



## NATURE AND LANDSCAPE MANAGEMENT STANDARDS

**TSES AND LANDSCAPE-  
FORMING ELEMENTS**

**PLANTING OF FRUIT TREES IN THE  
AGRICULTURAL LANDSCAPE**

**SPPK C02  
003:2016**

**SERIES C**

Planting of fruit trees in the agricultural landscape

Anpflanzung der Obstbäumen in Agrarlandschaft

This standard is intended for definition of agrotechnical operations connected with plot preparation, planting and follow-up management of fruit trees growing outside intensive production orchards up to 10 years of age on a permanent site.

### References:

Lípa M., Boček S., Baroš A. (2014): Metodika stanovení záchranných sortimentů ovocných odrůd, Certifikovaná metodika VUKOZ, v.v.i. č. 5/2014-050

ČSN EN 12944-1 Fertilizers and liming materials - Vocabulary - Part 1: General terms

ČSN EN 12944-2 Fertilizers and liming materials - Vocabulary - Part 2: Terms relating to fertilizers

ČSN EN 12944-3 Fertilizers and liming materials - Vocabulary - Part 3: Terms relating to liming materials

ČSN 83 9051 Vegetation technology in landscaping – Care of vegetation during development and maintenance in green areas

ČSN 73 6101 Design of highways and motorways

Act no. 89/2012 Coll., the Civil Code

Act no. 326/2004 Coll. on Medical Plant Care and on amendment of certain acts, as amended

Act no. 219/2003 Coll. on the marketing of seed and planting material and on amendment of certain acts

Act no. 114/1992 Coll. on Nature and Landscape Protection, as amended

Act no. 254/2001 Coll. on Waters and on amendment of certain acts, as amended

Act no. 13/1997 Coll. on Roads, as amended

Act no. 127/2005 Coll. on Electronic Communications and on amendment of certain acts, as amended

Act no. 458/2000 Coll. on Requirements for Business and Public Administration in Energy Industries

Act no. 156/1998 Coll. on fertilizers, auxiliary soil agents, auxiliary plant preparations and substrata, and on agrochemical testing of agricultural lands (Fertilisers Act)

Decree no. 32/2012 Coll. on preparations and other products for plant protection, as amended

Decree no. 332/2006 Coll. on mother crops and planting material of hops, vines, fruit genera and species and ornamental species and placing into circulation, as amended

MoA Decree no. 474/2000 Coll. laying down requirements for fertilisers

MoA Decree no. 275/1998 Coll. on agrochemical testing of agricultural soils and identification of soil properties of forest

Decree no. 327/1998 Coll., laying down the characteristics for soil ecology assessment units and the procedure for keeping records on them and updating them

Decree no. 189/2013 Coll. on Protection of woody plants and permission of their cutting, as amended

Decree no. 378/2010 Coll., establishing the list of species of cultivated plants

Commission Directive 93/48/EEC of 23 June 1993 setting out the schedule indicating the conditions to be met by fruit plant propagating material and fruit plants intended for fruit production, pursuant to Council Directive 92/34/EEC

Council Directive 2008/90/EC of 29 September 2008 on the marketing of fruit plant propagating material and fruit plants intended for fruit production

Council Directive 2000/29/EC of 8 May 2000 on protective measures against the introduction into the Community of organisms harmful to plants or plant products and against their spread within the Community

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Documentation for standard development is available in the library of NLPA CR.

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## 1. Standard purpose and contents

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The standard “Planting of fruit trees in the agricultural landscape” defines the agrotechnical operations connected with land plot preparation, planting and follow-up management of fruit trees growing outside intensive production orchards up to 10 years of age on a permanent site. Planting of fruit trees along roads has to respect rules laid down in the separate standard SPPK A02 010 Auxiliary vegetation along roads.

The standard is designed for planting of fruit trees with a harmonic combination of traditional production functions with present-day requirements for performance of non-production functions. In functional planting, none of the functions significantly dominates over the others. For this reasons, some of the parameters are set differently from those in fruit-farming.

In agricultural matters, the standard can be applied reasonably to gene pool planting with the main purpose of retaining the gene pool of fruit trees.

The purpose of the standard is to allow the utilisation of the wealth of varieties of fruit trees that differ significantly in their abilities to utilise or tolerate different site conditions. The wealth of diverse varieties of fruit trees growing in the open country has been an integral component of the Czech Republic’s agricultural landscape for centuries. Varieties usable for functional planting are designated for the purposes of the standard as preservation varieties of fruit trees, which are further divided based on their importance into the categories priority, specialised, acceptable, research and local varieties.

### Legal framework

**Act no. 326/2004 Coll.** on Medical Plant Care and on amendment of certain acts, and its executive **Decree no. 32/2012 Coll.** on Preparations and other products for protection of plants, define the use of preparations and other products for protection of plants.

**Act no. 219/2003 Coll.** on the marketing of seed and planting material and on amendment of certain acts, as amended, defines, among other things, marketing of planting material of cultivated plants, registration of varieties of cultivated plants specified in the species list and varieties of decorative species, and integrates applicable regulations of the European Union; the most important include **Commission Directive 93/48/EEC** of 23 June 1993 setting out the schedule indicating the conditions to be met by fruit plant propagating material and fruit plants intended for fruit production, pursuant to Council Directive 92/34/EEC, and **Council Directive 2008/90/EC** of 29 September 2008 on the marketing of fruit plant propagating material and fruit plants intended for fruit production.

**Decree no. 332/2006 Coll.** on mother crops and planting material of hops, vines, fruit genera and species and ornamental species and placing into circulation, as amended, defines details on recognition of mother crops and planting material of hops, vines, fruit genera and species and their marketing, and integrates applicable regulations of the European Union.

**Council Directive 2000/29/EC** of 8 May 2000 on protective measures against the introduction into the Community of organisms harmful to plants or plant products and against their spread within the Community.

**Council Directive 2008/90/EC** of 29 September 2008 on the marketing of fruit plant propagating material and fruit plants intended for fruit production. It specifies fruit species for the purposes of Czech legislation, notably Act no. 219/2003 Coll.

**Act no. 114/1992 Coll.** on Nature and Landscape Protection, as amended, defines rights and obligations in connection with cutting of woody plants growing outside forest, including fruit trees, as well as rights and obligations in connection with substitute planting and levies. The Act is based on the principle that cutting of woody plants growing outside forest is essentially subject to a permission regime; cutting of such woody plants requires a permit from a nature protection authority, unless specified otherwise therein (e.g., cutting of woody plants of defined sizes, or for the sake of life and health protection).

**Act no. 254/2001 Coll.** on Waters and on amendment of certain acts, as amended (Section 14, Para. 1 and 2), binds, among other things, planting of trees and shrubs in flood-prone areas in an extent affecting the drainage conditions to a permit from a water management authority.

**Act no. 13/1997 Coll.** on Roads, as amended, defines conditions for planting of trees and shrubs along roads in terms of viewing conditions. Section 15 stipulates that road vegetation on auxiliary land along roads and other suitable land comprising parts of motorways, highways or local roads must not pose a threat to road use safety or disproportionately complicate road maintenance or management of adjacent land.

**Act no. 127/2005 Coll.** on Electronic Communications and on amendment of certain acts, as amended (Section 102) defines protective zones for telecommunications equipment in which permanent vegetation must not be planted without the telecommunications line owner's consent.

**Act no. 458/2000 Coll.** on Requirements for Business and Public Administration in Energy Industries and on amendment of certain acts (Energy Act), as amended, defines the rights of electricity transmission and distribution system operators, gas producers and gas transport and distribution system and tank operators, and holders of licences for heat distribution to regulate vegetation endangering the operation of said systems, including on other owners' land. In addition, the Act deals with maintenance and planting of woody plants in protective zones of certain power system facilities, gasworks facilities and heat production or distribution facilities (Sections 46, 68 and 87).

**Act no. 156/1998 Coll.** on fertilizers, auxiliary soil agents, auxiliary plant preparations and substrata, and on agrochemical testing of agricultural lands (Fertilisers Act), defines conditions for marketing, storage and use of fertilizers, auxiliary soil agents, auxiliary plant preparations and substrata.

**Ministry of Agriculture Decree no. 474/2000 Coll.** laying down requirements for fertilisers.

**Ministry of Agriculture Decree no. 275/1998 Coll.** on agrochemical testing of agricultural soils and identification of soil properties of forest land plots.

**Decree no. 327/1998 Coll.**, laying down the characteristics for soil ecology assessment units and the procedure for keeping records on them and updating them.

**Decree no. 189/2013 Coll.**, on Protection of woody plants and permission of their cutting, as amended, makes a detailed specification of requirements for protection of woody plants and, in particular, defines conditions for permission of cutting of woody plants and defines terms related to cutting of woody plants. According to the Decree, no permit is required for woody plants with a trunk circumference up to 80 cm measured at 130 cm above ground, for canopied patches of woody plants up to 40 m<sup>2</sup>, for fruit trees growing in gardens, and for woody plants grown on land plots used as tree or shrub plantations. Simultaneously, it sets out stricter protection of canopied stands in excess of 40 m<sup>2</sup> and avenues.

**Decree no. 378/2010 Coll.**, establishing the list of species of cultivated plants.

## 2 Classification of fruit trees

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### 2.1 Fruit tree

2.1.1 For the purposes of this standard, a fruit tree refers to a woody plant providing humans with edible fruits with an aboveground portion comprising a non-branching trunk at least 1.3 m tall and a branched crown.

2.1.2 The following species are grown as fruit trees:

- common peach (*Persica vulgaris*) – also referred to as peach,
- common pear (*Pyrus communis*) – also referred to as pear,
- apple tree (*Malus domestica*) – also referred to as apple,
- service tree (*Sorbus domestica*)\* – also referred to as sorb tree,
- sweet rowan tree (*Sorbus aucuparia* var. *dulcis*)\* – also referred to as sweet rowan,
- shipova tree (*Sorbopyrus auricularis*) – also referred to as shipova,
- sweet chestnut tree (*Castanea sativa*) – also referred to as chestnut,
- quince tree (*Cydonia oblonga*) – also referred to as quince,
- almond tree (*Amygdalus communis*) – also referred to as almond,
- Tibetan apricot (*Armeniaca vulgaris*) – also referred to as apricot,
- common medlar (*Mespilus germanica*)\* – also referred to as medlar,
- black mulberry tree (*Morus nigra*)\*, white mulberry tree (*Morus alba*)\* – also referred to as mulberry,
- Persian walnut (*Juglans regia*) – also referred to as walnut,
- plum tree (*Prunus domestica*), common plum (*Prunus insititia*) – also referred to as plum,
- sweet cherry (*Cerasus avium*) – also referred to as cherry,
- sour cherry tree (*Cerasus vulgaris*) – also referred to as sour cherry.

\* Not on the list of fruit species and genera pursuant to Decree no. 378/2010 Coll.

### 2.2 Fruit shrub

2.2.1 For the purposes of this standard, a fruit shrub refers to a woody plant providing humans with edible fruits with an aboveground portion not forming a trunk but consisting of axes (branches) of identical importance.

2.2.2 The following species are grown as fruit shrubs:

- European cornel (*Cornus mas*)\* – also referred to as cornel,
- quince,
- common hazel (*Corylus avellana*) – also referred to as hazel,
- medlar\*,
- mulberry\*.

\* Not on the list of fruit species and genera pursuant to Decree no. 378/2010 Coll.

### 2.3 Grower's classification

- 2.3.1 **Pome-bearing species.** Species in the family *Rosaceae* (*Malaceae*) producing a pome as its fruit. They include the apple, pear, sweet rowan, sorb, shipova, quince and medlar.
- 2.3.2 **Drupe-bearing species.** Species in the family *Rosaceae* (*Malaceae*) producing a drupe as its fruit. They include the plum, cherry, sour cherry, apricot and peach.
- 2.3.3 **Nut-bearing species.** Species from which the seed wrapped in a hard shell is consumed. Botanically speaking, they belong to various families. They include the chestnut (family *Fabaceae*), hazel (family *Betulaceae*, *Corylaceae*), almond (family *Rosaceae*, *Amygdalaceae*) and walnut (family *Juglandaceae*).
- 2.3.4 **Minority species.** A botanically diverse group of species of little economic importance in fruit-farming and are therefore grown on a small scale. They include the sorb, chestnut, cornel, quince, medlar and mulberry.

## 2.4 Classification by temperature requirements

- 2.4.1 For the purposes of this standard, fruit species are divided into ordinary and thermophilic.
- 2.4.2 **Ordinary fruit species.** Species with low temperature requirements, generally well adapted to the Czech Republic's climate conditions: pear, apple, sweet rowan, shipova, hazel, plum, cherry and sour cherry.
- 2.4.3 **Thermophilic fruit species.** Species with higher temperature requirements, generally not so well adapted to the Czech Republic's climate conditions: peach, cornel, sorb, chestnut, quince, almond, apricot, medlar, walnut and mulberry.

## 3 Planning and project planning

### 3.1 Site selection

- 3.1.1 The appropriateness of the site for the fruit species and variety has to be assessed before the planting. The site refers to the area intended for planting of group or solitary woody plants that is the subject matter of management.
- 3.1.2 The site selection is driven by the ability of fruit woody plants to regularly bear fruit of at least average quality. The site selection is not driven by the ability of the species and variety to survive at the expense of ecological stress.
- 3.1.3 The site shall be preferably assessed using the system for classification of agricultural land development units (BPEJ; see Decree no. 327/1998 Coll.) of the land plot on which the planting is to be done.
- 3.1.4 Inappropriate sites by codes of climate regions, primary soil units, sloping and exposure and soil depth and coarseness under the BPEJ system are listed in Annex 1.
- 3.1.5 If a land plot does not have a BPEJ defined, the BPEJ of the nearest plot with adequate exposure, microclimate and soil conditions applies. If a land plot has more BPEJ defined, the one that most closely corresponds to the planting site applies.
- 3.1.6 In case a site cannot be assessed using BPEJ (none available for the plot or a comparable one, or individual BPEJ cannot be localised within an extensive plot with sufficient accuracy), the site shall only be assessed using a combination of altitude and microclimate.
- 3.1.7 Ordinary fruit species can be planted without limitation up to 350 m above sea level, with the exception of apple varieties susceptible to powdery mildew, which must not be planted at altitudes below 250 m (see Annex 4, Table 1).
- 3.1.8 Thermophilic species can be planted without limitation up to 250 m above sea level.
- 3.1.9 Inappropriate sites for planting of thermophilic fruit species are areas above 450 m a.s.l. In areas at 350-450 m a.s.l., planting of thermophilic species has to be justified by microclimate or historically, and only varieties suitable for this altitude zone have to be used.
- 3.1.10 At altitudes over 500 m, exposed ridges and gorges with permanent air flow are inappropriate. Buds are increasingly damaged by frost and woody plants can be damaged by hoarfrost or rime in these exposed locations. Such microclimate conditions can be assessed based on the condition of broadleaved woody plants present on the site.
- 3.1.11 At altitudes of 600-800 m, fruit trees can only be planted if presence of acceptably bearing woody plants of the species on the actual site has been reliably documented.
- 3.1.12 Areas at more than 800 m a.s.l. are inappropriate for planting of ordinary species. Only fruit-bearing varieties of the sweet rowan can be planted at such altitudes.



- 3.1.13 The use of specific species and varieties for sites with certain altitudes is specified in Annex 4.
- 3.1.14 Fruit woody plants must not be planted in areas with permanent presence of groundwater at less than 1.5 m below ground.
- 3.1.15 Planting is not permitted on sites with solid rock, stony or gravelly bed (>80% stone) at less than 0.6 m below ground.
- 3.1.16 Fruit trees must not be planted in frost hollows.
- 3.1.17 Planting on eastern slopes with a gradient of more than 12° is only allowed for shrubs and half standards. Full standards can only be used if they are nursery cultivations grafted in the crown on a frost-resistant full standard variety.
- 3.1.18 An exemption from the ban of planting in inappropriate locations can only be granted based on a special justification (e.g., due to well documented species protection of xylobiotic organisms on the site).

### 3.2 Spatial conditions of site for planting

Planting of fruit woody plants is governed by provisions of chapter 2.2 Spatial conditions of site for planting of standard SPPK A02 001 Planting of trees.

### 3.3 Species and variety selection

- 3.3.1 Functional planting shall use species and mostly varieties historically proven by traditional extensive cultivation in the agricultural landscape of the Czech Republic. Depending on their importance, varieties of most of the fruit species are classified as so-called preservation varieties of fruit woody plants into the following categories (see Annex 4):
- priority,
  - local,
  - specialised,
  - acceptable,
  - research
- 3.3.2 **Priority varieties** are varieties with the highest priority for use in planting throughout the Czech Republic. They are old varieties or regional varieties of domestic origin, or varieties grown in the Czech Republic for more than 200 years. Varieties with a clear regional bond are preferentially recommended for their respective regions.
- 3.3.3 **Local varieties** are varieties originating in the territory of the modern-day Czech Republic with a close bond to the specific area in which they originated whose spread to other regions is not documented. This results in preferential planting only in the area of their origin (regionality).
- 3.3.4 **Specialised varieties** are varieties whose use in planting is highly desirable particularly in areas without adequate conditions for priority varieties. This category comprises varieties with properties that present maximum fit for

functional planting in open landscape: suitability for taller trunk shapes, adaptability to worse environmental conditions, resistance to adverse abiotic and biotic influences. The specialised category also includes varieties with desirable tree or fruit properties that are not present in priority varieties. For these reasons, this category need not include old varieties only (see varieties resistant to plum pox virus among plums, apricots, peaches and almonds).

3.3.5 **Acceptable varieties** are varieties with the lowest priority for use in planting. These varieties originate from other countries. Their cultivation tradition in the Czech Republic does not extend for 200 years. Their choice for planting may be justified:

- as an emergency solution to shortage of nursery cultivates of priority, local or specialised varieties,
- by regional tradition of cultivation of the variety.

3.3.6 **Research varieties** are varieties insufficiently researched or insufficiently documented so far. Their status, and frequently also their name, is unclear and does not warrant classification into variety types. Their use in planting is possible based on a special justification accepted by the planting contracting authority.

3.3.7 Varieties classified in types of preservation varieties of fruit woody plants are listed in Annex 4. Each variety has to be chosen so as to match the altitude zone. Plums, apricots, peaches and almonds are specified with respect to suitability for areas with presence of the plum pox virus. The regionality is a recommendation only, with the exception of local varieties, for which it is binding.

3.3.8 The use of seedlings and wildings is permitted for the peach, cornel, sorb, chestnut, quince, almond, medlar, mulberry and walnut.

3.3.9 The use of rootstock varieties (without grafting other varieties) is permitted for the peach, almond and apricot (see Tables 6 and 7 in Annex 4).

### 3.4 Rootstock selection

3.4.1 Fruit-bearing varieties of fruit trees have to be grafted on a vigorously growing rootstock, with the exception of species listed in 3.3.8 and 3.3.9 above.

3.4.2 Generative rootstock has to be used preferably. Vegetative vigorously growing rootstock may be used exceptionally, only in high-quality humic soils.

3.4.3 The rootstock and the variety have to show good affinity and compatibility.

3.4.4 The use of own-root, vegetatively propagated fruit-bearing species is only permitted for fruit shrubs.

3.4.5 Suitable rootstock for the apple, pear, medlar, quince, sweet rowan, sorb, shipova, cherry, sour cherry, plum, almond and apricot are specified in Annex 2.

## 4 Planting material

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### 4.1 Requirements for nursery cultivates

- 4.1.1 Only nursery cultivates in the categories certified propagation material (C) conforming propagating material (CAC) can be planted, with the exception of woody plants not included on the list of fruit species and genera pursuant to Decree no. 378/2010 Coll.: the cornel, sweet rowan, sorb, medlar and mulberry.
- 4.1.2 Fruit tree planting shall use nursery cultivates of taller trunk shapes (half standard and full standard); maiden whips can be used in exceptional cases of shortage of planting material of the desired species and variety. Walnuts are planted normally as maiden whips. The full-standard shape is typically used along public transport infrastructure.
- 4.1.3 For the purposes of this standard, the following parameters of tree nursery cultivates:
- **half standard (PK):** trunk height 1.30–1.69 m,
  - **full standard (VK):** trunk height 1.70 m and more
  - **maiden whip for half standard:** height at least 1.50 m
  - **maiden whip for full standard:** height at least 1.90 m
- 4.1.4 Nursery cultivates have to conform to the minimum requirements of Annex 3 to Decree no. 332/2006 Coll. on mother crops and planting material of hops, vines, fruit genera and species and ornamental species and placing into circulation.
- 4.1.5 Nursery cultivates grown in free soil may be delivered from nurseries no earlier than on 1 October with the exception of the peach, almond and walnut, which can be delivered no earlier than on 20 October.
- 4.1.6 Nursery cultivates grown in free soil have to be without foliage, with matured shoots and well-developed terminal buds.
- 4.1.7 Nursery cultivates of fruit trees shall ideally have two-year-old crowns and four-year-old root systems (three-year-old for peaches). Maiden whips of adequate size are permissible (see 4. 1. 3), as are cultivates with crowns no more than two years old and root system no more than five years old.
- 4.1.8 The roots have to be fresh, healthy, undamaged and matured. The generative rootstock has to have at least 4 (2 for pears and almonds) further branched main roots at least 0.2 m long with adequate root hairs. The vegetative rootstock has to have a sufficient quantity of bunchy roots at least 0.14 m long, developed on a basal root section of the trunk at least 0.12 m long.
- 4.1.9 The trunk or shoot (of a maiden whip) has to be straight, smooth, undamaged, with wounds left after removed branching and pins healed around the edges. Branching on the trunks of peaches and almonds has to be removed in the herbaceous state.
- 4.1.10 Nursery cultivates grafted at the ground shall have at least 3 shoots in the crown at least 0.3 long. Nursery cultivates grafted in the crowns shall have at least 1 shoot

at least 0.3 long.

- 4.1.11 Nursery cultivates at least two years old shall be used for shrub planting. The cultivates have to have at least 3 shoots at least 0.5 m long.
- 4.1.12 Nursery cultivates of fruit woody plants with parameters different from those specified in 4.1.2 – 4.1.11 are not standard fruit nursery cultivates hereunder. They can only be used with the planting contracting authority's written consent.
- 4.1.13 The planting contractor has to permit the planting contracting authority to make a proper physical and administrative check of genuineness of cultivate species and varieties before signing the implementation contract. It shall arrange such a check with its subcontractors as well.

## **4.2 Requirements for other planting material**

- 4.2.1 If nursery cultivates pursuant to 4.1.1 – 4.1.11 cannot be used for planting of preservation varieties, cultivates of rootstock or trunk-forming varieties of parameters identical to those specified in 4.1.2 – 4.1.11 can be planted.
- 4.2.2 In such cases, preservation varieties shall be grafted directly on the site at the nearest physiologically appropriate date chosen with respect to the overall condition of the tree being grafted.
- 4.2.3 Propagating material of preservation varieties used for grafting on site has to come from a source that the planting contracting authority identifies or recognises are credible.

## 5 Planting of fruit woody plants

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Planting of fruit trees is governed by SPPK A02 001 – Planting of trees. Planting of fruit shrubs is governed by SPPK A02 003 – Planting and pruning of shrubs and climbing plants. This standard only discusses specific aspects of planting of fruit woody plants in agricultural landscape.

### 5.1 Plot adjustments

- 5.1.1 In the case of presence of undesirable herbaceous vegetation (persistent weeds – thistle, couch grass, burdock, mugwort, bindweed, etc.), it has to be regulated by blanket mowing to a height up to 0.1 m.
- 5.1.2 In the case of presence of undesirable woody plants, they have to be removed before the start of planting. Woody plant removal has to be done in accordance with Decree no. 189/2013 Coll. on Protection of woody plants and permission of their cutting.
- 5.1.3 When removing existing woody plants, individuals of both fruit-bearing and other woody plants may be left in order to boost the non-productive functions of the planting. However, their preservation has to be done so that they cannot endanger the target plants with root competition, shading or transmission of pathogens.
- 5.1.4 In the case of presence of regulated pathogenic organisms (formerly quarantine organisms) infecting fruit species planned for the planting, all the infected woody plants on the plot have to be removed.
- 5.1.5 If assuming maintenance of the herbaceous layer by machine mowing, the ground has to be levelled and stones removed before the planting.
- 5.1.6 If the implementation conditions allow, soil in the area can be processed following procedures for establishing extensive orchards.
- 5.1.7 If assuming reserve fertilisation, only organic fertilisers and mineral fertilisers of natural origin with slow nutrient release are permitted. The fertilisers have to comply with ČSN EN 12944-1, 12944-2 and 12944-3. Fertiliser doses have to conform to ČSN 83 9051.
- 5.1.8 The contractor shall delineate and identify the planting sites in a suitable manner before the planting itself. The contractor may only start planting after the client has granted its explicit approval of the locations of trees.

### 5.2 Distribution of individuals on site

- 5.2.1 Distances between trees and shrubs are governed by the fruit species and planting type. Group planting and solitary planting are distinguished in the area of functional planting.
- 5.2.2 Group planting is divided into linear planting (single-file and double-file) and orchards (more than double-file). The minimum and maximum distances between individuals are specified in Annex 3 for each planting type and each fruit species.

Sites for group planting include the adjacent peripheral handling areas, which must not extend beyond the maximum distance between individuals in the group planting at the beginnings and ends of rows and beside rows.

- 5.2.3 Solitary planting refers to planting in which individuals are farther apart than the permissible maximum distance for the group planting type. The site of a solitary tree is defined by a circle around the individual at its centre, with a diameter equalling the minimum diameter for the species in single-file and double file planting (see Annex 3).
- 5.2.4 In mixed planting composed of multiple species, the minimum and maximum distances are determined by the more space-demanding species.
- 5.2.5 A north-south row orientation is preferred on flat land or gentle slopes. Rows are oriented along contour lines on sloping plots.

### **5.3 Planting pits**

- 5.3.1 The planting pit is prepared with dimensions corresponding to the development and dimensions of the woody plant root system. The minimum permissible pit diameter or edge length for fruit woody plants is 0.7 m; depth 0.4 m.
- 5.3.2 The planting pit has to allow planting to a correct depth without the risk of exposure of the root collar after the earth sinks. At the same time, it has to allow formation of a watering bowl with a minimum capacity of 10 L of water on medium to heavy soils and 20 L on lighter soils.

### **5.4 Planting season**

- 5.4.1 Bare-rooted nursery cultivates of the majority of fruit trees, with the exception of the peach, almond and walnut (see 5.4.3), are ideally planted in the autumn, following the earliest dates determined for nursery dispatch (see 4.1.5 above), ideally in the first decade of November, until the freezing of the surface soil layers.
- 5.4.2 Spring planting is possible after the soil has thawed, at air temperatures above 0°C, by the sprouting time at the latest, as long as there is no risk of damage to sprouting buds in transport.
- 5.4.3 The peach, almond and walnut are ideally planted in the spring, from ground to ground.
- 5.4.4 Nursery cultivates of shrubs in containers or pots can be planted throughout the growing season, with the exception of sunny weather with air temperature above 25°C.

### **5.5 Planting procedure**

- 5.5.1 Nursery cultivates of fruit trees on generative rootstock have to be planted at the same depth at which it grew in the nursery. Nursery cultivates of fruit trees on

vegetative rootstock can be planted no more than 0.1 m deeper, always keeping the grafting point at least 0.05 m above ground.

- 5.5.2 Nursery cultivates of own-root shrubs have to be planted 0.1–0.15 deeper.
- 5.5.3 When planting maiden whips in the autumn, the planting has to be watered and earth has to be raised on the root collar up to at least 0.3 m for frost protection.
- 5.5.4 During spring planting or in the spring after autumn planting, form a watering bowl around the woody plant with a diameter at least identical to the diameter (edge length) of the planting pit. The watering bowl capacity has to be at least 10 L on medium to heavy soils and 20 L on light soils. (see Annex 1.2, Fig. 5).
- 5.5.5 The watering bowl area shall be free of vegetation.

## **5.6 Use of substrates and substances improving the site**

- 5.6.1 Proper selection of the site, rootstock and variety should achieve a state where functional plantings of fruit woody plants are only established under such conditions that do not require use of such substrates and substances.
- 5.6.2 If such plantings are established under conditions worse than those specified above for special reasons, the applicable provisions of chapter 5.7 Use of substrates and substances improving the site of standard SPPK A02 001 Planting of trees shall apply.

## **5.7 Woody plant anchoring and protection from damage by animals and game**

- 5.7.1 Due to the specific properties of the root system and great attractiveness of fruit woody plants for wild herbivores and farm animals, anchoring and protection from damage have to be provided for at least 10 years after planting.
- 5.7.2 The forms and methods shall be chosen with respect to the site conditions, particularly presence of farm animals (cattle, sheep), deer, roe deer and hare populations. Grazing of horses and goats on planting plots is undesirable.
- 5.7.3 Anchoring to a single stake is only possible for trees and only where the presence of the above animal and game species, with the exception of the European hare, is excluded. The stake shall be rammed in the bottom of the planting pit to a depth of 0.5 m slightly towards the south of the centre; this provides a shading facility for the trunk. The stake diameter is at least 0.08–0.12 m. The stake length is chosen depending on the tree trunk height, so that its top part is at least 0.1 m below the lowest branch (shoot) of the crown. The top of the stake should have rounded edges to prevent damage to the tree bark when moving in the wind. The stake height depends on the presence of wild game; e.g., stake height of approx. 2 m is recommended against deer.
- 5.7.4 If using a single stake, installation of protectors around the trunk up to at least 1 m is mandatory. The protector must not be lifted by game during antlering. (see Fig. 3 in Annex 5 for design examples).
- 5.7.5 Plants have to receive a protective mantle preventing damage; this applies always to shrubs and to trees if they are under pressure of wild deer game or grazing farm

animals (sheep, cattle) – full standard trees should be planted in the latter areas. Protective mantles are installed on a support structure comprised of at least three stakes, doubling as tree anchors, to constantly effectively prevent damage to the woody plant. The distance of the protective mantle from the plant has to be at least 0.3 m (see Fig. 4, 5 in Annex 5 for design examples).

- 5.7.6 In a planting pit with a radius greater than the distance of the protective mantle from the plant, stakes have to be driven in the pit bottom before the planting itself.
- 5.7.7 In areas where the anchoring and protective elements cannot be driven deep enough, they have to be properly stabilised, e.g., using increased quantities of fasteners or embedding.
- 5.7.8 Planted trees have to be properly tied to the anchoring elements using appropriate ties that will not damage the tree by rubbing or growing into the bark. If single-stake anchoring is used, the tree is tied to that stake. In multiple anchoring, the tree is tied to all the stakes using ties that will not damage the tree. The ties have to prevent tree movement and trunk tilting throughout the lifetime of the anchoring.
- 5.7.9 Protection from damage has to be designed so that the woody plants can receive pruning (see 6.1 below) and tree trunks can be treated (see 6.7 below) without having to remove the protectors.



## 6 After-planting management

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### 6.1 Pruning of fruit woody plants

- 6.1.1 Pruning of fruit woody plants is governed by provisions of SPPK A02 002 – Pruning of trees. Specific aspects of fruit woody plants are described in SPPK C02 005 – Management of functional plantings of fruit woody plants.
- 6.1.2 Pruning of fruit woody plants is an integral component of functional planting for the first 10 years after planting. The following pruning styles shall or may be employed as part of after-planting management of fruit woody plants:
- Pruning to crown (O-RK)
  - Juvenile pruning (O-RV)
  - Thinning pruning (O-RP)
  - Reparatory pruning (O-RO)

The above pruning techniques are described in SPPK C02 005 – Management of functional plantings of fruit woody plants.

### 6.2 Herbaceous layer management

- 6.2.1 The herbaceous layer is an integral component of functional plantings of fruit woody plants performing their non-productive functions.
- 6.2.2 Appropriate species composition and height structure also assists woody plant nutrition and regulation of undesirable organisms.
- 6.2.3 A herbaceous layer of the desired properties is formed either by deliberate establishment or by directing spontaneous development. Both methods are regarded as equal.
- 6.2.4 Blanket mechanical soil preparation before or after the planting establishes a herb-grass vegetation of a suitable species composition for the site.
- 6.2.5 Interspecies or intergenus grass hybrids must not be used, even as part of a mixture. The use of introduced plant species in a seed mixture is only possible for annual species, which have a justification as part of a cover crop mixture.
- 6.2.6 Each grass mixture shall be expanded with suitable nectar-producing species in the *Fabaceae* (leguminous) family providing nitrogen nutrition, with at least a 1% share.
- 6.2.7 The optimum technique for directing spontaneous development is grazing of sheep or cattle up to a weight of 500 kg per head at a rate adequate to the site supporting capacity.
- 6.2.8 If farm animal grazing is impossible and the pressure of undesirable vegetation is strong, rehabilitation mowing with removal of biomass at least 3 times per growing season has to be provided. A shift to maintenance mowing is possible

once meadow vegetation is established, depending on the site conditions.

- 6.2.9 Maintenance mowing is done 1-2 times a year, depending on the site moisture conditions, with biomass removal from the site. Part of the biomass can be used for mulching of the woody plants. If the pressure of ruderal and weed species is low, mowing can be done in strips or at a phase shift of approx. 1 month.

### **6.3 Management of attendant woody plants**

- 6.3.1 Attendant woody plants are a possible component of functional plantings of fruit woody plants. The primary purpose of their presence is to support non-productive functions of the planting and support to regulation of undesirable organisms.
- 6.3.2 Attendant woody plants may be left in fruit plantings during the site preparation as part of original vegetation, or they can be planted newly.
- 6.3.3 The selection of attendant woody plants has to consider the fruit species and the risk of common pathogens and pests. In cases of increased risk of regulated pathogenic organisms in particular, retention or planting of common hosts is undesirable.
- 6.3.4 Plantings with a **predominance of pome-bearing species** should not include host species of the fire blight of apples (*Erwinia amylovora*), such as hawthorn, and hosts of the insect order *Yponomeutidae* (ermine moths), such as the European spindle (*Euonymus europaeus*).
- 6.3.5 Plantings with a **predominance of drupe-bearing species** should not include the common blackthorn (*Prunus spinosa*), myrobalan plum (*P. cerasifera*) and wild species of *Prunus domestica* and *Prunus insititia*, which are the hosts of the jumping plant louse *Cacopsylla pruni*, the vector of the European ‘*Candidatus* Phytoplasma prunorum’ (ESFY), and some species of aphids, vectors of the plum pox potyvirus (PPV).
- 6.3.6 However, distribution of attendant woody plants has to be done so that they cannot endanger the target plants with root competition, shading or transmission of pathogens.

### **6.4 Inspection and removal of anchoring and protective elements**

- 6.4.1 Anchoring and protective elements shall be inspected at least once a year and defects identified are eliminated immediately.
- 6.4.2 Presence of anchoring connected to protective elements at fruit trees has to be ensured for a period of 10 years. Non-functioning parts have to be replaced with new ones immediately.

### **6.5 Watering, nutrition and fertilisation of fruit woody plants**

- 6.5.1 Watering of fruit woody plants is governed by SPPK A02 001 – Planting of trees and SPPK A02 003 – Planting and pruning of shrubs and climbing plants. Only issues specific for fruit woody plants are discussed below.

- 6.5.2 Watering is unconditionally necessary immediately after the planting of bare-rooted nursery cultivars in the spring.
- 6.5.3 The area around each woody plant corresponding to the diameter of the watering bowl shall not be sown with grass for at least three years after the planting, to prevent competition over water and nutrients. The area shall be maintained by shallow tillage (no deeper than 0.05 m), mulching or a combination of both methods.
- 6.5.4 Mulching can only be done if the risk of damage to the root system of fruit woody plants by rodents is excluded.
- 6.5.5 Mulching is done exclusively using organic material, which simultaneously contributes to nutrition of the fruit woody plants. Suitable materials include compost or wilted mown biomass from the herb-grass vegetation in the orchard. Wood chips and bark can only be used in the 3rd year after the planting; it is not ploughed in the soil.
- 6.5.6 The mulch must never be in direct contact with the trunk of the fruit tree.
- 6.5.7 On sites with a presence of rodents, the soils then have to be hoed at least twice a year.
- 6.5.8 In the case of insufficient increments of the fruit woody plants (less than 0.25 per growing season) in the first three years after the planting, the circular area of the watering bowl diameter has to be fertilised each autumn or spring with at least 0.05 of compost or other organic fertiliser.

## **6.6 Protection of fruit woody plants from disease, pests and weather effects**

- 6.6.1 It is necessary to monitor plant-feeding pests (aphids, jumping plant lice) and pathogens (powdery mildew on apples, brown rot on drupes), which seriously disrupt proper plant growth.
- 6.6.2 Any exceedance of the threshold of pest or pathogen harmfulness has to be regulated.
- 6.6.3 In the case of functional plantings of woody plants, the threshold of harmfulness is their serious damage, endangerment of the physical existence of the plant or of its grafted part.
- 6.6.4 When regulating undesirable organisms, principles of integrated plant protection have to be observed.
- 6.6.5 Mechanical protection methods are preferred: cutting off infected parts, collection, trapping, shaking off pests, etc.
- 6.6.6 If mechanical methods have insufficient effect, woody plants can be treated with registered plant protection preparations or other products (auxiliary plant protection products and biological agents pursuant to Act no. 326/2004 Coll.); non-chemical methods are preferred, particularly biological protection.
- 6.6.7 When choosing plant protection preparations, preference is given to those with the least adverse impacts on the environment and non-target organisms; however, they shall always ensure healthy plant growth.

- 6.6.8 In the event of identified presence of a regulated harmful organism, it is advisable to consult the situation and proceed in cooperation with a national medical plant care (Central Institute for Supervising and Testing in Agriculture).

### **6.7 Treatment of fruit tree trunks**

- 6.7.1 It is advisable to protect the trunk, of full standard trees in particular, from frost damage in winter and early spring on eastern and southern slopes. The protection is provided using a suitable protector or paint coat (e.g., whitewash). The paint coats have to be repeated annually.
- 6.7.2 In the case of anchoring to a single stake, the trunk base has to be protected from damage by machinery using mulch, wooden or stone elements.
- 6.7.3 Leader shoots from undergrowing rootstock have to be removed immediately – by breaking off or cutting off to branch ring, frequently necessitating temporary exposure of the root collar.
- 6.7.4 Trunks shall be maintained without shoots, with the exception of the first year after planting of maiden whips, where shoots are nipped off continuously in order to strengthen the trunk; see Pruning to crown (O-RK) in SPPK C02 005 – Management of functional plantings of fruit woody plants.
- 6.7.5 All shoots from the trunk have to be removed by the end of August at the latest.

**Annex 1****Inappropriate sites for fruit species based on BPEJ**

<b>Climate region</b>	<b>Primary soil unit code</b>	<b>Gradient and exposure code</b>	<b>Soil depth and coarseness code</b>
8, 9, (6, 7) <sup>1</sup>	04, 21, 31, 34, 35, 36, 37, 38, 39, 40, 43, 44, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 58, 59, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78.	8, 9	(5, 6, 7, 8, 9) <sup>2</sup>

<sup>1</sup> In climate regions with codes 6 and 7, pay increased attention to site selection in terms of microclimate.

<sup>2</sup> These sites feature shallow or very coarse (stony) soils. Planting can only be done in areas with increased accumulation of the loamy fraction.

## Annex 2 Suitable rootstock for fruit trees

Species	generative rootstock	vegetative rootstock
apple	apple seedling, apple wilding, J-TE-1, J-TE-2, J-KL-1, J-KL-2, J-KL-3, J-KL-4	A2, M1, M11, M16, MM111, J-TE-C.
pear, shipova	pear seedling, pear wilding, H-TE-1, H-TE-2, H-BO-1, <i>Pyrus betulaefolia</i>	OHxF 282 (syn. Farold 282, Dayre), OHF 333
cherries and sour cherries	gean group, such as P-TU-1, P-TU-2; mahaleb group – for drier soils, such as MH-KL-1	SL64, MHKOA, MH-KL-A, F12/1
plums	myrobalan group – for drier soils: non-selected myrobalan, MY-BO-1, MY-VS-1; common plum group – only for moister soils: e.g., Saint Julien 2, S-BO-1, Durancie, Wangenheimova, Zelená renklóda, Špendlík žlutý	myrobalan group: e.g., MYKOA, MY-KL-A, Myro-29C, Myrocal, GF31 common plum group: e.g., Marunke (syn. <i>Prunus Ackermani</i> ), Brompton, GF43 interspecies hybrid group: e.g., GF-8-1 Marianna
apricot	myrobalan group – see plums; apricot seedling group (not for heavy soils), e.g., M-VA-1, M-VA-2, M-VA-3, M-VA-4, M-LE-1, MLE2, M-HL-1, MHL2.	see plums
peach, almond	peach group: e.g., B-VA-1, B-VA-2, B-VA, 3, BSB1, BSB2, BSB3, GF305, Lesiberian, Montclar, Higama; peach-almond group: e.g., BM-VA-1, BM-VA-2; almond group: e.g., MN-VA-1, MN-VS-1.	peach-almond group: e.g., GF677, GF557; interspecies hybrid group: e.g., Cadaman, Fereley
medlar	hawthorn seedling, medlar seedling, quince seedling (warm areas)	quince MA, BA 29, S1 (warm areas)
quince	quince seedling, pear seedling, pear wilding	quince MA, BA 29, S1
sweet rowan	European rowan or sweet rowan seedling	-
sorb	sorb seedling	-

### Annex 3 Minimum and maximum distances between woody plants in group fruit plantings (m)

Species	Group planting type	
	linear planting (single-file and double-file)	orchards (more than double-file)
cherry, walnut, mulberry, sorb, shipova, chestnut	10 – 16	12 – 20
apple, pear, sour cherry, apricot	8 – 12	9 – 16
plum, almond, sweet rowan	6 – 10	8 – 12
quince, peach, medlar, hazel, cornel	4 – 8	6 – 10

**Annex 4: Preservation varieties of fruit trees****Table 1: Apple tree varieties**

Current variety name	Synonym	Category	Altitude [m]	Regionality	Country of origin
Anýzové české		priority	up to 450	Ústí nad Labem Region	CR
Bláhovo oranžové	Bláhova oranžová reneta	priority	250 - 450	Central Bohemian Region	CR
Božena Němcová		priority	up to 450	Hradec Králové Region	CR
Česká pochoutka	Česká koruna	priority	up to 450	Hradec Králové Region	CR
České růžové		priority	up to 600	Central Bohemian Region	CR
Daňkovo		priority	up to 600	Hradec Králové Region	CR
Gdanský hranáč		priority	up to 600		Germany?
Grávštýnské	Gravenštýnské	priority	250 - 600		Denmark
Hájkova reneta muškátová	Hájkova reneta	priority	up to 600	Pardubice Region, Hradec Králové Region	CR
Hetlina		priority	up to 800	Plzeň Region	Bohemia/Austria/Netherlands
Chodské		priority	up to 600	Plzeň Region	CR
Ideál		priority	up to 450	Hradec Králové Region	CR
Jadernička moravská	Jadernička valašská	priority	up to 600	Zlín Region	CR
Jaroslav Němec		priority	up to 450	Hradec Králové Region	CR
Kardinál žíhaný	Šálové	priority	up to 800		Germany?
Košíkové	Panské, Párkové	priority	up to 600	Pardubice Region, Hradec Králové Region	CR
Libernáč sloupenský		priority	up to 450	Hradec Králové Region	CR
Malinové holovouské		priority	up to 600	Pardubice	CR



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Current variety name	Synonym	Category	Altitude [m]	Regionality	Country of origin
				Region, Hradec Králové Region	
Malinové sloupenské		priority	up to 450	Hradec Králové Region	CR
Míšeňské	Míšeňské	priority	up to 450		Bohemia/Germany
Oberdieckovo		priority	up to 450	Hradec Králové Region	CR
Panenské české	Panenské	priority	up to 600		CR
Punčové		priority	up to 450	Karlovy Vary Region, Ústí nad Labem Region	CR, Lower Elbe Valley
Řehtáč soudkovitý		priority	up to 600		Germany
Studničné	Farliové	priority	up to 600	Pardubice Region, Hradec Králové Region	CR
Sudetská reneta		priority	250 - 600		CR
Vejlímek červený	Štětínské červené, Vejlímek chocholatý	priority	up to 600		Bohemia/Germany
Výtoužené		priority	up to 600	Hradec Králové Region	CR
Zapovězené		priority	up to 450	Pardubice Region, Hradec Králové Region	CR
Antonovka		specialised	up to 600	Karlovy Vary Region, Ústí nad Labem Region	Russia
Akerö		specialised	up to 800		Sweden
Albrechtovo	Princ Albrecht	specialised	up to 600		Germany
Astrachán bílý		specialised	up to 800		Baltic states
Astrachán červený		specialised	up to 600		Russia – Volga Valley
Batul		specialised	up to 600		Romania
Black Ben		specialised	up to 800		USA

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Current variety name	Synonym	Category	Altitude [m]	Regionality	Country of origin
Boikovo	Bojkovo	specialised	250 - 600		Germany
Boikovo obrovské		specialised	250 - 600		Germany
Červené tvrdé		specialised	up to 600		Netherlands/Germany
Citrónové zimní		specialised	up to 600		France/Germany
Coulonova reneta		specialised	up to 600		Belgium
Croncelské	Kroncelské	specialised	250 - 600		France
Double Red Wealthy		specialised	up to 600		USA
Elise Rathke		specialised	up to 600		Germany/Poland
Grahamovo		specialised	up to 600		England
Gravštýnské červené		specialised	250 - 600		Germany
Gustavovo trvanlivé		specialised	up to 800		Switzerland
Hedvábné bílé zimní		specialised	up to 600		Germany
Hedvábné pozděkvěté		specialised	up to 600		Germany
Hvězdnatá reneta		specialised	up to 600		Germany
Charlamowski	Borovinka, Šarlamovské	specialised	up to 600		Russia
Jeptiška	Železné	specialised	up to 600		Germany
Lebelovo	Jakob Lebel	specialised	up to 600		France
Lecar		specialised	up to 600	South Moravian Region	unknown
Lohák	Grosser oberösterreichischer Brünnerlinger, Brünerling	specialised	up to 600	Hradec Králové Region	Austria
Malinové podzimní	Malinové letní	specialised	up to 450		Germany
Malinové hornokrajské		specialised	up to 600		Netherlands
Omanové		specialised	up to 450		Germany?
Rederova reneta		specialised	250 - 600		Germany
Smiřické vzácné		specialised	up to 600	Hradec Králové Region	Bohemia/Scotland
Strýmka	Strymka	specialised	up to 600		Germany
Vilémovo		specialised	up to 600		Germany
Watervlietské mramorované		specialised	up to 600		Belgium
Wealthy		specialised	up to 600		USA
Aurora		acceptable	up to 600	Moravian- Silesian Region	USA
Baumannova reneta		acceptable	up to 450		Belgium
Berlepschova reneta		acceptable	up to 450		Germany

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Current variety name	Synonym	Category	Altitude [m]	Regionality	Country of origin
Bernské růžové		acceptable	up to 600		Switzerland
Biesterfeldská reneta		acceptable	up to 450		Germany
Blenheimská reneta		acceptable	up to 450		England
Boskoopské	Boskopské	acceptable	up to 450		Netherlands
Boskoopské červené		acceptable	up to 450		Germany
Car Alexander		acceptable	up to 600		Russia
Coxova reneta		acceptable	up to 450		England
Čistecké lahůdkové	Princezna Louisa kanadská	acceptable	up to 450		Canada
Doberánská reneta		acceptable	up to 450		Germany
Červený válec		acceptable	up to 450		Germany
Gascoyneho šarlatové	Gascoigneho šarlatové, Gascoyneho šarlatové	acceptable	up to 600		England
Hedvábné červené letní	Broskvové letní	acceptable	up to 600		France
Hammersteinovo	Minister von Hammerstein	acceptable	250 - 450		Germany
Harbertova reneta		acceptable	up to 600		Germany
Hawthorndenské	Hlohovské	acceptable	up to 600		Scotland
Hawthordenské červené		acceptable	up to 600		Scotland
Herrnhutské	Ochranovské	acceptable	up to 600		Germany
Hibernal		acceptable	up to 800		USA
James Grieve	-	acceptable	up to 600		Scotland
Jonathan		acceptable	250 - 450		USA
Kalvil červený podzimní	Jablko malinové, Malinové červené podzimní	acceptable	up to 600		France
Kanadská reneta	Kmínová reneta	acceptable	up to 450		France
Karmelitská reneta	Kropená reneta	acceptable	up to 450		France
Kasselská reneta		acceptable	up to 600		Germany/Netherlands
Kidd's Orange		acceptable	up to 450		New Zealand
Kirchwaldenské	Kirchwaldské	acceptable	up to 600		Germany
Knížecí zelené		acceptable	up to 450		Balcans?
Kožená reneta podzimní		acceptable	up to 600		France?
Kožená reneta zimní		acceptable	up to 450		France
Královnino		acceptable	up to 600		England
Krasokvět žlutý	Krasokvět americký	acceptable	up to 450		USA
Krátkostopka královská	Krátkostopké královské	acceptable	up to 450		Netherlands/Germany
Korunní princ Rudolf	Kronprinz Rudolf	acceptable	up to 600		Austria

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Current variety name	Synonym	Category	Altitude [m]	Regionality	Country of origin
Landsberská reneta	Reneta lanšperská	acceptable	250 - 600		Germany
Lesklá reneta		acceptable	up to 600		Germany
Libernáč vinický	Libernáč Winitzy	acceptable	up to 450		unknown
Libernáč zimní		acceptable	up to 450		Germany
Limburské		acceptable	up to 450		Netherlands
Londýnské	Londýnský jadernáč	acceptable	up to 450		England
Lunovské		acceptable	up to 600		Germany
Major		acceptable	up to 600	Moravian- Silesian Region	Scotland
Malvazinka		acceptable	up to 600		France
Matčino	Nonnetit	acceptable	up to 450		America
Mazánkův zázrak	Alžbětino, Annie Elizabeth	acceptable	up to 600		England
Muškatová reneta		acceptable	up to 600		France
Nathusiovo holubí		acceptable	up to 450	Ústí nad Labem Region	Germany
Ontario		acceptable	up to 450		Canada
Oranienské		acceptable	up to 600		Baltic states
Parkerovo	Jadernáč Parkerův, Jádrnáč Parkerův	acceptable	up to 450		England
Parména Strauwaldova	Strauwaldova parména	acceptable	up to 600		Horní Slezsko
Parména zlatá	Parména zlatá zimní	acceptable	up to 450		England/France
Peasgoodovo		acceptable	up to 600		England
Pogáč červený		acceptable	up to 450		Hungary
Průsvitné letní	Skleněné žluté	acceptable	up to 600		Baltic states
Ribstonské	Jadernáč ribstonský	acceptable	250 - 450		England
Richardovo žluté		acceptable	up to 450		Germany
Schmidtbergerovo	Schmidtbergerova reneta	acceptable	up to 600		Germany
Signe Tillisch		acceptable	up to 600		Denmark
Sikulské		acceptable	up to 450		Hungary
Skořicové letní		acceptable	up to 450		Netherlands
Solivarské	Solnohradské, Solivarské ušlechtilé	acceptable	up to 600		Slovakia
Soudek zlatý		acceptable	up to 450		Baltic states
Ušlechtilé žluté		acceptable	up to 600		England
Virginské růžové		acceptable	up to 600		unknown

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Current variety name	Synonym	Category	Altitude [m]	Regionality	Country of origin
Wesenerovo		acceptable	up to 450		Austria
Zvonkové		acceptable	up to 450		unknown
Achátové		research			unknown
Arcikníže Antonín		research			Austria?
Bejkovické		research		Little Haná, Boskovice Depression	CR
Běličné		research	up to 450	Přelouč District	CR
Bláhovo libovické		research	up to 600		CR
Bláhův poklad		research	250 - 600		CR
Cikánka		research			CR
Červený hranáč		research	up to 600	Hlučín District	unknown
Czechoslovakia		research			CR
Dr. Karel Kramář	Kramářovo	research	up to 450	Prague	CR
Fialkové		research			CR
Hladíkovo přeúrodné		research	up to 600	Chrudim, Pardubice Districts	CR
Hlohovské letní		research			
Hontánské	Entzovo rozmarýnové	research	up to 600		Slovakia
Chebský zelenáč		research			unknown
Jan Říha		research			CR
Kouřimský kropenáč		research			CR
Kočí pala		research		Hlučín, Opava Districts	CR
Kučerovo	Kutscherovo	research	up to 450	Lower Elbe Valley	CR
Kyjovský semenáč		research			CR
Libovická oranžová reneta		research			
Libovické muškátové		research			
Lužecký hranáč		research	up to 450	Chlumec District	CR
Malinové Vrchlického		research			CR
Marie		research			CR
Mikulášovo		research	up to 450		CR
Ověí hubičky hlučínské		research	up to 600	Hlučín District and elsewhere	unknown

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Current variety name	Synonym	Category	Altitude [m]	Regionality	Country of origin
Palouče		research	up to 600	Pardubice Region, Hradec Králové Region	CR
Pašíkovo jablko		research		Moravian-Silesian Region	CR
Podzvičínské		research		Hořice District	CR
Pokrouťe		research	up to 600	Pardubice Region, Hradec Králové Region	CR
Pozděkvěté	Bláhovo pozděkvěté	research			
Přeloučský šišák		research	up to 600	Pardubice Region, Hradec Králové Region	CR
Růžena Bláhová		research			
Růženka		research			CR
Táborita		research			
Trevírské červené		research	up to 450		unknown
Vejlímek zelený	Vejlímek žlutý	research			unknown
Větrné ploché		research	up to 600		unknown
Vršovské růžové zimní		research			unknown
Žďárská reneta		research	up to 600		unknown
Adamovské		local	up to 450	South Moravia, Moravian Slovakia, Haná, Moravian Wallachia	CR
Barynáč		local	up to 450	South Moravia, Upper Moravian Slovakia	CR
Bílé sládě z Meziny		local		Bruntál District	CR
Brněnka		local		Uherské Hradiště District	CR
Cedron		local		White Carpathians	CR

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Current variety name	Synonym	Category	Altitude [m]	Regionality	Country of origin
Cibulinka		local		Uherské Hradiště District	CR
Čančíkovo		local	up to 600	Zlín District	CR
Čandůvka		local		Uherské Hradiště District	CR
Čapák		local		White Carpathians	CR
Červené sláde z Meziny		local		Bruntál District	CR
Fialové z Rudy		local		Rýmařov District	CR
Granát třiblický	Granát třebívlický	local	up to 450	Louny District, Milešovka Range	CR
Granátka		local	up to 600	Klatovy District	CR
Homolky		local		White Carpathians	CR
Hrachůvka skalická		local		Frýdek-Místek District	CR
Kalvil Žitková 1		local		White Carpathians	CR
Kalvil Žitková 2		local		White Carpathians	CR
Kamýcké		local	up to 800	Klatovy, Přeštice Districts	CR
Kdoulové		local		White Carpathians	CR
Klobučanka		local		White Carpathians	CR
Kněžovské		local		White Carpathians	CR
Kočí hlavy		local		White Carpathians	CR
Koník		local		White Carpathians	CR
Kopřivnický kuželek	Kuželek	local	up to 600	Hlučín District	CR
Kosztela		local		Český Těšín District	Poland
Koty		local		White	CR

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Current variety name	Synonym	Category	Altitude [m]	Regionality	Country of origin
				Carphatians	
Králické		local	250 - 600	North Moravia, Orlické Mountains, Žamberk District	CR
Kubík - červený typ		local		Hlučín District	CR
Kubík - žlutý typ		local		Hlučín District	CR
Kútové		local		Uherské Hradiště, Uherský Brod Districts	CR
Kventlík		local		Uherské Hradiště District, Moravian Kopanice	CR
Kysňačka		local		White Carphatians	CR
Lašské	Grávštýn lašský	local	up to 600	Lachia	CR
Letní jablko ze Slezské Harty		local		Bruntál District	CR
Libinské		local	up to 600	Lachia	CR
Lipůvka		local		White Carphatians	CR
Lužická reneta	muškátová Hornolužická muškátová reneta	local		Liberec Region	CR
Masné		local		White Carphatians	CR
Masnůvky		local		White Carphatians	CR
Mikovské		local		Uherské Hradiště, Bojkovice Districts	CR
Míšeň jaroměřská		local	up to 450	Jaroměř District	CR
Mizaura		local		Hlučín District	CR
Mošťák ze Slezské Harty		local		Bruntál District	CR
Multhauptova reneta		local	up to 450	Hlučín District	CR
Opat Bruno		local	up to 600	South	CR



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Current variety name	Synonym	Category	Altitude [m]	Regionality	Country of origin
				Bohemia	
Opat Leopold		local	up to 600	South Bohemia	CR
Panenka z Hlučína		local		Hlučín District	CR
Pasecké vinné		local	up to 600	North Moravia, Haná, Uničov, Rýmařov Districts	CR
Plesník		local		Uherské Hradiště, Uherský Brod Districts	CR
Podstráňky		local		Luhačovice, Zlín Districts, South Wallachia	CR
Prastará jabloň z Dobřečova		local		Rýmařov District	CR
Sládě z Markvartovic		local		Hlučín District	CR
Sládě z Norberčan		local		Bruntál District	CR
Sladké		local		White Carpathians	CR
Svrbáky		local	up to 600	Uherské Hradiště District	CR
Šarlatka boračská		local	up to 600	Tišnov District	CR
Šmurůvky	Šmuraně	local		White Carpathians	CR
Špidlák		local		White Carpathians	CR
Stružinské	Pstružinské, Stružninské	local		Hradec Králové Region, Pardubice Region	CR
Štěpánovo z Barchovic		local		Kolín District	CR
Syreček úřetický		local	up to 450	Chrudim, Pardubice Districts	CR
Tvarůžek		local		White	CR

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Current variety name	Synonym	Category	Altitude [m]	Regionality	Country of origin
				Carpathians	
Valašská reneta		local	up to 600	Wallachia	CR
Vináre		local		White Carpathians	CR
Vinné		local		Opava District	CR
Vínovka		local		Bruntál District	CR
Vlkovo		local	up to 600	Little Haná, Bohemian-Moravian Highlands, Moravian Karst	CR
Vtelenské	Jizerní, Granátové svatodušní	local	up to 600	Mladá Boleslav, Liberec Districts	CR
Výčesa		local		White Carpathians	CR
Zárostopka z Bílčic		local		Bruntál District	CR
Zárostopka z Jiřikova		local		Rýmařov District	CR
Zárostopky		local		White Carpathians	CR
Zelenka		local		White Carpathians	CR
Žďárské červené	Žďárské úrodné	local	up to 800	Vysočina Region	CR
Žimové		local		Hlučín District	CR

**Table 2: Pear tree varieties**

Current variety name	Synonym	Category	Altitude [m]	Regionality	Country of origin
Ananaska česká		priority	up to 600		CR
Bezjaderka Říhova	Říhova bezjaderka	priority	up to 350		CR
Jakubka česká		priority	up to 600	Pardubice Region, Hradec Králové Region, Central Bohemian Region	CR
Křesetická	Canalova	priority	up to 600	Pardubice Region, Hradec Králové Region, Central Bohemian Region	CR
Koporečka	Liegelova máslovka	priority	up to 350	Ústí nad Labem Region	CR
Kozačka štuttgartská		priority	up to 450		Germany
Magdalenska	Zelinka, Pražka	priority	up to 350		France
Máslovka římská		priority	up to 600	South Moravian Region	unknown
Muškatelka letní		priority	up to 600	South Moravian Region	unknown
Muškatelka šedá		priority	up to 600		CR
Muškatelka turecká	Zbuzanka	priority	up to 450	Central Bohemian, Ústí nad Labem Region	CR
Nagevicova	Piksálka, Piksla	priority	up to 600	Vysočina Region	unknown
Pstružka		priority	up to 350		Lower Saxony
Solanka		priority	up to 450	Ústí nad Labem Region	CR
Solnohradka	Salcburka	priority	up to 600	South Moravian Region	Austria
Šídlenska		priority	up to 450	South Moravian Region	CR
Špinka	Šedá letní	priority	up to 600		France
Amanliská		specialised	up to 600		France
Ananaska courtrayská		specialised	up to 600 m		Belgium
Děkanka šedá		specialised	up to 450	Moravia	unknown
Dvorní		specialised	up to 600		Belgium
Hardyho	Máslovka Gellertova	specialised	up to 600		Belgium
Charneuská		specialised	up to 450		Belgium
Konference		specialised	up to 600		England

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Current variety name	Synonym	Category	Altitude [m]	Regionality	Country of origin
Merodova		specialised	up to 600		Belgium
Nelisoza zimní	Neliska zimní, Isembartka	specialised	up to 600		Belgium
Salisburyova	Salisburyho	specialised	up to 600		Belgium
Thirriotova	Ardenská	specialised	up to 600		France
Trévouská		specialised	up to 600		France
Avranšská	Dobrá Luisa	acceptable	up to 450		France
Bergamotka anglická	Anglická bergamotka, Děkanka červenošedá	acceptable	up to 600		England
Bezsemjanka	Bessemjanka	acceptable	up to 600		Russia
Blumenbachova		acceptable	up to 350	Moravia	Belgium
Boscova	Boscova lahvice	acceptable	up to 350		Belgium
Clappova	Klappova máslovka	acceptable	up to 600		USA
Clappova červená		acceptable	up to 600		USA
Colomaova	Kolomaova máslovka	acceptable	up to 350		Belgium
Červencová		acceptable	up to 450		France
Děkanka červencová		acceptable	up to 450		France
Dielova		acceptable	up to 350		Belgium
Drouardova		acceptable	up to 350		France
Eliška		acceptable	up to 450		Germany
Esperenova máslovka		acceptable	up to 450		Belgium
Giffardova		acceptable	up to 350		France
Hájenka	Máslovka lesní, Dřevobarevná	acceptable	up to 350	Ústí nad Labem Region	Belgium
Hardepontova		acceptable	up to 350	Ústí nad Labem Region	Belgium
Hohensaatská		acceptable	up to 450		Germany
Kolmarská zlatá		acceptable	up to 350	Moravian-Silesian Region	Belgium
Kongresovka		acceptable	up to 450		France
Křivice		acceptable	up to 350		France
Lebrunova	Le Brunova	acceptable	up to 350		France
Lucasova		acceptable	up to 350		France
Madame Verté		acceptable	up to 450		Belgium
Mas	President Mas	acceptable	up to 450		France
Mechelenská		acceptable	up to 250	Moravian-Silesian Region	Belgium
Monchallardova		acceptable	up to 600		France
Naghinova		acceptable	up to 450		Belgium

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Current variety name	Synonym	Category	Altitude [m]	Regionality	Country of origin
Pařížanka		acceptable	up to 600		France
Pastornice		acceptable	up to 350		France
Předobrá		acceptable	up to 350	Plzeň Region, Ústí nad Labem Region	France
Sterkmanova	Sterkmansova, Sterkmansova máslovka	acceptable	up to 350		Belgium
Šedá zimní		acceptable	up to 350		France
Viennská		acceptable	up to 350	South Moravian Region, Zlín Region	France
Virgule		acceptable	up to 350	South Moravian Region, Zlín Region	France
Williamsova	Wiliamsova čáslavka	acceptable	up to 250		England
Williamsova červená		acceptable	up to 250		England
Windsorská	Madamka, Královna	acceptable	up to 350	Ústí nad Labem Region	England
Oranžová zimní		research	up to 450		unknown
Děkanka letní	Bergamotka letní	research			unknown
Holenická	Talašova	research	up to 350		unknown
Kačenka		research			unknown
Krvavka moravská		research			unknown
Krvavka veliká	Červená role, Levínská krvavka	research	up to 450		unknown
Libochovická máslovka	Libovická máslovka	research			CR
Malá Dvory		research			unknown
Makulda		research			unknown
Michálka		research			unknown
Muškatelka ze Stráně		research			unknown
Okruhlinka		research		Opava, Hlučín Districts, all of Czech Silesia	CR
Ovesňačka		research		White Carpathians	CR
Pastelka		research			unknown
Špička		research			unknown
Půlpánka		research			unknown
Sírová		research			unknown
Valečská děkanka		research			unknown
Cibule Borová I		local		Hlučín, Opava Districts	CR

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Current variety name	Synonym	Category	Altitude [m]	Regionality	Country of origin
Cibule Borová II		local		Hlučín District	CR
Cibule Závada		local		Hlučín District	CR
Cibulky		local		White Carpathians	CR
Císařky		local		White Carpathians	CR
Císařská letní		local		North Moravia	CR
Cukrůvka		local		Opava District	CR
Čertí hruška		local		Beskids	CR
Džbánky		local		White Carpathians	CR
Fajfka		local		Tišnov District	CR
Gansbirne		local		Odra Valley	CR
Hadravského		local		White Carpathians	CR
Hnilička		local		White Carpathians	CR
Hnilička z Hatě		local		Hlučín District	CR
Hnilička z Jiřkova		local		Rýmařov District	CR
Hnilička z Kněžpole		local		Rýmařov District	CR
Hnilička z Krásné		local		Beskids	CR
Hnilička z Křížova		local		Rýmařov District	CR
Hnilička z Leskovce		local		Bruntál District	CR
Hnilička z Lojkaščanky		local		Beskids	CR
Hnilička z Morávky		local		Beskids	CR
Hnilička z Píště		local		Hlučín District	CR
Hnilička z Razové		local		Bruntál District	CR
Hnilička z Roudna		local		Bruntál District	CR
Hnilička z Roudna II		local		Bruntál District	CR
Hnilička z Těchanova		local		Rýmařov District	CR
Hnilička ze Starých Heřminov I		local		Bruntál District	CR
Hnilička ze Starých Heřminov II		local		Bruntál District	CR
Hnilička ze Strahovic		local		Hlučín District	CR
Hrdlačka		local		White Carpathians	CR
Hýl	Hýle	local		White Carpathians	CR
Jačménka		local		White Carpathians	CR
Jakubinka		local		Opava, Hlučín Districts, all of	CR

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Current variety name	Synonym	Category	Altitude [m]	Regionality	Country of origin
				Czech Silesia	
Jihomoravská letní		local		South Moravia	CR
Jurigova		local		White Carpathians	CR
Knížatka		local		Tišnov District	CR
Krehule	Kněždubjanka	local		White Carpathians	CR
Krvavka z Lopeníka		local		White Carpathians	CR
Krvavka letní	Krvavka z Vyškovce	local	up to 600 m	White Carpathians	CR
Krvavka podzimní		local		Wallachia, Beskids	CR
Krvavka ze Lhoty		local		Opava, Hlučín Districts	CR
Letní hnilička z Markvartovic		local		Hlučín District	CR
Letní hnilička ze Starých Heřminov		local		Bruntál District	CR
Letní hrušeň z Dolního Benešova		local		Hlučín District	CR
Letní hrušeň z Horního Benešova		local		Bruntál District	CR
Margetinka		local		Opava District	CR
Medovka		local		White Carpathians	CR
Medula		local		White Carpathians	CR
Meduňka		local		Hlučín District	CR
Medůvky		local		White Carpathians	CR
Neznámka		local		Tišnov District	CR
Oharkula		local		White Carpathians	CR
Oriešanka		local		White Carpathians	CR
Ovesninka		local		Opava District, Odra Valley	CR
Pchavka		local		Hranice District?	CR
Plaskarka		local		Hlučín District	CR
Podzimní hrušeň z Bystré		local		Beskids	CR
Podzimní hrušeň z Dolní Lhoty		local		Opava District	CR
Podzimní hrušeň z Dolního Benešova		local		Hlučín District	CR

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Current variety name	Synonym	Category	Altitude [m]	Regionality	Country of origin
Podzimní hrušeň z Krásné		local		Beskids	CR
Praskula	Praskule, Dule, Dula	local		White Carpathians	CR
Psíkova		local		White Carpathians	CR
Repovica		local		White Carpathians	CR
Sudinky		local		White Carpathians	CR
Sůkeničky		local		White Carpathians	CR
Šarůvka		local		Hlučín District	CR
Vavřinky		local		North Moravia	CR
Zelenka		local		White Carpathians	CR
Zelinka chlumecká		local	up to 350	Pardubice Region, Hradec Králové Region	CR
Žitňáčka		local		White Carpathians	CR
Žňuvka		local		Hlučín District	CR



**Table 3: Plum tree varieties**

Current variety name	Synonym	Category	Altitude [m]	Areas with high rates of plum pox virus (PPV)	Regionality	Country of origin
Ananasová česká		priority	up to 350	not known	Hradec Králové Region	CR
Augustinka		priority	up to 600	not known		unknown
Brněnská	Anička	priority	up to 250	no	South Moravian Region	CR
Černošická		priority	up to 450	no	Central Bohemian Region	CR
Durancie	Hornácká durancie	priority	up to 600	yes	Zlín Region, South Moravian Region, Olomouc Region	CR
Hamanova	Hamanova švestka	priority	up to 600	no	Hradec Králové Region	CR
Chrudimská	Vaňkova úrodná	priority	up to 350	yes	East Bohemia	CR
Malvazinka		priority	up to 250	yes		England?
Špendlík žlutý		priority	up to 450	no	Moravia	CR
*Švestka domácí (Prunus domestica)	Domáci švestka, Domáci velkoplodá and all other types	priority	up to 450	no		unknown
Čačanská lepotica		specialised	up to 450	yes		Serbia
Čačanská rodná		specialised	up to 600	no		Serbia
Elena		specialised	up to 350	yes		Germany
Gabrovská		specialised	up to 450	yes		Bulgaria
Herman		specialised	up to 450	yes		Sweden
Mirabelka Nancyská	Mirabelka z Nancy, Nancyská	specialised	up to 350	yes		France
Stanley		specialised	up to 450	yes		USA
Wangenheimova		specialised	up to 600	no		Germany
Wazonova renkloda		specialised	up to 350	yes		Germany/France
Anna Späth		acceptable	up to 250	yes		Germany
Althanova renkloda	Slíva Althanova	acceptable	up to 450	no		CR
Auerbacherská		acceptable	up to 350	no		Germany
Bryská	Bonne de Bry	acceptable	up to 450	no		France
Bühlská		acceptable	up to 450	not known		Germany

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Current variety name	Synonym	Category	Altitude [m]	Areas with high rates of plum pox virus (PPV)	Regionality	Country of origin
Carpatin		acceptable	up to 350	yes		Romania
Čačanská najbolja		acceptable	up to 250	yes		Serbia
Esslingenská švestka		acceptable	up to 250	yes		Germany
Flotowova mirabelka		acceptable	up to 350	no		Germany
Hanita		acceptable	up to 450	yes		Germany
Katalónský špendlík		acceptable	up to 250	no		unknown
Katinka		acceptable	up to 450	no		Germany
Kirkeho		acceptable	up to 350	not known		England
Mirabelka raná		acceptable	up to 350	not known		France
Ontario		acceptable	up to 350	yes		USA
Opál		acceptable	up to 450	yes		Germany
Oullinská		acceptable	up to 250	no	Moravian-Silesian Region	France
Těchobuzická		acceptable	up to 450	yes	Ústí nad Labem Region	CR
Valjevka		acceptable	up to 450	yes		Serbia
Velká cukrová	Cukrová velká	acceptable	up to 450	not known		unknown
Zimmerova		acceptable	up to 350	no		Germany
Zelená renkloda raná	Slíva zelená ranná	acceptable	up to 250	no		France
Zelená renkloda velká	Slíva zelená velká	acceptable	up to 250	no		Greece
Bystrická muškátová		research	up to 450	not known	Moravia	Slovakia
Meroldtova renklota		research	do350	not known	Žatec District	CR
Meruňkovitá renkloda	Slíva marhulovitá (meruňkovitá)	research	up to 250	not known		unknown
Meruňková žlutá		research	up to 250	not known		unknown
Pavče žluté	Paví vejce žluté	research	up to 600	not known	Giant Mountains	unknown
Šidlovka		research		not known		CR
Štolcova	Štolcova slíva	research	up to 350	not known	Central Bohemian Region	CR
Úrodná raná		research		not known		CR
Vejčitá žlutá slíva		research		not known		CR
Babče		local	up to 450	not known	Pardubice Region, Hradec Králové Region	CR
Bílá slíva		local	up to 450	yes	White Carpathians	CR

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Current variety name	Synonym	Category	Altitude [m]	Areas with high rates of plum pox virus (PPV)	Regionality	Country of origin
Bílá trnečka		local		yes	Wallachia	CR
Bílé trnky		local	up to 450	yes	White Carpathians	CR
Blanhardtovy švestky		local		not known	Krhov, Rousínov	CR
Čistecská raná švestka		local		not known	Rakovník District	CR
Dolanka		local		not known	Central Bohemian Region	CR
Eliášova		local	up to 250	not known	Mělník District	CR
Fürstova raná		local		not known	Litoměřice District	CR
Herova švestka		local		not known	Sázava Valley	CR
Kostelecká švestka		local		not known	Pardubice Region	CR
Kozí cecky		local	up to 600	yes	Bojkovice	CR
Kouřimská	Kouřimská zlepšená švestka	local		not known	Kouřim District	CR
Kuhnova blaženka		local		not known	Pardubice Region	CR
Kuhnova pozdní švestka		local		not known	Pardubice Region	CR
Kulovačka z Kašnice		local		yes	Osoblaha District	CR
Kulovačka z Krásné		local		yes	Beskids	CR
Kulovačka z Roudna		local		yes	Bruntál District	CR
Kulovačky	Gulovačka	local	up to 450	yes	Moravia	CR
Malé sračky		local		yes	Velká nad Veličkou	CR
Maškova slíva		local		not known	Hradec Králové Region	CR
Medovka		local		not known	Bruntál District	CR
Mělnická švestka		local	up to 250	not known	Mělník District	CR
Okrůhlica		local		yes	Javorník, Strání	CR
Pavlůvka		local	up to 450	yes	South and Central Moravia	CR
Podroužkova		local		not known	Pardubice Region	CR
Rychlice pastyříkova	Rychlice stračovská	local		not known	Hradec Králové Region	CR
Sračky		local		not known	Upper Moravian	CR

Current variety name	Synonym	Category	Altitude [m]	Areas with high rates of plum pox virus (PPV)	Regionality	Country of origin
					Slovakia	
Šlapanická švestka		local		not known	South Moravian Region	CR
Švestička	Švestičky	local	up to 450	yes	Komňa, Velká nad Veličkou, Upper Moravia Slovakia	CR
Trnka		local		yes	Hostětín	CR
Trnka u Spáčilů	Spáčilova	local		not known	Pitín, Žitková	CR
Valašská trnečka		local		not known	Wallachia	CR
Vohralíkova	Chrudimská pozdní švestka	local		not known	Pardubice Region	CR
Vrablačka		local	up to 600	yes	Vápenice, Komňa	CR
Zelená	Zelená slíva	local	up to 600	yes	Velká nad Veličkou	CR
Zelená švestka		local		not known	Bojkovice	CR
Žluté durancie		local	up to 600	yes	Upper Moravian Slovakia, Javorník	CR

\*Types of the Švestka domácí include notably the formerly separate varieties known under the following names:

Kostecká, Kouřimská, Muškátová, Srbova raná, Srbova velká, Jiráskova, Pacholíkova, Patřinská, Pozdní (or Dušičková), Předmostecká, Toušická, Vinická, Šlapanická, and more.

**Table 4: Cherry tree varieties**

Current variety name	Synonym	Category	Altitude [m]	Regionality	Country of origin
Granát		priority	up to 450		CR
Chlumecká raná		priority	up to 450	Central Bohemian Region, Hradec Králové Region, Pardubice Region	CR
Jánovka mšenská		priority	up to 450	Central Bohemian Region	CR
Karešova	Karšova	priority	up to 600		CR
Klecanská černá		priority	up to 450	Central Bohemian Region	CR

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Current variety name	Synonym	Category	Altitude [m]	Regionality	Country of origin
Královská		priority	up to 350	Moravia	unknown
Ladeho pozdní		priority	up to 450		Germany/Bohemia
Libějovická	Libějovická raná	priority	up to 600	Central Bohemian Region	CR
Litoměřická		priority	up to 600	Ústí nad Labem Region, Hradec Králové Region, Pardubice Region	CR
Medovka		priority	up to 600	Ústí nad Labem Region, Hradec Králové Region, Pardubice Region	CR
Pivovka	Sychrovská chrupka	priority	up to 600	Bohemian Paradise, Turnov District	CR
Skalka		priority	up to 600	South Moravian Region	CR
Srdcovka přeúrodná		priority	up to 600	Central Bohemian Region, Hradec Králové Region, Pardubice Region	CR
Těchlovická	Ziklova, Těchlovická II	priority	up to 600		CR
Tropriichterova		priority	up to 350		CR
Uherská měkká	Uherka, Moravka	priority	up to 450	South Moravian Region	CR
Vítovka molitorovská		priority	up to 600	Central Bohemian Region	CR
Vlkova	Vlkova obrovská	priority	up to 450	Moravia	CR
Žalanka	Šalanka	priority	up to 450	Central Bohemian Region	CR
Annonayská		specialised	up to 450		France
Dönissenova		specialised	up to 450		Germany
Droganova		specialised	up to 600		Germany
Germersdorfská		specialised	up to 600		Germany
Kassinova raná		specialised	up to 450		Germany
Kaštánka	Early Rivers	specialised	up to 600		England
Koburská raná		specialised	up to 350		France
Kordia	Těchlovická 2	specialised	up to 600		CR
Lyonská raná	Jaboulayova	specialised	up to 450		France

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Current variety name	Synonym	Category	Altitude [m]	Regionality	Country of origin
	polochrupka				
Rychlice německá		specialised	up to 600		Germany
Tygrovaná		specialised	up to 600		unknown
Willova		specialised	up to 600		Germany
Badacsonská černá		acceptable	up to 450		Hungary
Baltavarská		acceptable	up to 350		Hungary
Boppardská raná		acceptable	up to 450		Germany
Burlat		acceptable	up to 450		France
Büttnerova pozdní chrupka		acceptable	up to 450		Germany
Eltonova		acceptable	up to 450		England
Františkova	Císaře Františka chrupka	acceptable	up to 600		England
Grollova		acceptable	up to 600		Germany
Hedelfingenská		acceptable	up to 600		Germany
Krügerova		acceptable	up to 600		Germany
Medňanská		acceptable	up to 450		Slovakia?
Moreau		acceptable	up to 450	Pardubice Region, Hradec Králové Region	France
Napoleonova	Lauermanova, Büttnerova červená chrupka	acceptable	up to 450		Germany
Ramon Oliva		acceptable	up to 450		France
Schneiderova	Thurn Taxis, Přeloučská pumra, Slatiňanská obrovská chrupka	acceptable	up to 350		Germany
Těchlovan		acceptable	up to 450		CR
Velká černá chrupka		acceptable	up to 350		Germany
Walpurgiska		acceptable	up to 450		Germany
Winklerova černá	Winklerova černá chrupka	acceptable	up to 450		Germany
Winklerova raná		acceptable	up to 600		Germany
Bílá dobrá		research			unknown
Buketova		research	up to 450	Central and East Bohemia	CR
Černá chrupka		research			CR
Černá špička		research	up to 450		CR
Černá z Horan		research			CR
Černá z Ladzan		research			CR
Heřmanoměstecká		research	up to 600	Chrudim District	CR
Holovouská chrupka		research	up to 450		CR

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Current variety name	Synonym	Category	Altitude [m]	Regionality	Country of origin
Chlumecká černá		research	up to 450	Chlumeck District	CR
Kostelostatnice jaroměřská		research	up to 600	Central and East Bohemia	CR
Kozmice		research	up to 450	Kolín District	CR
Moravská rychlice		research	up to 600	Moravia	CR
Mramorovaná chrupka		research	up to 450		unknown
Mšenská žlutka		research			unknown
Oxfordka	Oxfordská chrupka	research	up to 600	East Bohemia	unknown
Perla z Bezdězu		research		East Bohemia	unknown
Pivka		research	up to 450		CR
Plotišťská		research	up to 600	East Bohemia	CR
Poplzká raná		research	up to 450		CR
Růžovka		research	up to 600		CR
Slezská chrupka		research		Czech Silesia	CR
Srdcovka královská		research	up to 600		CR
Šakvická		research			CR
Švestičková		research			Bohemia?
Taixmen		research			unknown
Tříčtvrteční		research		Bohemia	CR
Uherka velká		research			unknown
Václavka		research			unknown
Velichova chrupka		research	up to 450	Chlumeck District	CR
Vlachův semenáč		research	up to 450	Moravia	CR
Vlk Karel		research	up to 450	Moravia	CR
Vlk Sláva		research	up to 450	Moravia	CR
Vosenka		research	up to 450	Moravia	CR
Doupovská černá		local	up to 600	Karlovy Vary Region, Ústí nad Labem Region	CR
Choltická		local	up to 450	East Bohemia	CR
Kostelnice	Kostelnička	local	up to 600	Opočno, Nové Město nad Metují Districts	CR
Markétka		local	up to 450	Chrudim District	CR
Pumra	suspected of duplication with Schneiderova or Napoleonova	local	up to 450	Hořice, Jaroměř Districts	CR
Slatiňanská	suspected of duplication with Schneiderova	local	up to 450	Chrudim District	CR

Current variety name	Synonym	Category	Altitude [m]	Regionality	Country of origin
Vídeňská raná srdcovka		local	up to 450	East Bohemia	CR

Table 5: Sour cherry tree varieties

Current variety name	Synonym	Category	Altitude [m]	Regionality	Country of origin
Amarelka královská	Early Richmond	priority	up to 600		France
Vackova		priority	up to 600	Central Bohemian Region, Hradec Králové Region, Pardubice Region	CR
Vítova		priority	up to 450	Central Bohemian Region, Hradec Králové Region, Pardubice Region	CR
Královna hortenzie		specialised	up to 600		France
Morela pozdní	Moreillská, Amarelka stinná, Morela stinná	specialised	up to 600		France
Ostheimská	Ostheimská ušlechtilá	specialised	up to 600		unknown
Sladkovišeň raná	Májovka	specialised	up to 450		France
Španělská		specialised	up to 600		Spain
Vlasačka	Ostheimská	specialised	up to 600		Spain
Zdlouhavá		specialised	up to 450		unknown
Bruselská	Bruselská hnědá višeň	acceptable	up to 450		Belgium
Gobetova		acceptable	up to 600		France
Chatenayská	Chatenayova	acceptable	up to 450		France
Köröšská		acceptable	up to 450		Hungary
Ministr Podbielski	Podbielskij, Kochova zlepšená	acceptable	up to 450		Germany
Montmorency		acceptable	up to 450		France
Olivet		acceptable	up to 450		France
Umbra		acceptable	up to 450		Slovakia
Amarelka chvalkovická		local	up to 450	Hradec Králové Region	CR
Dobřínovská sladkovišeň		local	up to 450	Rychnov nad Kněžnou	CR
Kiškovická		local	up to 350	South Bohemian Region, Ústí nad Labem Region	CR



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Nedošínská		local	up to 450	Hradec Králové Region	CR
Šakvická		local	up to 350	South Moravian Region	CR
Amarelka pístovská		research	up to 450	Karlovy Vary Region	unknown

**Table 6: Apricot tree varieties**

Current variety name	Synonym	Category	Altitude [m]	Areas with high rates of plum pox virus (PPV)	Regionality	Country of origin
Bohutická		priority	up to 350	no	South Moravian Region	CR
Bořetická		priority	up to 450	yes	South Moravian Region	CR
Hájek		priority	up to 350	no	South Moravian Region	CR
Holubova	Cukrová Holubova	priority	up to 250	no	Central Bohemian Region, Ústí nad Labem Region	CR
Kloboucká raná		priority	up to 450	no	South Moravian Region	CR
Mělnická	Mělnická melounová	priority	up to 350	no	Central Bohemian Region, Ústí nad Labem Region	CR
Motalova nejlepší		priority	up to 450	no	Zlín Region	CR
Roztocká		priority	up to 250	no	Central Bohemian Region, Ústí nad Labem Region	CR
Sabinovská		priority	up to 250	no	South Moravian Region, Zlín Region, Olomouc Region	Slovakia
Velkopavlovická		priority	up to 250	no	South Moravian Region	CR
Znojemská		priority	up to 450	no	South Moravian Region	CR

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Želešická		priority	up to 250	no	South Moravian Region	CR
Adriana		specialised	up to 350	yes		CR
Betinka		specialised	up to 350	yes		CR
Candela		specialised	up to 350	yes		CR
Hargrand		specialised	up to 450	yes		Canada
Harlayne		specialised	up to 450	yes		Canada
Sophia		specialised	up to 350	yes		CR
Ananasová		acceptable	up to 350	no		Netherlands/France
Bredská	Holandská	acceptable	up to 250	no		Netherlands
Keckemetr rozsa	Růžová pozdní	acceptable	up to 350	no	South Moravian Region	Hungary
Královská	Württembergská ?	acceptable	up to 350	not known		France
Kráska		acceptable	up to 250	no		Hungary
Leala		acceptable	up to 450	no		Slovakia
Legolda		acceptable	up to 250	no		CR
Leskora		acceptable	up to 450	no		CR
Luizetova meruňka		acceptable	up to 350	no		France
M-VA-1		acceptable	up to 450	no		CR
M-VA-2		acceptable	up to 450	no		CR
M-VA-3		acceptable	up to 450	no		CR
Maďarská		acceptable	up to 250	no	South Moravian Region	Hungary
Nancyská		acceptable	up to 350	no		France
Orangered		acceptable	up to 250	yes		USA
Paviot		acceptable	up to 350	no		France
Rakovského		acceptable	up to 250	no	South Moravian Region	Slovakia
Vynoslivýj		acceptable	up to 450	no		Ukraine
Židlochovická		research		not known		CR

**Table 7: Peach and almond tree varieties**

Current variety name	Synonym	Variety	Zoning	Areas with high rates of plum pox virus (PPV)	Regionality	Country of origin
<b>Peach trees:</b>						
B-VA-1		priority	up to	no	South	CR

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			350		Moravian Region	
B-VA-2		priority	up to 350	no	South Moravian Region	CR
B-VA-3		priority	up to 350	no	South Moravian Region	CR
BSB 1		priority	up to 350	no	South Moravian Region	CR
BSB 2		priority	up to 350	no	South Moravian Region	CR
BSB 3		priority	up to 350	no	South Moravian Region	CR
Lednická žlutá		priority	up to 250	not known	South Moravian Region	CR
Marta		priority	up to 450	not known	Prachatic District	CR
<b>Almond trees:</b>						
Hustopeče VII		priority	up to 250	yes	South Moravian Region	CR
MN-VA-1		specialised	up to 250	yes	South Moravian Region	CR
Sladkoplodá krajová	Sultán	priority	up to 250	yes	South Moravian Region	USA?
Vama		specialised	up to 250	yes		CR
Šárka		research	up to 250	not known	Central Bohemian Uplands	unknown

**Table 8: Minority species varieties**

Variety	Synonym	Category	Altitude [m]	Regionality	Country of origin
<b>Shipova:</b>					
Tatarova		priority	up to 600		CR
Bollvilleriana	Šípková	specialised	up to 450		France
<b>Service tree:</b>					
Lednice LE-1		specialised	up to 450	Moravia	unknown
Kněždub OS-28		local	up to 350	Moravia	CR
Mlýnky u Strážnice OS-1		local	up to 450	Moravia	CR
Němčičky Sudný		local	up to 450	Moravia	CR
Strážnice OS-17-Adamcova		local	up to 450	Moravia	CR

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Strážnice OS-64		local	up to 450	Moravia	CR
Tvarožná Lhota OS-26-Špirudova		local	up to 450	Moravia	CR
Tvarožná Lhota OS-28		local	up to 450	Moravia	CR
Horní Nezly		local	up to 450	Central Bohemian Uplands	CR
Radobýl jihozápad		local	up to 450	Central Bohemian Uplands	CR
Velké Žernoseky		local	up to 450	Central Bohemian Uplands	CR
<b>Sweet rowan tree:</b>					
Moravský sladkoplodý		priority	up to 800	Moravian-Silesian Region	CR
Koncentra		specialised	up to 800		Germany
Kubovaja		specialised	up to 800		Russia
Nevěžinský		specialised	up to 800		Russia
Rosica		specialised	up to 800		Germany
<b>Sweet chestnut:</b>					
Bojar		specialised	up to 450		Slovakia
Místral		specialised	up to 450		Slovakia
Vestecký		local	up to 600	Chrudim, Havlíčkův Brod Districts	CR
Slatiňanský		local	up to 600	Chrudim, Havlíčkův Brod Districts	CR
Hnědák		local	up to 600	Chrudim, Havlíčkův Brod Districts	CR
Nasavrcký velkoplodý		local	up to 600	Chrudim, Havlíčkův Brod Districts	CR
<b>Medlar tree:</b>					
Holandská		priority	up to 500		unknown
Bezsemenná		specialised	up to 500		Serbia
Notthingam		specialised	up to 500		England
Velkoplodá		specialised	up to 500		USA
<b>Mulberry tree:</b>					
Jugoslávská		acceptable	up to 400		Serbia
Molperňa		acceptable	up to 250	Moravia	CR
Mora Grossa		acceptable	up to 400		Italy
Trnavská		acceptable	up to 250		Slovakia
Chrudimská		local	up to 350	Chrudim, Havlíčkův Brod Districts	unknown

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Lánská		local	up to 350	Chrudim, Havlíčkův Brod Districts	unknown
Chuchelská		local	up to 350	Chrudim, Havlíčkův Brod Districts	unknown
<b>Walnut tree:</b>					
Mars		specialised	up to 450		CR
Seifersdorfský		specialised	up to 600		Saxony

**Annex 5 Illustrations**

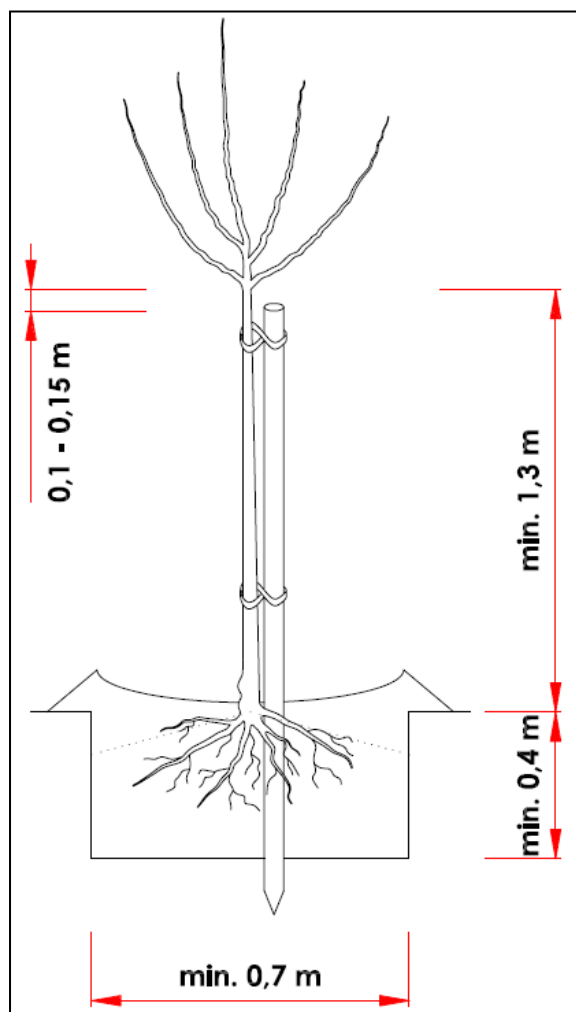


Fig. 1: Planting a fruit tree on flat ground (5.5.4).

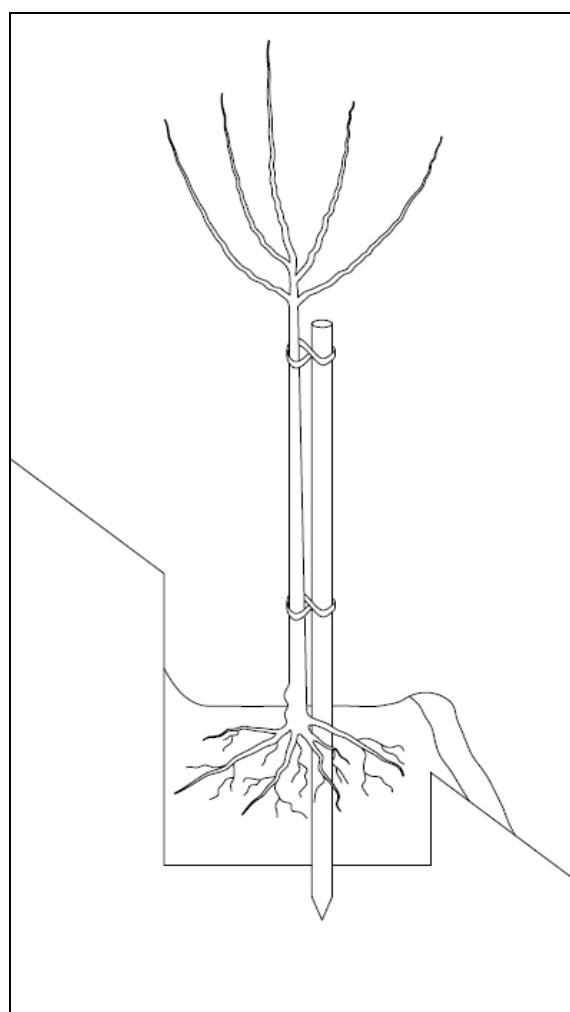


Fig. 2: Planting a fruit tree on a slope (5.5.4).

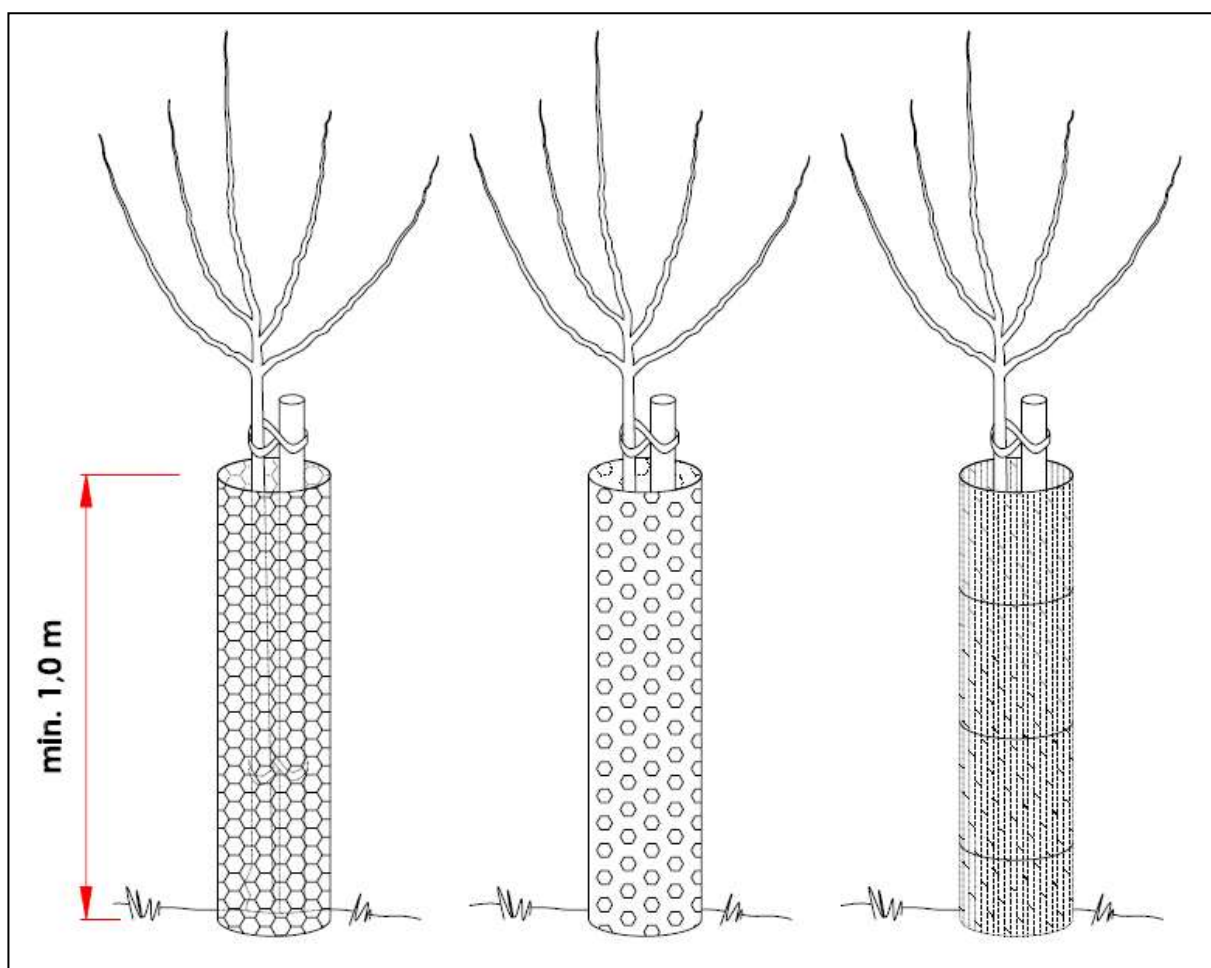


Fig. 3: Trunk protection in single-stake anchoring, design examples (wire mesh, plastic, reed, etc.) (5.7.4).

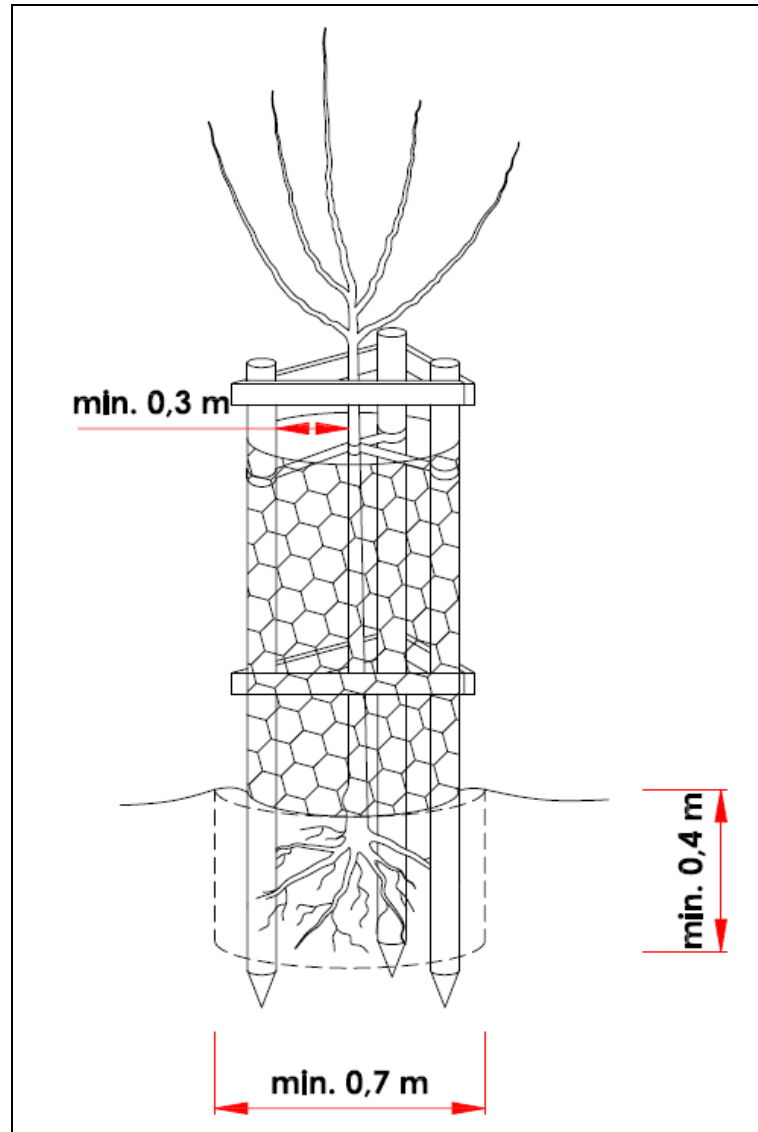


Fig. 4: Trunk protection in multiple-stake anchoring, design examples (wire mesh, wood) (5.7.5).



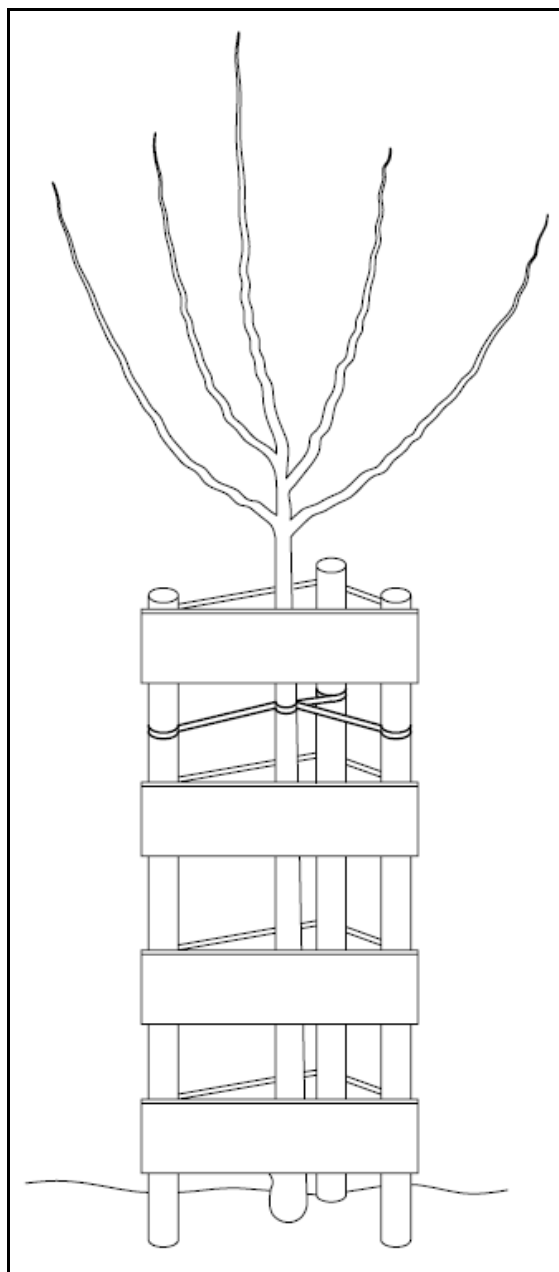


Fig. 5: Trunk protection with boards

**Annex 6 List of Nature and Landscape Management Standards (Series C – TSES and landscape-forming elements) developed**

**00 General**

00 001 Terminology

**01 Inspection, assessment, planning**

01 001 Assessment of TSES functionality

01 002 TSES development (plans and projects)

**02 Work procedures**

02 001 Implementation of TSES biocentres and biocorridors

02 002 Development of landscape-forming and interactive elements

02 003 Planting of fruit trees in the agricultural landscape

02 004 Management of TSES components, incl. landscape-forming and interactive elements

02 005 Management of functional plantings of fruit woody plants above 10 years of age

**03 Occupational health and safety**

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2016

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