

## **Appendix A:**

### **Promising vegetable varieties of *Coriandrum sativum* L. sourced from N.I. Vavilov Research Institute of Plant Industry (VIR), Russia.**

In the Appendix pictures of one-month-old plants grown in a soil bed in a glasshouse at the University of Sussex are provided. Decisions on suitability for the field industry are based on vegetative and phenological characteristics.

The vegetative characteristic provided is the number of leaves in the rosette; there is also a brief description of the appearance of the variety. The number of leaves is the number of true rosette leaves. Once flowering is initiated, two to three more leaves appear, but these are not true rosette leaves, as but are borne on the flowering stem.

The phenological characteristic provided is the time to bolting. As trials were performed in a glasshouse, which is much hotter in summer than an open field, this characteristic is comparative rather than absolute.



**Variety K-4: "Duganskii vegetable Yaup-Shchos"**

Origin: Kazakhstan

This variety is not recommended for field growers.

Plants look lush (number of true rosette leaves is 6), but petioles have a tendency to stretch. It is a late-bolting variety: 37 days in midsummer in glasshouse



**Variety K-5: "Kish-Kish"**

Origin: Daghestan (Russian part of Caucasus)

This variety is not recommended for field growers.

Plants look strong, succulent and lush (number of true rosette leaves is 7), but taste was found unpalatable. It is a late-bolting variety: 47 days in midsummer in glasshouse

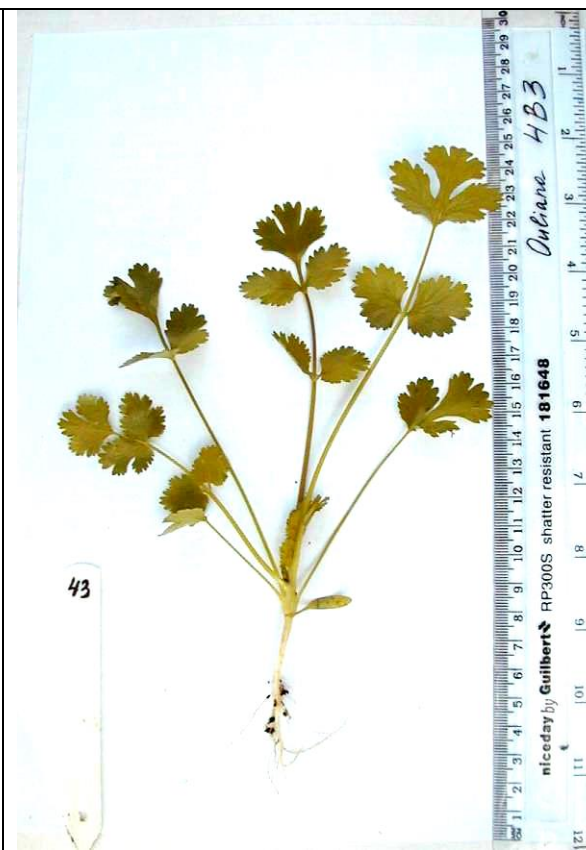


Variety K-23

Origin: Armenia

**This variety is recommended for field growers.**

Plants look very lush (number of true rosette leaves is 8). It is a late bolting variety: 35 days in midsummer in glasshouse

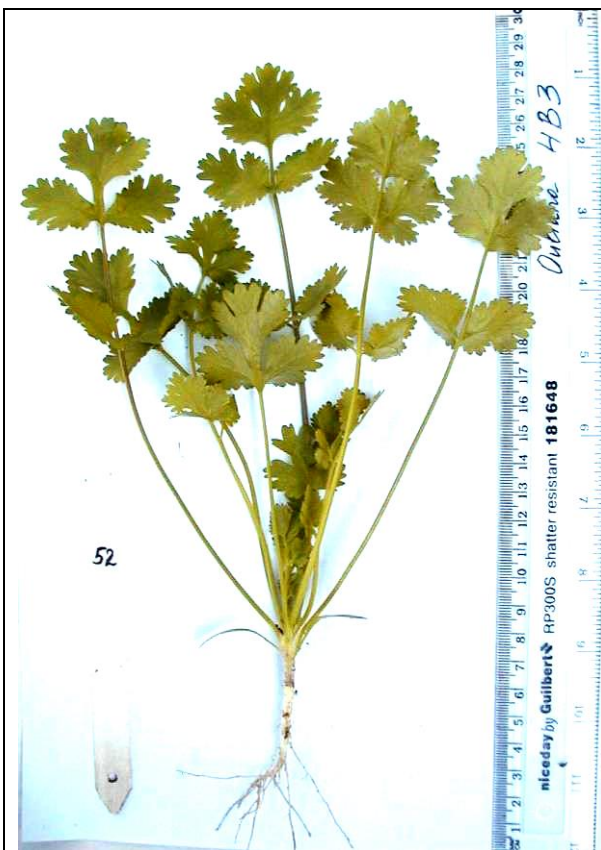


Variety K-43

Origin: Georgia

**This variety is recommended for field growers.**

Plants look sturdy, robust and lush (number of true rosette leaves is 7). It is a late bolting variety: 37 days in midsummer in glasshouse

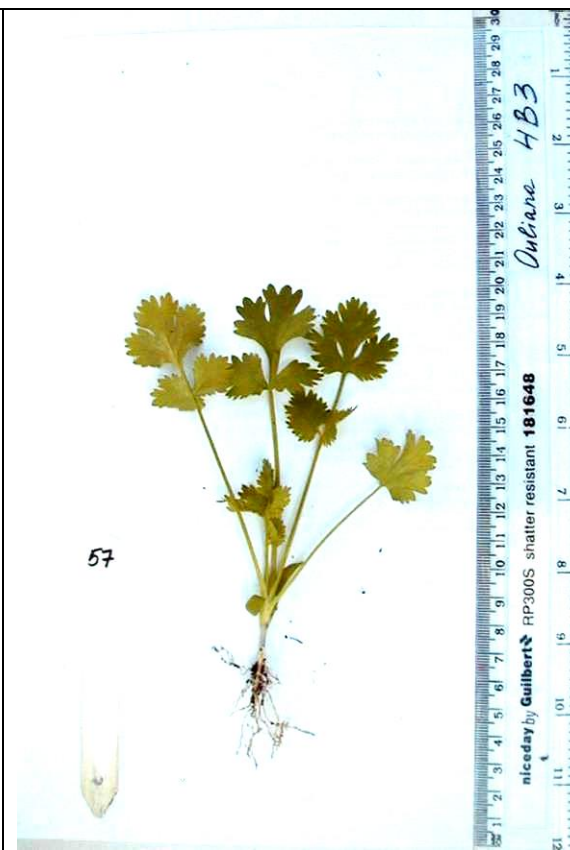


Variety K-52

Origin: Azerbaijan

**This variety is recommended for field growers.**

Plants look lush (number of true rosette leaves is 7) and succulent. It is a late-bolting variety: 35 days in midsummer in glasshouse



Variety K-57

Origin: Kazakhstan

This variety is not recommended for field growers.

Plants look strong and lush (number of true rosette leaves is 6), but it is a medium-bolting variety (26 days in midsummer in glasshouse) with ordinary size leaves (small size on the picture because of poor seed).



Variety K-58  
 Origin: Abkhazia republic of Georgia  
 This variety is not recommended for field growers.  
 Plants look strong and lush (number of true rosette leaves is 7), but it is a medium-bolting variety (29 days in midsummer in glasshouse) with ordinary size leaves.



Variety K-59  
 Origin: Armenia  
 This variety is not recommended for field growers.  
 Plants look strong and lush (number of true rosette leaves is 6), but it is a medium-bolting variety (29 days in midsummer in glasshouse) with ordinary size leaves.





Variety K-60  
Origin: Armenia

**This variety is recommended for field growers.**

It is a best looking variety, plants look strong, lush (number of true rosette leaves is 5), and leaves are exceptionally big. It is a medium-bolting variety (27 days in midsummer in glasshouse).

Variety K-61  
Origin: Georgia

This variety is not recommended for field growers.

Plants look strong, succulent and lush (number of true rosette leaves is 6), but it is a medium-bolting variety (33 days in midsummer in glasshouse) with ordinary size leaves.



Variety K-62

Origin: Georgia

**This variety is recommended for field growers.**

Plants look succulent and lush (number of true rosette leaves is 5), and leaves are big. It is a medium-bolting variety (25 days in midsummer in glasshouse).



Variety K-64

Origin: Georgia

This variety is not recommended for field growers.

Plants look very strong and lush (number of true rosette leaves is 5), but it is a medium-bolting variety (23 days in midsummer in glasshouse) with ordinary size leaves.



Variety K-66

Origin: Armenia

**This variety is recommended for field growers.**

Plants look succulent and lush (number of true rosette leaves is 8). It is a late-bolting variety (35 days in midsummer in glasshouse).



Variety K-79: **“Zernovoi”**

Origin: Azerbaijan

This variety is not recommended for field growers.

It is a ‘fruit’ variety (number of true rosette leaves is 4), which is medium-bolting (28 days in midsummer in glasshouse). It was taken for further trials only because pot growers liked the whole plant appearance.





Variety K-92

Origin: Uzbekistan

**This variety is recommended for field growers.**

Plants look succulent and lush (number of true rosette leaves is 8). It is a late-bolting variety (35 days in midsummer in glasshouse).



Variety K-101

Origin: Kazakhstan

**This variety is recommended for field growers.**

Plants look strong and lush (number of true rosette leaves is 7), and leaves are big. It is a medium-bolting variety (33 days in midsummer in glasshouse).



Variety K-103  
 Origin: Armenia  
**This variety is recommended for field growers.**  
 Plants look succulent, strong and lush (number of true rosette leaves is 7). It is a late-bolting variety (38 days in midsummer in glasshouse).



Variety K-114  
 Origin: Abkhazia republic of Georgia  
 This variety is not recommended for field growers.  
 Plants look strong and lush (number of true rosette leaves is 7), but miniature.



Variety K-115  
 Origin: Abkhazia republic of Georgia  
 This variety is not recommended for field growers.  
 Plants look strong and lush (number of true rosette leaves is 6), but miniature.



Variety K-116  
 Origin: Abkhazia republic of Georgia  
 This variety is not recommended for field growers.  
 Plants look strong and lush (number of true rosette leaves is 7), but miniature.



Variety K-123

Origin: former Czechoslovakia

This variety is not recommended for field growers.

Plants look lush (number of true rosette leaves is 5), but weak. It is a medium-bolting variety (33 days in midsummer in glasshouse).



Variety K-126: "**Smena**"

Origin: VIR breeding line

This variety is not recommended for field growers.

Plants look strong and lush (number of true rosette leaves is 5), but it is a medium-bolting variety (25 days in midsummer in glasshouse) with ordinary size leaves.





**Variety K-129**

Origin: Armenia

This variety is not recommended for field growers.

Plants look lush (number of true rosette leaves is 5), but it is a medium-bolting variety (33 days in midsummer in glasshouse) with ordinary size leaves.

**Variety K-133**

Origin: Armenia

This variety is not recommended for field growers.

Plants look strong and lush (number of true rosette leaves is 6), but it is a medium-bolting variety (30 days in midsummer in glasshouse) with ordinary size leaves.



Variety K-148

Origin: Adzharia republic of Georgia

**This variety is recommended for field growers.**

Plants look strong, succulent and lush (number of true rosette leaves is 8). It is a late-bolting variety (35 days in midsummer in glasshouse).

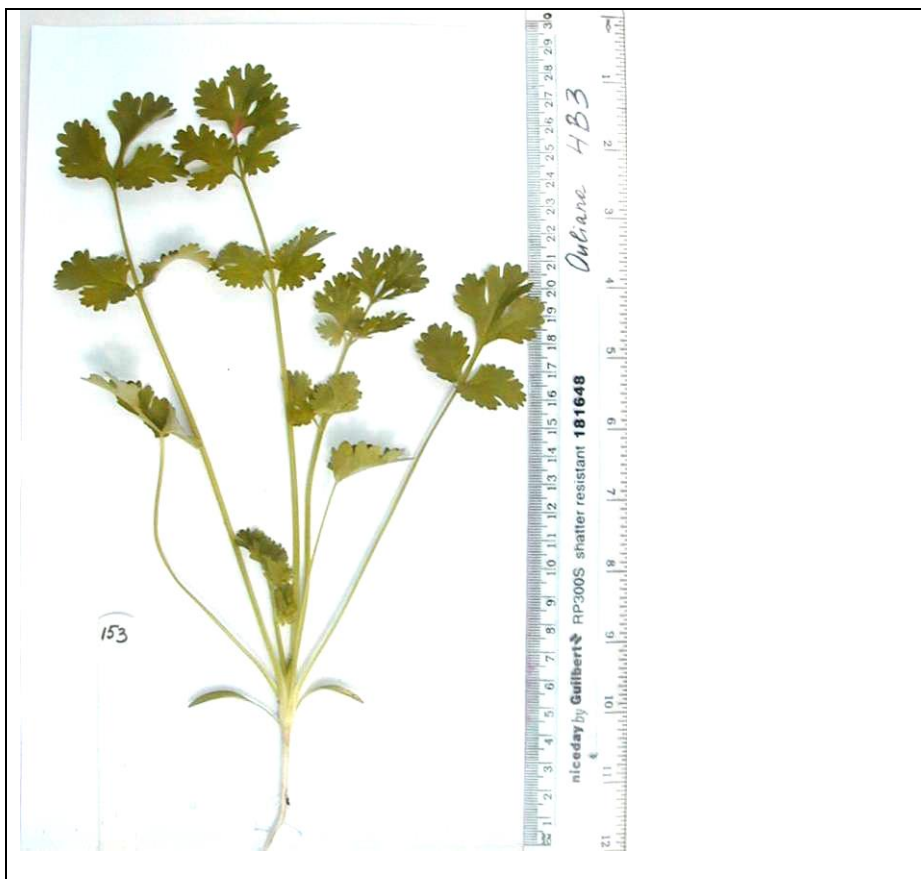


Variety K-150: "Ogorodnyi"

Origin: Adzharia republic of Georgia

**This variety is recommended for field growers.**

Plants look strong, succulent and lush (number of true rosette leaves is 7), and leaves are big. It is a medium-bolting variety (35 days in midsummer in glasshouse).



Variety K-153: **“Kinza”**  
 Origin: Uzbekistan  
 This variety is not recommended for field growers.  
 Plants look strong, succulent and lush (number of true rosette leaves is 5), but petioles have a tendency to stretch. It is a medium-bolting variety (30 days in midsummer in glasshouse) with ordinary size leaves.



Variety K-157: **“Ogorodnyi”**  
 Origin: Adzharia republic of Georgia  
**This variety is recommended for field growers.**  
 Plants look strong, succulent and lush (number of true rosette leaves is 9). It is a late-bolting variety (40 days in midsummer in glasshouse).



Variety K-165

Origin: Georgia

**This variety is recommended for field growers.**

Plants look strong and lush (number of true rosette leaves is 8). It is a late-bolting variety (38 days in midsummer in glasshouse).



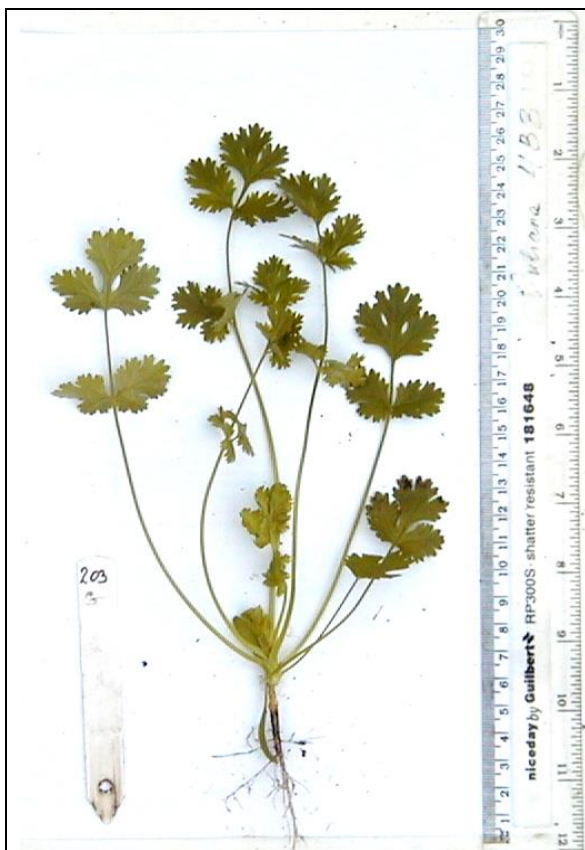
Variety K-166

Origin: Georgia

This variety is not recommended for field growers.

Plants look strong, robust and lush (number of true rosette leaves is 6), but it is a medium-bolting variety (33 days in midsummer in glasshouse) with ordinary size leaves.





Variety K-203

Origin: Georgia

This variety is not recommended for field growers.

Plants look robust and lush (number of true rosette leaves is 7), but it is a medium-bolting variety (30 days in midsummer in glasshouse) with ordinary size leaves.



Variety K-213

Origin: Armenia

**This variety is recommended for field growers.**

Plants look strong, succulent and lush (number of true rosette leaves is 6). It is a medium-bolting variety (25 days in midsummer in glasshouse) with exceptionally big leaves.



Variety K-288

Origin: Kazakhstan

**This variety is recommended for field growers.**

It is a best-looking variety: plants look strong and lush (number of true rosette leaves is 7), and leaves are exceptionally big. It is a medium-bolting variety (35 days in midsummer in glasshouse).



Variety K-317

Origin: Armenia

**This variety is recommended for field growers.**

It is a best-looking variety: plants look strong and lush (number of true rosette leaves is 6), and leaves are exceptionally big. It is a medium-bolting variety (27 days in midsummer in glasshouse).

## Appendix B:

### Vegetative and phenological characteristics of new 'leafy' coriander varieties: preliminary selections for pot growers and an explanation of decision on final of the criteria

a) Varieties used at present by the UK pot herb growers. *Page 54*

b) Varieties recommended for the UK pot herb growers. *Page 58*

c) Varieties not thought suitable for the UK pot growers. *Page 78*

Pictures are given only for controls and for varieties finally selected for the pot industry. For each variety, the picture on the left shows its usual appearance and the picture on the right the worst we saw in the glasshouse (for variety K-202 only one picture is given, as it was only trialled once).

In the **Tables** under the pictures, figures in a **bold black font** are values, which were significantly greater than those of the in controls (i.e. longer petioles, straighter petioles, higher number of leaves in rosette, bigger leaves, higher dry weight, longer hypocotyls, longer harvesting window and longer shelf-life). Data in a **bold grey font** are values, which were significantly less than in control (i.e. shorter petioles, floppier petioles, lower number of leaves in rosette, lower leaves, lower dry weight, shorter hypocotyls, shorter harvesting window and shorter shelf-life)

In the column headed 'harvesting window', superscript <sup>b</sup> indicates the end of the window was due to bolting; a superscript <sup>y</sup> indicates the end of the harvesting window was due to leaf yellowing

In terms of suitability of varieties for the pot industry the **font** code means that all characteristics in **bold black** show an improvement over the current controls, except for hypocotyl length, which is better to be **bold grey**.

a) Varieties used at present by the UK pot herb growers

**Variety *Kashmir***



Variety *Kashmir* is a rather tall variety with attractive big leaves (see left picture), but it has several disadvantages. First, phenologically, it is an early-bolting variety (about 20 days from germination in summer), which limits its harvesting window and shelf-life. *Kashmir* is very sensitive to mid-summer heat in greenhouse: in June-July it bolts readily, plants are short (might not reach saleable height) and have small scorched leaves (see right picture). Second, as an early-bolting variety it could be ascribed by vegetative characteristics to the “fruit” type, having very low number of leaves in rosette (3-4), in which aging is promoted by the early production of flowering stalk. Third, petioles of *Kashmir*, although thick, are very floppy and weak and, in addition, long hypocotyls make plants in pots very elevated, thus unstable and droopy (see left picture).



Kashmir

Date of harvest	Plant height	Area of second leaf	Number of basal leaves at harvest	Plant dry weight	Appearance of petioles	Hypocotyl length	Harvesting window	Number of basal leaves at bolting	Number of days from germination till bolting
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
15.Dec.06	11.6 ± 0.3	882 ± 103	3.1 ± 0.2	45 ± 5	Floppy, stretched	3.6 ± 0.2	11 <sup>b</sup>	4.1 ± 0.1	36
15.Dec.06	11 ± 0.5	890 ± 137	3.6 ± 0.2	39 ± 5	Floppy, stretched	3.6 ± 0.2	11 <sup>b</sup>		36
28.Feb.07	14.3 ± 0.7	865 ± 60	3.5 ± 0.2	81 ± 10	Floppy, stretched	4.3 ± 0.2	10 <sup>b</sup>		32
12.Mar.07	15.9 ± 0.6	836 ± 58	4.5 ± 0.2	117 ± 13	Floppy	3 ± 0.1	2 <sup>b</sup>	4.5 ± 0.2	28
22.Jun.07	9.9 ± 0.7	646 ± 50	3.4 ± 0.2	107 ± 12	Upright, but petioles short, leaves scorched	1.7 ± 0.2	0 <sup>b</sup>	3.4 ± 0.2	25
16.Jul.07	10.5 ± 1.2	483 ± 38	3.7 ± 0.3	74 ± 13	Upright, but petioles short, lvs scorched, plants bolted before harvest	1.6 ± 0.3	-2 <sup>b</sup>	3.7 ± 0.3	21
23.Jul.07	17.3 ± 0.8	1102 ± 79	3.8 ± 0.1	108 ± 15	Floppy	1.9 ± 0.1	0 <sup>b</sup>	3.8 ± 0.1	20
14.Sep.07	14 ± 0.5	947 ± 56	4.3 ± 0.3	83 ± 13	Floppy, leaves yellow, plants bolted before harvest	2.4 ± 0.3	-4 <sup>b</sup>	4.3 ± 0.3	25
17.Sep.07	18 ± 1	987 ± 53	4 ± 0.2	70 ± 13	Floppy	3.2 ± 0.2	0 <sup>b</sup>	4 ± 0.2	29
08.Dec.07	15.8 ± 0.7	1072 ± 101	3.4 ± 0.3		Floppy	2.4 ± 0.4	0 <sup>b</sup>	3.4 ± 0.3	29
09.Dec.07	20 ± 0.8	1532 ± 122	3.9 ± 0.2	191 ± 41	Floppy	2 ± 0.3	0 <sup>b</sup>	3.9 ± 0.2	27
20.Feb.08	17.3 ± 0.7	1164 ± 110	3.8 ± 0.3	119 ± 30	Slightly floppy	3.2 ± 0.3	0 <sup>b</sup>	3.8 ± 0.3	26

### Variety *Americanum*



Variety *Americanum* has an advantage compared to *Kashmir*: it is a medium-bolting variety (about 30 days from germination in summer) and produces more leaves in basal rosette than the 'fruit' varieties, so may be ascribed to the 'leafy' category, thus benefiting from a longer harvesting window and higher biomass. Disadvantage of *Americanum* compared to *Kashmir* is the smaller leaf size. On other features *Americanum* is very similar to *Kashmir*: it has floppy petioles and long hypocotyls, making plants look unstable and droopy (see left picture); is very sensitive to mid-summer heat in greenhouse, when short petioles and scorched small leaves are produced (see right picture).

*Americanum*

Date of harvest	Plant height	Area of second leaf	Number of basal leaves at harvest	Plant dry weight	Appearance of petiole	Hypocotyl length	Harvest ing window	Number of basal leaves at bolting	Number of days from germination till bolting
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
01.Mar.07	13.4 ± 0.9	836 ± 67	4.1 ± 0.3	95 ± 15	Floppy	3 ± 0.3	21 <sup>y</sup>	4.2 ± 0.2	50
13.Mar.07	17.7 ± 1	997 ± 70	4.8 ± 0.3	144 ± 24	Floppy	1.7 ± 0.2	10 <sup>y</sup>		None <sup>(40)</sup>
23.Jun.07	10.2 ± 0.5	555 ± 44	5.1 ± 0.3	128 ± 22	Upright, but petioles short, leaves scorched	1.1 ± 0.1	0 <sup>b</sup>	5.1 ± 0.3	28
17.Jul.07	12.1 ± 0.6	744 ± 48	3.8 ± 0.2	81 ± 9	Upright, but stunned petioles	2 ± 0.2	11 <sup>b</sup>	5.2 ± 0.3	30
25.Jul.07	16 ± 0.6	982 ± 73	4.5 ± 0.2	129 ± 17	Upright	1.6 ± 0.1	6 <sup>y</sup>		None <sup>(30)</sup>
17.Sep.07	17.6 ± 0.6	814 ± 30	6.7 ± 0.4	260 ± 44	Slightly floppy	1.2 ± 0.1	9 <sup>y</sup>		40
24. Sep.07	14.9 ± 1.1	883 ± 70	4.9 ± 0.5	155 ± 47	Slightly floppy	1.5 ± 0.3	22 <sup>b, y</sup>		52
09.Dec.07	21.7 ± 0.8	1209 ± 65	4.6 ± 0.3	146 ± 24	Floppy	2.6 ± 0.2	12 <sup>y</sup>	7.6 ± 0.4	56
11.Dec.07	17.7 ± 0.9	1019 ± 85	4.3 ± 0.2		Slightly floppy	2.5 ± 0.3	6 <sup>y</sup>		None <sup>(40)</sup>
24.Feb.08	20.2 ± 0.6	1012 ± 92	4.8 ± 0.3	147 ± 24	Floppy	2.8 ± 0.3	14 <sup>y</sup>	7.5 ± 0.6	43

## b) Varieties recommended for the UK pot herb growers

### Variety K-4. Origin – Kazakhstan



Variety K-4 produces more leaves in its rosette than controls; therefore it is a true vegetable variety. Appearance of this variety as a whole in pots is similar to currently used *Kashmir*, but leaf lobes have sharper geometrical tips (see left picture).

This variety has many distinguishing characteristics: it grows quicker than controls, with a higher number of leaves and higher biomass are produced during the same period of growth; plants grow taller than controls and produce bigger leaves; petioles are upright, only sometimes flopping can be observed (see right picture); shortened hypocotyls position leaf rosette closer to the soil, thus making plants more stable and less droopy. Thus, variety K-4 is better than both industry controls based on all vegetative characteristics. Phenologically this variety also has an advantage, as harvesting window (i.e. length of vegetative rosette stage) is longer than of controls in spring/ autumn/winter. In summer variety K-4 bolts as early as controls, but is less sensitive to summer heat, as no scorching was observed.

Thus, variety K-4 was selected as promising vegetable variety for production in greenhouse in all seasons except summer, when bolting might be an issue.



K-4

Date of harvest; origin of substrate	Plant height	Area of second leaf	Number of basal leaves at harvest	Plant dry weight	Appearance of petioles	Hypocotyl length	Harvesting window	Number of basal leaves at bolting	Number of days from germination till bolting
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
15.Dec.06	12 ± 0.5	702 ± 101	3.6 ± 0.2	60 ± 7	Upright	2.7 ± 0.2	21 <sup>y</sup>	8.1 ± 0.5	None <sup>(45)</sup>
15.Dec.06	12.3 ± 0.9	855 ± 79	4.2 ± 0.4	83 ± 15	Upright	2.5 ± 0.3	21 <sup>y</sup>		None <sup>(45)</sup>
28.Feb.07	16.9 ± 1.1	784 ± 82	4.5 ± 0.3	80 ± 11	Upright	2.8 ± 0.5	19 <sup>y</sup>		50
01.Mar.07	13.9 ± 0.7	917 ± 72	4.2 ± 0.3	98 ± 15	Upright	1.9 ± 0.2	20 <sup>y</sup>		50
16.Jul.07	14.8 ± 0.7	943 ± 90	5.1 ± 0.4	193 ± 26	Slightly floppy	1 ± 0.1	1 <sup>b</sup>	5.1 ± 0.4	26
16.Jul.07	13.7 ± 0.7	935 ± 93	4.6 ± 0.3	137 ± 21	Upright	0.8 ± 0.1	1 <sup>b</sup>	4.6 ± 0.3	22
08.Dec.07	18.5 ± 0.5	842 ± 49	5 ± 0.3		Slightly floppy	1.6 ± 0.2	10 <sup>y</sup>		None <sup>(40)</sup>
09.Dec.07	19.1 ± 0.8	1191 ± 131	5.6 ± 0.3		Upright	1.3 ± 0.3	10 <sup>y</sup>		None <sup>(40)</sup>

*Variety K-23. Origin – Armenia*



Variety K-23 produces more leaves in its rosette than controls; therefore it is a true vegetable variety. Appearance of this variety is similar to celery: bunch of thick petioles with leaves on top (see left picture).

This variety has many distinguishing characteristics: it grows faster than controls, with a higher number of leaves and higher biomass produced during the same period of growth; plants grow taller than controls and have bigger leaves; petioles are upright (stretching was once observed, see left picture); shortened hypocotyls position leaf rosette closer to the soil, thus making plants more stable and less droopy. Thus variety K-23 is better than both industry controls by all vegetative characteristics. Phenologically this variety is also better than controls, as it is a late-bolting variety, which is tolerant to summer heat.

Thus, variety K-23 was selected as promising vegetable variety for production in greenhouse in all seasons.

Date of harvest; origin of substrate	<i>Plant height</i>	Area of second leaf	Number of basal leaves at harvest	<i>Plant dry weight</i>	Appearance of petioles	Hypocotyl length	Harvesting window	Number of basal leaves at bolting	Number of days from germination till bolting
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
12.Mar.07	<b>19 ± 1</b>	<b>1221 ± 69</b>	<b>5.7 ± 0.2</b>	<b>232 ± 19</b>	<b>Upright</b>	<b>1.1 ± 0.1</b>	<b>7<sup>y</sup></b>		<b>None<sup>(40)</sup></b>
13.Mar.07	<b>22.1 ± 1.2</b>	<b>1383 ± 95</b>	<b>5.8 ± 0.4</b>	<b>264 ± 34</b>	<b>Upright, stretched</b>	<b>1.1 ± 0.2</b>	10 <sup>y</sup>		None <sup>(40)</sup>
23.Jul.07	17.4 ± 0.6	<b>1090 ± 83</b>	<b>5.3 ± 0.2</b>	<b>176 ± 19</b>	<b>Upright</b>	<b>0.9 ± 0.1</b>	<b>8<sup>y</sup></b>		<b>None<sup>(30)</sup></b>
25.Jul.07	17 ± 0.5	917 ± 40	<b>5.3 ± 0.2</b>	133 ± 15	Upright	<b>0.7 ± 0.1</b>	6 <sup>y</sup>		None <sup>(30)</sup>
09.Dec.07	20.4 ± 0.5	1343 ± 57	<b>5.4 ± 0.2</b>	<b>320 ± 36</b>	<b>Upright</b>	<b>1.2 ± 0.2</b>	<b>10<sup>y</sup></b>	<b>9.7 ± 0.9</b>	<b>51</b>
09.Dec.07	20.5 ± 0.5	<b>1371 ± 80</b>	<b>6.4 ± 0.2</b>	<b>339 ± 51</b>	<b>Upright</b>	<b>0.6 ± 0.1</b>	12 <sup>y</sup>	<b>10.7 ± 0.7</b>	54

**Variety K-43. Origin - Georgia**



Variety K-43 produces more leaves in its rosette than controls; therefore it is a true vegetable variety. Appearance of this variety in pots is a compact ball shape; leaf lobes have sharp geometrical tips (see both pictures). This variety has many distinguishing characteristics: it grows quicker than controls, because a higher number of leaves is produced during the same period of growth; plants grow taller than controls, but never look stretched; petioles are always upright; shortened hypocotyls position leaf rosette of this variety closer to the soil, thus making plants more stable and less droopy. Thus variety K-43 is better than both industry controls by main vegetative characteristics. Phenologically this variety is also better, as it is a late-bolting variety. It is tolerant to summer heat, although slight scorching was observed (see right picture).

Thus, variety K-43 was selected as promising vegetable variety for production in greenhouse in all seasons.

K-43

Date of harvest; origin of substrate	Plant height	Area of second leaf	Number of basal leaves at harvest	Plant dry weight	Appearance of petioles	Hypocotyl length	Harvesting window	Number of basal leaves at bolting	Number of days from germination till bolting
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
19.Dec.06	11.7 ± 0.4	778 ± 62	<b>4 ± 0.2</b>	55 ± 5	<b>Upright</b>	<b>2.8 ± 0.1</b>	<b>20<sup>y</sup></b>	<b>7.1 ± 0.4</b>	<b>None<sup>(45)</sup></b>
19.Dec.06	11 ± 0.6	817 ± 63	<b>4.2 ± 0.2</b>	<b>63 ± 8</b>	<b>Upright</b>	<b>2.2 ± 0.2</b>	<b>20<sup>y</sup></b>		<b>None<sup>(45)</sup></b>
05.Mar.07	<b>15.2 ± 0.8</b>	850 ± 49	<b>4.8 ± 0.3</b>	90 ± 10	<b>Upright</b>	<b>2.3 ± 0.3</b>	<b>15<sup>y</sup></b>		<b>None<sup>(50)</sup></b>
05.Mar.07	<b>14.3 ± 0.8</b>	727 ± 43	4.7 ± 0.3	101 ± 14	<b>Upright</b>	2.5 ± 0.3	20 <sup>y</sup>		<b>None<sup>(50)</sup></b>
16.Jul.07	<b>14.5 ± 0.5</b>	<b>768 ± 46</b>	<b>4.5 ± 0.1</b>	85 ± 6	Upright	1.6 ± 0.1	<b>12<sup>y</sup></b>		<b>None<sup>(40)</sup></b>
17.Jul.07	<b>13.2 ± 0.4</b>	689 ± 41	4.2 ± 0.3	96 ± 16	Upright	1.5 ± 0.2	11 <sup>y</sup>		<b>None<sup>(40)</sup></b>
08.Dec.07	15.1 ± 0.5	902 ± 72	<b>4.4 ± 0.3</b>		<b>Upright</b>	1.9 ± 0.2	<b>10<sup>y</sup></b>		<b>None<sup>(40)</sup></b>
09.Dec.07	16.9 ± 0.3	<b>860 ± 44</b>	3.9 ± 0.2		Slightly floppy	2.5 ± 0.3	<b>10<sup>y</sup></b>		None <sup>(40)</sup>



**Variety K-58.** Origin – Abkhazia Republic of Georgia



Variety K-58 produces more leaves in its rosette than controls; therefore it is a true vegetable variety. Appearance of this variety in pots is similar to *Kashmir* (see both pictures). This variety is about the same height as controls, has same leaf area and biomass. This variety has distinguishing characteristics: it grows quicker than controls, with a higher number of leaves produced during the same period of growth; petioles are upright and non-floppy (flopping was observed only once, see right picture); shortened hypocotyls position leaf rosette closer to the soil, making plants more stable and less droopy. Thus variety K-58 is better than both industry controls on several vegetative characteristics. Phenologically this variety is also better, as it is tolerant to summer heat, as no scorching was observed. It is a medium-bolting variety (same as *Americanum*), thus has harvesting window longer than *Kashmir* (early-bolting variety), but same as *Americanum*.

Thus, by many features variety K-58 is better than both industry controls, and so was selected as promising vegetable variety for production in greenhouse in all seasons.

Date of harvest; origin of substrate	Plant height	Area of second leaf	Number of basal leaves at harvest	Plant dry weight	Appearance of petioles	Hypocotyl length	Harvesting window	Number of basal leaves at bolting	Number of days from germination till bolting
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
19.Dec.06	<b>10 ± 0.7</b>	891 ± 60	<b>3.7 ± 0.3</b>	51 ± 10	<b>Upright</b>	<b>2.4 ± 0.2</b>	<b>20<sup>y</sup></b>	<b>8.5 ± 0.4</b>	<b>None<sup>(45)</sup></b>
19.Dec.06	10.2 ± 1	1001 ± 101	<b>4.5 ± 0.4</b>	<b>63 ± 14</b>	<b>Upright</b>	<b>1.8 ± 0.2</b>	<b>20<sup>y</sup></b>		<b>None<sup>(45)</sup></b>
28.Feb.07	15.7 ± 0.8	875 ± 54	<b>4.1 ± 0.2</b>	83 ± 9	<b>Upright</b>	<b>3.1 ± 0.2</b>	<b>13<sup>y</sup></b>		
01.Mar.07	<b>15.6 ± 0.7</b>	<b>567 ± 53</b>	<b>5 ± 0.2</b>	123 ± 14	<b>Upright</b>	<b>1.6 ± 0.1</b>	19 <sup>y</sup>		48
16.Jul.07	<b>13.6 ± 0.9</b>	<b>701 ± 50</b>	<b>4.4 ± 0.2</b>	99 ± 12	Upright	1.6 ± 0.2	<b>12<sup>b</sup></b>	<b>7.1 ± 0.4</b>	<b>31</b>
17.Jul.07	13.4 ± 0.6	<b>542 ± 42</b>	4.2 ± 0.2	71 ± 6	Slightly floppy	<b>1.3 ± 0.2</b>	11 <sup>b</sup>		29

**Variety K-60. Origin - Armenia**



Variety K-60 produces more leaves in its rosette than controls; therefore it is a true vegetable variety. Appearance of this variety in pots is similar to *Americanum*, but leaves are much bigger (see both pictures). This variety has many distinguishing characteristics: it grows quicker than controls, with a higher number of leaves and higher biomass being produced during the same period of growth; plants grow taller than controls and have bigger leaves; shortened hypocotyls position leaf rosette closer to the soil, thus making plants more stable and less droopy; petioles have a tendency to flop (see right picture), but actual flopping is less than in controls. Thus variety K-60 is better than both industry controls by all vegetative characteristics. Phenologically this variety is better than controls, as it has a longer harvesting window in all seasons except summer. In summer it bolts as early as *Americanum* (so later than *Kashmir*), but advantageously is tolerant to mid-summer heat (no scorching was observed).

Thus, by many features the variety K-60 is better than both industry controls, and so was selected as promising vegetable variety for production in greenhouse in all seasons except summer, when bolting might be an issue.

K-60

Date of harvest; origin of substrate	Plant height	Area of second leaf	Number of basal leaves at harvest	Plant dry weight	Appearance of petioles	Hypocotyl length	Harvesting window	Number of basal leaves at bolting	Number of days from germination till bolting
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
15.Dec.06	11.4 ± 0.6	920 ± 74	3.4 ± 0.1	51 ± 5	Floppy	2.7 ± 0.1	21 <sup>y</sup>	6.6 ± 0.4	46
15.Dec.06	<b>9 ± 0.9</b>	<b>1105 ± 78</b>	3.3 ± 0.3	52 ± 11	Floppy	1.6 ± 0.1	21 <sup>y</sup>		46
28.Feb.07	<b>17 ± 0.8</b>	<b>1047 ± 71</b>	<b>4 ± 0.2</b>	85 ± 11	<b>Upright</b>	<b>3.6 ± 0.2</b>	13 <sup>y</sup>		
01.Mar.07	14.3 ± 0.9	<b>1017 ± 53</b>	4.7 ± 0.3	102 ± 10	<b>Upright</b>	2.6 ± 0.3	12 <sup>b</sup>		37
16.Jul.07	<b>17.3 ± 0.8</b>	<b>863 ± 69</b>	<b>4.6 ± 0.2</b>	<b>123 ± 17</b>	Upright	1.2 ± 0.2	6 <sup>b</sup>		27
16.Jul.07	13.2 ± 0.5	785 ± 43	<b>4.6 ± 0.2</b>	<b>117 ± 14</b>	Slightly floppy	0.9 ± 0.1	4 <sup>b</sup>	<b>4.8 ± 0.2</b>	25
08.Dec.07	<b>18.2 ± 0.6</b>	948 ± 52	4.1 ± 0.3		<b>Slightly floppy</b>	2.4 ± 0.3			None <sup>(40)</sup>
09.Dec07	17.9 ± 1	1161 ± 68	<b>5.4 ± 0.3</b>		Floppy	2 ± 0.3			None <sup>(40)</sup>

**Variety K-61. Origin - Georgia**



Variety K-61 produces more leaves in its basal rosette than corresponding control; therefore it is a true vegetable variety. Appearance of this variety in pots is similar to *Americanum*, but leaves are much bigger (see both pictures). This variety has many distinguishing characteristics: it grows quicker than controls, with a higher number of leaves and higher biomass produced during the same period of growth; plants grow taller than controls and have bigger leaves; shortened hypocotyls position the leaf rosette closer to the soil, thus making plants more stable and less droopy; petioles have a tendency to flop, but actual flopping is less than in controls. Thus variety K-61 is better than both industry controls by all vegetative characteristics. Phenologically this variety is also better than controls, as it has a longer harvesting window. In summer it bolts as early as *Americanum* (so later than *Kashmir*) and is less sensitive to mid-summer heat than both controls, as only some scorching was observed (see right picture). Thus, by many features the variety K-61 is better than both industry controls, and so was selected as promising vegetable variety for production in greenhouse in all seasons except summer, when scorching might be an issue.



K-61

Date of harvest; origin of substrate	Plant height	Area of second leaf	Number of basal leaves at harvest	Plant dry weight	Appearance of petioles	Hypocotyl length	Harvesting window	Number of basal leaves at bolting	Number of days from germinatio n till bolting
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
28.Feb.07.	<b>16.7 ± 0.6</b>	<b>1118 ± 83</b>	<b>4.3 ± 0.1</b>	98 ± 8	<b>Upright</b>	<b>3.2 ± 0.2</b>	<b>16<sup>y</sup></b>		
01.Mar.07.	<b>15.2 ± 0.8</b>	<b>1019 ± 87</b>	4.4 ± 0.3	118 ± 17	<b>Upright</b>	2.7 ± 0.1	<b>12<sup>y</sup></b>		
16.Jul.07.	<b>14.5 ± 0.7</b>	<b>745 ± 84</b>	<b>4.4 ± 0.2</b>	98 ± 11	<b>Slightly floppy; scorched lvs</b>	1.5 ± 0.1	<b>12<sup>y</sup></b>	<b>5.8 ± 0.4</b>	<b>37</b>
17.Jul.07.	13.6 ± 0.5	711 ± 47	3.9 ± 0.1	71 ± 6	<b>Floppy</b>	1.7 ± 0.1	11 <sup>y</sup>		30
20.Feb.08	<b>19.2 ± 0.8</b>	1195 ± 115	<b>5.6 ± 0.3</b>	<b>199 ± 36</b>	Slightly floppy	<b>2 ± 0.2</b>	<b>18<sup>b</sup></b>	<b>9.6 ± 0.9</b>	<b>43</b>
24.Feb.08	<b>18.6 ± 0.5</b>	1000 ± 64	<b>6.5 ± 0.4</b>	<b>230 ± 34</b>	<b>Slightly floppy</b>	<b>1.4 ± 0.2</b>	<b>17<sup>b</sup></b>	9 ± 0.8	45

**Variety K-64.** Origin - Georgia



Variety K-64 produces more leaves in its rosette than controls; therefore it is a true vegetable variety. Appearance of this variety in pots is similar to *Kashmir*, but leaves are bigger (see both pictures). This variety has many distinguishing characteristics: it grows quicker than controls, with a higher number of leaves and higher biomass produced during the same period of growth; plants grow taller than controls and have bigger leaves; shortened hypocotyls position leaf rosette closer to the soil, thus making plants more stable and less droopy; petioles have a tendency to flop (see right picture), but actual flopping is less than in controls. Thus variety K-64 is better than both industry controls by all vegetative characteristics. Phenologically this variety is better than controls, as it has a longer harvesting window in winter. In summer it bolts as early as *Americanum* (so later than *Kashmir*), but advantageously is less sensitive to mid-summer heat.

Thus, by many features the variety K-64 is better than both industry controls, and was selected as promising vegetable variety for production in greenhouse in all seasons except summer, when bolting might be an issue.

Date of harvest; origin of substrate	Plant height	Area of second leaf	Number of basal leaves at harvest	Plant dry weight	Appearance of petioles	Hypocotyl length	Harvesting window	Number of basal leaves at bolting	Number of days from germination till bolting
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
16.Dec.06	11 ± 0.4	776 ± 35	<b>3.6 ± 0.2</b>	45 ± 4	<b>Upright</b>	<b>3.1 ± 0.1</b>	<b>15<sup>b</sup></b>	<b>5.5 ± 0.4</b>	<b>43</b>
16.Dec.06	10.4 ± 0.5	808 ± 114	3.9 ± 0.2	50 ± 5	<b>Upright</b>	<b>2.7 ± 0.1</b>	<b>15<sup>b</sup></b>		<b>43</b>
28.Feb.07	<b>17.2 ± 0.7</b>	<b>1021 ± 67</b>	<b>4.5 ± 0.2</b>	79 ± 7	Floppy	3.9 ± 0.2	10 <sup>b</sup>		<b>35</b>
01.Mar.07	14.4 ± 0.8	932 ± 67	<b>4.7 ± 0.3</b>	107 ± 13	Floppy	<b>2.4 ± 0.2</b>	12 <sup>b</sup>		<b>33</b>
16.Jul.07	<b>14.3 ± 0.7</b>	<b>662 ± 46</b>	<b>5 ± 0.4</b>	<b>107 ± 16</b>	Upright	<b>1 ± 0.2</b>	<b>4<sup>b</sup></b>	<b>5.9 ± 0.3</b>	<b>25</b>
17.Jul.07	10.6 ± 0.7	649 ± 38	4.4 ± 0.4	84 ± 18	Upright	1.4 ± 0.2	<b>-2<sup>b</sup></b>	4.4 ± 0.4	<b>19</b>

**Variety K-66.** Origin – Armenia



Variety K-66 produces more leaves in its rosette than controls; therefore it is a true vegetable variety. Appearance of this variety is similar to celery: bunch of thick petioles with leaves on top (see left picture). This variety has many distinguishing characteristics: it grows quicker than controls, with a higher number of leaves and higher biomass are produced during the same period of growth; plants grow taller than controls and have bigger leaves; shortened hypocotyls position leaf rosette closer to the soil, thus making plants more stable and less droopy; petioles have a tendency to flop, but actual flopping is less than in controls (see right picture). Thus variety K-66 is better than both industry controls by all vegetative characteristics. Phenologically this variety is also better than controls, as it has a longer harvesting window. It is a late-bolting variety, which is tolerant to mid-summer heat.

Thus, by many features the variety K-66 is better than both industry controls, and so was selected as promising vegetable variety for production in greenhouse in all seasons.

K-66

Date of harvest; origin of substrate	<i>Plant height</i>	Area of second leaf	Number of basal leaves at harvest	Plant dry weight	Appearance of petioles	Hypocotyl length	Harvesting window	Number of basal leaves at bolting	Number of days from germination till bolting
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
12.Mar.07	<b>22.7 ± 1</b>	<b>1230 ± 75</b>	<b>5.3 ± 0.3</b>	<b>184 ± 21</b>	<b>Slightly floppy, stretched</b>	<b>1.9 ± 0.3</b>	<b>7<sup>y</sup></b>		<b>None<sup>(40)</sup></b>
13.Mar.07	<b>22.8 ± 1.3</b>	1178 ± 123	5.3 ± 0.3	174 ± 27	<b>Slightly floppy, stretched</b>	1.7 ± 0.2	10 <sup>y</sup>		None <sup>(40)</sup>
23.Jul.07	17.9 ± 0.8	<b>1126 ± 76</b>	<b>4.7 ± 0.2</b>	132 ± 15	<b>Upright</b>	<b>1.2 ± 0.2</b>	<b>8<sup>y</sup></b>		<b>None<sup>(30)</sup></b>
25.Jul.07	<b>17.6 ± 0.6</b>	938 ± 55	<b>5.3 ± 0.1</b>	<b>157 ± 16</b>	Upright	<b>0.8 ± 0.1</b>	6 <sup>y</sup>		None <sup>(30)</sup>
20.Feb.08	<b>22.7 ± 0.7</b>	<b>1466 ± 141</b>	<b>4.9 ± 0.3</b>	<b>170 ± 33</b>	<b>Floppy, stretched</b>	2.6 ± 0.3	<b>20<sup>y</sup></b>	<b>9.6 ± 0.6</b>	<b>None<sup>(50)</sup></b>
24.Feb.08	20.7 ± 0.9	1129 ± 92	<b>6.7 ± 0.5</b>	<b>319 ± 66</b>	<b>Upright</b>	<b>1 ± 0.1</b>	<b>17<sup>y</sup></b>	<b>10.4 ± 0.8</b>	<b>None<sup>(50)</sup></b>



**Variety K-92. Origin – Kazakhstan**



Variety K-92 produces more leaves in rosette than controls; therefore it is a true vegetable variety. Appearance of this variety in pots is similar to *Kashmir* (see both pictures). This variety has distinguishing characteristics: it grows quicker than controls, with a higher number of leaves and higher biomass produced during the same period of growth; it is taller than controls, but petioles does not look stretched; shortened hypocotyls position leaf rosette closer to the soil, making plants more stable and less droopy; petioles have a tendency to flop, but actual flopping is less than in controls (see right picture). Thus variety K-92 is better than both industry controls on main vegetative characteristics. Phenologically this variety is also better, as it is a late-bolting variety, which is tolerant to summer heat.

Thus, variety K-92 was selected as promising vegetable variety for production in greenhouse in all seasons.

Date of harvest; origin of substrate	<i>Plant height</i>	Area of second leaf	Number of basal leaves at harvest	Plant dry weight	Appearance of petioles	Hypocotyl length	Harvesting window	Number of basal leaves at bolting	Number of days from germination till bolting
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
23.Jul.07.	17.7 ± 0.6	848 ± 64	4.3 ± 0.2	96 ± 9	<b>Upright</b>	1.4 ± 0.1	9 <sup>y</sup>		None <sup>(30)</sup>
25.Jul.07.	<b>17.7 ± 0.6</b>	<b>830 ± 60</b>	<b>5 ± 0.2</b>	124 ± 14	<b>Slightly floppy</b>	<b>0.9 ± 0.1</b>	7 <sup>y</sup>		None <sup>(30)</sup>
09.Dec.07	<b>22.5 ± 0.6</b>	<b>1110 ± 95</b>	<b>4.5 ± 0.2</b>	172 ± 28	Floppy	2.4 ± 0.3	10 <sup>y</sup>	<b>10.7 ± 0.6</b>	<b>61</b>
09.Dec.07	<b>22.1 ± 0.8</b>	<b>1247 ± 82</b>	<b>5.7 ± 0.3</b>	<b>247 ± 29</b>	<b>Slightly floppy</b>	<b>1.1 ± 0.2</b>	12 <sup>y</sup>	<b>10.1 ± 0.6</b>	<b>57</b>
20.Feb.07	<b>20 ± 0.7</b>	1217 ± 85	4.5 ± 0.3	157 ± 22	<b>Upright</b>	<b>2 ± 0.2</b>	23 <sup>y</sup>	<b>9.8 ± 0.5</b>	None <sup>(50)</sup>
24.Feb.07	19.5 ± 0.7	1104 ± 93	<b>5.9 ± 0.3</b>	<b>249 ± 27</b>	<b>Upright</b>	<b>1.6 ± 0.2</b>	17 <sup>y</sup>	8.1 ± 0.6	None <sup>(50)</sup>

**Variety K-103. Origin - Armenia**



Variety K-103 produces more leaves in its rosette than control; therefore it is a true vegetable variety. Appearance of this variety in pots is similar to *Americanum*, but leaves are much bigger (see both pictures). This variety has distinguishing characteristics: it grows quicker than controls, with a higher number of leaves and higher biomass produced during the same period of growth; it is taller than controls and has bigger leaves; shortened hypocotyls position leaf rosette closer to the soil, making plants more stable and less droopy; petioles are upright in summer, but floppy in spring/ winter (see right picture). Phenologically this variety is also better, as it is a late-bolting variety, which is tolerant to summer heat: in summer it flourishes compared to controls, which bolt, have short stunted petioles and small scorched leaves. In spring/winter petioles of variety K-103 tend to flop and stretch (see right picture).

Thus, variety K-103 was selected as promising variety for production in greenhouse only in summer.

Date of harvest; origin of substrate	Plant height	Area of second leaf	Number of basal leaves at harvest	Plant dry weight	Appearance of petioles	Hypocotyl length	Harvesting window	Number of basal leaves at bolting	Number of days from germination till bolting
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
05.Mar.07	<b>17 ± 0.6</b>	887 ± 61	<b>5.8 ± 0.1</b>	<b>176 ± 18</b>	Floppy, stretched	<b>1.5 ± 0.1</b>	<b>13<sup>y</sup></b>	9.1 ± 1.5	<b>54</b>
05.Mar.07	<b>15.2 ± 0.8</b>	<b>1023 ± 75</b>	4.4 ± 0.3	<b>118 ± 17</b>	Floppy, stretched	2.7 ± 0.1	<b>16<sup>y</sup></b>	<b>9.7 ± 2</b>	49
16.Jul.07	<b>13.5 ± 0.5</b>	<b>1019 ± 78</b>	<b>4.6 ± 0.3</b>	<b>161 ± 22</b>	Upright	1.2 ± 0.2	<b>10<sup>y</sup></b>		<b>38</b>

**Variety K-133.** Origin – Armenia



Variety K-133 produces more leaves in its rosette than control; therefore it is a true vegetable variety. Appearance of this variety in pots is similar to *Kashmir* (see both pictures). This variety has distinguishing characteristics: it grows quicker than controls, with a higher number of leaves produced during the same period of growth; it is taller than controls, but petioles does not look stretched; shortened hypocotyls position the leaf rosette close to the soil, making plants more stable and less droopy; petioles have a tendency to flop (see right picture), but actual flopping is less than in controls. Thus variety K-133 is better than both industry controls on main vegetative characteristics. Phenologically variety K-133 is a medium-bolting variety, which is not susceptible to mid-summer heat, so has a longer harvesting window than controls.

Thus, variety K-133 was selected as promising vegetable variety for production in greenhouse in all seasons.



Date of harvest; origin of substrate	<i>Plant height</i>	Area of second leaf	Number of basal leaves at harvest	Plant dry weight	Appearance of petioles	Hypocotyl length	Harvesting window	Number of basal leaves at bolting	Number of days from germinatio n till bolting
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
12.Mar.07	<b>21.8 ± 0.7</b>	<b>1126 ± 77</b>	4.8 ± 0.2	137 ± 14	<b>Upright</b>	2.5 ± 0.2	<b>7<sup>y</sup></b>		<b>40</b>
13.Mar.07	<b>24 ± 0.9</b>	1008 ± 55	4.8 ± 0.2	149 ± 14	<b>Slightly floppy</b>	2.4 ± 0.3	10 <sup>y</sup>		40
23.Jul.07	17.2 ± 0.5	<b>926 ± 56</b>	<b>4.8 ± 0.2</b>	107 ± 11	<b>Upright</b>	1.6 ± 0.1	<b>8<sup>b, y</sup></b>		<b>29</b>
23.Jul.07	<b>14.3 ± 0.5</b>	<b>678 ± 39</b>	<b>5 ± 0.1</b>	108 ± 12	Upright	<b>0.8 ± 0.1</b>	<b>6<sup>y</sup></b>		<b>None<sup>(30)</sup></b>
20.Feb.08	<b>19.4 ± 0.8</b>	1338 ± 99	<b>4.6 ± 0.3</b>	138 ± 20	Slightly floppy	2.6 ± 0.3	<b>12<sup>b</sup></b>	<b>8.1 ± 0.6</b>	<b>36</b>
24.Feb.08	19.5 ± 0.7	1104 ± 93	<b>5.9 ± 0.3</b>	<b>249 ± 27</b>	<b>Upright</b>	<b>1.6 ± 0.2</b>	<b>8<sup>b</sup></b>	8.1 ± 0.6	<b>35</b>

**Variety K-157.** Origin – Adzharia (part of Georgia)



Variety K-157 produces more leaves in its rosette than control; therefore it is a true vegetable variety. Appearance of this variety in pots is similar to *Kashmir* (see both pictures). Vegetative characteristics of this variety are similar to controls. Phenologically this variety is better than controls: it is a late-bolting variety, which is not susceptible to mid-summer heat: in summer it flourishes (see left pictures) compared to controls, which bolt, have short stunted petioles and small scorched leaves. In winter, petioles of this variety tend to flop and stretch (see right picture).

Thus, variety K-157 was selected as promising variety for production in greenhouse only in summer.

Date of harvest; origin of substrate	<i>Plant height</i>	Area of second leaf	Number of basal leaves at harvest	Plant dry weight	Appearance of petioles	Hypocotyl length	Harvesting window	Number of basal leaves at bolting	Number of days from germinatio n till bolting
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
14.Sep.07	15.6 ± 0.9	<b>642 ± 25</b>	<b>6.4 ± 0.4</b>	<b>241 ± 40</b>	<b>Upright</b>	<b>0.9 ± 0.1</b>			
17.Sep.07	<b>22.2 ± 0.9</b>	841 ± 43	7.1 ± 0.4	279 ± 43	<b>Upright</b>	1.1 ± 0.1	<b>21<sup>y</sup></b>		<b>None<sup>(50)</sup></b>
20.Feb.08	<b>20.8 ± 0.8</b>	1130 ± 89	<b>5.1 ± 0.4</b>	159 ± 25	<b>Floppy, stretched</b>	2.4 ± 0.3	<b>22<sup>y</sup></b>	<b>11 ± 0.9</b>	<b>51</b>

**Variety K-165. Origin – Georgia**



Variety K-165 produces more leaves in its rosette than control; therefore it is a true vegetable variety. Appearance of this variety in pots is similar to *Americanum*, but leaf lobes have sharper geometrical tips (see both pictures). This variety has distinguishing characteristics: it grows quicker than controls, with a higher number of leaves and biomass produced during the same period of growth; it is taller than controls and has bigger leaves; shortened hypocotyls position leaf rosette closer to the soil, making plants more stable and less droopy; petioles are upright. Thus variety K-165 is better than both industry controls on main vegetative characteristics. Phenologically variety K-165 is a late-bolting variety, but some scorching can be observed in summer (see left picture). Another advantage of this variety is that its harvesting window is longer than of controls.

Thus, variety K-165 was selected as promising vegetable variety for production in greenhouse in all seasons.

Date of harvest; origin of substrate	<i>Plant height</i>	Area of second leaf	Number of basal leaves at harvest	Plant dry weight	Appearance of petioles	Hypocotyl length	Harvesting window	Number of basal leaves at bolting	Number of days from germination till bolting
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
22.Jun.07	<b>15.7 ± 0.7</b>	<b>797 ± 56</b>	<b>4.7 ± 0.3</b>	135 ± 20	<b>Upright</b>	<b>0.9 ± 0.1</b>	<b>10<sup>y</sup></b>		<b>39</b>
23.Jun.07	<b>14 ± 0.7</b>	547 ± 31	<b>5.7 ± 0.2</b>	151 ± 22	Upright, some scorching	<b>0.8 ± 0.1</b>	<b>10<sup>y</sup></b>	<b>7.5 ± 0.5</b>	<b>35</b>
20.Feb.08	<b>19.8 ± 0.6</b>	1190 ± 95	<b>5.5 ± 0.3</b>	<b>204 ± 34</b>	<b>Upright</b>	<b>1.7 ± 0.2</b>	<b>19<sup>y</sup></b>	<b>11.8 ± 1.4</b>	<b>None<sup>(50)</sup></b>
24.Feb.08	<b>18.3 ± 0.9</b>	<b>1374 ± 131</b>	5.2 ± 0.5	192 ± 57	<b>Slightly floppy</b>	<b>1.3 ± 0.1</b>	<b>19<sup>y</sup></b>	8.6 ± 0.6	<b>None<sup>(50)</sup></b>



**Variety K-202. Origin – Georgia**



Variety K-202 produces more leaves in its rosette than control; therefore it is a true vegetable variety. Appearance of this variety in pots is similar to *Americanum*, but leaf lobes have sharper geometrical tips (see both pictures). This variety has distinguishing characteristics: it grows quicker than controls, with a higher number of leaves and higher biomass produced during the same period of growth; it is taller than controls and has bigger leaves; shortened hypocotyls position leaf rosette closer to the soil, making plants more stable and less droopy; petioles are upright (see both pictures). Thus variety K-202 is better than both industry controls on main vegetative characteristics. Phenologically variety K-202 is better than controls: it is a late-bolting variety, thus has a longer harvesting window, and it is not susceptible to mid-summer heat.

There were not enough seeds for further trials (this variety was received from VIR during the second year of the project, and so propagation could not be repeated). Thus, variety K-202 was recommended for production in greenhouse only in summer.

<b>Date of harvest; origin of substrate</b>	<i>Plant height</i>	<b>Area of second leaf</b>	<b>Number of basal leaves at harvest</b>	<b>Plant dry weight</b>	<b>Appearance of petioles</b>	<b>Hypocotyl length</b>	<b>Harvesting window</b>	<b>Number of basal leaves at bolting</b>	<b>Number of days from germination till bolting</b>
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
22.Jun.07	<b>12.8 ± 0.4</b>	680 ± 49	<b>5.3 ± 0.3</b>	<b>182 ± 25</b>	Upright	1.3 ± 0.1	<b>3<sup>b</sup></b>	<b>5.5 ± 0.3</b>	<b>32</b>
23.Jun.07	<b>14.3 ± 0.4</b>	<b>777 ± 94</b>	<b>5.7 ± 0.4</b>	<b>200 ± 30</b>	Upright	<b>0.6 ± 0.1</b>	<b>6<sup>b</sup></b>	<b>6.1 ± 0.6</b>	<b>31</b>

**Variety K-317. Origin – Armenia**



Variety K-317 produces more leaves in its rosette than control; therefore it is a true vegetable variety. Appearance of this variety in pots is similar to *Kashmir*, but leaf lobes have sharper geometrical tips (see both pictures). This variety has distinguishing characteristics: it grows quicker than controls, with a higher number of leaves and higher biomass produced during the same period of growth; it is taller than controls and has bigger leaves; shortened hypocotyls position leaf rosette closer to the soil, making plants more stable and less droopy; petioles may flop, but actual flopping is much less than in control (see right picture). Thus variety K-317 is better than both industry controls on all vegetative characteristics. Phenologically variety K-317 is better than controls: it is a medium-bolting variety, which is not susceptible to mid-summer heat. Harvesting window of variety K-317 is longer than of controls.

Thus, the variety K-317 was selected as promising vegetable variety for production in greenhouse in all seasons.

Date of harvest; origin of substrate	<i>Plant height</i>	Area of second leaf	Number of basal leaves at harvest	Plant dry weight	Appearance of petioles	Hypocotyl length	Harvesting window	Number of basal leaves at bolting	Number of days from germination till bolting
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
12.Mar.07	<b>22.6 ± 0.7</b>	<b>1363 ± 70</b>	<b>5.7 ± 0.2</b>	<b>243 ± 25</b>	<b>Upright</b>	<b>1.4 ± 0.1</b>	<b>7<sup>y</sup></b>		<b>None<sup>(40)</sup></b>
13.Mar.07	<b>21 ± 1.6</b>	<b>1308 ± 159</b>	<b>6.9 ± 0.7</b>	<b>352 ± 76</b>	<b>Upright</b>	<b>1 ± 0.2</b>	10 <sup>y</sup>		None <sup>(40)</sup>
23.Jul.07	<b>19.5 ± 0.5</b>	<b>1331 ± 62</b>	<b>5.2 ± 0.2</b>	<b>218 ± 24</b>	Floppy	<b>0.9 ± 0.1</b>	<b>8<sup>y</sup></b>		<b>None<sup>(30)</sup></b>
25.Jul.07	15.7 ± 0.9	874 ± 89	4.5 ± 0.3	<b>131 ± 25</b>	Upright	<b>0.7 ± 0.3</b>	<b>0<sup>b</sup></b>	4.5 ± 0.3	21
20.Feb.08	<b>19.1 ± 0.7</b>	1294 ± 127	<b>4.6 ± 0.2</b>	<b>191 ± 21</b>	<b>Upright</b>	<b>2.1 ± 0.2</b>	<b>15<sup>y</sup></b>	<b>7.7 ± 0.5</b>	<b>None<sup>(50)</sup></b>
24.Feb.08	<b>22.1 ± 0.6</b>	<b>1582 ± 167</b>	5 ± 0.3	195 ± 26	Floppy	2.4 ± 0.2	<b>17<sup>y</sup></b>	7.5 ± 0.5	45

**c) Varieties not suitable for the UK pot growers.**

**Variety K-5.** Origin – Daghestan

Variety K-5 has unpalatable taste; therefore it was rejected for production in greenhouse.

Date of harvest; origin of substrate	Plant height	Area of second leaf	Number of basal leaves at harvest	Plant dry weight	Appearance of petioles	Hypocotyl length	Harvesting window	Number of basal leaves at bolting	Number of days from germination till bolting
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
28.Feb.07	<b>20.8 ± 0.7</b>	948 ± 56	<b>4.9 ± 0.2</b>	100 ± 12	Floppy, stretched	<b>3.4 ± 0.2</b>	<b>12<sup>y</sup></b>		
01.Mar.07	<b>17.9 ± 1</b>	972 ± 55	<b>4.9 ± 0.3</b>	120 ± 18	<b>Upright,</b> stretched	2.7 ± 0.2	20 <sup>y</sup>		<b>None<sup>(50)</sup></b>

**Variety K-52.** Origin - Azerbaijan

Variety K-52 produces more leaves in its rosette than controls; therefore it is a true vegetable variety. This variety has upright non-floppy petioles and shortened hypocotyls, which position leaf rosette closer to the soil, making plants more stable and less droopy. This variety also grows quicker than controls, producing a higher number of leaves during the same period of growth. Phenologically this variety is also better, as it is a late-bolting variety, which is tolerant to summer heat. The main disadvantages of this variety are that petioles are longer than controls and have a stretched look; they also point all sides, and such an ‘unbrushed’ look spoils the appearance; therefore variety K-52 was rejected for production in pots.



Date of harvest; origin of substrate	Plant height	Area of second leaf	Number of basal leaves at harvest	Plant dry weight	Appearance of petioles	Hypocotyl length	Harvesting window	Number of basal leaves at bolting	Number of days from germination till bolting
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
28.Feb.07	<b>18 ± 0.8</b>	819 ± 53	<b>4.2 ± 0.2</b>	74 ± 10	<b>Upright</b>	<b>3.1 ± 0.2</b>	9 <sup>y</sup>		
01.Mar.07	<b>15.1 ± 0.6</b>	814 ± 49	<b>5 ± 0.2</b>	111 ± 13	<b>Upright</b>	<b>2.2 ± 0.1</b>	20 <sup>y</sup>		<b>None</b> <sup>(50)</sup>
17.Jul.07	<b>17.8 ± 0.9</b>	820 ± 49	<b>5.1 ± 0.3</b>	<b>175 ± 22</b>	Upright	1.5 ± 0.2	11 <sup>y</sup>		<b>None</b> <sup>(40)</sup>
19.Sep.07	<b>18.3 ± 0.6</b>	<b>663 ± 58</b>	<b>7.2 ± 0.4</b>	243 ± 40	Upright	1.2 ± 0.1	<b>16</b> <sup>b</sup>		<b>46</b>

**Variety K-57.** Origin - Kazakhstan

Variety K-57 produces more leaves in its rosette than controls; therefore it is a true vegetable variety. Appearance of this variety in pots is similar to *Kashmir*. Compared to other varieties, variety K-57 has slightly paler colour, which does not spoil the appearance. This variety is about the same height as control, has same size of leaves and biomass. This variety grows quicker than controls; has upright petioles and short hypocotyls, so is better than both industry controls on several vegetative characteristics. Phenologically this variety is susceptible to mid-summer heat, although much less than controls. Harvesting window is not much longer than of controls.

Thus, variety K-57 is better than industry controls on some aspects, but on other it is very similar, so this variety was rejected for production in pots.

Date of harvest; origin of substrate	Plant height	Area of second leaf	Number of basal leaves at harvest	Plant dry weight	Appearance of petioles	Hypocotyl length	Harvesting window	Number of basal leaves at bolting	Number of days from germination till bolting
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
19.Dec.06	<b>10 ± 0.9</b>	863 ± 47	<b>4.3 ± 0.4</b>	60 ± 13	<b>Upright</b>	<b>2.3 ± 0.2</b>	<b>16<sup>y</sup></b>	<b>9 ± 0.6</b>	<b>40</b>
19.Dec.06	<b>8.7 ± 0.8</b>	1042 ± 82	<b>4.1 ± 0.3</b>	<b>53 ± 9</b>	<b>Upright</b>	<b>1.9 ± 0.1</b>	<b>16<sup>y</sup></b>		<b>40</b>
05.Mar.07	<b>15.9 ± 0.7</b>	851 ± 56	<b>4.8 ± 0.2</b>	74 ± 7	<b>Upright</b>	<b>3.4 ± 0.2</b>	10 <sup>y</sup>		<b>None<sup>(50)</sup></b>
05.Mar.07	14.6 ± 0.6	753 ± 37	<b>5.3 ± 0.2</b>	111 ± 12	<b>Upright</b>	3 ± 0.2	11 <sup>y</sup>		None <sup>(50)</sup>
16.Jul.07	<b>14.9 ± 1</b>	<b>745 ± 51</b>	<b>4.6 ± 0.3</b>	97 ± 12	Upright	2 ± 0.3	<b>7<sup>b</sup></b>	<b>5.6 ± 0.3</b>	<b>28</b>
17.Jul.07	13.3 ± 0.6	<b>599 ± 31</b>	3.8 ± 0.1	<b>56 ± 5</b>	<b>Floppy</b>	1.9 ± 0.2	11 <sup>b</sup>	6.1 ± 0.4	29

**Variety K-59.** Origin - Armenia

Variety K-59 produces more leaves in its rosette than controls; therefore it is a true vegetable variety. This variety looks a very promising variety for repeat cuts: it has deep-seated growth bud and long thick petioles. This variety grows quicker than controls, with a higher number of leaves and biomass produced during the same period of growth. The main disadvantage of this variety is that petioles are longer than controls and plants have a tendency to look stretched and floppy, which spoils the appearance. Other disadvantages are that harvesting window and susceptibility to mid-summer heat are similar to controls. Therefore variety K-59 was rejected for production in a greenhouse.

Date of harvest; origin of substrate	Plant height	Area of second leaf	Number of basal leaves at harvest	Plant dry weight	Appearance of petioles	Hypocotyl length	Harvesting window	Number of basal leaves at bolting	Number of days from germination till bolting
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
28.Feb.07	<b>19.1 ± 0.8</b>	913 ± 51	<b>4.8 ± 0.2</b>	93 ± 10	Floppy, stretched	<b>3.5 ± 0.2</b>	9 <sup>b</sup>		<b>39</b>
01.Mar.07	<b>16.5 ± 1</b>	944 ± 52	<b>5.6 ± 0.4</b>	<b>160 ± 19</b>	<b>Upright</b>	<b>2.2 ± 0.2</b>	20 <sup>y</sup>		51
16.Jul.07	<b>18.8 ± 2.8</b>	<b>871 ± 72</b>	<b>4.5 ± 0.3</b>	91 ± 11	Upright, stretched	1.5 ± 0.2	<b>7<sup>b</sup></b>	<b>6.8 ± 0.5</b>	<b>29</b>
16.Jul.07	<b>16 ± 0.5</b>	708 ± 42	4.3 ± 0.2	95 ± 12	<b>Floppy</b> , stretched, scorched leaves	<b>1.3 ± 0.1</b>	<b>7<sup>b</sup></b>	5.5 ± 0.2	28
09.Dec.07	19 ± 0.4	<b>1150 ± 87</b>	<b>4.9 ± 0.2</b>	202 ± 22	<b>Upright</b>	1.8 ± 0.2	<b>10<sup>y</sup></b>	<b>10 ± 0.7</b>	<b>58</b>
09.Dec.07 <b>SWP</b>	<b>19 ± 0.8</b>	1300 ± 121	<b>5.4 ± 0.3</b>	<b>221 ± 39</b>	<b>Upright</b>	<b>1.6 ± 0.2</b>	12 <sup>y</sup>	<b>9.2 ± 0.5</b>	

**Variety K-62.** Origin - Georgia

Variety K-62 produces more leaves in its rosette than controls; therefore it is a true vegetable variety. Appearance of this variety in pots is similar to *Americanum*, but leaves are bigger. This variety also grows quicker than controls, with a higher number of leaves and higher biomass being produced during the same period of growth; it grows taller than control and has bigger leaves. It is a medium-bolting variety, which is susceptible to mid-summer heat, but less than controls. The real disadvantage of this variety is that it has floppy, sometimes stretched petioles. Thus, variety K-62 was rejected as not suitable for production in pots.

Date of harvest; origin of substrate	Plant height	Area of second leaf	Number of basal leaves at harvest	Plant dry weight	Appearance of petioles	Hypocotyl length	Harvesting window	Number of basal leaves at bolting	Number of days from germination till bolting
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
19.Dec.06	11 ± 0.5	857 ± 76	3.6 ± 0.2	63 ± 7	Floppy	2.8 ± 0.2	20 <sup>y</sup>	7 ± 0.3	None <sup>(45)</sup>
19.Dec.06	11.7 ± 0.9	1043 ± 95	3.8 ± 0.3	75 ± 10	Floppy	2.2 ± 0.2	20 <sup>y</sup>		None <sup>(45)</sup>
05.Mar.07	15.9 ± 0.9	963 ± 65	4.1 ± 0.3	102 ± 14	Floppy, stretched	2.3 ± 0.2	13 <sup>y</sup>		49
05.Mar.07	17.5 ± 0.9	1080 ± 38	4.7 ± 0.3	158 ± 22	Floppy	1.9 ± 0.3	7 <sup>y</sup>		
22.Jun.07	14 ± 0.7	781 ± 64	5.2 ± 0.3	203 ± 34	Upright, lvs scorched	1 ± 0.1	0 <sup>b</sup>	5.2 ± 0.3	29
23.Jun.07	12.9 ± 0.4	641 ± 42	5.9 ± 0.3	163 ± 21	Upright, lvs scorched	1 ± 0.1	0 <sup>b</sup>	5.9 ± 0.3	29
19.Sep.07	20.6 ± 1	812 ± 64	4.7 ± 0.4	107 ± 17	Floppy	2.6 ± 0.2	9 <sup>y</sup>		38

**Variety K-79.** Origin - Azerbaijan

Variety K-79 has low number of leaves in its rosette, and thus should be ascribed to 'fruit' rather than 'leafy' varieties. Other disadvantages are low growth rate, small leaves and long hypocotyls. Thus, variety K-79 was rejected as not suitable for pot production.

Date of harvest; origin of substrate	Plant height	Area of second leaf	Number of basal leaves at harvest	Plant dry weight	Appearance of petioles	Hypocotyl length	Harvesting window	Number of basal leaves at bolting	Number of days from germination till bolting
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
19.Dec.06	<b>9.5 ± 0.3</b>	<b>350 ± 48</b>	<b>2.4 ± 0.1</b>	45 ± 5	<b>Upright</b>	<b>4.3 ± 0.2</b>	<b>21<sup>y</sup></b>	<b>6.4 ± 0.3</b>	<b>None<sup>(45)</sup></b>
19.Dec.06	<b>7.8 ± 0.3</b>	630 ± 97	3.0 ± 0.3		<b>Upright</b>	3.3 ± 0.3	<b>21<sup>y</sup></b>		<b>None<sup>(45)</sup></b>
28.Feb.07	14.9 ± 0.6	<b>702 ± 49</b>	<b>4 ± 0.2</b>	75 ± 10	Floppy	<b>3.6 ± 0.3</b>	<b>15<sup>y</sup></b>		<b>49</b>
01.Mar.07		860 ± 76		106 ± 16	<b>Upright</b>		<b>16<sup>y</sup></b>		49



**Variety K-101.** Origin - Kazakhstan

Variety K-101 has a high number of leaves in its rosette, and thus it is a leafy variety. In soil it looked strong and had attractive big leaves, but in pots leaf area is same as controls, and petioles are long and floppy, so plants look rather stretched and weak. Thus, variety K-101 was rejected as not suitable for production in pots.

<b>Date of harvest; origin of substrate</b>	<i>Plant height</i>	<b>Area of second leaf</b>	<b>Number of basal leaves at harvest</b>	<b>Plant dry weight</b>	<b>Appearance of petioles</b>	<b>Hypocotyl length</b>	<b>Harvesting window</b>	<b>Number of basal leaves at bolting</b>	<b>Number of days from germination till bolting</b>
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
23.Jul.07.	<b>19.6 ± 0.7</b>	969 ± 58	<b>4.8 ± 0.2</b>	<b>154 ± 20</b>	<b>Slightly floppy</b>	<b>1.3 ± 0.1</b>	<b>9<sup>y</sup></b>		<b>None<sup>(30)</sup></b>
25.Jul.07.	16.7 ± 0.7	899 ± 29	4.7 ± 0.2	130 ± 15	<b>Slightly floppy</b>	1.2 ± 0.2	7 <sup>y</sup>		None <sup>(30)</sup>

**Variety K-114.** Origin – Abkhazia republic of Georgia

During its growth period variety K-114 produces about the same number of basal leaves as both controls. It also has floppy petioles and develops smaller leaves than both controls, so plants look weak and stretched. Thus, variety K-114 was rejected for production in greenhouse.

<b>Date of harvest; origin of substrate</b>	<i>Plant height</i>	<b>Area of second leaf</b>	<b>Number of basal leaves at harvest</b>	<b>Plant dry weight</b>	<b>Appearance of petioles</b>	<b>Hypocotyl length</b>	<b>Harvesting window</b>	<b>Number of basal leaves at bolting</b>	<b>Number of days from germination till bolting</b>
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
14.Sep.07	<b>19.8 ± 0.7</b>	<b>786 ± 43</b>	<b>6.2 ± 0.3</b>	<b>162 ± 24</b>	Floppy	<b>1.3 ± 0.2</b>	<b>7<sup>b</sup></b>		<b>36</b>
17.Sep.07	19.1 ± 0.8	<b>723 ± 41</b>	<b>5.3 ± 0.4</b>	<b>114 ± 18</b>	<b>Floppy</b>	1.4 ± 0.2	9 <sup>b</sup>		40

**Variety K-115.** Origin - Abkhazia republic of Georgia

During the growth period variety K-115 produces about the same number of basal leaves as both controls. It also has floppy petioles and develops smaller leaves than both controls, so plants look weak and stretched. Thus, variety K-115 was rejected for production in greenhouse.

<b>Date of harvest; origin of substrate</b>	<i>Plant height</i>	<b>Area of second leaf</b>	<b>Number of basal leaves at harvest</b>	<b>Plant dry weight</b>	<b>Appearance of petioles</b>	<b>Hypocotyl length</b>	<b>Harvesting window</b>	<b>Number of basal leaves at bolting</b>	<b>Number of days from germination till bolting</b>
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
14.Sep.07	<b>19.8 ± 0.9</b>	<b>659 ± 58</b>	<b>6 ± 0.4</b>	<b>172 ± 28</b>	Floppy	<b>1.5 ± 0.3</b>	<b>7<sup>b</sup></b>		<b>36</b>
17.Sep.07	<b>20 ± 0.9</b>	<b>617 ± 48</b>	6 ± 0.4	<b>127 ± 23</b>	<b>Floppy</b>	1.4 ± 0.1	<b>7<sup>b</sup></b>		<b>38</b>

**Variety K-116.** Origin – Abkhazia republic of Georgia

During its growth period variety K-116 produces about the same number of basal leaves as both controls. It also has floppy petioles and develops smaller leaves than both controls, so plants look weak and stretched. Thus, variety K-116 was rejected for production in greenhouse.

<b>Date of harvest; origin of substrate</b>	<i>Plant height</i>	<b>Area of second leaf</b>	<b>Number of basal leaves at harvest</b>	<b>Plant dry weight</b>	<b>Appearance of petioles</b>	<b>Hypocotyl length</b>	<b>Harvesting window</b>	<b>Number of basal leaves at bolting</b>	<b>Number of days from germination till bolting</b>
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
14.Sep.07	<b>17.9 ± 1.2</b>	<b>662 ± 36</b>	<b>6.6 ± 0.5</b>	<b>216 ± 46</b>	Floppy	<b>0.9 ± 0.1</b>	<b>10<sup>b</sup></b>		<b>40</b>
17.Sep.07	<b>21.8 ± 0.9</b>	<b>639 ± 34</b>	6.2 ± 0.3	<b>134 ± 21</b>	<b>Floppy</b>	1.3 ± 0.1	10 <sup>b</sup>		41

**Variety K-123.** Origin – former Czechoslovakia

Variety K-123 has a high number of leaves in basal rosette, and thus it is a leafy variety. But growth rate of this variety is slow, as it reached height of controls four days later. It has hypocotyls longer than controls, so leaf rosette flops when shaken. Leaf size is smaller than in controls, so plants tend to look stretched. Thus, variety K-123 was rejected for production in pots.

Date of harvest; origin of substrate	Plant height	Area of second leaf	Number of basal leaves at harvest	Plant dry weight	Appearance of petioles	Hypocotyl length	Harvesting window	Number of basal leaves at bolting	Number of days from germination till bolting
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
05.Mar.07	15.1 ± 0.9	<b>657 ± 41</b>	<b>4.9 ± 0.3</b>	88 ± 16	Floppy; stretched	<b>2.8 ± 0.2</b>	<b>16<sup>y</sup></b>		<b>49</b>
05.Mar.07	<b>15.2 ± 0.7</b>	732 ± 30	<b>5.2 ± 0.3</b>	114 ± 16	Floppy; stretched	<b>2 ± 0.2</b>	<b>17<sup>y</sup></b>		49



**Variety K-126.** Origin: VIR breeding line.

Variety K-126 does not differ from controls in height, dry weight, leaf area, petiole length, growth rate, time of bolting and harvesting window. Thus, variety K-126 was rejected for production in pots.

<b>Date of harvest; origin of substrate</b>	<i>Plant height</i>	<b>Area of second leaf</b>	<b>Number of basal leaves at harvest</b>	<b>Plant dry weight</b>	<b>Appearance of petioles</b>	<b>Hypocotyl length</b>	<b>Harvesting window</b>	<b>Number of basal leaves at bolting</b>	<b>Number of days from germination till bolting</b>
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
23.Jul.07.	17 ± 1	1023 ± 65	4 ± 0.2	112 ± 14	Floppy	1.3 ± 0.2	5 <sup>b</sup>	4.4 ± 0.2	23
25.Jul.07.	15.1 ± 0.4	945 ± 51	3.9 ± 0.1	100 ± 8	Upright	1.3 ± 0.1	3 <sup>b</sup>	4.3 ± 0.7	23
09.Dec.07	21 ± 0.6	1286 ± 63	4.4 ± 0.2	145 ± 14	<b>Upright</b>	2.1 ± 0.3	4 <sup>b</sup>	4.7 ± 0.2	31
09.Dec.07	21.7 ± 0.9	1312 ± 94	4 ± 0.1	180 ± 9	<b>Upright</b>	2.2 ± 0.1	12 <sup>y</sup>	8.9 ± 0.6	58

**Variety K-129.** Origin – Armenia

Variety K-129 has a high number of leaves in its rosette, so it is a true leafy variety. But plants are very tall with long floppy petioles, thus look rather stretched. Thus, variety K-129 was rejected for production in pots.

<b>Date of harvest; origin of substrate</b>	<i>Plant height</i>	<b>Area of second leaf</b>	<b>Number of basal leaves at harvest</b>	<b>Plant dry weight</b>	<b>Appearance of petioles</b>	<b>Hypocotyl length</b>	<b>Harvesting window</b>	<b>Number of basal leaves at bolting</b>	<b>Number of days from germinatio n till bolting</b>
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
12.Mar.07	<b>22.3 ± 0.9</b>	<b>1076 ± 58</b>	4.5 ± 0.2	121 ± 13	Floppy, stretched	<b>1.9 ± 0.2</b>	<b>7<sup>y</sup></b>		<b>40</b>
13.Mar.07	<b>22.7 ± 0.7</b>		4.7 ± 0.3	118 ± 17	Floppy, stretched	1.6 ± 0.2	10 <sup>y</sup>		<b>38</b>

**Variety K-148.** Origin – Adzharia republic of Georgia

Variety K-148 produces more leaves in its basal rosette than corresponding control; therefore it is a true vegetable variety. This variety also grows quicker than controls, with a higher number of leaves and higher biomass produced during the same period of growth. Another advantage of this variety is that it has longer harvesting window than controls. Appearance of petioles is very variable, showing the whole range from floppy to upright and more trials were needed to make a firm decision on use in pot industry. These trials were not performed due to low germination of this variety.

<b>Date of harvest; origin of substrate</b>	<i>Plant height</i>	<b>Area of second leaf</b>	<b>Number of basal leaves at harvest</b>	<b>Plant dry weight</b>	<b>Appearance of petioles</b>	<b>Hypocotyl length</b>	<b>Harvesting window</b>	<b>Number of basal leaves at bolting</b>	<b>Number of days from germinatio n till bolting</b>
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
14.Sep.07	13.9 ± 0.5	<b>650 ± 48</b>	<b>5.9 ± 0.3</b>	<b>150 ± 19</b>	<b>Upright</b>	<b>1.1 ± 0.2</b>	<b>21<sup>b</sup></b>		<b>50</b>
17.Sep.07	<b>20 ± 1</b>	760 ± 45	<b>5.1 ± 0.4</b>	<b>97 ± 19</b>	<b>Floppy</b>	<b>2.1 ± 0.2</b>	9 <sup>b</sup>		40
20.Feb.08	18.5 ± 0.7	1112 ± 69	<b>5.6 ± 0.3</b>	<b>182 ± 28</b>	Slightly floppy	<b>1.7 ± 0.2</b>	<b>22<sup>y</sup></b>	<b>10.7 ± 0.8</b>	<b>51</b>
24.Feb.08	18.1 ± 0.7	985 ± 71	<b>6.5 ± 0.4</b>	<b>251 ± 56</b>	<i>Upright</i>	<b>1.6 ± 0.2</b>	<b>17<sup>y</sup></b>	<b>9.8 ± 0.7</b>	<b>None<sup>(50)</sup></b>

**Variety K-150.** Origin - Armenia

Variety K-150 has a high number of leaves in its rosette, so it is a leafy variety. But petioles are long and floppy and plants look rather stretched and weak. Thus variety K-150 was rejected as not suitable for production in pots.

<b>Date of harvest; origin of substrate</b>	<i>Plant height</i>	<b>Area of second leaf</b>	<b>Number of basal leaves at harvest</b>	<b>Plant dry weight</b>	<b>Appearance of petioles</b>	<b>Hypocotyl length</b>	<b>Harvesting window</b>	<b>Number of basal leaves at bolting</b>	<b>Number of days from germination till bolting</b>
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
12.Mar.07.	<b>20.8 ± 1.4</b>	<b>1092 ± 78</b>	4.4 ± 0.4	158 ± 26	Floppy, stretched	<b>2.3 ± 0.3</b>	7 <sup>y</sup>		<b>None</b> <sup>(40)</sup>
13.Mar.07.	<b>20.6 ± 0.8</b>	<b>1286 ± 98</b>	4.6 ± 0.2	165 ± 19	Floppy, stretched	2.3 ± 0.2	10 <sup>y</sup>		None <sup>(40)</sup>

**Variety K-153.** Origin – Uzbekistan

Variety K-153 has a rather low number of leaves in its rosette similar to *Americanum*. Other characteristics are very similar to both controls.

Thus variety K-153 was rejected as not suitable for pot production.

Date of harvest; origin of substrate	Plant height	Area of second leaf	Number of basal leaves at harvest	Plant dry weight	Appearance of petioles	Hypocotyl length	Harvesting window	Number of basal leaves at bolting	Number of days from germination till bolting
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
15.Dec.06	11.6 ± 0.4	848 ± 103	2.9 ± 0.2	41 ± 5	Floppy, stretched	3.2 ± 0.2	21 <sup>y</sup>	6.2 ± 0.3	46
15.Dec.06	11.1 ± 0.5	901 ± 54	2.8 ± 0.2	37 ± 5	Floppy, stretched	2.8 ± 0.2	21 <sup>y</sup>		46
01.Mar.07	15.9 ± 0.8	874 ± 56	4.1 ± 0.2	123 ± 14	Floppy, stretched	2.9 ± 0.3	12 <sup>b</sup>		39

*Variety K-166. Origin – Georgia*

Variety K-166 produces more leaves in its rosette than controls; therefore it is a true vegetable variety. This variety also grows quicker than controls, with a higher number of leaves and biomass being produced during the same period of growth. But leaf area, petioles 'flopping' and harvesting window are the same as in controls. Thus this variety was rejected for production in greenhouse.

Date of harvest; origin of substrate	Plant height	Area of second leaf	Number of basal leaves at harvest	Plant dry weight	Appearance of petioles	Hypocotyl length	Harvesting window	Number of basal leaves at bolting	Number of days from germination till bolting
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
22.Jun.07	<b>16 ± 0.6</b>	662 ± 44	<b>5 ± 0.3</b>	134 ± 19	Upright	<b>1 ± 0.1</b>	<b>3<sup>b</sup></b>	<b>7 ± 0.3</b>	<b>32</b>
23.Jun.07	<b>15.1 ± 0.6</b>	577 ± 26	<b>6.3 ± 0.3</b>	172 ± 31	Upright	<b>0.7 ± 0.1</b>	<b>4<sup>b</sup></b>	6 ± 0.4	<b>34</b>
09.Dec.07	19.5 ± 0.5	1147 ± 48	<b>4.5 ± 0.2</b>	119 ± 17	Floppy, stretched	1.7 ± 0.1	<b>10<sup>y</sup></b>	<b>7.6 ± 0.5</b>	<b>61</b>
09.Dec.07	21.9 ± 0.6	1093 ± 67	4.6 ± 0.4	<b>228 ± 38</b>	<b>Slightly floppy</b>	<b>1.9 ± 0.2</b>	12 <sup>y</sup>	8.5 ± 0.7	58



*Variety K-203. Origin – Georgia*

Variety K-203 produces more leaves in its rosette than control; therefore it is a true vegetable variety. This variety also grows quicker than controls, with a higher number of leaves and higher biomass produced during the same period of growth. But leaf area and petioles ‘flopping’ are about the same as in controls. Thus this variety was rejected for pot production.

Date of harvest; origin of substrate	Plant height	Area of second leaf	Number of basal leaves at harvest	Plant dry weight	Appearance of petioles	Hypocotyl length	Harvesting window	Number of basal leaves at bolting	Number of days from germination till bolting
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
22.Jun.07	<b>15.2 ± 0.8</b>	685 ± 58	<b>5.4 ± 0.4</b>	151 ± 32	Upright	<b>1.1 ± 0.1</b>	<b>4<sup>b</sup></b>	<b>5.6 ± 0.4</b>	<b>33</b>
23.Jun.07	<b>14 ± 0.8</b>	603 ± 37	<b>6.8 ± 0.5</b>	<b>296 ± 53</b>	Upright	<b>0.4 ± 0.1</b>	0 <sup>b</sup>	<b>6.8 ± 0.5</b>	27
09.Dec.07	19.3 ± 0.6	<b>945 ± 52</b>	<b>4.8 ± 0.2</b>	148 ± 26	<b>Slightly floppy, stretched</b>	1.9 ± 0.2	<b>10<sup>y</sup></b>	<b>9.2 ± 0.6</b>	<b>50</b>
09.Dec.07	20.7 ± 0.9	1126 ± 89	<b>5.7 ± 0.2</b>	<b>237 ± 43</b>	<b>Slightly floppy, stretched</b>	<b>1.4 ± 0.1</b>	12 <sup>y</sup>	<b>9.6 ± 0.5</b>	56

**Variety K-213.** Origin - Armenia

Variety K-213 has a high number of leaves in its rosette, therefore it is true vegetable variety. More trials should be performed before any decision could be made. There were not enough seeds for further trials (this variety was received from VIR during the second year of the project, and so propagation could not be repeated).

<b>Date of harvest; origin of substrate</b>	<i>Plant height</i>	<b>Area of second leaf</b>	<b>Number of basal leaves at harvest</b>	<b>Plant dry weight</b>	<b>Appearance of petioles</b>	<b>Hypocotyl length</b>	<b>Harvesting window</b>	<b>Number of basal leaves at bolting</b>	<b>Number of days from germination till bolting</b>
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
12.Mar.07	<b>22.2 ± 0.8</b>	<b>1102 ± 50</b>	4.7 ± 0.1	133 ± 12	<b>Slightly floppy</b>	<b>2.3 ± 0.2</b>	<b>7<sup>y</sup></b>		<b>None<sup>(40)</sup></b>
13.Mar.07	<b>22.2 ± 0.6</b>	1144 ± 53	<b>5.7 ± 0.3</b>	160 ± 17	<b>Slightly floppy, stretched</b>	1.6 ± 0.1	10 <sup>y</sup>		None <sup>(40)</sup>

**Variety K-288.** Origin - Kazakhstan

Variety K-288 has a high number of leaves in its rosette, so it is a leafy variety; it also has attractive big leaves. But petioles are floppy and weak, and so variety K-288 was rejected for pot production.

Date of harvest; origin of substrate	<i>Plant height</i>	Area of second leaf	Number of basal leaves at harvest	Plant dry weight	Appearance of petioles	Hypocotyl length	Harvesting window	Number of basal leaves at bolting	Number of days from germination till bolting
	[cm]	[mm <sup>2</sup> ]		[mg]		[cm]	[day]		[day]
23.Jul.07.	18.5 ± 0.8	992 ± 58	<b>4.8 ± 0.3</b>	128 ± 13	Floppy	<b>1.3 ± 0.2</b>	<b>9<sup>b</sup></b>	<b>4.8 ± 0.3</b>	<b>30</b>
25.Jul.07.	<b>18 ± 0.7</b>	<b>1170 ± 87</b>	4.7 ± 0.2	145 ± 87	<b>Floppy</b>	<b>1.1 ± 0.1</b>	7 <sup>y</sup>	8.1 ± 0.3	None <sup>(30)</sup>