar content

**TABLE 06 – PRELIMINARY VINING PEA VARIETY EVALUATIONS.** Summary of agronomic data, Standard Vining Pea Preliminary Variety Trial, Nocton – 2023  
 Varieties placed in order of maturity. Standard varieties underlined. All varieties sown on 30 March.  
 Results are means of three replicates. Target population 100 plants per m<sup>2</sup> sown in ten 15 cm rows.

Variety	Source	1000 Seed Weight g	@ TR 100							@ TR 120							Standing Ability 9=erect 1=lodged	Pea wt. as % of total weight	Raw pea colour 1=pale 6=dark
			Maturity (± days) Avola	Yield % of Oasis	% in size grades				Maturity (± days) Avola	Yield % of Oasis	% in size grades				Haulm length cm				
					L	M	S	VS			L	M	S	VS					
<u>Avola</u>	<u>SVS</u>	<u>211</u>	<u>0</u> (21/6)	<u>60</u>	<u>42</u>	<u>50</u>	<u>7</u>	<u>1</u>	<u>0</u> (23/6)	<u>71</u>	<u>57</u>	<u>40</u>	<u>3</u>	<u>0</u>	<u>62</u>	<u>3.0</u>	<u>19</u>	<u>4.6</u>	
Wav 4120	vW	176	+1	51	45	45	9	1	+1	62	64	32	4	0	50	5.7	19	4.7	
<u>Sherwood</u>	<u>SVS</u>	<u>235</u>	<u>+2</u>	<u>54</u>	<u>27</u>	<u>51</u>	<u>18</u>	<u>4</u>	<u>+2</u>	<u>54</u>	<u>36</u>	<u>48</u>	<u>13</u>	<u>3</u>	<u>47</u>	<u>5.7</u>	<u>18</u>	<u>4.7</u>	
CS-504AF	(SL) CS	182	+3	37	49	41	8	2	+2	47	60	33	6	1	69	7.7	18	4.8	
CS-503AF	(SL) CS	159	+3	67	26	58	14	2	+2	70	31	57	11	1	57	7.7	19	4.6	
Wav 975	(SL) vW	150	+4	66	30	51	16	3	+3	72	41	46	11	2	61	7.3	17	4.6	
CS-508AF	(SL) CS	209	+6	81	28	62	9	1	+6	79	35	57	7	1	40	9.0	18	4.7	
PFR 1816	PFR	173	+8	69	43	44	10	3	+8	84	46	45	7	2	37	7.0	25	4.5	
<u>Oasis</u>	<u>LUK</u>	<u>182</u>	<u>+9</u>	<u>100</u> (6.37 t/ha)	<u>62</u>	<u>30</u>	<u>7</u>	<u>1</u>	<u>+9</u>	<u>100</u> (6.52 t/ha)	<u>68</u>	<u>25</u>	<u>6</u>	<u>1</u>	<u>50</u>	<u>4.7</u>	<u>21</u>	<u>4.7</u>	
<u>Ambassador</u>	<u>vW</u>	<u>171</u>	<u>+10</u>	<u>96</u>	<u>61</u>	<u>33</u>	<u>5</u>	<u>1</u>	<u>+10</u>	<u>93</u>	<u>73</u>	<u>24</u>	<u>3</u>	<u>0</u>	<u>61</u>	<u>6.7</u>	<u>19</u>	<u>4.5</u>	
CS-517AF	(SL) CS	185	+12	52	34	40	19	7	+13	64	60	34	6	0	46	7.7	18	4.7	

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

SL = Semi-leafless; SF = Semi-fasciated

Source of varieties see Appendix.

**TABLE 07 - VINING PEA VARIETY EVALUATIONS.** Summary of quality data - Standard Vining Pea Preliminary Variety Trial, Nocton – 2023

Variety	Tenderometer Reading	Appearance				Brix %
		Colour (3-8)	Brightness (1-2)	Uniformity (1-5)	No. of blonds (1-5)	
<u>Avola</u>	<u>97.5</u>	<u>5.0</u>	<u>1.0</u>	<u>4.0</u>	<u>1.0</u>	<u>13.0</u>
Wav 4120	95.0	5.7	1.0	4.7	1.0	14.0
<u>Sherwood</u>	<u>113.0</u>	<u>5.3</u>	<u>1.0</u>	<u>4.5</u>	<u>1.0</u>	<u>10.8</u>
CS-503AF	99.0	5.3	1.0	4.7	1.0	11.5
CS-504AF	102.5	5.0	1.0	4.2	1.0	12.0
Wav 975	93.5	5.5	1.0	4.5	1.0	12.9
CS-508AF	107.0	5.2	1.0	4.0	1.3	10.3
PFR-1816	100.0	5.2	1.0	4.0	1.2	13.9
<u>Oasis</u>	<u>104.0</u>	<u>5.3</u>	<u>1.0</u>	<u>4.3</u>	<u>1.0</u>	<u>10.5</u>
<u>Ambassador</u>	<u>100.5</u>	<u>5.3</u>	<u>1.0</u>	<u>4.5</u>	<u>1.0</u>	<u>10.6</u>
CS-517AF	97.0	5.3	1.0	3.7	1.3	12.4

KEY: Uniformity; Uniformity; No. of blonds; (1-5) - a high figure indicates that the variety shows the character to a high degree

Colour: a high figure indicates a darker green; Brightness: 1 = bright, 2 = dull; Brix - measured using Atago pocket refractometer PAL-1 and gives an indication of sugar content

**TABLE 08 – SCREENING VINING PEA VARIETY EVALUATIONS.** Summary of agronomic data, Standard Vining Pea Screening Variety Trial, Nocton – 2023  
 Varieties placed in order of maturity. Standard varieties underlined. All varieties sown on 30 March.  
 Results are means of two replicates. Target population 100 plants per m<sup>2</sup> sown in ten 15 cm rows.

Variety	Source	1000 Seed Weight g	@ TR 100				@ TR 120				Haulm length cm	Standing Ability 9=erect 1=lodged	Pea wt. as % of total weight	Raw pea colour 1=pale 6=dark				
			Maturity (± days) Avola	Yield % of Oasis	% in size grades L M S VS				Maturity (± days) Avola	Yield % of Oasis					% in size grades L M S VS			
<u>Avola</u>	<u>SVS</u>	<u>211</u>	<u>0</u> (21/6)	<u>71</u>	<u>42</u>	<u>51</u>	<u>6</u>	<u>1</u>	<u>0</u> (23/6)	<u>67</u>	<u>57</u>	<u>40</u>	<u>3</u>	<u>0</u>	<u>66</u>	<u>3.0</u>	<u>18</u>	<u>4.6</u>
Wav 132	(SL) vW	149	+1	68	18	65	16	1	0	63	21	67	11	1	45	7.0	19	4.3
<u>Sherwood</u>	<u>SVS</u>	<u>235</u>	<u>+2</u>	<u>97</u>	<u>28</u>	<u>51</u>	<u>17</u>	<u>4</u>	<u>+2</u>	<u>75</u>	<u>36</u>	<u>49</u>	<u>12</u>	<u>3</u>	<u>45</u>	<u>5.8</u>	<u>16</u>	<u>4.7</u>
CS-492AF	(SL) CS	191	+5	102	30	60	9	1	+6	79	36	56	7	1	30	8.0	22	4.7
Wav 194	(SL) vW	141	+6	65	13	60	23	4	+5	57	16	68	14	2	52	7.5	12	4.7
Wav 168	(SL) vW	175	+6	74	46	43	9	2	+6	63	72	26	1	1	60	6.5	14	4.7
CS-500F	CS	176	+7	104	35	56	8	1	+7	81	48	45	6	1	55	4.5	19	4.6
CS-514F	CS	158	+7	117	57	37	5	1	+7	91	68	28	3	1	51	5.5	21	4.8
PL-0076	(SL) PLS	149	+8	47	30	60	9	1	+8	46	39	54	6	1	50	8.0	14	4.7
PL-0266	(SL) PLS	124	+9	42	9	46	37	8	+9	33	12	55	29	4	48	6.5	11	4.5
Tirza	(SL) ZKI	189	+9	76	30	62	7	1	+9	76	44	51	5	0	57	5.5	19	4.7
CS-513F	CS	124	+9	97	29	55	14	2	+9	86	38	53	8	1	51	8.0	23	4.6
<u>Oasis</u>	<u>LUK</u>	<u>182</u>	<u>+9</u>	<u>100</u> (5.34 t/ha)	<u>58</u>	<u>32</u>	<u>8</u>	<u>2</u>	<u>+9</u>	<u>100</u> (6.91 t/ha)	<u>67</u>	<u>26</u>	<u>6</u>	<u>1</u>	<u>47</u>	<u>4.2</u>	<u>17</u>	<u>4.7</u>
Finish	ZKI	200	+9	123	28	54	16	2	+9	110	33	55	11	1	55	5.5	24	4.6
<u>Ambassador</u>	<u>vW</u>	<u>171</u>	<u>+10</u>	<u>115</u>	<u>60</u>	<u>34</u>	<u>5</u>	<u>1</u>	<u>+10</u>	<u>89</u>	<u>74</u>	<u>23</u>	<u>3</u>	<u>0</u>	<u>62</u>	<u>6.8</u>	<u>17</u>	<u>4.6</u>

KEY: Size grades: L = large > 10.2mm; M = medium 8.75 - 10.2mm; S = small 7.5 - 8.75mm; VS = very small < 7.5mm  
 SL = Semi-leafless; SF = Semi-fasciated  
 Source of varieties see Appendix.



**TABLE 09 - VINING PEA VARIETY EVALUATIONS.** Summary of quality data - Standard Vining Pea Screening Variety Trial, Nocton – 2023

Variety	Tenderometer Reading	Appearance				Brix %
		Colour (3-8)	Brightness (1-2)	Uniformity (1-5)	No. of blonds (1-5)	
<u>Avola</u>	<u>97.5</u>	<u>5.0</u>	<u>1.0</u>	<u>4.0</u>	<u>1.0</u>	<u>13.0</u>
Wav 132	98.0	5.2	1.0	4.7	1.0	10.2
<u>Sherwood</u>	<u>113.0</u>	<u>5.3</u>	<u>1.0</u>	<u>4.5</u>	<u>1.0</u>	<u>10.8</u>
CS-492AF	109.5	5.3	1.0	4.5	1.3	9.9
Wav 194	101.5	5.3	1.0	4.5	1.0	10.3
Wav 168	100.0	5.7	1.0	4.7	1.0	10.1
CS-500F	100.5	5.2	1.0	4.3	1.7	11.6
CS-514F	98.5	5.5	1.0	4.2	1.0	11.2
PL-0076	108.0	4.7	1.0	4.5	1.0	10.5
<u>Oasis</u>	<u>104.0</u>	<u>5.3</u>	<u>1.0</u>	<u>4.3</u>	<u>1.0</u>	<u>10.5</u>
CS-513F	100.0	5.2	1.0	2.7	1.3	11.4
Finish	104.0	5.3	1.0	4.5	1.0	10.2
PL-0266	102.0	5.8	1.7	4.3	1.3	14.2
Tirza	104.5	5.2	1.0	3.8	1.0	10.8
<u>Ambassador</u>	<u>100.5</u>	<u>5.3</u>	<u>1.0</u>	<u>4.5</u>	<u>1.0</u>	<u>10.6</u>

KEY: Uniformity; Uniformity; No. of blonds; (1-5) - a high figure indicates that the variety shows the character to a high degree

Colour: a high figure indicates a darker green; Brightness: 1 = bright, 2 = dull; Brix - measured using Atago pocket refractometer PAL-1 and gives an indication of sugar content

**TABLE 10 – PETITS VINING PEA VARIETY EVALUATIONS.** Summary of agronomic data Vining Pea Petits Pois Main, Preliminary & Screening Variety Trial, Holbeach – 2023. Varieties placed in order of maturity. Standard varieties underlined. All varieties sown on 26 April. Results are means of three replicates for main and preliminary trials and two replicates for screening trial. Target population 100 plants per m<sup>2</sup> sown in ten 15 cm rows.

Variety	Source	1000 Seed Weight g	@ TR 100							@ TR 120							Standing Ability 9=erect 1=lodged	Pea wt. as % of total weight	Raw pea colour 1=pale 6=dark
			Maturity (± days) Waverex	Yield % of Waverex	% in size grades				Maturity (± days) Waverex	Yield % of Waverex	% in size grades				Haulm length cm				
<b>PP Main Trial</b>																			
Digit	(SL) Bro	138	- 3	79	1	13	51	35	- 5	105	2	25	54	19	54	8.3	17	4.5	
Atasiska	(SL) Bro	101	- 2	61	1	14	45	40	- 4	72	2	22	52	24	50	8.0	15	4.6	
Postaldo (DGL0069)	Syn	129	0	110	3	31	54	12	- 1	97	6	40	46	8	62	7.3	15	4.6	
BSC494	(SL) Bro	133	0	131	4	34	49	13	- 1	127	8	46	40	6	55	8.3	19	4.8	
Flovert (DGF0071)	Syn	98	0	98	0	6	37	57	- 1	87	1	10	55	34	56	7.7	15	4.5	
<u>Waverex</u>	<u>vW</u>	<u>125</u>	<u>0</u>	<u>100</u>	<u>1</u>	<u>16</u>	<u>46</u>	<u>37</u>	<u>0</u>	<u>100</u>	<u>2</u>	<u>26</u>	<u>51</u>	<u>21</u>	<u>49</u>	<u>7.3</u>	<u>16</u>	<u>4.8</u>	
			(12/7)	(3.23 t/ha)					(15/7)	(3.69 t/ha)									
<b>PP Preliminary Trial</b>																			
Zara	(SL) vW	103	+ 6	45	1	14	52	33	+ 4	48	2	23	59	16	60	8.3	7	4.7	
<b>PP Screening Trial</b>																			
PL-0001	(SL) PLS	95	+ 1	74	1	16	55	28	0	73	2	25	56	17	50	8.5	13	4.8	
PLS-705	(SL) PLS	59	+ 1	71	0	3	35	62	0	63	0	5	52	43	56	7.5	10	4.3	
PL-0122	(SL) PLS	77	+ 3	51	0	4	34	62	+ 1	46	0	6	44	50	40	7.0	9	4.5	

KEY: Size grades: L = large > 10.2mm; M = medium 8.75 - 10.2mm; S = small 7.5 - 8.75mm; VS = very small < 7.5mm  
 SL = Semi-leafless; SF = Semi-fasciated  
 Source of varieties see Appendix.

**TABLE 11 - VINING PEA VARIETY EVALUATIONS.** Summary of quality data - Standard Vining Pea Petits Pois Variety Trials, Holbeach – 2023

Variety	Tenderometer Reading	Appearance				Brix %
		Colour (3-8)	Brightness (1-2)	Uniformity (1-5)	No. of blonds (1-5)	
Digit	100.5	5.7	1.7	4.2	1.3	12.3
Atasiska	97.0	5.5	1.0	4.0	1.3	13.6
BSC494	102.0	5.2	1.0	4.5	1.0	11.1
Flovert	107.0	6.0	1.0	4.2	1.0	11.4
Postaldo	101.0	5.2	1.0	4.5	1.0	10.6
<u>Waverex</u>	<u>105.0</u>	<u>5.2</u>	<u>1.0</u>	<u>5.0</u>	<u>1.0</u>	<u>12.0</u>
Zara	100.0	5.0	1.0	4.7	1.0	11.4
PL-0001	107.0	5.5	1.0	3.8	1.33	10.6
PLS-705	99.0	5.2	1.0	4.5	1.33	11.0
PL-0122	97.5	5.2	1.0	4.3	1.0	11.9

KEY: Uniformity; Uniformity; No. of blonds; (1-5) - a high figure indicates that the variety shows the character to a high degree

Colour: a high figure indicates a darker green; Brightness: 1 = bright, 2 = dull; Brix - measured using Atago pocket refractometer PAL-1 and gives an indication of sugar content

## APPENDIX 1

### KEY TO SOURCE OF VARIETIES

Bro	Brotherton Seed Company, USA
CS	Crites Seed Inc., USA
EI	Elsoms Seeds Ltd, UK
GA	General Availability
LUK	Limagrain UK Ltd, UK
PFR	The New Zealand Institute for Plant and Food Research Ltd
PLS	Pure Line Seeds Inc., USA
SVS	Seminis Vegetable Seeds, UK
Syn	Syngenta Seeds, UK
vW	van Waveren, Germany
ZKI	ZKI, Hungary