FRUIT GROWING

An orchard is an intentional planting of trees or shrubs that is maintained for food production. Orchards comprise fruit, vegetable, and nut-producing trees which are grown for commercial production. Orchards are also sometimes a feature of large gardens, where they serve an aesthetic as well as a productive purpose. A fruit garden is generally synonymous with an orchard, although it is set on a smaller non-commercial scale and may emphasize berry shrubs in preference to fruit trees. A meadow orchard is a meadow with scattered fruit trees. It is a traditional landscape in the temperate, maritime climate of continental Western Europe. In recent years, ecologists have successfully lobbied for state subsidies to valuable habitats, biodiversity and natural landscapes, which are also used to preserve old meadow orchards.

Pomologic division of fruit species - Fruit species are divided into 5 groups: POME (fruit with seeds), STONE (fruits with stone), NUTS (fruits have a shell), BERRIES, CITRUS, TROPICAL – EXOTIC fruits.

Establishment of orchard

Establishment of an orchard is a long term investment and deserves a very critical planning. The selection of proper location and site, planting system and planting distance, choosing the varieties and the nursery plants have to be considered carefully to ensure maximum production.

Before a grower selects a site for establishing a new orchard, he must have assessed the following factors:
1. Suitability of soil, its fertility, the nature of subsoil and soil depth.
2. Site must have proper drainage and no water stagnation during rainy season
3. Irrigation water must be of good quality.
4. There must be proper transport facilities either by road or rail within the reach.
5. Whether the climatic conditions are suitable for the fruits to be grown and whether site is free from the limiting factors such as cyclones, frost, hailstorms and strong hot winds.
6. Whether there are seasonal surpluses or over production in any particular period of the year.
7. Whether there is assured demand in the market for the fruits to be grown.
8. Whether his orchard is a new venture or whether there are already other growers.

Site Selection Good air drainage is essential. Cold air, like water, flows downhill. For this reason, fruit buds on plants set in a low spot are more likely to be killed than those on a slope. Frost pockets; low, wet spots; and locations exposed to strong, prevailing winds must be avoided. South-facing slopes encourage early bud development and can sometimes result in frost damage. Select late-blooming varieties for this location.

Soil Selection Deep, well-drained soil of moderate fertility should be selected. A fertile, sandy loam or sandy clay loam is suitable for most tree fruits. Poor fertility may easily be improved by proper fertilization and cultural practices.

Variety Selection The varieties must be adapted to the soil and climatic conditions, having few insect and disease problems. The value of certain varieties for special uses, such as freezing, canning, and preserving should be considered.
**Cross-pollination** is necessary for satisfactory fruit set in many tree fruits. Varieties that are cross-fruitful and that have overlapping bloom dates should be selected. To be certain of adequate cross-pollination, plant at least three varieties of apples. At least two of the recommended pear, plum, and sweet cherry varieties should be planted. Sour cherry, peach, and nectarine varieties are sufficiently self-fruitful to set satisfactory crops with their own pollen.

**Apple Rootstocks** Apples, like other tree fruits, will not produce trees with the same characteristics from seed. Fruit trees are propagated vegetatively by either budding or grafting scion wood of the desired cultivar on a rootstock. The rootstock and scion variety maintain their respective genetic identities, but are joined at the graft union and function as a unit.

Dwarf fruit come into bearing earlier than standard-sized trees, occupy less space, and can be more easily pruned and sprayed with equipment normally available to the average gardener.

**Time of Planting:** Planting about a month after the first killing frost in the fall or about a month before bloom in the spring is generally recommended. The important things to remember are that trees should be dormant and the soil should have proper moisture content.

**Handling Nursery Stock** Fruit trees are usually purchased as containerized plants from local nurseries and garden centres. If trees cannot be planted immediately, they can be stored in the original packaging for a week or two in an unheated basement or garage. Do not expose to freezing temperatures, which may damage roots; or high temperatures, which may induce bud break. It is a good idea to soak the roots in a bucket of water for a few hours before planting.

**Orchard Management**

**Cultivation** Young fruit trees should be mulched or cultivated until they begin to bear. Weeds must be eliminated so they will not compete for available moisture and fertilizer. Cultivation must be shallow to avoid injury to roots near the surface. Fertilize young trees three times. Apply fertilizer about two weeks after planting, and again six and 10 weeks after planting. The use of black polyethylene plastic as a mulch has given good results. Holes may be punched in the plastic to allow moisture penetration control.

**Fertilization** Before planting, test your soil pH. If your soil is acidic, it should be limed to adjust the pH to a level between 6.0 and 6.5. As a rule, no fertilizer is recommended or needed at planting time. Overfertilization with either organic or inorganic materials should be avoided. Excessive vegetative growth will result, usually accompanied by delayed fruiting and possible winter injury. Fertilizer may be applied either after the leaves have fallen or in early spring about three or four weeks before active growth begins. The usual method of application is to scatter fertilizer evenly under the tree, starting about 2 feet from the trunk and extending to just beyond the tips of the branches.
**Pruning** The general purpose of pruning fruit trees is to regulate growth, improve fruit size and quality, control tree size, and reduce production costs. Pruning is necessary to shape the trees for convenience of culture and for repair of damage. Most pruning is done during the dormant season, preferably just before active growth begins in the spring. At this time, pruning wounds heal faster, flower buds can be easily recognized, and injury from low winter temperature is avoided.

Light is the source of energy that produces the crop. Bearing wood that is shaded is low in vigour and produces small, poorly coloured fruits. Good light exposure is necessary for the development of flower buds as well as optimum size, colour, and sugar content of the fruit. Proper pruning can also help to maintain desired tree size and shape.

**Rodent Control** Mice may cause serious damage to the fruit planting. They chew off the bark at ground level or below and often completely girdle a tree, causing it to die. Most of this damage takes place during winter.

Rabbits are responsible for the loss of thousands of young fruit trees each year. Perhaps the most satisfactory method of preventing rabbit damage is the use of a mechanical guard.

**Tree Fruit Spraying** For significant insect or disease problems, it may be necessary to follow a spray program. To be successful with your spray program, spray at the proper time and do it thoroughly. Leave no portion of the tree unsprayed. Semi-dwarf and dwarf trees should be considered when making your planting. Their small size makes the task of spraying easier. Early maturing varieties are less likely to be seriously affected by insects and diseases than late-maturing varieties because of the shorter growing season.

**Sanitation**

Adopt good orchard sanitation practices. The destruction of places that harbour insects and diseases plays a large part in the control program. Conditions that encourage mice should also be eliminated.

These are some practices to include in an orchard sanitation program:
- Collect and burn debris.
- Remove and destroy all dropped fruit.
- Rake and burn apple and cherry leaves.
- Scrape loose bark from trunks, crotches, and main limbs of apple trees.
- Prune out and destroy all dead or diseased limbs, branches, and twigs.
EXERCISES

I. Answer the following questions about the text:
1. What are the advantages of dwarf fruit trees over normal-size trees?
2. What does the expression »good air drainage« mean?
3. What kind of soil do fruit trees prefer?
4. What factors must we consider when choosing the variety of fruit trees?
5. What is the right time for planting fruit trees?
6. When should fruit trees be fertilized?
7. What is the purpose of pruning fruit trees?
8. How do we prevent damage by rodents and rabbits?
9. Enumerate some good orchard sanitation practices.

II. Match the expressions to the Slovenian equivalents and name the pomological group it belongs to.

| 1. apple       | ____višnja       |
| 2. sweet cherry| ____nektarina    |
| 3. lemon       | ____češnja       |
| 4. nectarine   | ____marelica     |
| 5. plum        | ____kutina       |
| 6. sour cherry | ____pomaranča    |
| 7. pear        | ____avokado      |
| 8. peach       | ____jabolko      |
| 9. apricot     | ____hruška       |
| 10. chestnut   | ____ananas       |
| 11. hazelnut   | ____lešnik       |
| 12. quince     | ____grenivka     |
| 13. papaya     | ____limona       |
| 14. walnut     | ____breskev      |
| 15. avocado    | ____oreh         |
| 16. orange     | ____kostanj      |
| 17. grapefruit | ____sliva        |
| 18. pineapple  | ____papaja       |

Virji:

http://en.wikipedia.org/wiki/Orchard
http://agritech.tnau.ac.in/horticulture/horti_orchard%20management.html
http://www2.pef.uni-lj.si/kemija/pai/sadne/index.html