

1/1988

PROCESSORS & GROWERS RESEARCH ORGANISATION

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T H E S E A S O N

The winter was mild, with soil temperatures higher than normal in February and March and rainfall during these months was frequent and often heavy. Drilling began on the last day of February and the trials were drilled into generally good seedbeds. As a result emergence of most crops was good, usually a little above target populations.

April was a drier month with above average temperatures. There was less pest activity from pea and bean weevil (Sitona lineatus) and field thrips (Thrips angusticeps) than in some years.

During the first half of May and the first three weeks of June, rainfall was high and temperatures a little below average. As a result pea crops produced long haulm and excessive foliage. The second half of May and the last week of June was much drier however.

More than twice the long term average amount of rainfall was recorded during July, with rain occurring on most days. Temperatures were below average and there was little sunshine. In pea crops, severe infections of Botrytis and some Mycosphaerella were seen as well as secondary infections of downy mildew, even where fungicidal seed treatments had been used. These diseases reduced the yield of some crops, but quality appeared better than in 1987.

August was very much drier and warmer, and conditions for harvesting combining peas were mostly ideal.

Meteorological Data - Thornhaugh

Month	1988 Average Temperature °C		Long-term Average Temperature °C	
	Maximum	Minimum	Maximum	Minimum
March	10.2	2.7	9.0	1.9
April	13.0	3.2	11.9	4.0
May	16.9	6.5	15.7	6.5
June	20.5	9.7	19.1	9.5
July	19.9	10.9	20.6	11.1
August	21.6	10.5	20.4	11.4

Month	1988 Monthly Rainfall mm	Long-term Average Rainfall mm
March	60.8	44.1
April	30.5	42.3
May	55.7	46.2
June	48.7	49.7
July	101.5	52.5
August	42.9	63.5

4/1988

S U M M A R Y

V I N I N G P E A S

M A I N T R I A L V A R I E T I E S T E S T E D I 9 8 6 - I 9 8 8

The varieties were evaluated in contrasting seasons. 1986 was hot and dry after a cold wet spring. 1987 and 1988 were both wet years, 1988 particularly during the harvesting period.

Seed of all varieties was treated to control downy mildew, damping off and Ascochyta diseases. Five new varieties were compared to the standards, Sprite (breeder's stock), Scout the yield standard (commercially available stock), Dark Skinned Perfection (DSP), and Waverex the petit pois standard.

Misty was of first early maturity, with yields and size grade similar to those of Sprite, but was a shorter strawed and more determinate variety, rather similar to Span. Dignity, a second early variety, was long strawed, heavily foliated and lodged early. Yields were lower than those of Sprite at the freezing stage, but a little higher at the canning stage. Produce was a little smaller in size than Sprite and can be uneven in colour in a dull, wet season. Flair, another second early, again yielded similar to Sprite. The produce was of medium/small size grade, but can be uneven in a wet season.

Yields of Citadel, a true petit pois variety were significantly lower than those of Scout and lower than Waverex. The variety was long strawed and vigorous, but produce was of a good dark even colour for freezing.

Pasja was a semi-leafless variety that gave excellent quality samples of produce in the medium size grade. Yields however, were rather low compared to other varieties in the trial.

T R I A L S I N I 9 8 8

As in previous years the vining pea variety trials programme consisted of four trials. The Main, Preliminary and Screening trials at Thornhaugh and an Extension trial at Gosberton, S. Lincolnshire to evaluate selected varieties on a silt soil type.

Seed of all varieties were treated to control damping off, downy mildew and Ascochyta. The quality standard Sprite was obtained from the breeder, as was the petit pois standard Waverex. The yield standard Scout and the late maturing standard Dark Skinned Perfection (DSP) were from commercially available stocks, except at Gosberton where breeders stock of Scout was used.

The first trial was sown early on the 29th February. The spring was wet but temperatures were above average in March and the peas emerged well. Frequent periods of rainfall induced excessive vegetative growth and many varieties lodged as a result.

5/1988

Above average rainfall during the flowering period resulted in a high level of Botrytis and downy mildew and late maturing varieties seemed to be affected most. Harvesting began on the 5th July. The peas were slow to mature and the vining season was long. In some samples there were several 'blond' peas; a problem associated with heavy foliage and little sun.

MAIN TRIAL, THORNHAUGH - 1988

Growth in this trial was very vigorous, but maturities were within the normal range. Scout, the yield standard, yielded very well.

Sprite and Misty were the earliest varieties to mature. Their yields, growth habit and size grade of produce were similar, but Misty was shorter strawed and more determinate. (At the time of writing Misty has not passed UK Distinctness, Uniformity and Stability tests). D 8225, also of first early maturity, gave disappointing yields, but the produce was of a good dark even colour for freezing.

Dignity matured two days later than, and yielded similar to Sprite. Produce was a little smaller and of a more even colour than Sprite. The variety had thick, heavy foliage and lodged. Flair, another second early also yielded similar to Sprite. Produce was of medium/small size grade and uneven in colour, perhaps because it lodged rather early.

Scout matured seven days after Sprite, was long strawed and lodged, but yields were very good. Pasja (Ceb 1642) was the only semi-leafless variety in the trial. It stood well and matured one day after Scout. Produce was of medium size grade, dark, even coloured, and of excellent quality. Yields were similar to Sprite and better than in previous years. DSP was the latest variety to mature, twelve days after Sprite. The variety was long strawed and yields were low this year. Stirling (FR 2318) was of maincrop maturity. It was long strawed and prone to lodging, but yields were better than DSP and a little better than Sprite. Produce was not as large as that of DSP or Scout.

Petit pois and small seeded varieties

The seed stock of Waverex, the petit pois standard, was virus free and growth of Waverex was more vigorous than seen in previous years. Yields of Waverex were low in this trial and produce a little uneven in colour. Citadel, a true petits pois variety was very low yielding this year. It had long straw, was vigorous and suffered more than other varieties from the effects of the wet weather and a slight check from pre-emergence herbicide. The produce was of similar size grade to Waverex, but of a better colour. D 9315 and Darfon were both fine foliaged and matured six and seven days respectively after Sprite. Both varieties gave a petit pois sample, but with fewer peas in the small (less than 7.5 mm diameter) size grade than Waverex. Darfon gave a dark, even coloured sample of produce, with fewer blond peas than Waverex, while D 9315 was a little paler. Yields of both varieties were similar to Waverex.

SILT SOILS EXTENSION TRIAL
GOSBERTON, SOUTH LINCS. - 1988

Trials began at this site in 1985 and this was the second year for evaluation of late maturing varieties of similar maturity, but smaller size grade, than DSP or Jof. Petits pois and small seeded varieties were also compared with Waverex, which is widely grown in this area, but has proved unreliable where seed stocks are infected with pea seed-borne mosaic virus.

The trial was sown on 5th April and the latest maturing variety DSP, was harvested on 27th July. During that time the rainfall was over 250 mm and much higher than average during July. As in 1987, vegetative growth was excessive, many varieties lodged severely, haulm rotted, and pods were lost as a result of Botrytis infection. DSP, Citadel and Dinos seemed affected most by the conditions. Semi-leafless, Markana and Rampart, the more determinate Puget, and the fine foliated varieties Cobalt, D 9315 and Darfon were affected least. Thus the important aspect of plant type at this site was demonstrated yet again. Amounts of sunshine were lower than usual and this together with heavy foliage resulted in large numbers of blond peas in some samples.

Petits pois and small seeded varieties

Cobalt was the earliest variety to mature, seven days before Scout. It lodged less than most varieties, but yields were disappointing, being significantly lower than Waverex, which yielded well at this site. The variety is not classed as petits pois, but with about 70% of the produce less than 8.75 mm. Produce was rather uneven in colour and contained several blond peas in the frozen sample. Citadel, a true petits pois matured three days before Scout. It is long strawed, vigorous, gave low yields and was clearly unsuitable for these fertile wet conditions. Botrytis may have reduced yields and the produce was uneven in colour. D 9315 was also of second early maturity and yielded similar to Waverex. Peas were of petits pois size grade but slightly larger than Waverex. Produce was slightly paler than Waverex and contained several blond peas in the sample. Darfon matured at the same time as Scout and although it is very long strawed, it stood well and the foliage remained fairly clean. Yields were similar to Waverex, but the produce was uneven in colour and slightly larger with about 80% of the peas in the small/very small size grades. Dinos suffered from the wet conditions at this site and yields were significantly lower than Waverex. Produce was slightly larger than that of Waverex, but had a good even colour. As at Thornhaugh a virus free stock of Waverex was grown at this site. Growth was vigorous and yields were very good, similar to Scout. The produce however, contained many blond peas in the sample.

Late-maturing varieties

Manuela, as in 1987, gave low yields of medium sized peas. Rampart, a semi-leafless variety remained erect longer than most varieties and gave satisfactory yields bearing in mind that the produce is of small size grade. Markana also semi-leafless matured five days after Scout. It lodged less than most varieties in the trial. Yields were good, similar to Scout and the produce was smaller than Scout with a good dark, even colour for freezing.

7/1988

Tahoe gave poor yields, was heavily foliaged and suffered from rotting and Botrytis. Produce was uneven in colour and contained blond peas in the sample. The triple podded variety Triad was also heavy foliaged and lodged. Yields of this variety were disappointing after a good performance in 1987. Puget, an established variety on the silts, again performed well, yielding similar to Scout. Produce was of a good dark, even colour. Sundance, in trial for the first year matured one day before DSP. It had long heavy foliage but yielded well, similar to Scout. Peas were smaller than those of DSP or Scout and of a good colour. DSP was the latest variety to mature, and yields of large size grade peas were low.

From this years results the most suitable late maturing varieties are Puget and Sundance and the semi-leafless varieties Rampart and Markana. The smaller seeded varieties D 9315 and Darfon also performed well. Citadel, Dinos and Tahoe appeared to be unsuitable on this soil type and conditions. Triad was disappointing this year.

P R E L I M I N A R Y T R I A L - 1 9 8 8

Varieties in this trial are at National List stage of evaluation, and come from sources within Europe and the USA. A good spread of maturity was seen between the varieties, but only a few were early or late maturing. The trial was drilled early, and yields were high, particularly from the yield standard Scout.

The earliest variety to mature was H 955-1-1 (Nordic), one day before Sprite. It was short strawed and less prone to lodging than many varieties, but did not yield well. Produce was of medium size grade and uneven in colour. FR 80-1789-1, of similar maturity to Sprite gave low yields of medium size grade peas.

Joko and semi-leafless Nova were both second earlies and gave low yields of medium size grade peas. Nova had a good plant habit and the frozen sample of dark, even coloured peas was one of the best from the trial. NZ 888 and Mimic were also of second early maturity, both lodged early and were of similar heavy foliaged plant type. Peas were of a similar size to Sprite and yields were fairly low, but Mimic did yield better at the canning stage. WAV F 502, also of second early maturity, was long strawed and gave satisfactory yields of smaller grade size peas than Scout.

Scamp and Sentry matured two days before Scout. Scamp yielded well at the canning stage, but the produce which was smaller than Sprite had a poor colour. Sentry was long strawed and vigorous and yielded only a little below Scout. The variety lodged badly and the large size grade produce was uneven in colour. Vaupy and GZ 8/1, both semi-leafless, matured at the same time as Scout. Vaupy had a good plant habit, but the yield of medium grade sized peas was low. GZ 8/1 had an extreme plant type, with thick stems and very large stipules. Although the peas were of a good colour, they were large and yields were low.

8/1988

Waverex the petits pois standard performed well. The only other true petits pois in trial, 441 ph 15 matured a day later and was fine foliated. It did not yield as well as Waverex and peas were slightly smaller, but less attractive in appearance.

H 328-1-1 was semi-leafless and of early maincrop maturity. It was short strawed and remained fairly erect, but yields were only average and the produce large. Sublima matured nine days after Sprite and was of fine foliage. Yields were good and the medium size grade peas were a good colour. Asunta, of the same maturity was also fine foliated and yields were a little better. Produce was of small/medium size grade and a good colour for freezing. WAV F 505 yielded slightly better than Scout and gave a smaller sized sample of produce, although it was a little uneven in colour. The variety was long strawed, lodged to some extent, but remained fairly disease free.

Yields of Bonito were disappointing this year. It is a triple podded, heavy foliated variety and was affected by the wet weather during the season. NUN 512-2 was long strawed, lodged and gave average yields of medium sized peas.

Maturing one day after DSP, Twilight, as in 1987 gave very poor yields of similar size grade peas to DSP. NZ 988 was a very late variety, maturing four days after DSP. Although yields were better than DSP, the peas were large and uneven in colour.

The most promising varieties in the trial were Sublima, Asunta and WAV F 505. These varieties will be evaluated further in Main Trial in 1989.

SCREENING TRIAL - 1988

Thirty varieties were evaluated and as with the preliminary trial most were of mid-season maturity. Despite being later sown than the Main and Preliminary trials, growth was vigorous throughout the season.

No variety significantly outyielded Scout at the freezing stage. Scout however, did not perform as well at the canning stage, where several varieties significantly outyielded the standard.

Cl 513S was a very early maturing variety, five days before Sprite. It gave poor yields of medium size grade peas with a good colour at the freezing stage, although yields were better at the canning stage. NZ 188 matured one day before Sprite. Yields were lower at the freezing stage and higher at the canning stage than Scout. Produce was of medium size grade, but of indifferent quality. Sprite gave good yields of mostly large peas, with the frozen sample containing several blond peas. Curly matured at the same time as Sprite and despite being semi-leafless, it had lodged badly by harvest. Pods of this variety were long and broad. The produce was of medium size grade, but yields were poor.

In the group of second earlies FR 165 gave better yields than Scout, while yields of FR 605 and Sunre were low. Produce of these varieties was uneven in colour, containing several blond peas.

9/1988

The following were early maincrop varieties and matured at the same time as Scout. NZ 688 was semi-leafless and yields overall were moderate with peas of medium/small size grade, and were pale in appearance. Scout gave an even coloured frozen sample of produce this season. FR 308 and Cl 412S gave poor yields, although the former did yield better at the canning stage. Produce of FR 308 was large, while Cl 412 S was of medium/small size grade. Argona and RS 2272 gave peas of small size, but only 75% of produce was in the petits pois grade. Yields from Argona were low, but the produce was attractive and even coloured. RS 2272 yielded a little above Scout at the freezing stage and significantly so at the canning stage but produce was uneven in colour. Maturing one day after Scout, WAV F 504 gave very good yields, significantly outyielding Scout at the canning stage. Produce was even coloured and of medium size grade.

Waverex the petits pois standard gave moderate yields but the produce contained several blond peas. 690 Ph 6.2 and 690 Ph 6.3 were also early maincrop varieties and yielded better than Scout. Peas were of medium/small size grade, but were very pale in colour and unsuitable for freezing.

The following varieties matured three days after Scout and all gave very good yields, with 23, Conf. 4 and 1037 Ph 7 significantly outyielding Scout at the canning stage. Conf. 2 was of medium/small size grade and produce was attractive with a good, dark, even colour. 23 and Conf. 4 were similar in appearance and size to Scout. 1036 Ph 21 and 1037 Ph 7 were semi-leafless, both remained erect until harvest and gave attractive samples of dark even coloured medium/small size grade peas.

Conf. 3 was also semi-leafless and matured one day before DSP. The variety was long strawed, but yielded well and gave an attractive sample of medium sized even coloured peas. Pods of this variety were long and thin and contained many peas. FR 743 and Menlo matured nine days after Sprite. Both were heavily foliaged, lodged early and the yields of medium sized, uneven coloured peas were poor. Conf. 1 and Cl 626 S yielded similarly to Scout and were of small/medium size grade. Conf. 1 gave a more attractive sample, with dark even coloured peas.

Maturing at the same time as DSP, Sunex gave moderate yields, but it was heavily foliaged and lodged early. Yields of DSP and NZ 888, which matured two days later, were poor. Produce of these varieties was uneven and contained many blond peas.

The most promising varieties in terms of yield and quality were 1037 Ph 7, 1036 Ph 21, Conf. 1, Conf. 2, Conf. 3 and WAV F 504.

VINING PEA VARIETY STUDIES

Varieties placed in order of maturity. Standard varieties underlined. Results are mean of three replicates. All varieties sown together in each year. Target population 90 plants per m² sown in ten 15 cm rows.

Variety	Source	Seeds /kg	At Practical Freezing Stage					At Practical Canning Stage					Haulm length cm.	Pea wt. as % of total wt.	Raw pea colour 1 = pale 5 = dark	
			Maturity relative to Sprite (+ days)	Yield of shelled peas as % of Scout @ TR 100	% in size grades	L	M	S	VS	Maturity relative to Sprite (+ days)	Yield of shelled peas as % of Scout @ TR 120	% in size grades				L
<u>Sprite</u>	As	4515	0	94	37	47	6	2	0	105	53	40	6	1	17	4
Misty (Fr 2272) †	PLS	4463	0	98	34	45	18	3	0	99	50	43	6	1	17	4
Dignity (CMO 76F)	CM	4023	+2	82	33	39	24	4	+2	95	45	40	13	2	14	4
Flair (XPF 176)	As	6352	+3	94	11	49	34	6	+3	99	16	53	27	4	17	5
Citadel	As	10117	+5	56-	0	11	43	46	+4	66-	3	17	54	26	12	5
Waverex	vW	9906	+6	76	0	12	40	48	+7	72	2	21	52	25	14	5
<u>Scout</u>	Bk	4870	+6	100	42	42	13	3	+6	100	56	37	6	1	17	5
				(6.27t/ha)						(6.96t/ha)						
Pasja(Ceb 1642) φ	B1	4191	+7	73	30	43	22	5	+7	83	44	44	10	2	12	5
DSP	Bk	4045	+9	90	60	28	10	2	+9	90	67	26	6	1	13	4
Significance @ P = 0.05				SD												
LSD @ P = 0.05				27.1						33.8						
C of V %				18.0						20.9						

KEY: Yield: + Significantly higher than Scout @ P = 0.05
 - Significantly lower than Scout @ P = 0.05

Size grades: L = large > 10.3 mm; M = medium 8.75 - 10.3 mm; S = small 7.5 - 8.75 mm; VS = very small < 7.5 mm
 φ = Semi-leafless
 † = Misty has not passed UK DUS testing (Distinctness, uniformity and stability tests).

VINING PEA VARIETY STUDIES Summary of Agronomic Data - Main Variety Trial, Thornhaugh - 1988
 Varieties placed in order of maturity. Standard varieties underlined. All varieties sown on 18th March.
 Results are means of three replicates. Target population 90 plants/m² sown in ten 15 cm rows.

Variety	Source	Seeds /kg	At Practical Freezing Stage				At Practical Canning Stage				Haulm length cm	Pea wt. as % of total weight	Raw pea colour 1=pale 5=dark
			Maturity relative to Sprite (\pm days)	Yield of shelled peas as % of Scout @ TR 100	% in size grades L M S VS	Maturity relative to Sprite (\pm days)	Yield of shelled peas as % of Scout @ TR 120	% in size grades L M S VS					
Misty (FR 2272)	PLS	4489	0	77-	46 34 18 2	0	75-	68 28 4 0	69	15	4		
Sprite	As	4780	0	80-	47 35 15 3	0 (12/7)	95	66 28 5 1	80	16	4		
D 8225 (Rexado)	S&G	4848	0	66-	25 43 25 7	- 1	60-	37 43 17 3	87	13	5		
Dignity (CMO 76F)	CM	4410	+ 2	79-	40 37 20 3	+ 1	79-	56 35 7 2	82	15	4		
Flair (XPF 176)	As	6350	+ 4	77-	17 48 28 7	+ 3	81-	26 51 18 5	81	14	4		
Citadel	As	9460	+ 6	38-	0 20 44 36	+ 4	47-	0 22 48 30	93	11	4		
D 9315 (Minado)	S&G	11549	+ 6	70-	0 27 53 20	+ 6	75-	0 27 58 15	70	15	3		
Darfon	RS	8400	+ 7	72-	0 20 53 27	+ 6	79-	1 24 58 17	94	14	4		
Scout	Bk	4274	+ 7	100 (8.40t/ha)	63 26 8 3	+ 6	100 (9.75t/ha)	72 20 6 2	104	20	5		
Maverex	vW	11031	+ 7	70-	0 19 40 41	+ 7	66-	1 24 48 27	73	14	4		
Pasja (CEB 1642)(SL)	Bl	3750	+ 8	77-	29 42 23 6	+ 7	78-	48 39 11 2	69	12	4		
D.S.P.	Bk	4268	+12	77-	51 32 14 3	+11	73-	58 29 10 3	91	13	4		
Stirling (FR 2318)	PLS	4402	+12	82	45 40 12 2	+10	78-	57 33 8 2	89	14	4		
Significance @ P = 0.05				SD									
LSD @ P = 0.05				18.03									
C of V %				11.1									

KEY: Yield: + Significantly higher than Scout @ P = 0.05; - Significantly lower than Scout @ P = 0.05
 Size grades: L = large > 10.3 mm; M = medium 8.75 - 10.3 mm; S = small 7.5 - 8.75 mm, VS = very small < 7.5 mm
 (SL) = semi-leafless

VINING PEA VARIETY STUDIES Summary of Agronomic Data - Extension Variety Trial, Silt Soils, South Lincolnshire - 1988
 Varieties placed in order of maturity. Standard varieties underlined. All varieties sown on 5th April.
 Results are means of three replicates. Target population 90 plants per m² sown in ten 15 cm rows.

Variety	Source	Seeds /kg	At Practical Freezing Stage				At Practical Canning Stage				Haulm length cm	Pea wt. as % of total weight	Raw pea colour 1=pale 5=dark
			Maturity relative to Scout (± days)	Yield of shelled peas as % of Scout @ TR 100	% in size grades	Maturity relative to Scout (± days)	Yield of shelled peas as % of Scout @ TR 120	% in size grades					
Cobalt	CL	10154	- 7	73-	1 31 43 25	- 7	63-	2 47 35 16	97	11	4		
Citadel	As	9460	- 3	36-	0 14 43 43	- 3	31-	2 23 42 33	111	5	4		
D 9315 (Minado)	S&G	11549	- 2	95	0 15 53 32	- 2	84	1 22 54 23	85	14	3		
Darfon	RS	8400	0	96	2 18 50 30	0	70-	2 23 60 15	119	11	3		
Scout	CM	4460	0(21/7)	100	46 31 17 6	0	100	52 34 11 3	109	13	5		
				(5.83t/ha)			(8.06t/ha)						
Waverex	vW	11031	+ 1	101	3 18 40 39	+ 2	86	3 24 55 18	95	16	4		
Manuela	vW	5587	+ 4	79-	21 35 31 13	+ 3	74-	26 45 24 5	110	12	4		
Rampart	As	7688	+ 4	80-	9 28 45 18	+ 3	77-	11 46 36 7	100	12	4		
Tahoe	PLS	5115	+ 4	62-	28 35 28 9	+ 3	63-	40 43 13 4	106	9	4		
Dinos	As	8107	+ 4	62-	3 24 42 31	+ 4	59-	1 45 41 13	108	11	4		
Puget	Bro	4805	+ 5	100	31 38 22 9	+ 5	77-	43 38 16 3	96	13	4		
Markana	Sp	4352	+ 5	100	37 38 20 5	+ 4	79	39 44 14 3	104	11	4		
Sundance	PLS	4390	+ 5	102	36 39 18 7	+ 5	97	52 35 10 3	103	14	4		
Triad	Ya	4752	+ 6	60-	27 41 24 8	+ 7	48-	40 38 17 5	92	9	4		
D.S.P.	Bk	4268	+ 6	75-	44 36 16 4	+ 6	68-	52 33 11 4	120	9	4		
				SD			SD						
				19.7			21.4						
				14.5			17.9						

KEY: Yield: + Significantly higher than Scout @ P = 0.05; - Significantly lower than Scout @ P = 0.05
 Size grades: L = large > 10.3 mm; M = medium 8.75 - 10.3mm; S = small 7.5 - 8.75 mm; VS = very small < 7.5 mm
 (SL) = semi-leafless

VINING PEA VARIETY STUDIES Summary of Agronomic Data - Preliminary Variety Trial, Thornhaugh - 1988
 Varieties placed in order of maturity. Standard varieties underlined. All varieties sown on 29th February.
 Results are means of three replicates. Target population 90 plants/m² sown in ten 15 cm rows.

At Practical Freezing Stage At Practical Canning Stage

Variety	Source	Seeds /kg	At Practical Freezing Stage				At Practical Canning Stage				Haulm length cm	Pea wt. as % of total weight	Raw pea colour 1=pale 5=dark
			Maturity relative to Sprite (± days)	Yield of shelled peas as % of Scout @ TR 100	% in size grades L M S VS	Maturity relative to Sprite (± days)	Yield of shelled peas as % of Scout @ TR 120	% in size grades L M S VS					
H 955-1-1 (Nordic)	Rog	4865	- 1	76-	19 55 23 3	- 1	83	28 59 12 2	77	14	4		
FR 80-1789-1	Rog	5324	0	65-	20 41 29 10	+ 1	71-	33 48 16 3	92	13	4		
Sprite	As	4035	0 (6/7)	86	49 39 10 2	0 (8/7)	101	62 30 6 2	71	17	4		
Joko	Nun	7452	+ 2	64-	14 43 30 13	+ 3	61-	14 55 26 5	94	13	4		
Nova (SL)	Sp	5291	+ 3	54-	34 44 16 6	+ 4	67-	38 44 14 4	77	12	5		
NZ 388	Agis	4423	+ 3	60-	35 41 20 4	+ 4	69-	55 35 8 2	92	11	4		
Mimic (FR 2434)	PLS	4777	+ 4	86	48 37 12 3	+ 4	104	59 33 6 2	88	15	4		
WAV F502	vW	5399	+ 4	85	37 45 16 2	+ 5	94	44 42 12 2	95	15	4		
Scamp (FR 108)	PLS	5906	+ 5	89	39 43 16 2	+ 5	97	52 38 9 1	88	14	4		
Sentry	PLS	4559	+ 5	96	55 32 11 2	+ 5	96	65 28 5 2	106	13	4		
Vaupy (SL)	Sp	6250	+ 6	71-	24 42 30 4	+ 6	74-	26 49 21 3	88	12	4		
GZ 8/1 (SL)	Bk	4037	+ 7	81	45 41 13 1	+ 6	86	55 35 9 1	117	13	5		
Scout	Bk	4274	+ 7	100 (8.15t/ha)	57 34 7 2	+ 6	100 (9.19t/ha)	69 23 7 1	116	12	5		
Waverex	vW	11031	+ 7	77-	0 24 32 34	+ 7	71-	0 27 47 26	83	12	4		
441 ph 15 (Minnow)	Bk	11863	+ 8	62-	0 15 39 46	+ 8	68-	0 14 46 40	87	12	4		
H 328-1-1 (SL)	Rog	4895	+ 8	79	54 37 7 2	+ 8	91	56 36 6 2	79	14	5		
Sublima	Sp	8130	+ 9	92	20 51 21 8	+ 9	92	23 51 19 7	83	15	4		
Asunta (NUN 5540)	Nun	9810	+ 9	94	0 33 43 24	+10	101	0 38 49 13	92	15	4		
WAV F505	vW	5943	+ 9	104	32 48 16 4	+10	101	33 53 11 3	104	15	4		
Bonito	CM	6020	+ 9	45-	30 41 18 11	+10	54-	38 35 20 7	87	9	4		
NUN 512-2	Nun	6110	+10	82	33 41 19 7	+11	82	38 41 17 4	107	15	4		
D.S.P.	Bk	4268	+12	70-	47 33 15 5	+12	68-	58 31 9 2	104	13	5		
Twilight	PLS	4337	+13	44-	48 31 17 4	+13	46-	53 30 13 4	93	8	4		
NZ 988	Agis	4712	+16	78	58 29 11 2	+17	87	67 26 5 2	118	13	4		

Significance @ P = 0.05
 LSD @ P = 0.05
 C of V %

KEY: Yield: + Significantly higher than Scout @ P = 0.05; - Significantly lower than Scout @ P = 0.05
 Size grades: L = large > 10.3 mm; M = medium 8.75 - 10.3 mm; S = small 7.5 - 8.75 mm; VS = very small < 7.5 mm
 (SL) = semi-leafless

VINING PEA VARIETY STUDIES Summary of Agronomic Data - Screening Variety Trial, Thornhaugh - 1988
 Varieties placed in order of maturity. Standard varieties underlined. All varieties sown on 20th April.
 Results are means of two replicates. Target population 90 plants/m² sown in ten 15 cm rows.

At Practical Freezing Stage At Practical Canning Stage

Variety	Source	Seeds /kg	At Practical Freezing Stage				At Practical Canning Stage				Haulm length cm	Pea wt. as % of total weight	Raw pea colour 1=pale 5=dark
			Maturity relative to Sprite (± days)	Yield of shelled peas as % of Scout @ TR 100	% in size grades L M S VS	Maturity relative to Sprite (± days)	Yield of shelled peas as % of Scout @ TR 120	% in size grades L M S VS					
Cl 513 S (Cash)	Cl	5408	- 5	70	28 38 26 8	- 4	93	33 43 18 6	56	14	5		
NZ 188	Agis	4938	- 1	91	26 38 29 7	0	112	41 44 13 2	71	13	4		
Sprite	As	4780	0 (20/7)	120	50 37 12 1	0 (22/7)	137	61 31 6 2	71	17	4		
Curly	(SL) N&S	5200	0	57-	30 40 26 4	0	84	42 40 17 1	72	9	4		
FR 165	PLS	4698	+ 2	106	40 39 17 4	+ 3	135	43 44 11 2	83	17	4		
FR 605	Bro	5612	+ 3	88	27 36 29 8	+ 4	121	32 50 15 3	90	14	5		
Sunre	Sun	5310	+ 4	78	31 48 18 3	+ 5	106	39 45 13 3	70	12	5		
NZ 688	(SL) Agis	6667	+ 5	94	2 43 42 13	+ 6	117	12 53 30 10	84	16	3		
Scout	Bk	4274	+ 5	100	45 39 13 3	+ 6	100	57 33 8 2	94	16	4		
				(6.67t/ha)			(6.67t/ha)						
FR 308	PLS	5048	+ 5	87	43 41 14 2	+ 5	139	60 35 4 1	100	19	4		
Cl 412 S (Cristy)	Cl	11604	+ 5	81	5 36 36 13	+ 6	105	3 43 42 12	78	12	4		
Argona	Nun	7790	+ 5	85	0 24 49 27	+ 5	103	2 25 53 20	89	15	4		
RS 2272	RS	6350	+ 5	107	0 24 47 29	+ 6	147+	1 29 54 16	64	16	4		
WAV F 504	VW	5450	+ 6	122	22 55 19 4	+ 7	149+	29 59 10 2	77	17	4		
Waverex	VW	11031	+ 7	95	1 12 46 41	+ 7	117	1 18 58 23	77	16	4		
690 Ph 6.2	Bk	8475	+ 7	105	4 25 53 18	+ 7	116	5 33 47 15	80	16	2		
690 Ph 6.3	Bk	7813	+ 7	115	5 28 43 24	+ 7	129	9 40 42 9	74	16	2		
Conf 2	-	9050	+ 8	124	6 39 43 12	+ 10	135	6 49 38 7	84	19	4		
23	Chal	4497	+ 8	126	37 45 14 4	+ 9	153+	60 32 6 2	93	18	4		
Conf 4	-	4674	+ 8	130	47 40 11 2	+ 8	143+	59 34 5 2	79	22	4		
1036 Ph 21	(SL) Bk	6944	+ 8	115	10 46 31 13	+ 8	133	16 57 23 4	84	19	4		
1037 Ph 7	(SL) Bk	5882	+ 8	125	19 47 15 19	+ 9	149+	26 53 18 3	86	19	4		
Conf 3	(SL) -	5915	+ 9	123	18 55 22 5	+ 10	135	25 59 14 2	110	19	5		

VINING PEA VARIETY STUDIES Summary of Agronomic Data - Screening Variety Trial, Thornhaugh - 1988
 Varieties placed in order of maturity. Standard varieties underlined. All varieties sown on 20th April.
 Results are means of two replicates. Target population 90 plants/m² sown in ten 15 cm rows.

Variety	At Practical Freezing Stage				At Practical Canning Stage				Raw pea colour 1=pale 5=dark		
	Source	Seeds /kg	Maturity relative to Sprite (\pm days)	Yield of shelled peas as % of Scout @ TR 100	% in size grades L M S VS	Maturity relative to Sprite (\pm days)	Yield of shelled peas as % of Scout @ TR 120	% in size grades L M S VS		Haulm length cm	Pea wt. as % of total weight
FR 743	Bro	4885	+ 9	54-	21 48 25 6	+10	62	31 50 15 4	79	11	4
Menlo	Bro	4708	+ 9	52-	24 50 22 4	+10	63	33 47 15 5	74	11	4
Conf 1	-	9878	+ 9	96	2 31 50 17	+10	101	2 45 40 13	78	16	4
Cl 626 S (Caty)	Cl	8202	+ 9	102	3 25 52 20	+ 9	104	4 36 49 11	89	17	4
Sunex	Sun	6000	+10	88	10 41 39 10	+11	96	18 51 27 4	86	14	4
D.S.P.	Bk	4268	+10	60-	40 38 17 5	+11	77-	47 36 12 5	93	10	5
NZ 888	Agis	4696	+12	43-	13 34 38 15	+13	43-	24 41 26 9	81	6	4
				SD			SD				
				35.8			40.0				
				11.1			13.3				

KEY: Yield: + Significantly higher than Scout @ P = 0.05; - Significantly lower than Scout @ P = 0.05
 Size grades; L = large > 10.3 mm; M = medium 8.75 - 10.3 mm; S = small 7.5 - 8.75 mm; VS = very small < 7.5 mm
 (SL) = semi-leafless

V I N I N G P E A V A R I E T Y S T U D I E S

Disease Resistance Test - Main Trial, 1988

Results for downy mildew susceptibility are the mean of tests carried out at 2 sites.

Variety	Field resistance to downy mildew (<i>Peronospora viciae</i>) *	
	1988 Rating	Overall rating based on 3 years data
Citadel	MS	
Darfon	GFR	
Dark Skinned Perfection		GFR
Dignity	MS	
D 8825 (Rexado)	SS	
D 9315 (Minado)	SS	
Flair (XPF 176)	MS	
Misty (FR 2272)	S	
Scout		GFR
Sprite		S
Stirling	S	
Waverex	MS	SS

* Key: GFR = Good field resistance
 SS = Slightly susceptible
 MS = Moderately susceptible
 S = Susceptible

SUMMARY

COMBINING PEAS

TRIALS IN 1988

In 1988 PGRO again had a large programme of variety trials. In six replicated trials 74 varieties were evaluated, including the standards Birte, Countess, Progreta and Solara. The mean yield of these four varieties was used as the yield control in all trials. Forty nine varieties evaluated were semi-leafless and nine were tare-leaved.

The Screening, Preliminary, one of the Main trials and a Confidential Screening trial were carried out at Thornhaugh on a sandy loam soil type. Two other Main trials were carried out at Royston, Hertfordshire, on a free draining light soil and on an organic silt clay loam at Chatteris, Cambridgeshire. The Main trials form part of the NIAB/ADAS/PGRO co-ordinated system from which the Recommended List is produced. Varieties tested are either fully or provisionally recommended, or are candidates for the recommended list jointly selected from the most promising registered varieties. Six varieties Tsarina, Hanak, Majesty, Echo, Kasino and Ascona are in the RLO category where extra data is being sought before the varieties are put forward for full Recommended List evaluation. Varieties with a special use recommendation (Conquest, Maro and Bunting) were not tested at Royston.

All seed used in the trials was treated to control both damping off diseases and Ascochyta. Good conditions allowed an early start to drilling, and trials were drilled into good seedbeds during the period 29th February - 6th April. At Thornhaugh emergence was good (usually a little above target populations) with little damage from field thrip or pea and bean weevil. At Chatteris a dry spell after drilling caused erratic and delayed emergence. At Thornhaugh frequent periods of rainfall, particularly during July induced vigorous vegetative growth and lodging of some varieties was severe. The yield of some varieties may have been further reduced by infections of downy mildew (Peronospora viciae). Rainfall at Chatteris was less than at Thornhaugh, growth was not as vigorous as usual and lodging was less severe. At Royston emergence was satisfactory and growth was adequate throughout the season and was never restricted by a lack of moisture as in 1987, but peas at Royston suffered a severe infection of downy mildew. As a result NIAB in agreement with PGRO decided not to include results from this trial in the preparation of the 1989 Recommended List. Results of this trial are therefore not presented, and it is hoped that in the future seed treatments to control downy mildew will be used in the trials. Fine weather during the month of August allowed the harvest to proceed with little interruption enabling most varieties to be harvested at the optimum time.

18/1988

Levels of staining and numbers of chalky peas (caused by Botrytis) were low compared to 1987, and these were assessed for varieties thought to have possible potential for human consumption. Samples of all small blue and marrowfat varieties from the Thornhaugh trials were canned and the produce sent for evaluation by the canning industry. Samples of the canned produce were also evaluated at Cannery's Day, held at the PGRO, by a panel of BEPA (British Edible Pulse Association) members. The panel consisted of quality control personnel from the canning companies and merchants.

MAIN TRIAL, THORNHAUGH - 1988
(NIAB/ADAS/PGRO)

Yields were better overall than 1987, by about 0.6 t/ha.

The small blues all yielded lower than the mean of the control varieties; Conquest and Helka significantly lower. Yields of Helka may have been depressed by an infection of downy mildew midway through the season. Orb and Echo were better yielding. Echo was a little longer strawed and had the better standing ability of the two. With the exception of Conquest all the small blues were semi-leafless. Conquest, recommended as a special use human consumption variety, was the earliest maturing small blue and the only small blue to be judged by the BEPA panel to have canning qualities, it was however the lowest yielding small blue variety.

All three large blues significantly outyielded the control. Ascona was the highest yielding, with Progolt and Solara yielding the same. Ascona matured one day earlier than Solara and Progolt five days before Solara. Ascona and Solara are of similar plant type - semi-leafless and short strawed. Progolt was long strawed and conventional leaved. All three varieties were easy to harvest.

Madria, Majesty and Consort were the earliest maturing white peas (8 days before Countess) and although semi-leafless, all showed poor standing ability. Madria was the shortest strawed variety in the trial. Madria and Majesty yielded similarly and lower than the control, yields of Consort were poor. Birte and Stehgolt both conventional leaved lodged badly, and while Birte yielded well, Stehgolt suffered from secondary infections of downy mildew and yields were poor. Hanak and Bohatyr yielded very well, significantly better than the control. Bohatyr was the highest yielding variety in the trial. Both varieties are of similar plant type and habit. They are long strawed, conventional leaved and after early lodging further vertical growth holds the pods clear of the ground. Semi-leafless Kasino also yielded better than the control, but not significantly so. It was vigorous with long straw, but lodged by harvest. Countess was late maturing, similar to Progreta, and yielded better than the control, but an infection of downy mildew may have reduced yields. It was long strawed, but stood fairly well and was easy to harvest.

19/1988

Progreta was badly infected by disease, yields as in 1987 were poor and was the lowest yielding variety in the trial. Princess was of similar maturity to Progreta, it was semi-leafless, stiff strawed, stood well and was easily harvested, but yields at this site were disappointing. Bunting and Maro were later maturing than Progreta, were long strawed, lodged and yielded lower than the control. Maro was the better yielding and was one day later in maturity.

Bunting, Maro and Progreta were all judged to have suitable canning qualities by the BEPA panel. Princess was judged to be unsuitable on the grounds of poor texture and excessive breakdown. Princess may however, be suitable as a packet pea for human consumption.

MAIN TRIAL, CHARACTERISTICS - 1988
(N I A B / A D A S / P G R O)

Yields were better at this site than 1987, by about 1.7 t/ha, lodging was not as great and quality was generally very good.

As at Thornhaugh Conquest was significantly lower yielding than the control. The other small blues yielded better than the control, but not significantly so. Orb was the highest yielding small blue followed by Echo and Helka. Tsarina was lower yielding but matured very early, 12 days before Progreta. Helka and Echo followed by Orb showed the best standing ability and harvestability in this group.

Of the large blues Progolt was the earliest to mature, it was easily harvested, but yields were slightly lower than the control. Ascona matured one day before Solara, both were of similar plant habit and were short strawed. Ascona and Solara gave similar yields higher than the control.

White seeded peas Madria, Majesty, Birte and Kasino matured 8 days before Countess. Kasino and Majesty showed good standing ability and were easily harvested. Madria was very short and weak strawed and lodged. Birte, also weak strawed, lodged badly. Madria, Majesty and Birte yielded similar to the control and Kasino slightly higher than the control. Consort suffered less from lodging at this site, was easy to harvest and yielded similar to the control. Stehgolt lodged severely and yields were low. Hanak and Bohatyr were both long strawed but easily harvested, and their yields were disappointing at this site being lower than the control. Countess of similar maturity to Progreta performed well, was easily harvested and was the second highest yielding variety in the trial.

Princess was the only variety at this site to significantly outyield the mean of the control varieties. Princess had a better plant habit than other marrowfat varieties, semi-leafless, erect and was easy to harvest. Bunting matured one day after Progreta, yields were similar to Progreta and both were significantly lower than the mean of the control varieties. Maro was the latest variety to mature, it was not easily harvested, but yields were only a little lower than the control.

MAIN TRIAL, ROYSTON - 1988
(NIAB/ADAS/PGRO)

Due to the severity of the infection of downy mildew, NIAB in agreement with PGRO decided not to include results from this site in the preparation of the 1989 Recommended List. Results are therefore not presented, and no conclusions on yield can be reached.

All varieties were infected by downy mildew to some extent. The varieties Progreta, Stehgolt, Helka, Progolt and Tsarina showed the highest levels of infection. Birte, Solara, Bohatyr, Consort, Ascona and Hanak had low levels of infection.

Straw lengths were considerably shorter than at the Thornhaugh or Chatteris sites. Many varieties showed excellent standing ability, and this coupled with light growth made harvesting of most varieties easy. Echo showed the best standing ability and the varieties Ascona, Solara and Princess also stood well. Tsarina, Helka, Progolt and Stehgolt did not stand as well as most varieties. Birte had poor standing ability.

Thousand grain weights of the produce were higher at this site.

PRELIMINARY TRIAL, THORNHAUGH, 1988

This trial provides additional data to the National List sites, which are used to select candidate varieties for the Recommended List. Excluding the standards there were nineteen varieties entered this year, including fourteen semi-leafless and two tare-leaved varieties, and as in 1987 the white peas formed the largest group. Small blue and marrowfat varieties were canned to evaluate their potential for human consumption.

Tiara was the earliest maturing variety, 11 days before Progreta. It was very small seeded, short strawed, lodged and was lower yielding than the control. Radley and NRPB 621, both semi-leafless matured, 4 and 5 days respectively after Tiara, they were quite long strawed and fairly easy to harvest. Radley yielded similar to the control and NRPB 621 performed very well significantly outyielding the control.

All the large blues yielded better than the control. Solara significantly so, and all except Ceb 120 were short strawed. Ceb 1118 and Solara were semi-leafless and of similar plant habit. Chantal was tare-leaved. Ceb 120 yielded better than Ceb 1118 and Chantal.

Birte, Katrin and NRPB 640 (Bohatyr plant type) were conventional leaved varieties, the remaining white seeded peas were semi-leafless. With the exception of Countess, all of the white peas yielded better than the control; Katrin, Rex and NRPB 640 significantly so. Yields of Countess may have been reduced by an infection of downy mildew midway through the season. Countess of similar maturity to Progreta was the latest maturing white pea. NRPB 640 and Tivoli matured 5 and 4 days respectively before Countess. The rest of the white peas were of similar maturity, in the range 7 - 9 days before Countess. Renata and Tivoli were very long strawed, PAJ 4-0208 and PAJ 4-0241 were very short strawed. Impala and Renata lodged more than other varieties but none of the white peas were difficult to harvest.

21/1988

Reflex matured 2 days before Progretra. It was tare-leaved, short strawed, difficult to harvest and was lower yielding than the control. The yield of Progretra may have been reduced by an infection of downy mildew, it was the lowest in the trial and significantly lower than the control. Progretra and Maro were both long strawed. Ceb 210 and Maro had the same maturity, 2 days later than Progretra. Ceb 210 was of similar habit to Maro and yields were better than Maro and slightly better than the control. The seed size of Ceb 210 was larger than that of Maro, which is a desirable feature for the canning industry.

None of the small blue varieties were judged to have canning qualities by the BEPA panel. Maro and Progretra were suitable as was the new variety Ceb 210. Some interest in the latter variety was shown by the canning companies.

SCREENING TRIAL, 1988

Despite being later sown, yields from the Screening trial were comparable to the earliest sown trials. Out of a total of seventeen new varieties 15 were semi-leafless, and two were tare leaved. No new marrowfat varieties were entered this year.

With the exception of Mascot which was tare leaved all the small blues were semi-leafless. Best yielding were FT 1/4/1 and HR 1, they yielded better than the control but not significantly so. CQ 1/1/2 was significantly lower yielding than the control, DJ 4 slightly lower and FT 2/2 and Mascot a little below the control. CQ 1/1/1 and CQ 1/1/2 were the earliest varieties to mature, but none were very early maturing. HR 1 was late for a small blue only 2 days before Progretra. CQ 1/1/1, CQ 1/1/2, DJ 4 and HR 1 were long strawed but stood well and none of the small blues were difficult to combine.

Only one large blue, Masterman, was entered into the trial, it was tare-leaved and yields were significantly lower than the control. Solara the standard large blue performed very well and was the only variety to significantly outyield the control.

All the white seeded peas in the trial were semi-leafless and none were difficult to harvest. Birte matured later than normal and together with 66/86 was the earliest maturing white pea. Birte yielded well but 66/86 yielded below the control. Maturing one day after Birte were 62/86, 68/86 and Conf 3, the former two varieties yielded a little higher than the control and the latter lower than the control. Conf. 2 and Conf. 5 matured 3 and 2 days before Countess respectively, Conf. 2 yielded slightly better than the control and Conf. 5 lower than the control. Conf. 1 and Conf. 4 yielded well, better than the control, but not significantly so. Both were very long strawed, and easy to harvest. Conf. 4 was the slightly longer strawed but Conf. 1 showed the better standing ability. Both varieties matured one day before Countess. Countess matured one day after Progretra and yielded below the control and as with Progretra yields of Countess may have been reduced by downy mildew. Yields of Progretra were poor, those of Maro were better but less than the control.

The BEPA panel evaluated two small blue varieties from this trial. CQ 1/1/1 was judged to be unsuitable for canning. Mascot was judged to be possibly suitable for canning, and some interest was shown in this variety.

COMBINING PEA VARIETY STUDIES Summary of Agronomic Data - Main Variety Trial, Thornhaugh - 1988
Standard varieties underlined. All varieties sown on 11th March. Results are means of three replicates.

Variety	Source	Seed 1000 grain weight (g)	Maturity days earlier (-) later (+) than Progreta	Yield % of control @ 16% MC	Straw length (cm)	Standing ability 9=erect 1=lodged	Ease of harvest 9=easy 1=difficult	1000 grain weight (g)	Waste & stain %	Water uptake %
SMALL BLUES: Target population 95 plants/m²										
Tsarina (CJ 2/3)	(SL) Bk	178	-12	83-	89	2	4	183	5	88
Orb	(SL) Bk	195	-10	95	79	2	4	205	3	82
Conquest	Bk	195	-10	79-	98	2	3	179	2	90
Echo (P 69)	(SL) Ni	202	-9	92	88	3	5	205	4	84
Helka	(SL) Ni	185	-6	85-	89	2	4	211	3	83
LARGE BLUES: Target population 70 plants/m²										
Progolt	Sem	304	-9	118+	95	3	5	255		
Ascona (Ceb 1116)	(SL) Ni	237	-5	120+	79	2	4	271		
Solara	(SL) D	290	-4	118+	78	3	5	298		
WHITES: Target population 70 plants/m²										
Madria	(SL) Sem	181	-9	94	61	1	3	226		
Majesty (DF 1/3/1)	(SL) Bk	204	-9	93	84	2	5	239		
Consort	Bk	248	-9	80-	84	1	4	258		
Birte	Ni	244	-8	111	87	1	3	236		
Stehgolt	Sem	293	-7	87-	71	1	3	239		
Hanak (HM 1880)	Ni	311	-5	116+	106	3	5	297		
Kasino (P 83)	(SL) Ni	241	-5	106	94	2	4	260		
Bohatyr	Ni	261	-3	126+	128	4	5	253		
Countess	(SL) Bk	318	-1	101	103	4	6	320		
MARROWFATS: Target population 65 plants/m²										
Princess	(SL) Bk	301	0	92	100	3	5	302	3	150
Progreta	(T) Prog	338	0 (16/8)	70-	94	2	4	283	2	100
Bunting	Bat	379	+1	89	96	2	3	347	2	98
Maro	GA	394	+2	95	104	1	3	352	1	100
Mean yield of control varieties t/ha										
Significance @ P = 0.05										
LSD @ P = 0.05										
C of V %										

KEY: Yield: Control varieties = Birte, Countess, Progreta, Solara
+ Significantly greater than control @ P = 0.05; - Significantly smaller than control @ P = 0.05
(SL) = Semi-leafless; (T) = Tar-leaved

COMBINING PEA VARIETY STUDIES Summary of Agronomic Data - Main Variety Trial, Chatteris - 1988
Standard varieties underlined. All varieties sown on 31st March. Results are means of three replicates.

Variety	Source	Seed 1000 grain weight (g)	Maturity days earlier(-) later(+) than Progreta	Yield % of control @ 16% MC	Straw length (cm)	Standing ability 9=erect 1=lodged	Ease of harvest 9=easy 1=difficult	1000 grain weight (g)	Waste & stain %
SMALL BLUES: Target population 95 plants/m²									
Tsarina (CJ 2/3)	(SL) Bk	178	-12	100	96	2	3	166	6
Orb	(SL) Bk	195	-10	111	90	3	5	205	3
Conquest	Bk	195	-9	73-	95	2	4	178	7
Echo (P 69)	(SL) Ni	202	-8	107	90	4	6	203	3
Helka	(SL) Ni	185	-7	105	99	4	6	198	2
LARGE BLUES: Target population 70 plants/m²									
Progolt	Sem	304	-8	95	100	5	6	244	
Ascona (Ceb 1116)	(SL) Ni	237	-5	111	84	2	4	269	
<u>Solara</u>	<u>(SL) D</u>	<u>290</u>	<u>-4</u>	<u>109</u>	<u>83</u>	<u>2</u>	<u>4</u>	<u>298</u>	
WHITES: Target population 70 plants/m²									
Madria	(SL) Sem	181	-8	98	79	2	4	225	
Majesty (DF 1/3/1)	(SL) Bk	204	-8	100	89	4	6	249	
Birte	Ni	244	-8	99	95	1	3	214	
Kasino (P 83)	(SL) Ni	241	-8	105	90	3	5	255	
Consort	(SL) Bk	248	-7	101	92	4	6	276	
Stehgolt	Sem	293	-5	91	80	1	3	238	
Hanak (HM 1880)	Ni	311	-4	88	110	4	6	293	
Bohatyr	Ni	261	-3	94	119	5	7	257	
<u>Countess</u>	<u>(SL) Bk</u>	<u>318</u>	<u>0</u>	<u>110</u>	<u>103</u>	<u>4</u>	<u>6</u>	<u>334</u>	
MARROWFATS: Target population 65 plants/m²									
Princess	(SL) Bk	301	0	118+	102	5	6	316	1
Progreta	(T) Prog	338	0 (22/8)	83-	100	2	4	305	2
Bunting	Bat	379	+1	83-	99	2	4	330	4
Maro	GA	394	+2	95	101	2	3	346	2
Mean yield of control varieties t/ha 6.0									
Significance @ P = 0.05 SD									
LSD @ P = 0.05 13.3									
C of V % 8.1									

KEY: Yield: Control varieties = Birte, Countess, Progreta, Solara
+ Significantly greater than control @ P = 0.05; - Significantly smaller than control @ P = 0.05
(SL) = Semi-leafless; (T) = Tare-leaved

COMBINING PEA VARIETY STUDIES

Summary of Agronomic Data - Preliminary Variety Trial, Thornhaugh - 1988

Standard varieties underlined. All varieties sown on 1st March. Results are means of three replicates.

Variety	Source	Seed 1000 grain weight (g)	Maturity days earlier(-) later(+)	Yield % of control @ 16% MC	Straw length (cm)	Standing ability 9=erect 1=lodged	Ease of harvest 9=easy 1=difficult	1000 grain weight (g)	Waste & stain %	Water uptake %
SMALL BLUES: Target population 95 plants/m²										
Tiara	(SL) Bk	151	-11	94	80	2	4	155	8	79
Radley	(SL) Bk	205	-7	101	100	3	5	184	1	90
NRPB 621 (Arena)	(SL) Ni	233	-6	118+	103	3	5	216	3	90
LARGE BLUES: Target population 70 plants/m²										
Ceb 1118	(SL) Ceb	289	-6	105	81	3	5	288		
Solara	(SL) D	290	-5	116+	82	2	4	291		
Ceb 120	(SL) Ceb	275	-5	113	97	2	4	262		
Chantal (Ceb 119)	(T) Ceb	318	-4	102	86	2	4	318		
WHITES: Target population 70 plants/m²										
Terese (PAJ 4-0208)	(SL) Ni	222	-9	103	78	2	4	241		
Mary (PAJ 4-0241)	(SL) Ni	339	-8	109	75	2	4	300		
Renata (Ceb 1416)	(SL) Ceb	341	-8	108	90	1	4	268		
Rena (LD 8913)	(SL) ICI	263	-8	108	124	2	4	233		
Katrin	(SL) Twy	357	-7	122+	92	2	3	321		
Rex (NRPB 412)	(SL) Ni	218	-7	120+	130	2	4	227		
Rose (PAJ 4-0271)	(SL) Ni	237	-7	106	87	2	5	225		
Birte	(SL) Ni	244	-7	104	101	2	3	240		
Impala (Ceb 1415)	(SL) Ceb	274	-7	102	99	1	3	224		
NRPB 640 (Celeste)	(SL) Ni	246	-5	122+	99	4	5	253		
Tivoli (LD 8907)	(SL) ICI	245	-4	104	113	2	3	235		
Countess	(SL) Bk	318	0	97	100	3	5	319		
MARROWFATS: Target population 65 plants/m²										
Reflex (Ceb 212)	(T) Ceb	323	-2	95	87	2	3	300	2	93
Progreta	(T) Prog	338	0 (15/8)	84-	110	2	4	280	1	86
Maro	(T) GA	394	+2	94	108	2	3	344	2	106
Guido (Ceb 210)	(T) Ceb	399	+2	103	94	2	4	379	3	109
Mean yield of control varieties t/ha 5.1										
Significance @ P = 0.05 SD										
LSD @ P = 0.05 13.3										
C of V % 7.7										

KEY: Yield: Control varieties = Birte, Countess, Progreta, Solara
 + Significantly greater than control @ P = 0.05; - Significantly smaller than control @ P = 0.05

COMBINING PEA VARIETY STUDIES Summary of Agronomic Data - Screening Variety Trial, Thornhaugh - 1988
Standard varieties underlined. All Varieties sown on 29th April. Results are means of two replicates.

Variety	Source	Seed 1000 grain weight (g)	Maturity days earlier(-) later (+) than Progreta	Yield % of control @ 16% MC	Straw length (cm)	Standing ability 9=erect 1=lodged	Ease of harvest 9=easy 1=difficult	1000 grain weight (g)	Waste & stain %	Water uptake %
SMALL BLUES: Target population 95 plants/m²										
CQ 1/1/1	(SL) Bk	217	- 9	97	111	2	4	174	2	85
CQ 1/1/2	(SL) Bk	145	- 8	84-	102	3	5	168	3	86
Mascot (AA)	(T) N&S	191	- 7	96	88	2	4	202	2	95
FT 2/2	(SL) Bk	185	- 5	93	81	2	4	203	2	85
FT 1/4/1	(SL) Bk	194	- 4	102	94	3	5	221	1	73
DJ 4	(SL) Bk	155	- 4	99	101	2	4	176	2	88
HR 1	(SL) Bk	225	- 2	104	102	4	6	236	2	92
LARGE BLUES: Target population 70 plants/m²										
Masterman (C)	(T) N&S	292	- 6	82-	90	2	4	251		
<u>Solara</u>	(SL) D	290	- 3	121+	92	3	5	297		
WHITES: Target population 70 plants/m²										
Birte	Ni	244	- 4	108	97	2	4	234		
66/86	(SL) ICI	263	- 4	93	88	3	4	257		
62/86	(SL) ICI	204	- 3	104	101	3	5	231		
68/86	(SL) ICI	293	- 3	100	90	3	5	282		
Conf 3	(SL) Conf	299	- 3	93	96	2	4	298		
Conf 2	(SL) Conf	282	- 2	102	106	3	5	290		
Conf 5	(SL) Conf	268	- 1	94	108	3	5	294		
Conf 1	(SL) ICI	200	0	114	123	5	6	236		
Conf 4	(SL) ICI	229	0	113	128	3	5	251		
<u>Countess</u>	(SL) Bk	318	+ 1	98	110	2	4	310		
MARROWFATS: Target population 65 plants/m²										
Progreta	(T) Prog	338	0 (16/8)	73-	106	3	3	296	2	101
<u>Maro</u>	GA	394	+ 2	90	97	1	3	336	2	102
Mean yield of control varieties t/ha										
5.1										
Significance @ P = 0.05										
SD										
LSD @ P = 0.05										
14.5										
C of V %										
7.1										

KEY: Yield: Control varieties = Birte, Countess, Progreta, Solara
+ Significantly greater than control @ P = 0.05; - Significantly smaller than control @ P = 0.05
(SL) = Semi-leafless; (T) = tare-leaved

A P P E N D I X

Full Postal AddressCode

Agis	AGIS, Karl H. Schafer & Co. KG, P.O. Box 1162, D-3400 Gottingen 1,	W. Germany
As	Asgrow Seed Company, 9634-190-31, 7000 Portage Road, Kalamazoo, MI 49001,	U.S.A.
Bat	Brooke Bond Batchelors Ltd., Wadsley Bridge, Sheffield S6 1NG,	U.K.
Bk	Booker Seeds Ltd., Boston Road, Sleaford, Lincs.,	U.K.
Bl	Andre Blondeau, Rue Nestor Longue Epee, B.P. No. 1, 59235 Bersee,	France
Bro	W. Brotherton Seed Co. Inc., P.O. Box 1136, Moses Lake, Washington 98837,	U.S.A.
Ceb	Cebeco-Handelsraad, 31 Blaak, Postbus 182, 3000 AD, Rotterdam,	Holland
Chal	Challenge Seeds Ltd., P.O. Box 939, Christchurch,	New Zealand
Cl	Société Clause, Comptabilité, 1 Avenue Lucien Clause, 91220 Bretigny, Cedex,	France
CM	Crites-Moscow Growers Inc., Box 8912, Moscow, Idaho 83843,	U.S.A.
Conf	Confidential	

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D	Dalgety Agriculture Ltd., Dalgety House, Works Lane, Setchey, King's Lynn, Norfolk,	U.K.
GA	General Availability	
HS	Holland Select BV, P.O. Box 27, 1619 ZG Andijk,	The Netherlands
ICI	ICI Seeds UK Ltd., Marsh Lane, Boston, Lincs.	U.K.
Ni	Nickersons RPB Ltd., Rothwell, Lincoln LN7 6DT,	U.K.
N & S	Nutting & Speed Ltd., Longstanton, Cambridge, CB4 5DU,	U.K.
NUN	Nunhems Zaden BV, Postbus 4005, 6080 AA Haelen,	Holland
PLS	Pure Line Seeds Inc., P.O. Box 8866, Moscow, Idaho 83843,	U.S.A.
Prog	Progreta Ltd., c/o Unilink, 14a Tuesday Place, King's Lynn, Norfolk,	U.K.
Rog	International Group, Rogers Brothers Seed Co., P.O. Box 4727, Boise, ID 83711-0727,	U.S.A.

<u>Code</u>		
RS	Royal Sluis BV, P.O. Box 22, 1600 AA, Enkhuizen,	Holland
Sem	Semundo Ltd., Unit 55, Clifton Road, Cambridge CB1 4FR,	U.K.
S & G	Sluis & Groot BV, P.O. Box 13, 1600 AA, Enkhuizen,	Holland
Sp	Carl Sperling & Co., D-314 Luneberg, Postfach 2640,	W. Germany
Sun	Sunseeds, P.O. Box 1438, 2320 Technology Parkway, Building 11, Suite A, Hollister, CA 95024-1438,	U.S.A.
Twy	Twyfords Seeds Ltd., Scotts Farm, Kings Sutton, Banbury, Oxon OX17 3QW.,	U.K.
vW	Van Waveren Pflanzenzucht GmbH, D-3405 Rosdorf, Uber Gottingen,	W. Germany
Ya	Yates Research, Old West Coast Road, Courtenay, R.D. 1 Christchurch,	New Zealand