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INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ



**Inovace studijních programů AF a ZF MENDELU  
směřující k vytvoření mezioborové integrace  
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# Cultivation Systems of Berries

World fruits production  
Land area of intensive cultivation  
Nursery production  
Gooseberry cultivation  
Currant cultivation  
Raspberry cultivation  
Blackberry cultivation  
Strawberry cultivation

## World fruits production

Gooseberry	134.5 THS tons
Currant	862.2 THS tons
Raspberry	498.1 THS tons
Strawberry	3,616.9 THS tons

## European fruits production

Gooseberry	134.4 THS tons
Currant	852.8 THS tons
Raspberry	416.3 THS tons
Strawberry	1,385.0 THS tons

Spain is the greatest strawberry producer and exporter in the EU.

Poland is the second greatest strawberry producer

Pressure from strawberries imported from Morocco, Egypt, and Turkey

Egypt: strawberry: 2,700 ha, 68,000 tons of yield

Morocco: 2,800 ha, yield: 118,000 tons

EU enlargement in 2004 increased production of berry plants for processing: EU is the greatest producer of berry plants for processing industry Cultivation areas increased from 69,000 ha (EU 15) to 237,000 (EU 25): Poland 141,000 ha (strawberry 60 %, black currant 70 %)

Intensive cultivation area in CR [ha]

Gooseberry 16

Red and white currant 1,093

Black currant 312

Raspberry 35

Crops – yield [t.ha<sup>-1</sup>]

Gooseberry 3.36

Red and white currant 2.66

Black currant 1.55

Raspberry 3.00

Nursery production [pc]

Gooseberry 277,375

White currant 50,458

Red currant 344,451

Black currant 380,081

Raspberry 361,555

Blackberry 17,761

Strawberry 10,987,339

Consumption of fresh fruit [kg.per capita.per year]

Gooseberry 0.4

Currant 1.9

Strawberry 2.0

## Gooseberry cultivation

### Significance of cultivation

Large adaptability for cultivation

Early productiveness onset

Rich in vit. C

Necessary chemical protection: powdery mildew of currant



## Requirements on the environment

Low requirements on soil and weather

Intolerant to closed locations, frequent fogs, late spring frosts

Intolerant to desiccated and heavy, clay soils

Benefits from heat-retaining soil, medium-high locations, average temperatures 7-9 °C, precipitation 650 mm (tolerates half-shade)

Medium-heavy, loamy, sufficiently moist, neutral soil

## Cultivation technologies

Tree-shaped plants, wire support on the golden currant rootstock (ME-LS-A, ME-LS-C)

Spacing: 3.0 x 1.0-1.2 m (2,770-3,300 pc per ha), for manual picking for table fruits production

Intensive planting: 2-3 m rows, 0.75 m distance in the rows, trees with crowns 1.0 and 0.7 m tall alternate, 2 crown levels are formed

Wire support, poles 4 m apart, firm wire is 0.6 m high, the other is at the height of the crown, individual support for particular trees (Lhenicky method)

## Planting and treatment

Planted in autumn, deeper than in the nursery, reduce the crown to 2-3 buds in spring, emerging buds from a 4-5 shoot crown; second year: shoots are reduced by 1/3; third year: thickening shoots are eliminated; rejuvenation after 5-7 years

Inter-rows: Regular mowing/disintegration of soil surface

Fertilization, potassium fertilizers with sulphates; N fertilizers – beginning of blooming; fertilize with organic fertilizers in 3-4 year intervals; necessary microelements: B, Mn, Zn, Cu

Irrigation: Apr-June, in October if the weather is dry

## Harvest

Harvest: According to variety maturity, June and July; first for pectin processing, processing maturity, fruits must be flexible when pressed (4-7 days before consumption maturity)

Yield: 9-10 tons per ha















# Gooseberry - Lhenice





Currant cultivation

Significance of cultivation

Adaptability for cultivation

Early productiveness onset

Source of vit. C, sugar, pectin, cellulose, organic acids, protein, tannin





## Requirements on environment

Low requirements, grows even in higher locations, altitude of 400-800 m

Average annual temperature: Red currant: 6-8 °C, black currant: 7-9 °C, precipitation: 500-700 mm

Red currant is most prone to frost-damage, flourishes in lowlands, max. 350 m

Loamy, sandy-loamy soil, pH 5.5-6.5

## Cultivation technologies

Shrubs, dense closure in rows, compact rows with 2.0 m work path (mechanized harvest)

Spacing: white and red currant: 2.5-3.5 x 0.6-1.0 m (2,860 – 6,600 pc per ha)

Proper variety selection eliminates use of herbicides, powdery mildew and rust of black currant, anthracnose of red and white currant

Black currant: Pay attention to pollination, proper selection of varieties for cross-pollination, plant in blocks





## Planting and treatment

Prepare the land at least 2 years ahead, remove all persistent weeds, apply farm-yard manure (40-60 ton), supply phosphorous and potassium fertilizers

Build 2-3 m rows in autumn, reduced the roots and plant 7-10 cm deeper than in the nursery

Head to 2-3 buds; second year: 5-6 vigorous scaffold shoots; third year: shrubs have 3-5 one-year old shoots, same amount of two-year olds and older ones

Maintenance pruning since the fourth year – remove 1/3 of the oldest, unproductive branches after harvest



Take care of the inter-rows, fertilize, and protect; supply nitrogen with sulphates, urea; apply 0.3 % Vegaflor during growing season to prevent dying of buds and annual shoots; apply lime if necessary every 3-5 years, currant requires lots of B, Mn, Zn, Cu  
Sufficient irrigation before blooming and during fruits growing

## Harvest

Currant matures within 70-80 days after blossom loss, from June to August, mechanical picking, self-propelled/continuous harvesters; manual picking for table currant  
Yield: 7-10 tons per ha







