



## Broad beans

Project FV 369

### Broad bean variety trials 2010/2011

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This factsheet provides a summary of the performance of twelve broad bean varieties

#### Trial details

Trials were undertaken at PGRO, Thornhaugh on a sandy loam soil type.

For the first year's trials in 2010, the beans were sown on 15 and 16 April and in 2011, the beans were sown on 30 March. Thiram, a fungicidal seed treatment was used. Broadleaf weeds were controlled pre-emergence. Plots were protected with nettings. Pea and bean weevil and pea aphids were controlled with insecticide. In the absence of any disease, no fungicides were applied. The plots were not irrigated.

In both years, the level of disease was very low or absent. In the exceptionally dry spring of 2011, plants were short and, while yields were higher than in 2010, they were on the low side. It is probable that the number of pods per plant, length of pods and number of beans per pod were lower than normally seen.

#### Results 2010

The highest yielding varieties in the trial were **Supriffin** and **Statissa**. As a rule, most of medium to small seeded lines did not out yield **Listra** except for **Finale**. All of the larger seeded varieties out yielded **Listra**.

The shortest variety in the trial was **Scorpio**, while **Finale** was the tallest. **Scorpio** was the only variety with three productive tillers, while all the rest either had one or two tillers.

Bean to pod ratio varied with variety and maturity. **Monika** had the lowest number of pods per plant, while **Listra** had the highest. Length of pod tended to vary with seed size, eg **Monika**, **Witkiem**, **Supriffin** and **Statissa** had the largest seed sizes and the longest pod lengths. The number of seeds per pod did not vary dramatically between varieties, on average, they were all around four beans per pod.

There were some differences between the length of the snag attachment between varieties. This is an important attribute for the fresh industry as it has to be snipped off prior to being sold so if it detaches from the plant without a snag this is a good attribute. **Supriffin**, followed by **Finale**, had the shortest snag attachment.

The varieties were also assessed for their colour (see appendix 1) and taste attributes. **Greeny** stood out as having a particularly bright green colour when raw and cooked which is different from the grey/brown colour normally associated with cooked broad beans.

**Greeny** and **Witkiem** were the most preferred varieties by the taste panel.

#### Results 2011

**Monica** and **Witkiem Manita** were the earliest varieties to mature, four to five days earlier than **Listra**. Late maturing (**Listra** +7) varieties were **Greeny** and **Scorpio** and could offer advantages in extending the maturity range. **Supriffin** (coloured flowered) was a large seeded bean and was the highest yielding variety. Yields were significantly higher than all other varieties in the trial series. **Sirene** gave significantly lower yields than **Listra**. The percentage of beans to whole pods was generally high. The varieties giving the highest percentage were **Supriffin**, **Scorpio** and **Finale** (H2 only) with values over 40%.

While plant growth was generally short, **Finale** and **Greeny** were the tallest varieties. **Gold**, **Monica** and **Scorpio** were the shortest varieties. Pod length was generally short. Varieties producing the longest pods were **Supriffin**, **Monica**, **Witkiem**, **Manita** and **Vendor**. All gave pods longer than **Listra** and greater 12cm length.

The number of beans per pod did not vary greatly, but **Supriffin** gave slightly the highest number 4.5 and 5.2 beans per pod at H1 and H2 respectively. The number of pods per plant was more varied and ranged at H1 from 3.7 (**Monica**) to 9.1 (**Greeny** and **Scorpio**) and 8.8 (**Statissa**).

There were some differences between the length of the snag attachment between varieties. This is an important attribute for the fresh industry as it has to be snipped off prior to being sold. Varieties showing a shorter snag attachment were **Monica**, **Witkiem Manita**, **Statissa**, **Gold**, **Supriffin**, **Finale** and **Greeny**. The colour of **Greeny** was very distinctive, being bright green.

Full trial results are in HDC report FV 369.

Variety	Source	1000 Seed Weight (g)	Maturity (± days) Listra	Yield % of Listra	TR	Maturity (± days) Listra	Yield % of Listra	TR	% beans to whole pods	Plant height (cm)	No. pods/plant	Pod length cm	No. beans/pod	Snag attachment (cm)	pod attachment
Monica	Elsoms	1407	-5	124	151	-4	99	173	28	47	3.7	12.7	3.8	1-2	3.8
Witkiem Manita (C)	Elsoms	1436	-4	106	139	-4	104	180	35	52	5.6	12.4	3.9	1-2	3.8
Vendor	Holland Select	977	-3	98	131	-3	98	174	39	49	6.9	12.9	4	>2	2.5
Statissa	Pro-Veg Seeds	1272	-2	83	139	-2	106	144	41	52	8.8	10.0	3.7	1-2	3.0
Gold	Nickerson Zwaan	710	-2	80	143	-2	83	144	34	45	6.3	9.8	4.3	1-2	2.8
Stereo	Holland Select	686	-2	92	156	-2	76	167	29	49	8.9	10.0	4	>2	2.3
Sirene	Bakker Brothers	811	-1	68 <sup>*</sup>	146	0	66 <sup>*</sup>	154	34	49	8.0	9.6	3.6	>2	1.8
Suprifin (C)	Holland Select	1287	-1	170 <sup>+</sup>	143	-1	139 <sup>+</sup>	167	48	50	6.8	12.6	4.5	1-2	4.3
Listra	Nunhems	822	0	100 (3.97t/ha)	135	0	100 (4.52t/ha)	144	38	51	8.4	11.2	4.1	≥2	1.8
Finale	Nunhems	655	+4	91	129	+4	104	139	43	59	7.8	10.8	4.2	1-2	1.8
Scorpio	Holland Select	893	+7	75	116	+8	88	147	43	47	9.1	9.9	4	>2	2.8
Greeny	Nunhems	662	+7	90	125	+8	75	154	35	58	9.1	9.5	3	1-2	2.0

**Table 1:** Summary of broad bean variety tables for 2010 and 2011

Key: Pod angle (orientation): 1 = vertical, 3 = horizontal, 5 = hanging down. Yield: <sup>\*</sup> significantly lower than Listra @ P = 0.05, <sup>+</sup> significantly greater than Listra @ P = 0.05  
Harvest 1: TR 110-140 for a 140g sample: Harvest 2: TF 130-150 for a 140g sample.

**Table 2:** Summary of broad bean appearance data for 2010 and 2011

Appearance	Source	Cooked colour 2010	Defrosted colour 2011	Brightness 2010 (1-2)	Brightness 2011 (1-2)	Uniformity 2010 (1-5)	Uniformity 2011 (1-5)
Monica	Elsoms	Grey/brown	white/grey	1.4	2.0	4.1	4.7
Witkiem Manita (C)	Elsoms	Grey/brown	white/grey	2.0	2.0	4.1	4.7
Vendor	Holland Select	white	white/green	1.8	2.0	4.0	3.0
Statissa	Pro-Veg Seeds	Grey/brown	white/grey	1.6	2.0	3.7	4.3
Gold	Nickerson Zwaan	Slightly green	white/green	2.0	2.0	4.0	3.3
Stereo	Holland Select	Slightly green	white/green	1.4	2.0	4.0	3.0
Sirene	Bakker Brothers	White	white/green	1.8	2.0	4.2	4.0
Suprifin (C)	Holland Select	Grey/brown	white/grey	2.0	2.0	3.2	4.7
Listra	Nunhems	White	white/green	1.8	2.0	3.7	3.3
Finale	Nunhems	White	white/green	1.8	2.0	3.8	3.0
Scorpio	Holland Select	White	white/green	1.2	2.0	3.6	3.2
Greeny	Nunhems	Green	green	1.2	1.0	4.0	4.0

Key: Uniformity: (1-5) - a high figure indicates that the variety shows the character to a high degree

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Colour: Brightness: 1 = bright, 2 = dull

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