



INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ



Inovace studijních programů AF a ZF MENDELU
směřující k vytvoření mezioborové integrace
CZ.1.07/2.2.00/28.0302

**Tato prezentace je spolufinancovaná z Evropského sociálního fondu
a státního rozpočtu České republiky**

Bulbous vegetables



ONION (*Allium cepa*) Nutritional value

Dry matter 10-15%

Carbohydrates 8-9%

Fibre 0.7-1.4%

Protein 1.5-2%

•S 740 mg

•Zn 6.5 mg

Vitamin C: 60-70 mg

•niacin 4.2 mg

Vitamin E 2 mg

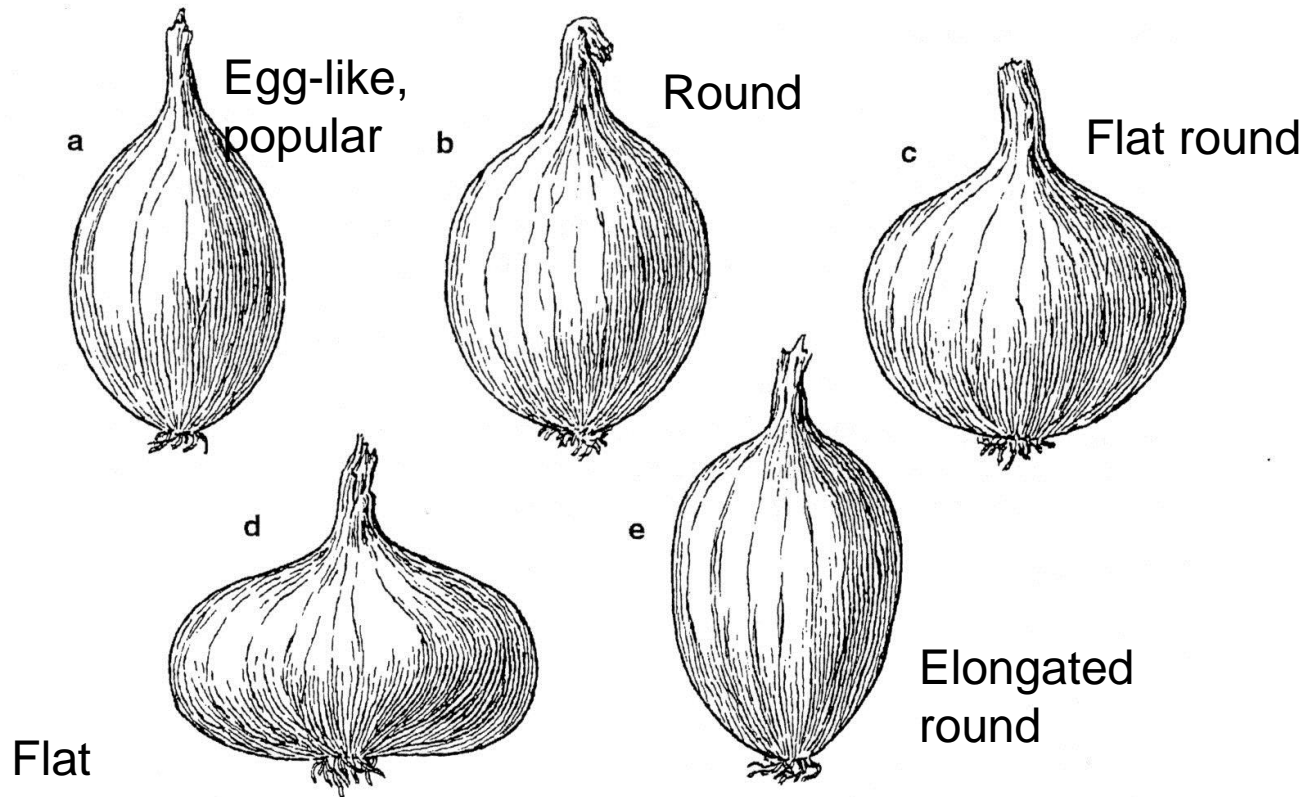
Essential oils, flavonoids



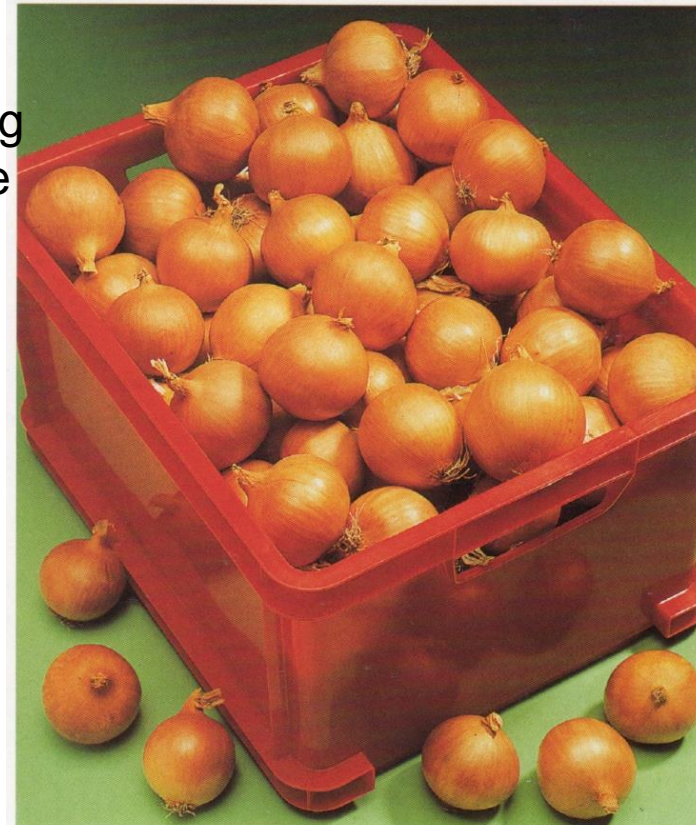
Types of onion

Most desired type: round onion

Least suitable type: flat onion, practical for cooking (easy cutting and slicing); not good for sale, businessmen are not interested (Stuttgart Giant onion)



Hybrid varieties (F1)
Good quality, popular
Uniform: no need to have a sorting
machine, stable in shape and size
Expensive seeds: 11,000 CZK/kg



Non-hybrid varieties

Good quality

Less stable: need to have a sorting machine, must be pre-sorted

Cheap seed: 600-1,000 CZK/kg

Best variety: ALICE (700 CZK/kg)

Foreign customers buy ALICE variety

Clever growers buy ALICE variety

Foolish growers buy VŠETANA:

Worse flavour, worse yield and storability;
similar price as ALICE

Growing technology: from seeds and from sets

1. Growing from seeds

Plant: 2-3kg/ha

Costs: 2,000 CZK (non-hybrid)

2. From sets

Plant: 1,200kg/ha, 1 kg of planting: 30

CZK, costs: 36,000 CZK

It is definitely better to grow onions from seeds (!)

In terms of yield, there is no difference between sowing (seeds) and planting (sets)

Onions from sets have worse storability – part of vegetation is already over

Hobby gardeners: planting sets is practical; onions from seeds sprout within 3 weeks, beds are empty for a long time

Spring onion

STUTTGART ONION

Standard variety, native to CR

Stuttgart both from seeds and sets is of superior quality

High yield

Drawback: flat shape

Drawback: wet summers, rain – keeps growing and the tunics crack

Then: harvest, dry with air on grids; never leave on the field

Above-average storability and yield

Low sales due to flat shape



ALICE

Native to CR, yellow onion, 130g

Superior yield: 50-70 t/ha

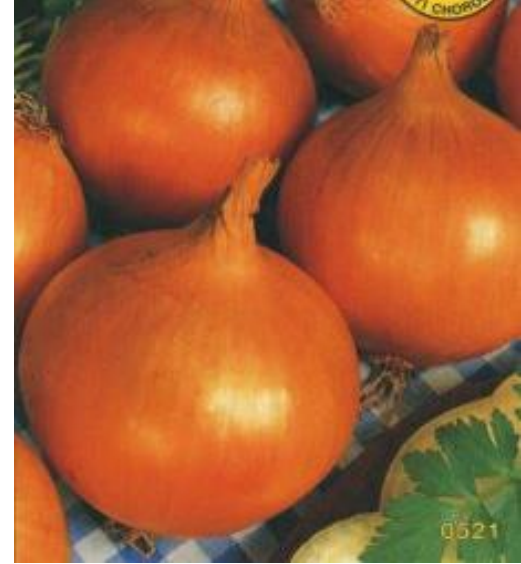
Excellent storability over the year

Sowing from seeds only

Not suitable for planting from sets: dries out after harvest, gone before March (suitable varieties for onion sets: Všetana, Stuttgart and Karmen)

Versatile: even in marginal areas

Grower in Dolní Dunajovice grew Alice variety at 50 ha and yielded 70 t/ha (national yield: less than 20 t). This grower sows in first ten days of March – decisive factor (!)



TRIUMF F1

early/medium early hybrid spring onion

Onion of egg-like shape, large: 150-155g

Good storability



UNICO F1

medium early hybrid variety

Mid-size onion, elliptic shape, 130-135g

Excellent storability



TANDEM

Grown for sowing, 123-128 days

Round shape, 130-135g

Direct consumption and storing

Excellent yield and storability



LUSY

Early variety

Uniform in shape and ripening

Suitable for long-term storing



DAGMAR

Medium early variety

Large, round onions with firm, light bronze tunic

High yield

Good storability

Strong root system: good for growing in dry regions



TOSCA

Medium late and late variety

Current world trend: oval onions

Onions with long oval shape, 5cm diameter, 12-14cm long, 160-165g

Suitable for slicing

Good storability



ELISTA

Elongated, blunt ends: ideal for slicing

Mid-term storing



KARMEN

CZ, purple-red

Above-average storability (until new harvest season)

Good sales: attractive for hotels, restaurants (potato salads), red

Average yield: 25-30 tons (low yield counterweighed by higher price)

Best market potential: growers always sell all their harvests



GRENADA

Early variety

Good for planting of sets as well as sowing
of seeds

Large onion: 190g, crimson-purple with
crimson tunics

High yields, good for salads preparation

Mid-term storing



VIGORA F1

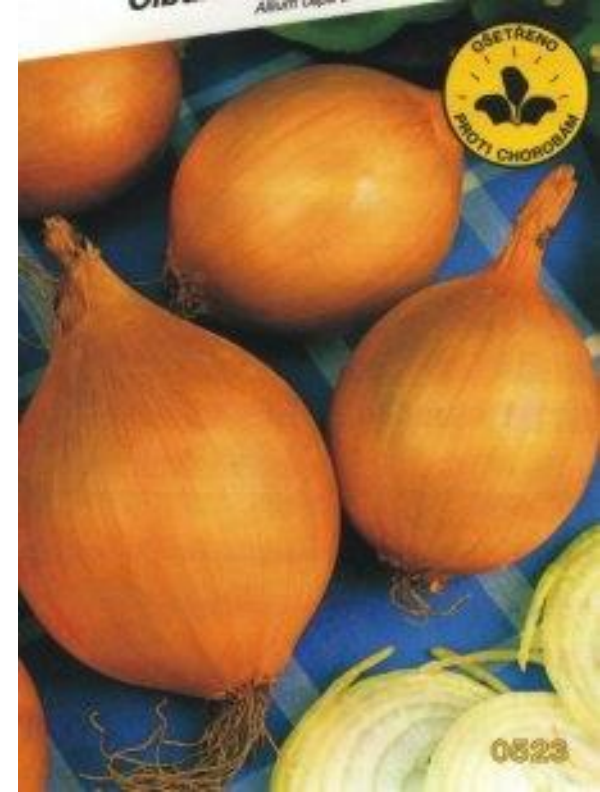
CR, hybrids, yellow

Stable, versatile variety

Round shape LEGIO F1

CR, hybrids, high yields

Average storability



VŠETANA

CR, round shape, yellow

Peak production in 1950s, not so common nowadays

Below-average yield and storability (until March/April; Alice may be stored for 2 months longer)

Not recommended FORTA F1

CR, tendency to bolt; if more than 30% is bolting, the batch must be sorted

Not recommended

Foreign hybrid varieties

CLIPPER F1

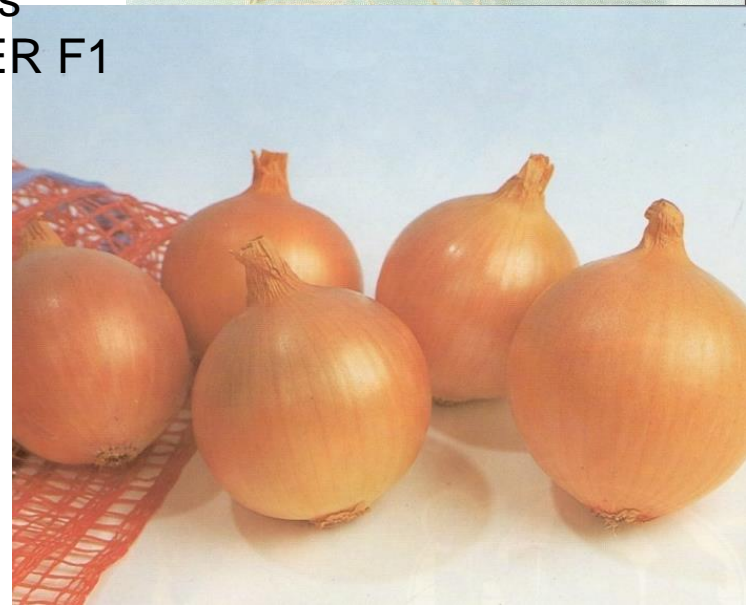
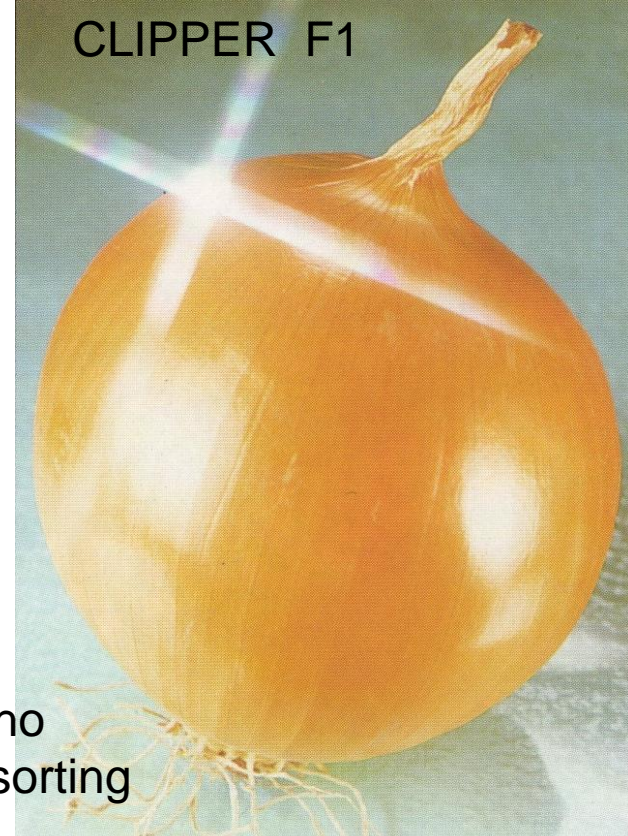
Nice round shape

Stable onion

Expensive seeds: only for growers who grow on small areas and do not use sorting machine; 8,000 CZK/kg of seeds

TAMARA F1 SPIRIT F1 CLIPPER F1

ALDATO F1



HILTON F1 SONSETA F1

Foreign onion hybrids with round shape,
uniform

Superior yield: 50t

Good for growers without sorting
machinery

Commercial-scale growers (over 20 ha):
not suitable (expensive seeds)

DAYTONA F1

Foreign superior mid-size onion

Average storability

Common use in CR MARCO F1

Mid-size/large onion

Above-average storability HYSAM F1

Mid-size onion

Average storability

White onion

ALA

CR, white onion, identical flavour

Thieves prefer white onions: outside rows

All white onions last till Christmas at most,
not fit for storing

October/November: good condition,

December: onion starts to form a green
stalk and bolts

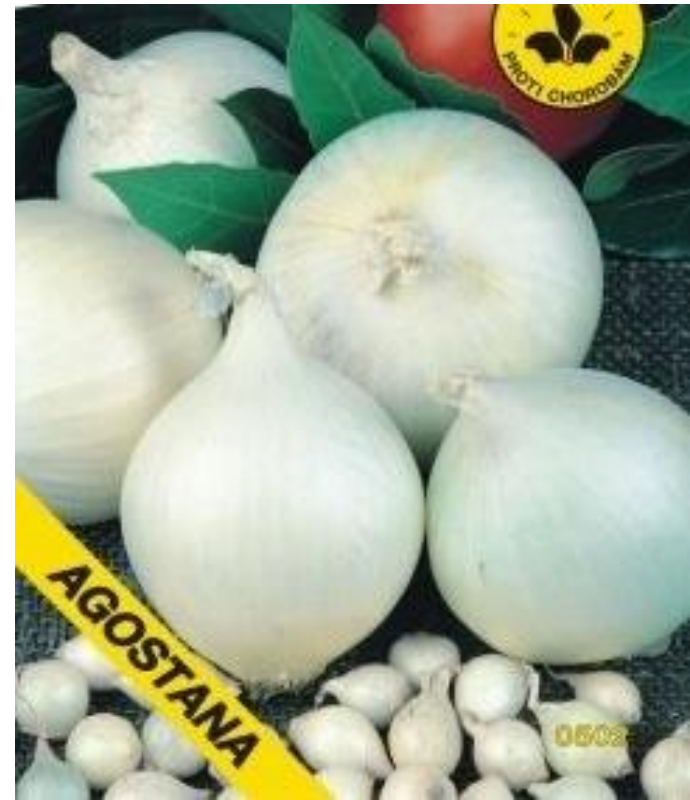
Not worth growing

AGOSTANA

Foreign variety; white, good for hobby
gardeners

Direct consumption

Not fit for storing, lasts until Christmas at
most



ALBIENKA

Medium early variety with white peel

Mid-size onions

Flat round shape

High content of dry matter (more than 14%)

Direct consumption, short-term storing, drying



Late onion for canning

GLOBO

Long vegetation period

Sow by 25 February into planting containers; planting in early April

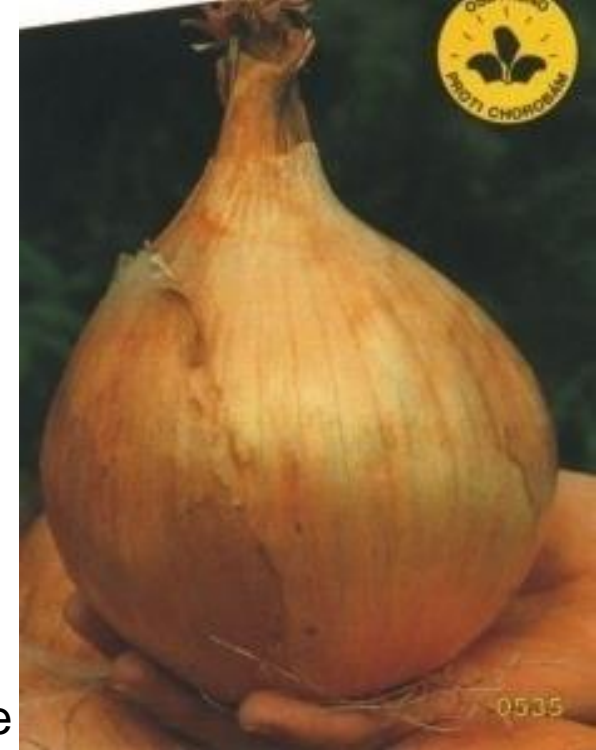
750g, yield: 50-60 tons

Storable till Christmas at most

If sown in early March, 250g onions are produced (storable till Christmas only)

In demand by big restaurants, hospitals (one onion is enough)

Common technology in England (all onions planted from planting containers)



Winter onion

Small areas only (2-3 ha)

Seeding: August, winters in the stage of 4-5 leaves, survives temperatures as low as -15°C; forms bulbs in May (5cm)

Harvest (including tops): in May, first fresh onion of the season, 50 t/ha

Tops are cut to max. 40cm (standard)

Not fit for storing (max. 1-2 months)

There is no demand for 5 kg of onions with tops (max. 0.5kg); cannot be sown on larger areas

If the onions are not harvested with the tops, they are economically unsuitable (cannot be stored) and dry out.

ALIX

Foreign variety, high yield

High resistance to freeze

HIBERNA

CR, the most grown type of winter onion

Onions are sown in autumn (end of August, early September), and winter on fields

Onions are not suitable for large areas of land – may be stored 2 months at most

White pulp, soft, gentle flavour, 135-140g

Onions may be stored with or without tops

High yield

Low resistance to freeze



AUGUSTA

CR, medium-late

Flat round onion

Suitable for harvest of:

onion greens

fresh onions or dry onions

Average yield

Good for wintering



Winter onion (Siberian onion)

1. All-year round: green tops, cut 3-4times per vegetation period
2. Delicate onion, suitable for bundling

Onion bulbs: 1.5cm diameter, off-white colour

Tops are used in soups, spreads, and mixed salads

Onions winter easily, sprout in early spring (at 1°C)

Onions may be left at the site for 4 years

Onion do not suffer from rust (better than parsley)

Roots go 0.3-0.4m deep into soil

Tops: vitamin C 400 mg%

Onions are cut manually; not suitable for large-scale growing

Yield: 3-5kg/m² of tops



BAJKAL

Welsh onion – perennial onion

Harvest of tops, for bundling

Sowing: early spring through mid-July; later sowing: harvest in early spring the following year



Shallot *Allium ascalonicum*

Vegetative propagation

1ha: 800-1,000 kg of planting stock (50 CZK/kg)

Sets are planted, harvest: cluster of 8-12 same-size bulbs

Seeds: 28,000 CZK/kg, expensive and unavailable for sale

Short vegetation period: 110 days

Low yield: 20 t

Best onion for storage: up to 2 years

Shallots may not be in the market for some time: good for hobby gardeners, onions are in the cellar, no sprouting



Dry matter 15-18%

Carbohydrates: 15-16%, sweeter-better storage

Vitamin C 80 mg.kg⁻¹ (onion grown for green tops: 300–500 mg)

Planting stock: imported from Poland

CENTURION F1

Seedstock, Dutch

Seedstock price: 28,000 CZK

Bejo company did not succeed

GOLDEN GOURMET

Yellow variety of shallot

Plantings, not seedstock

Storability: 2 years



RED SUN

Red variety of shallot

Plantings, not seedstock

Storability: 2 years



Onion growing: Miscellaneous

If you leave onion in ground until November, it keeps growing as it wants to bloom

If roots are not cut off from corm the roots absorb air humidity and onion keeps growing even at landfills (!)

Onion with roots starts growing and roots must be eliminated

Onions with roots are placed in 350kg containers on grids

Air is supplied under the grids; at first, air flow is intensive, roots dry out

Before marketing, roots are eliminated with mechanical brushes

Bolting onions with open necks cannot enter storage premises as they may cause neck rot (*Botrytis allii*)

Following onions winter:

Winter onion (Siberian onion)

Siberian onion may sustain -20°C

Winter onion

In the stage with 4-5 leaves, the onion may sustain -15°C

Garlic *Allium sativum*

Garlic does not produce seeds

Vegetative propagation via cloves

Nutritional value

Dry matter 30-35%

Carbohydrates 23-28%

Fibre 0.8%

Protein 6-7%

- 1,314 mg P, 4,360 mg K, 700 mg S, 11.3 mg Zn, 219 Mg, 12.7 mg Fe, 0.02 mg Se

Vitamin C: 90 mg, niacin 6.0 mg, vit B1 1.13 mg, B2: 0.44 mg, B6: 3.8 mg,

Essential oil: alliin, a cysteine derivate

Antibiotic: Garlicin and allistatin



Garlic varieties Winter hard-neck garlic Bad for
(until January), yield 6 t/ha Winter wide-leaf
garlic – may be stored until February Best y
Spring narrow-leaf, soft-neck garlic – may b
April Yield: 4 t/ha



Planting season Winter: autumn November

Spring: spring 15 March – 1 April

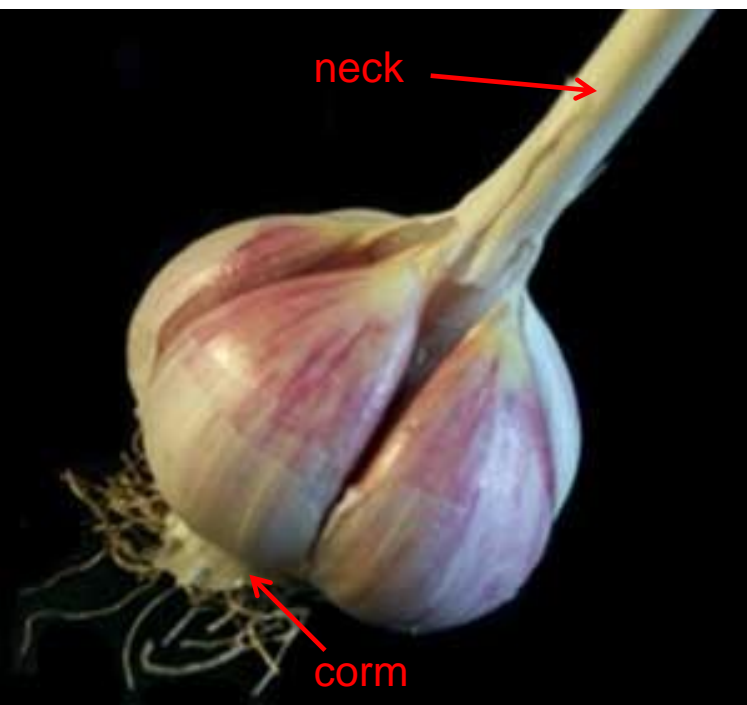
In past: garlic planted at the end of

September, early October; current trends differ

First garlic sprouts early in spring and might get infected by garlic fly. Garlic should be therefore planted after All Saints holiday so that it sprouts later in spring (best time is after 10 November; otherwise, cover the garlic beds with unwoven fabric in the spring).

Garlic sprouts earlier in spring and be freeze (as in 2012)

Hard-neck garlic (winter purple garlic)
Garlic produces flower stalks at the end of
vegetation
with aerial bulblets at the end of the flower
stalks:
Aerial bulblet is formed at the end of flower
stalks the first year
Second year: Uniform undivided bulb (2-
3cm), leave in the soil
Third year: Large bulb (5 cm and more),
divided into cloves



hard, firm neck: bottom part of the flower stalk

After the neck is plucked out, bulb separates into individual cloves

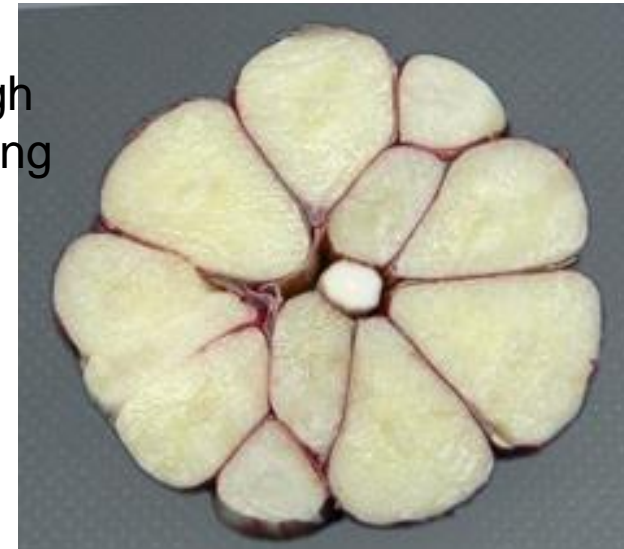
Average yield: 6 t/ha

Worse storability: below average, sell immediately (rotting)

Used for garlic spreads

Planting: Autumn (November)

Majority of varieties do not last through storage and cannot be planted in spring



DUKÁT

Hard-neck garlic, medium-early variety

large bulbs, 75-90g

Excellent: 5-7 large cloves only

High content of essential oils

Excellent storability (till March)

Little propagation, few cloves

Ideal for hobby gardeners



HAVRAN

Ing. Jan Kozák: Mendelu graduate
hard-neck garlic, medium-late (harvested
around 20 July)

Medium-size, large-size bulbs, round
shape

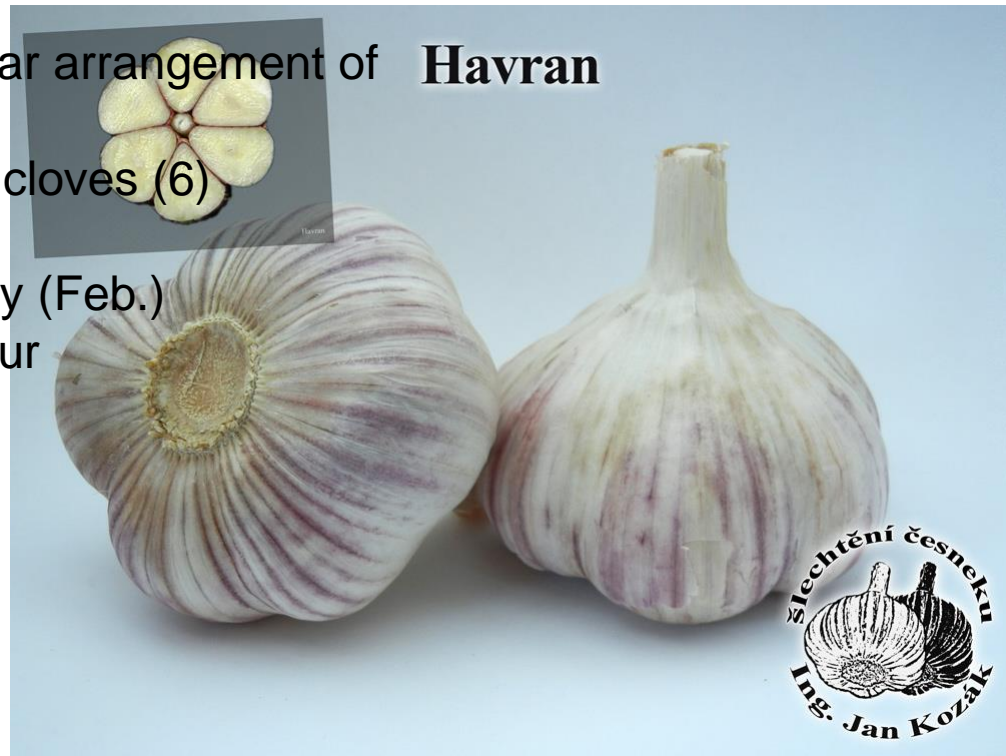
Large cloves, regular arrangement of **Havran**
cloves in a bulb

Medium amount of cloves (6)

High yield variety

Very good storability (Feb.)

Rather strong flavour



MIRKA

hard-neck garlic, may be planted in spring
medium-late variety (harvested around 25
July)

bulbs are flat round, 10 cloves

High yield variety

Excellent storability (till March)



Mirka



STANIK

hard-neck garlic, medium-late (harvested around 25 July)

Round bulbs, regular shape

10 cloves

Very high yield

Excellent storability (till March)



ANIN

hard-neck garlic, medium-early variety,
harvested around 15 July

Medium to large bulbs, flattened

Medium-size to large-size cloves, 9-15

Very high yield

Very good storability, till February



Anin



JOVAN

Hard-neck garlic, medium-late variety,
harvested around 25 July

Medium-size, large-size bulbs, round
shape

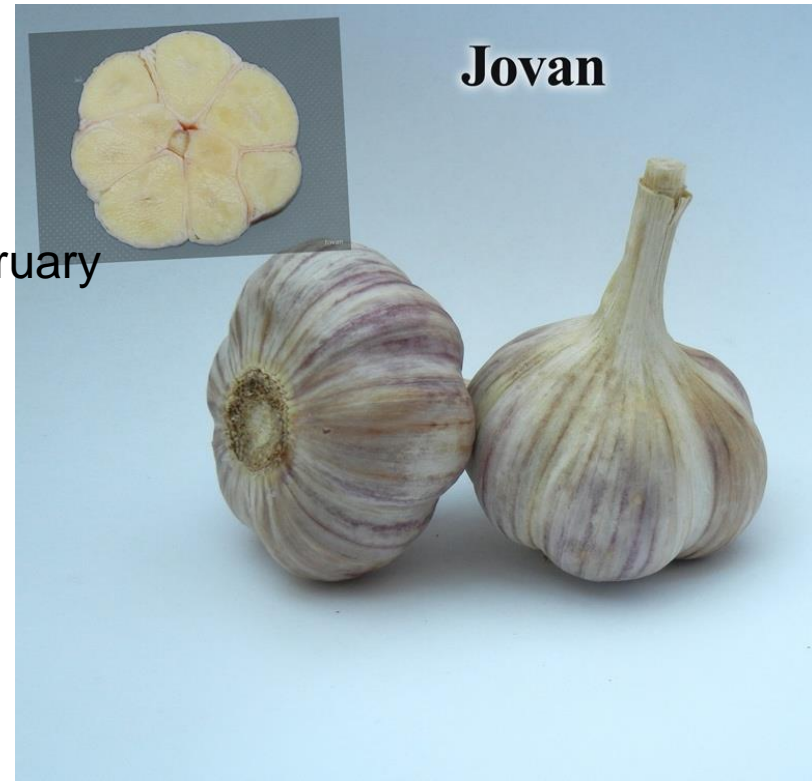
Medium to large cloves

6-9 cloves

High yield variety

Very good storability, till February

Rather strong flavour



VEKAN

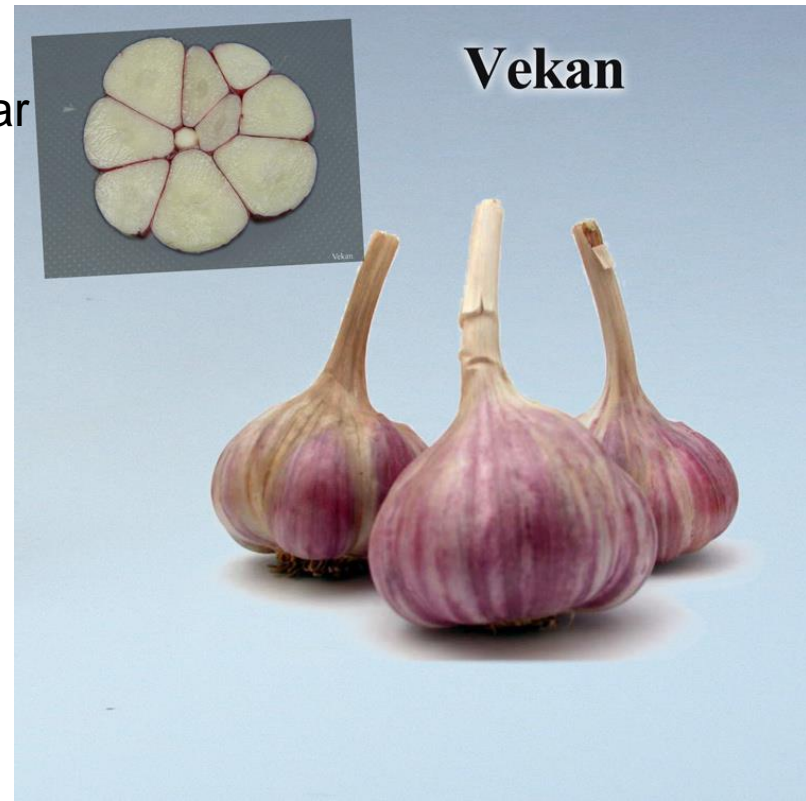
hard-neck garlic, medium-early variety,
harvested around 10 July

Mid-size bulbs

5-10 mid-size cloves; irregular
arrangement

High yield variety

May be stored till January



BLANIN

Hard-neck garlic, medium-late variety,
harvested around 25 July

Mid-size bulbs, irregular clove
arrangement, 6-12 mid-size cloves

Medium yield

Very good storability, till February

Late sprouting in spring; least infected by
garlic fly

Slightly strong flavour, tolerated by people
suffering from dysfunctional gallbladder



Blanin



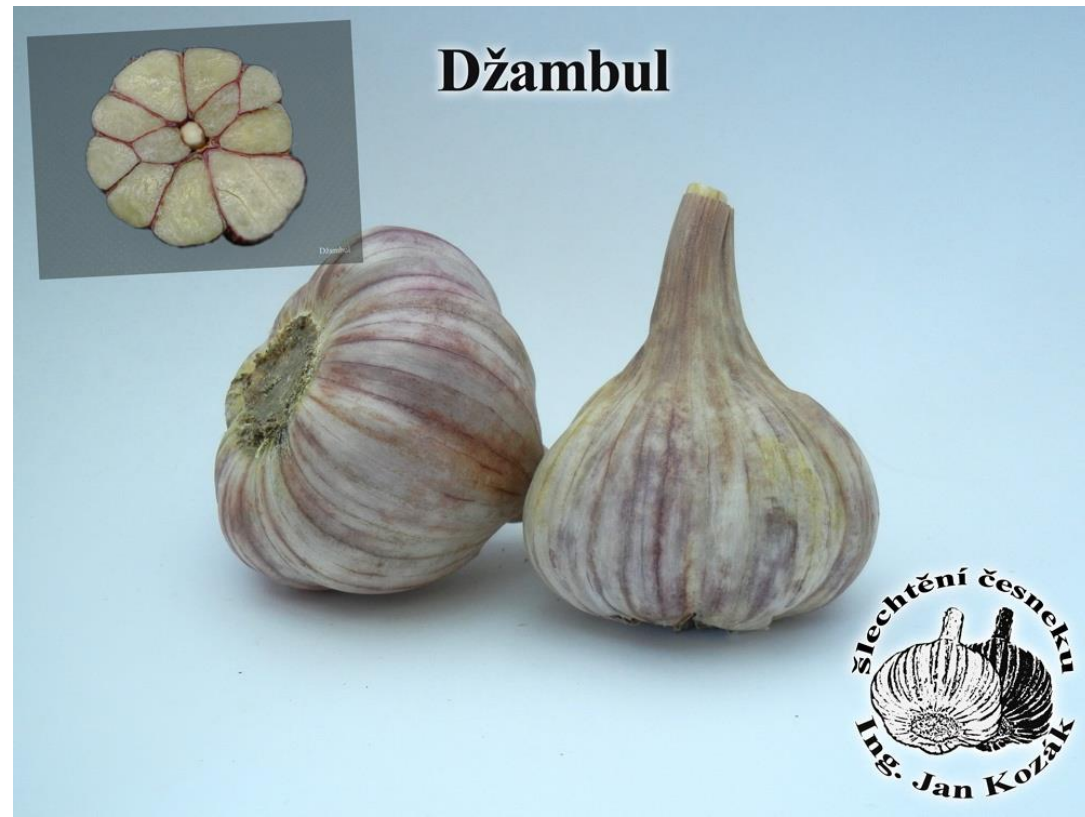
DŽAMBUL

hard-neck garlic, medium-early variety, harvested around 15
July

Round bulbs, regular shape

10-12 cloves

Very high yield



BJETIN

Earliest hard-neck garlic variety, harvested in first days of July, suitable for garlic greens harvest

Flat round bulbs

8 large, irregularly arranged cloves

High yield, good storability (Feb.)

If flower stalks are not removed, yield is low

Tolerated by people suffering from dysfunctional gallbladder



SLAVIN

hard-neck garlic, harvested around 20 July

Regular-shaped bulb

10-15 petite cloves



UNIKAT

Hard-neck garlic, early variety

Large bulbs, 75-85g

8-13 mid-size cloves in a bulb

Industrial processing, direct consumption



TANTAL, TRISTAN

Meristem propagation

Expensive virus-free planting stock: 210

CZK/kg

Not grown, 1,000 kg of seeds per 1 ha

ROPAL

Large quantities of aerial bulblets

Mediocre variety

Worse storability than other varieties (till

December) Not recommended: CEPAL

KLEON BZENECKÝ PALIČÁK

Low yield

Poor storability



Wide-leaf, soft-neck garlic varieties (white winter garlic)

Up to 3cm wide leaves

Soft flexible neck, no flower stalk

Above-average yield: the best (more than 10 t; planting: 1 t/ha)

Average storability (till March)

Planted in autumn (November)



soft flexible neck

LUKAN

Wide-leaf, soft-neck garlic, early variety (by 10 July)

Medium-size, large-size bulbs

8-14 mid-size cloves

High storability (by March)

Approved in 1994, variety with highest yield
may be grown even in waterlogged soil

Most grown variety



ANTON

Wide-leaf, soft-neck garlic, early variety (harvested in early July)

8-12 mid-size bulbs, mid-size cloves

High yield variety

High storability (by March)

Suitable for harvest of garlic greens

May produce short stalk with aerial bulblets

Depending on year and location, garlic with short stalks and aerial bulblets may comprise up to 10% of the yield



Anton



BENÁTČAN

wide-leaf soft-neck garlic, autumn and spring planting

Late variety – harvested in early August

Flat round large bulbs of irregular shape

12-17 cloves, small as well as large

High yield variety

Very good storability (April)

Belated harvest: garlics do not deconstruct



ZÁHORSKÝ
Slovak variety
Dry areas
Sandy soils MOJMÍR
Not grown

Narrow-leaf, soft-neck garlic (white spring garlic)

narrow thin leaves (1cm)

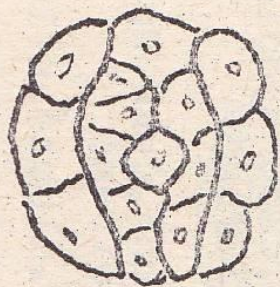
Small bulb with 12 cloves, 30-40 g

Small, narrow sickle-shaped cloves

Below-average yield (the worst yield: 4 t;
planted: 1.3 t/ha)

Hard bulb: best storability (by May at least;
varieties may be stored even for 1.5 year)

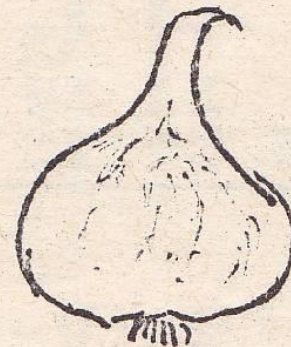
Planted in spring



úzkolistý nepaličák /jarní/



Japo



Prim

LUMÍR

Narrow-leaf, early soft-neck garlic, spring planting

20-25g bulbs, 11-15 cloves

Excellent storability

Winters without problems, if planted in autumn. Early variety, high yield



JAPO II

Narrow-leaf soft-neck garlic, late,
harvested in early August

Replaces JAPO, an older variety

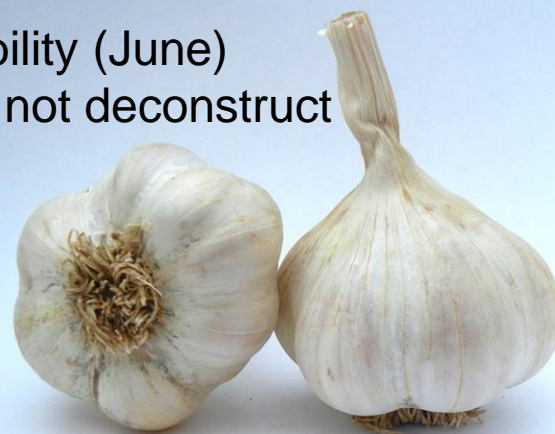
Round bulbs, regular shape

8-13 large cloves

High yield, very good storability (June)

Belated harvest: garlics do not deconstruct

Japo II



MATIN

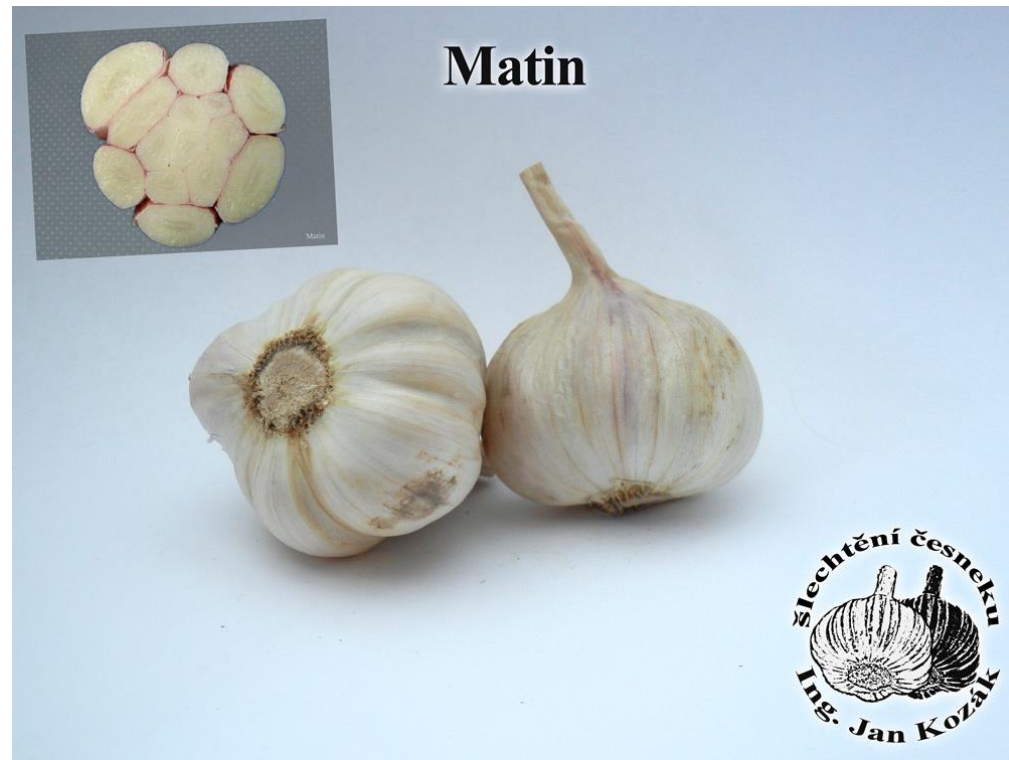
Narrow-leaf soft-neck garlic, harvested at the turn of July and August

White bulbs, 8-13 cloves

Good yield even in dry years

Very good storability

Autumn planting: higher yield and infection from garlic fly



PRIM, DAKAR

May be stored by April-May JAPO

30-40 g small bulbs

12-13 cloves

Firm: long storability

3-4 t yield, low (1.3 t planted)

Storability of garlic

Hard-neck garlic

100% last until Christmas; December, January, February (Dukát)

Rotting: planting must be done in autumn

Wide-leaf soft-neck garlic

February, March

100% of the material is all right

20% of the material is lost by March

(rotting) and therefore the garlic is planted in autumn

Narrow-leaf soft-neck garlic

May and even later on

Lasts without any difficulties by spring, spring planting

Garlic from Central Europe has twice as many aroma and nutritional substances than Chinese, Egyptian and Spanish garlic.

Hungarians grow garlic a lot.

zně v č
i konzumní část
poměrně



Leek *Allium porrum*

Nutritional value

Dry matter 11-12%

Carbohydrates 8.6%

Fibre 1.5%

Protein 2.8%

Vitamin C: 200 mg, vit E 20 mg

Essential oils: up to 30 mg/kg

Positive impact on liver, gallbladder,
digestion

Diuretic effects

Antiviral effects

Leek used to be planted in rows 30cm apart, which is a mistake as plants could not be covered with soil

Nowadays, the distance between rows are_ - min. 50cm, 60-70cm is optimum – good coverage of plants

Sets are planted at the bottom of 10cm deep planting furrow; blade and roots are shortened to a half (eliminates harmful evaporation)

Planting furrow is gradually covered, white stem: 20-25cm high



Leek was not grown in past in the Czech lands, purchase prices was very low (11 CZK/kg), and leek used to be imported from Saudi Arabia, Africa, and Egypt

Today's purchase price: 20-30 CZK/kg

Basic ingredient in soups: dry leek

All soups contain leek

Customers: Všetana Byšice and Karpatia

Prievidza

Excellent vegetable all year round

Excellent main dish: leek baked with broccoli and potatoes

Leek omelette: leek is sliced, stewed in lard and mixed with coarse bread crumbs; omelettes are filled with this mixture

Excellent antiviral effect: leek juice, preventive medicine in late winter,

consumption of leek: spreads, salads

Sowing

Planting

Harvest

SUMMER CULTIVAR December - January early April August - September does not winter, freezes

AUTUMN CULTIVAR early April early June October - December tolerates -10°C

WINTER CULTIVAR late April late June March - April tolerates -15°C , winters

may winter

Summer varieties of leek

White stem: long, thin, freezes

Sowing: December through mid-January,
harvest: August/July

STAROZAGORSKI KAMUŠ

Bulgarian, fast-growing variety

Selected from Dutch variety

summer and autumn harvest

Length of edible part: 55-65 cm



ALBOS

Czech variety, very good
summer and autumn harvest

Sowing for planting purposes: January
through mid-April, planting: from April

Length of edible part: 30-35cm



TERMINAL

summer and early autumn harvest

Length of edible part: 30-35 cm



GOLEM

summer and autumn harvest

Length of edible part: 30-35 cm



VARNA, JOLANT

foreign variety: Netherlands

Origins: Bulgaria, KAMUŠ variety

excellent yield and quality

BULGINA

Dutch variety, origins in Bulgaria

Autumn and winter leek varieties

BLIZZARD

excellent freeze resistance (withstands
hard frost of -23°C)

winters without difficulties

Above-average yield: 25 t/ha

Edible part (stem) is longer: 25cm

ELEFANT

Czech variety, excellent

Suitable for autumn harvest, as well as for gradual harvest till spring months

excellent frost resistance (-23°C), winter without difficulties

Direct sowing: March through April

Planting: till June

Edible part: 15-20 cm



WINNER

High yield variety

Good for autumn harvest as well as
wintering and gradual harvesting till spring

Tolerates temperatures down to -15°C

Edible part: 20-25 cm



TANGO

For autumn harvest

Winters in temperatures down to -12°C

Length of edible part: 25-30 cm



TITUS

High yield variety

For autumn harvest

Winters in temperatures down to -12°C

Edible part: 20-25cm



OCTOBER

High yield variety

For autumn harvest

Length of edible part: 30-35 cm



ARKANSAS, POLLUX

Average frost resistance (down to -15°C),
worse frost tolerance than ELEFANT and
BLIZZARD

LATINA, LAURA, SIEGFRIED 2

Average yield

Low resistance to frost

If temperatures drop below -15°C , leek
freezes out

Low resistance to frost:
BANDIT, LEVI, LONGINA

Leguminous plants



Garden pea (*Pisum sativum* subsp.
hortense conv. *medullare*)

Early sowing: March, sow as early as possible; sprouts at 2°C; snow has no negative impact

Combination of varieties for a diversified harvest Very early, ½ early, ½ late, late
Very early varieties: large seeds, attractive pods

Late varieties: higher yield

Rich in protein 6.5 %

•Zn: 6 mg



Harvest of whole pods for sale: 50-90
CZK/kg

Whole top plants are harvested, pea pods
are picked indoors

Varieties for direct consumption: large-
grain, 1cm grain, 7-12 peas in a pod
(Oskar, Junos)

Picked seeds are transferred to canning
plants and cooling plants

Small pea for canning plants: 5mm grain
diameter (max. 8mm)

Czech varieties: good and wide selection,
cheaper seeds

Sowing standard: 250 kg/ha = seed price
has a significant impact; 300 ha are
commonly sown (for canning and cooling
plants)

Early varieties for direct consumption
(large-grain, for hobby gardening)

OSKAR

Popular, very early variety

Large, full long pods

10-12 grains, 1cm grains, sweet

High yield

Ideal for harvesting of whole pods as well
as mechanized grain harvest

For hobby gardeners



JUNOS

Very early variety

Large, full long pods

10-12 grains, 1cm grains, sweet

Ideal for harvesting of whole pods

Little tillage, sowing must be increased by 10%

Benefit: prolonged harvest period

Pods overripe slower than in other varieties



PREMIUM

Very early variety, 58 days

Direct consumption, canning

Medium-large and large grains

7-8 peas in the pod



WINNER

Very early variety, 59 days

Direct consumption, canning

Medium-large and large seeds pods

7-8 peas in the pod



KELVEDON WONDER

Medium-late variety, 67 days

USA, old variety (1942)

The sweetest variety, great taste

Susceptible to anthracnose that infects
bottom parts of the plant

Only for hobby gardeners

Medium-size peas

6-8 peas in the pod



DALILA

Late variety

Large-seed variety

Suitable for manual harvesting as well as
for industrial processing

High yield, good condition



GLORIOSA

Early variety, 63 days

Suitable for mechanized harvest and processing in cooling plants

Large, dark-green seeds

Pod length: 8-9cm; 7-9 peas in a pod



AMBASSADOR

Late variety, 70 days

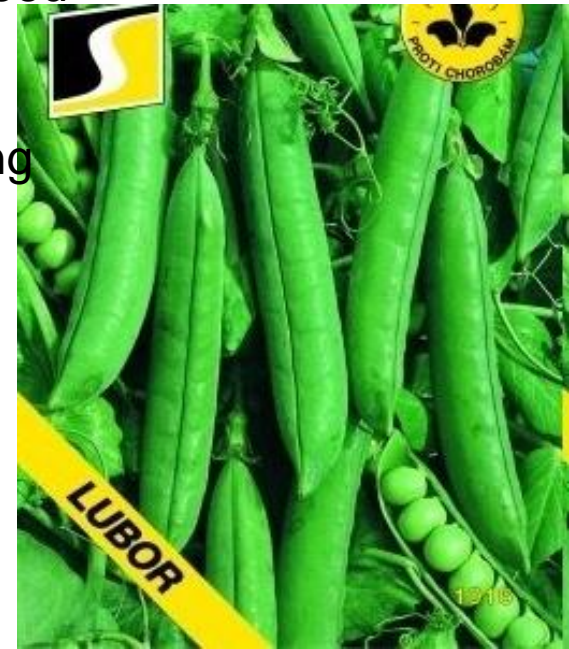
Direct consumption, canning

Large, dark-green seeds

8-9 peas in the pod



Early varieties for canning
Czech: BOHDAN, HAVEL, VLADAN,
LUBOR Czech varieties: male names
Foreign: RANI, AVOLA, LEDA: not
necessary, Czech varieties are good
(sowing count: 250 kg/ha)
Large-scale production requires small-seed
varieties Canning plants do not accept
large-seed peas
Energy intensity: sterilization and freezing
of small seeds takes less time



Late varieties for canning

RADOVAN

Medium-early variety

Reliable, high-yield variety

Virtually no tendency to lay flat

Suitable for industrial processing



LANCET

Medium-late variety, 68 days
Direct consumption, canning
8-9 peas in the pod



CETRIS

Late variety

Medium-size seeds

High yield: three pods are common

Resistant to fusarium wilt



ZÁBOJ

MORAVAN

Direct consumption of whole pods
KUDRNÁČ
Afila type: consumption of whole pods
Thin, sweet peel
Leaves are curly



AMBROSIA

Sugar pea, vegetation period: 68 days

Whole pods are harvested; direct consumption, canning

Inner wall of the pod does not contain vellum layer



65-75

7

5-6

large

2

5

15

30

48

Dry-resistant

DRAGON

70

65-75

6

6-7

small

9

18

60

13

0

high yield

Exclusive, small seeds

CEZAR

75

70-75

32

21

large pod, mildew resistant, high yield

MORRIS

83

60-80

7

6-7

medium

18

20

39

20

3

good condition, mildew resistant, high yield

RADIM

84

60-70

9

9-11

medium

11

14

40

28

7

Common bean *Phaseolus vulgaris*

Sowing time: 10-15 May

150 kg/ha of seed

One variety may be sown gradually

Pod harvest:

Optimum time: pods are brittle and break easily

Overripe bean: Pod break and the cut frays (fibres)

Very overripe: pods bend and cannot be broken



Yellow-pod varieties

- Direct consumption, smaller areas -
insignificant for processing, oxidizes on the
cut area



MAXIDOR

Early variety, high yield

Suitable for single harvest using harvesters

High plant

Long pods: 14-16 cm, light yellow



AIDAGOLD

Medium early, 65-70 days

Suitable for mechanized harvest, grown for
canning and freezing industries

Yellow, long pods (10-12 cm)

Plant height: 35 cm



SONESTA

Medium-early variety

Canning industry (sterilization, freezing)

Small plant

Mid-size pod length (13cm)

Light to medium yellow



BLANCHE

Early to medium early variety

Suitable for harvest of bean greens

Also good for harvest of dry ripe seeds

Yellow, mid-size pods

Basic colour: white with black spots



Green-pod varieties
Canning industry (slow oxidation)
Direct consumption
Foreign varieties
50% higher yield than in the CR, superior
varieties:
ACHIM
FANION
NARBONNE
Czech varieties
BONA, GAMA
Others are susceptible to fungi infestation



BONA

Medium late variety, 68-72 days

Suitable for mechanized harvest; grown for
canning and freezing industries

Green-pod variety, 10-12cm long pods with
0.7cm in diameter

Plant height: 35cm

High resistance to bean anthracnose



GAMA

Medium late, green variety, 70-75 days

Suitable for mechanized harvest; grown for
canning and freezing industries

Green-pod variety, 10-12cm long pods with
0.8cm in diameter

Plant height: 42cm

High resistance to bean anthracnose



NOVORES

Medium early variety with above-average yield

Medium plant height

Medium plant length (10cm)

Medium to dark green, smooth surface



DALMATIN

Early to medium early variety

Good for harvest of dry ripe seeds

Medium long, light green pods

Large, oval, black and white seeds with
black spots



Not recommended:

ŠÁRKA – fungi infestation

DITA

DĚTENICKÁ

BLANKA

Sowing: 150-160 kg/ha

Czech Republic falls behind in cultivation
of this variety

Climbing common bean *Phaseolus vulgaris*
L. var. *vulgaris*

Good for hobby gardeners, sown along
fences

Climbing beans are not recommended for
hobby gardeners, bush varieties produce
higher yield

Seeds with uniform colour



BELMONTE

Climbing medium early variety

Long, wide, medium to dark green pods

Semi-ripe seeds are light green, dry seeds are white

Exuberant, healthy growing



BLAUHILDE

Attractive, dark-purple, shiny pods (17cm)

Direct consumption

Purple seeds turn green after thermal treatment



Scarlet runner bean *Phaseolus coccineus*

Patchy seeds

Large seeds: processing of pods requires
seeds as small as possible