

Organic Fruit Tree Workshop

By Bruce Ham

1 Introduction

Aim - to help improve understanding of the basic foundations of growing fruit.

Disclaimer – this workshop is not related to requirements for obtaining organic certification

Scope - understanding the ecosystem
soil fertility,
plant selection
water management
plant nutrition
Plant culture and
pest and disease management.

Setting the Context

Who are we and what are our values– as individuals and as a community?

What are our goals and objectives? Health, healthy food, exercise, community

Why do we want to grow organic vegetables? Personal use, share, sell. If we are going to sell the vegetables, then the cost of inputs and particularly labour, need to be considered carefully

Where are we going to grow the vegetables? Our own gardens, community areas, good soils or poor soils

When do we want to grow organic vegetables? Our favourite vegetables have a limited and specific growing season, but we need to have food for our tables 12 months of the year. Alternative varieties of fruit and vegetables need to be considered, as do preserving practices.

2 Principles of Fruit Tree Growing

The fundamental issues to be addressed include the following -:

- Understanding the eco-system – companion planting
- Site assessment - Micro-Climate
- Soil fertility,
- Plant selection – read the instructions,
- Planting time,
- Care of seedlings,
- Plant nutrition,
- Plant culture,
- Disease management , - Companion planting
- Pest management
- Harvesting and Post harvest care and consumption .

Plant disorders, diseases and attack by pests is usually related to poor plant health. Before we reach for the pesticide or fungicide, we need to understand the cause rather than treating the symptom. Where treatments are required, low cost products that provide minimal risk to human health should be used.

Companion plants – Legumes – Alfalfa, pinto peas, pigeon peas, ice-cream bean
Attract beneficial insects – Nasturtiums, basil lemon balm
Mineral accumulators – comfrey, borage, elderberry, stinging nettle
Insecticide - Tansy, pyrethrum daisy

3 Site Assessment

Existing Environment

Sun /Shade – winter and summer

Dry mild winters, hot dry spring and early summer and the wet season in late summer and autumn.

The variations in climatic conditions around our houses and gardens

Slope and the direction of slope may have a significant impact.

Northern slopes enjoy sunny conditions in winter

Southern slopes and cool and shaded

Western slopes and sides get very hot in summer.

Existing large trees and walls also have environmental effects.

Access to living area

Water points

Slope / Drainage

Pathways and terraces

Access for a range of users and a range of activities

Site Analysis

Observe soil profile

Observe weeds

Test soil Ph,

Potential root competition

4 Soil fertility, soil preparation and planting

How rock types and geological processes have worked to provide the minerals needed for growing fruit and vegetables.

Most rock types have a deficiency in one or more of the minerals necessary for growing fruit and vegetables..

Physical qualities of good soil include free drainage and moisture retention.

Carbon dioxide and oxygen from the air and from the soil

Nitrogen, potassium, phosphorus, calcium and magnesium

Trace elements including iron, manganese, silicon, copper boron and chlorine.

Granite provides potassium and calcium. Examples include the fruit growing areas such as Stanthorpe, Bundaberg and Bowen.

Basalts provide calcium, iron and magnesium. Soils from these areas are good for growing leafy green vegetables. Sites include Toowoomba, Mt Tamborine, Melany and the Lockyer Valley.

Organic products that provide the various elements

potassium, - Ash, composted hardwood, sugarcane mulch and molasses.

phosphorus, - fowl manure, seaweed and fish products, blood and bone, rock phosphate

calcium – gypsum, dolomite, blood and bone

magnesium - Epsom salts, dolomite

trace elements - seaweed and fish products, rock (basalt and tuff) minerals

Planting

Dig hole at least twice as deep and three times the diameter of the pot.

Fill the hole with water. If the water does not drain in 10 minutes, water-logging is a serious risk and built-up beds should be used.

Incorporate generous quantities of low nitrogen organic material.

Check the pH. If adjustment is required –

 Add dolomite to increase pH

 Add sulphur dust to reduce pH. – after adjustment wait for two weeks and re-test.

Excavate hole and place ag-flow watering pipe to 500 mm.

On planting, soil should be mounded up and collar of tree should be at the level of the soil.

The tree should be watered in with work liquid and seaweed solution.

5 Plant selection

Plants for food, Climatic conditions, fruit for all seasons and maintenance capacity.

Citrus – lime, lemonade, lemon, mandarins, oranges and ruby grapefruit

 Fruit in autumn and winter – limes and lemonades -most of the year

Pawpaw – fruit in spring, summer autumn

Passionfruit -Fruit in summer autumn and winter

Longan fruit in late summer / autumn

Banana – fruit in spring, summer and autumn – controlled species

Mulberry – fruit in spring

Mango – fruit in summer

Macadamia fruit in autumn but keep for 12 months

Nectarine – fruit in spring

Strawberries - winter

Plant nutrition

Nutrients to encourage root growth include phosphorous and trace elements. This may be provided by the application of seaweed based products.

Leaf development - requires large amounts of nitrogen with some calcium, iron and trace elements.

Flowers and fruit - nitrogen demand reduces and the demand for potassium for flowers and fruit increases.

6 Pruning Fruit Trees,

Each type of fruit has its own cultural requirements.

Major structural prune after picking of fruit

Light pruning six months later but not generally June or July (except July to prune stonefruit and grapes. Remove spindly and inwardly growing branches.

In general, if larger fruit are desired, the number of flowers / small fruit should be reduced.

Root completion is often, but not always a limiting factor. Weed competition should be controlled. As feeding roots are usually concentrated around the drip line of trees, trenching, feeding and root pruning beyond the drip line may be productive.

Protect warm climate varieties from cold and frost.

7.1 Disease management ,

Unhealthy plants are more prone to disease –

Check plant requirements, climate and time of year,

Check for water stress / water logging,

Check pH and soil fertility

Strengthen plant resistance to disease –seaweed solution, potassium, copper and silica

Viral disorders – destroy plant – burn or remove from site

Fungal disorders – apply soap spray, milk spray, wettable sulphur or herbal teas

7.2 Pest management

Unhealthy plants are more prone to attack –

Check plant requirements, climate and time of year,

Check for water stress / water logging,

Check pH and soil fertility

Strengthen plant resistance to disease –seaweed solution, potassium, copper and silica

Set traps – fruit fly traps

Net trees or bag fruit

Place pest deterrent – rubber snakes, CD, fake birds and cats, bird scarers, moth balls

Apply gently insecticides - soap spray, milk spray, wettable sulphur, herbal teas and molasses.

Apply higher strength insecticides – neem, spinosad, derris dust

8 Harvesting, Post harvest care and consumption

Harvesting

Pick when ripe or before taken by creatures of the forest

Use fresh when possible

Preserve harvest while still fresh

Post harvest care and consumption

Pick fruit in the afternoon when effect of sunlight has maximized sugar content.

Wash before eating

See BOGI booklet 'Saving the Surplus' for information on various approaches to longer term storage.