



LITHUANIAN
RESEARCH CENTRE
FOR AGRICULTURE
AND FORESTRY

ECPGR

SafeAlliDiv

Growing *Alliums* in Lithuania

Danguolė Juškevičienė, Rasa Karklelienė,
Audrius Radzevičius, Nijolė Maročkienė,
Eugenijus Dambrauskas

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Tallinn

Vegetable Breeding Department

Breeding is carried out with tomatoes, cucumbers, sweet peppers, beans, garden peas, carrots, red beets, white cabbages, radish, onions, garlic and chives. Local genetic resources are used for the creation of new varieties and hybrids.



Vegetable breeding department

About 60 species of plants and 300 varieties are cultivated in the field collection of herbs and spices.



38 cultivars are listed in the EU Common

Catalogue of vegetable cultivars

Edible carrots – ‘Garduolės’, ‘Šatrija’, ‘Svalia BS’ H,
‘Gona’, ‘Skalsa BS’ H, ‘Ieva’ H, ‘Rokita’ H.

Red beet– ‘Joniai’, ‘Ilgiai’, ‘Kamuoliai’, ‘Rikiai’

Edible radish – ‘Babtų žara’, ‘Liliai’.

White cabbage – ‘Bagočiai’.

Bean– ‘Baltija’.

Sweet pepper – ‘Reda’, ‘Alanta’.

Cucumber– ‘Trakų pagerinti BS’, ‘Artai’ H, ‘Gintai’ H, ‘Krukliai BS’ H,
‘Daugiai’ H, ‘Troliai’ H.

Tomato– ‘Arvaisa’, ‘Laukliai BS’, ‘Slapukai BS’ ‘Skariai’ ‘Jurgiai’,
‘Aušriai BS’, ‘Svara’, ‘Viltis’, ‘Balčiai’, ‘Sveikutis’ H, ‘Adas’ H,
‘Ainiai’ H.

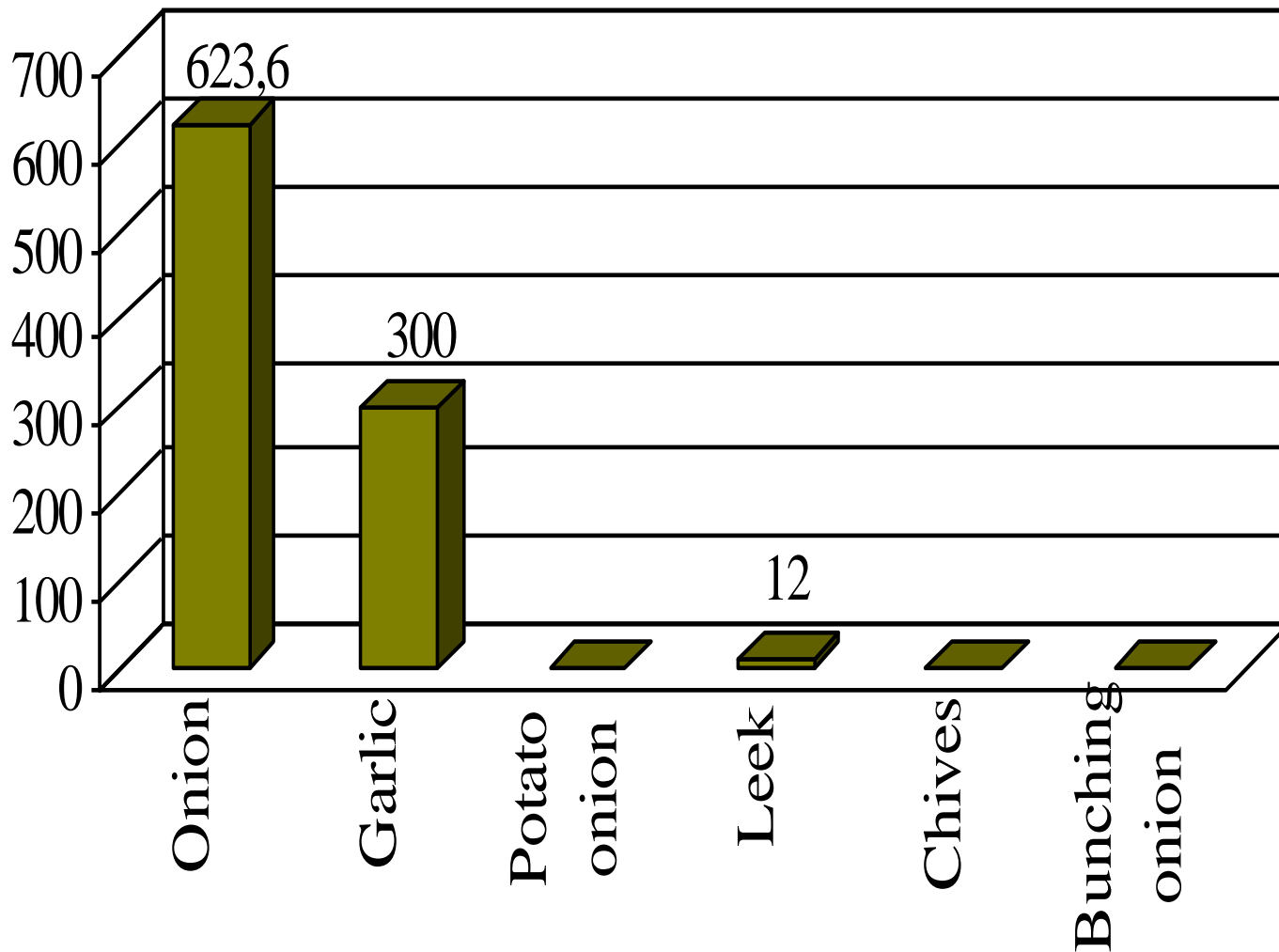
Garlic– ‘Vasariai’, ‘Žiemiai’, ‘Dangiai’.

Common onion– ‘Babtų didieji’. **Chive**– ‘Aliai’.



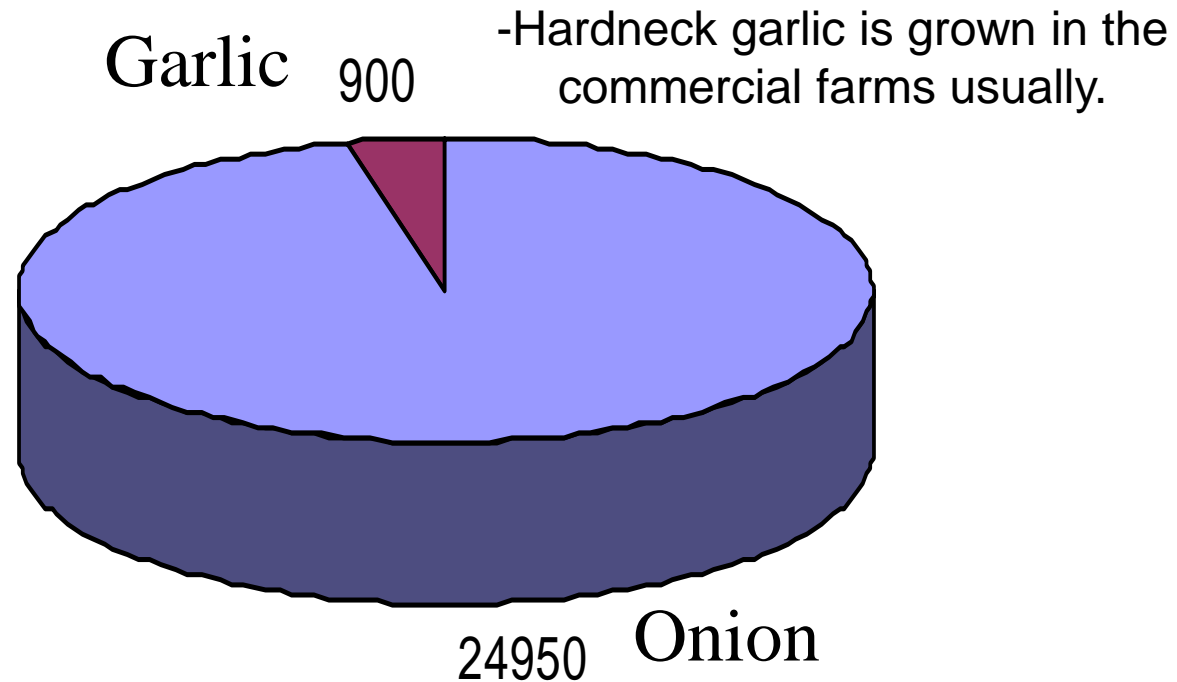
Alliums growing area in Lithuania (ha), 2016

Lithuanian Statistical department



Alliums production in Lithuania 2016, (t)

Lithuanian Statistical department



Onions are grown:

- by sowing seeds to soil directly in commercial farms;
- by planting sets to soil in home gardens.

Collection of common onion (*Allium cepa* L.)

LRCAF, HI 2012–2017

	Cultivar	Status	Origin
1.	Babtų didieji	Cultivar	Lithuania
2.	Kristine	Cultivar	Poland
3.	Wolska	Cultivar	Poland
4.	Rawska	Cultivar	Poland
5.	Eureka	Cultivar	Poland
6.	Olina	Cultivar	Czech Republic
7.	Elista	Cultivar	Czech Republic
8.	Tosca	Cultivar	Czech Republic
9.	Rijnsburger Jumbo	Cultivar	Netherland
10.	Red Baron	Cultivar	Netherland
11.	Karmen	Cultivar	Netherland
12.	Stuttgarten Riesen	Cultivar	Germany
13.	Ramata Rosso di Parma	Cultivar	Italy
14 - 51		Local population	Lithuania



Babtų didieji

- Medium early cultivar has been developed at the LRCAF IH. The duration of vegetation is 85 days.
- Bulbs are oval. External scale of bulb is a yellowish orange.
- Bulbs are suitable for fresh production and for storing.



Collection of hardneck garlic

LRCAF, HI 2012–2017

No.	Cultivar	Status	Origin
1.	Žiemiai	Cultivar	Lithuania
2.	Dangiai	Cultivar	Lithuania
3.	J. Gribovo	Cultivar	Russia
4.	Ducat	Cultivar	Czech Republic
5.	Unicat	Cultivar	Czech Republic
6.	Liubasha	Cultivar	Ukraine
7.	Teodor	Cultivar	Germany
8.	Chinese	Cultivar	China
9.	Spring Violeta	Cultivar	Spain
10-34.		Landrases	Lithuania



Hardneck garlic productivity and morphological features 2013–2015

Cultivar	Total yield t·ha ⁻¹	Marketable yield t·ha ⁻¹	Average weight of bulb g	Colour of bulb external scales	Number of cloves	Colour of cloves skin	Arrangement of cloves
Žiemiai	12.9	11.9	55cd	White	11.1a	White cream	Single
Dangiai	14.4	13.9	82a	White+stripe	7.1cd	Cream purple	Single
Gribovo	8.5	7.4	70b	Purple	8.2c	Purple	Single
Ducat	7.2	6.0	44e	Cream	7.3cd	White	Single
Unicat	9.4	8.0	41e	purple	8.3c	White purple	Single
Liubasha	12.8	12.1	69b	Purple	9.4b	Light purple	Single
Teodor	7.8	5.8	80a	White	10.4a	White cream	Single
Chinese	4.5	3.8	27f	White	7.4cd	White	Single
Spring Violeta	7.5	6.2	41e	Purple	8.3c	Purple	Single
No.4	9.6	9.2	78a	White	7.2cd	Cream	Single
No.5	8.7	6.9	75b	Light purple	8.6c	Purple	Single
No.6	14.3	13.1	75b	White	8.7c	White	Single
No.7	11.6	10.8	71b	White+stripe	7.1cd	Light purple	Single
No.11	9.1	7.8	80a	White	7.1cd	White	Single
No.15	10.9	9.7	76ab	White	9.4b	White	Single
No.16	14.4	13.1	76ab	Cream	7.8c	Cream	Single
No.27	6.8	5.3	39e	White+stripe	7.8c	Light purple	Single
No.28	7.4	6.0	43e	White	8.2c	White	Single
No.30	16.8	15.8	78a	Cream	9.8ab	White cream	Single
No.36	7.8	6.1	39e	Light purple	9.1b	White+stripe	Single
No.37	10.3	8.9	72b	White+stripe	10.6a	Light purple	Single
No.39	10.9	10.0	62c	White+stripe	7.6cd	Purple	Single
No.40	13.9	12.5	81a	White	11.0a	Cream	Single
No.41	12.8	11.8	62c	Dark purple	8.8c	Dark purple	Single



‘Žiemiai‘

Hardneck garlic

- Shape of bulb is flat oval. External scale is white colour.
- Cloves are large 5 – 10 pcs. in a bulb. Bulbils are small. Number of bulbils is about 200 in a flower head.
- Garlic distinguishes with a high productivity and resistance to winter frost.



‘Dangiai’

Hardneck garlic

- Distribution of cloves is radial.
- Shape of bulbs is flat oval.
- Colour of bulb external scale is white with purple stripes.

Number of cloves per bulb is 5–7 pcs.



Collection of softneck garlic

LRCAF, IH, 2013–2015

No.	Name	Status	Origin
1.	‘Jarus’	Cultivar	Poland
2.	‘Vasariai’	Cultivar	Lithuania
3 – 26.		Landrases	Lithuania

Softneck garlic productivity and morphological features 2013–2015

Cultivar	Total yield t·ha ⁻¹	Marketable yield t·ha ⁻¹	Average weight of bulb g	Colour of bulb external scales	Number of cloves	Colour of cloves skin	Arrangement of cloves
No.8-2	5.8	5.4	19b	White	19.6b	White	2 layers
No.9	4.5	3.9	21ab	White+stripe	14.8c	L.purple	3 layers
No.14	9.4	8.9	21ab	White	14.1c	Cream	2-3layers
No.15	7.2	6.0	21ab	White	15.1c	White	2-3layers
No.19-1	9.4	9.0	16b	Cream	14.9c	Cream	2 layers
No.19-2	8.9	8.7	17b	Cream	14.6c	Cream	2 layers
No.22	5.4	4.4	14bc	White	16.1bc	White	2 layers
No.25	6.2	5.0	16b	Cream	13.1cd	White	2-3layers
No.26	5.5	4.1	14bc	White	12.6cd	White	2-3layers
No.27	6.7	5.6	18b	Cream	13.3cd	Cream	2-3layers
No.28	5.8	5.0	22a	White	13.4cd	White	2 layers
No.40	12.1	11.2	26a	White	24.8a	White	2-3layers
Jarus	9.8	9.0	18b	White	15.0c	White	2 layers
Vasariai	9.9	8.9	17b	White	14.6c	Cream	2 layers
LSD ₀₅	1.4	1.2					

‘Vasariai’

Softneck garlic

- External scales’ are of white colour. Number of cloves reached from 10 to 18.
- Duration of vegetation is approximately 115 days.
- Cultivar is suitable for the growing under ecological conditions.



Distribution of cloves in a bulb – non radial

Collection of potato onions

LRCAF, HI 2012–2017



No.	Name	Status	Bulbs in one cluster
1.	No.V2	Breeding line (LT)	10-12
2.	No.V4	Breeding line (LT)	5-7
3.	No.V5	Breeding line (LT)	10-11
4.	No.V6	Breeding line (LT)	4-7
5.	No.V8	Breeding line (LT)	6-8
6.	No.V10	Breeding line (LT)	4-6
7.	No.V11	Breeding line (LT)	5-8
8.	No.V12	Breeding line (LT)	8-10
9.	No.V13	Breeding line (LT)	7-9
10.	No.V14	Breeding line (LT)	5-8
11.	No.V15	Breeding line (LT)	6-10
12.	No.V16	Breeding line (LT)	4-6



Amount of bulbs in a cluster



V16 – 4-6 bulbs



V14– 5- 8 bulbs

V2 – 10-12 bulbs

Amount of bulbs in a cluster



V12 – 8-10 bulbs



V5 -10 bulbs



V2 – 10-12 bulbs

Colour differences of potatoes onion external scale

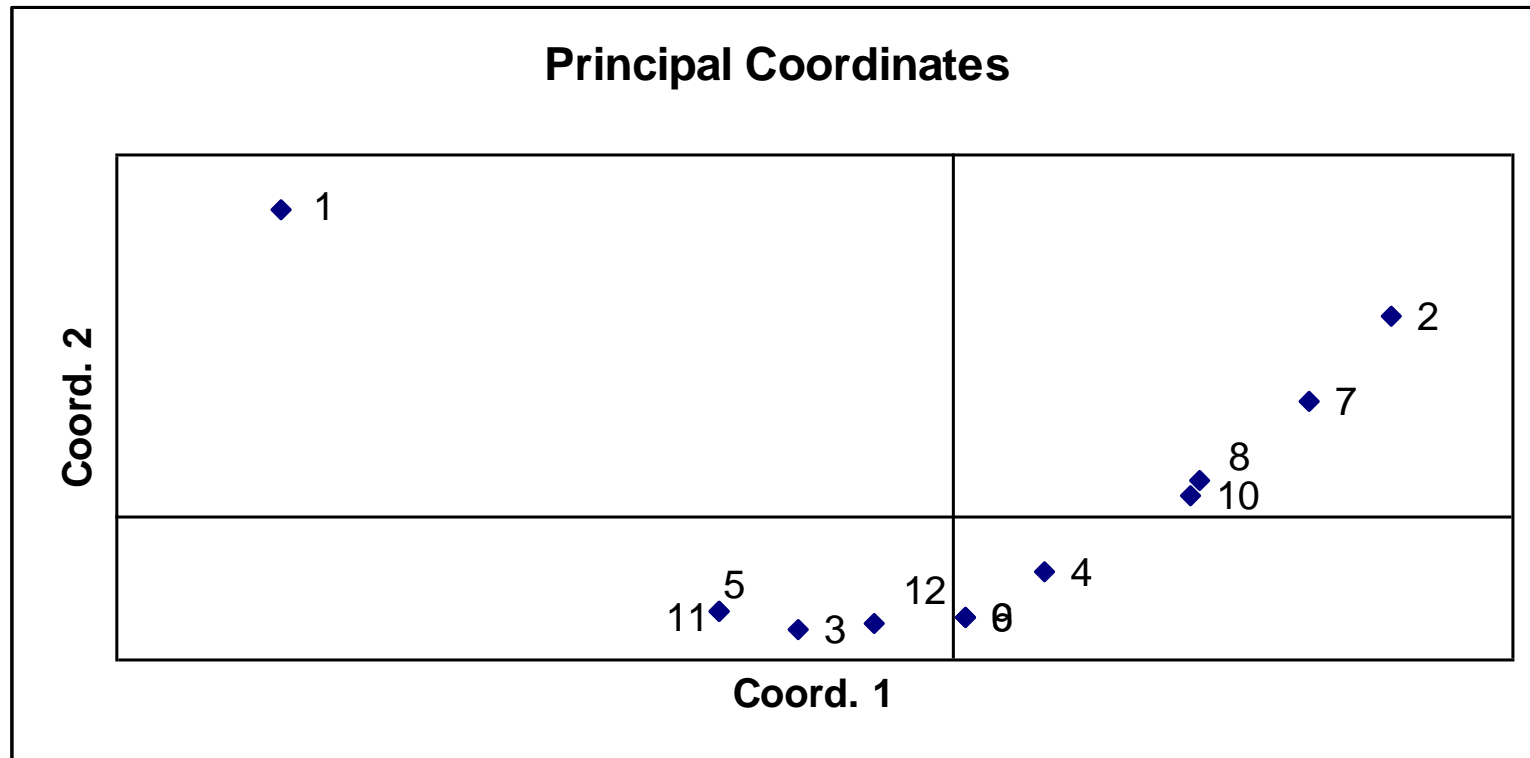


Yellow external scale



Red external scale

Scatter plot of potato onion according to the results of principal coordinate analysis (PC) of bulbs amount in a cluster



List of potato onions: 1 – V2; 2 – V4; 3 – V5; 4 – V6; 5 – V8; 6 – V10; 7 – V11; 8 – V12; 9 – V13; 10 – V14; 11 – V15; 12 – V16

Chives (*Allium schoenoprasum* L.)

- Cultivar has been developed at the LRCAF IH. First yield can be harvested after 20 days after germination in early spring. The productivity reached to 17.5 t/ha. Leaves are narrow and delicate taste.
- The colour of flower is light purple.

‘Aliai’



Allium plants collection at the LRCAF, HI

Plant species	Amount of accessions
<i>Allium fistulosum</i> L. (Welsh onion)	4
<i>Allium ampeloprasum</i> L. (Wild leek)	2
<i>Allium porrum</i> L. (Leek)	4
<i>Allium tuberosum</i> L. (Oriental garlic)	1
<i>Allium vineale</i> L.(Crow garlic)	1
<i>Allium turcestans</i> L. (Turcestans onion)	1
<i>Allium altaicum</i> L. (Altaic onion)	1
<i>Allium pskemense</i> L. (spp.Wild onion)	1
<i>Allium flavum</i> L. (Small yellow onion)	1



Thank You for attention!



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