



evropský
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EVROPSKÁ UNIE



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MLÁDEŽE A TĚLOVÝCHOVY



OP Vzdělávání
pro konkurenceschopnost

Mendelova
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INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ



**Inovace studijních programů AF a ZF MENDELU
směřující k vytvoření mezioborové integrace
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CROPPING PRACTICES OF FRUIT TREE PLANTINGS

Soil management of fruit tree plantings

- Fruit trees grow in the same location for several years, they have high requirements on soil fertility
- Tree growing is responsible for sufficient soil moisture, removal of weed, biological activity, proper ration of air and water
- Trees prevent water erosion on slope land areas
- Degree of tree height, fertility, density is proportionate to requirements on soil management
- Responsible for accessibility of work paths – inter-rows, use of machinery

Methods of soil management

- Soil smoothing: Soil is evened out and sprouting weed is eliminated
- Soil disintegration should not go too deep and damage root system (cultivators, disc harrows, subsoilers)
- Harrowing, substitutes for surface soil disintegration, used for weakly weed infested areas
- Tillage, most commonly in autumn, depth of tillage in inter-rows should not exceed 0.15 m and should not go beyond 0.1 m near the trees
- Chemical treatment, herbicides (long lasting and short lasting effect)

Systems of soil management

Soil in orchards

- ▶ Dead fallow cultivated throughout the year
- ▶ Dead fallow: Summer seeding of mixtures for green manure
- ▶ Dead fallow: All-year round seeding of mixtures for green manure

Non-cultivated soil

- ▶ Grassed areas: Mowing (permanent, temporary)
- ▶ Soil mulching
- ▶ Dead fallow treated with herbicides







- Dead fallow cultivated throughout the year, regular processing is economically unfavourable (major soil heating and defragmentation is a detriment)
- Dead fallow with summer sowing of mixtures for green manure, soil is smoothed in spring which is followed by deeper disintegration of the soil (herbicides are applied on strips of land close to the tree trunks) Legume-wheat mixtures (vetch, pea) are sown in mid-June. Mixtures are ploughed back into the soil after the harvest (amounts of green manure: 20-30 t.ha⁻¹, amounts of N: 40-60 kg.ha⁻¹)
- Dead fallow with all-year round sowing of mixtures for green manure – used in young plantings. Mixtures are sown twice a year (use of crops well covering the soil and creating lots of organic matter)

- Grassed areas are mowed, inter-rows are grassed, herbicides are applied on strips of land close to the trees, frequent mowing (8-10 times for 100-150 mm long grass). Mean annual precipitation: More than 650 mm. Benefits: Use of machinery, anti-erosive effect
- Soil mulching: Straw, peat, grounded tree bark, PE foils, etc. Mulching provides adequate soil moisture and structure.
- Herbicides are applied on dead fallow; inter-rows and land close to the tree trunks are weed-free. Timely and regular treatment of the land area is a must.

Cultivation of catch crops

- Only for young plantings (before the trees assume soil space)
- Chemical protection causes majority of cultivation problems
- Field crops usually seriously compete with fruit trees for irrigation
- Vegetables: Most of them can be used for growing; plantings do not benefit from cabbage crops
- Legumes, beans, pea are suitable; lettuce, gherkins, spinach and onions are optimal.