Aquaponic Fruit Trees

With Robbie Vinson

Overview

- Flood and Drain design
- Grow medium
- Tree choice
- Nutrients
- Hardware

Grow Bed

Minimum size for even dwarf varieties is 12” deep &
10 - 15 gallons capacity

55 gallons is the easiest available and adequate for years of rootball growth.

Clay vs Gravel

Clay can prove to be too lightweight and unsupportive for larger trees. Although it does hold moisture longer between water cycles.
Gravel provides substantial weight for tree stability. This becomes more important the shallower the grow bed area.

Tree Selection

Choosing fruit trees mostly should be based on the greenhouse environment you intend to provide for the planting.

Tropical

Tropical trees require a warmer winter environment. This can be a substantial expense in cooler climates, but in a greenhouse designed for year round production of warm weather vegetable crops this is a great fit.

Cold Hardy

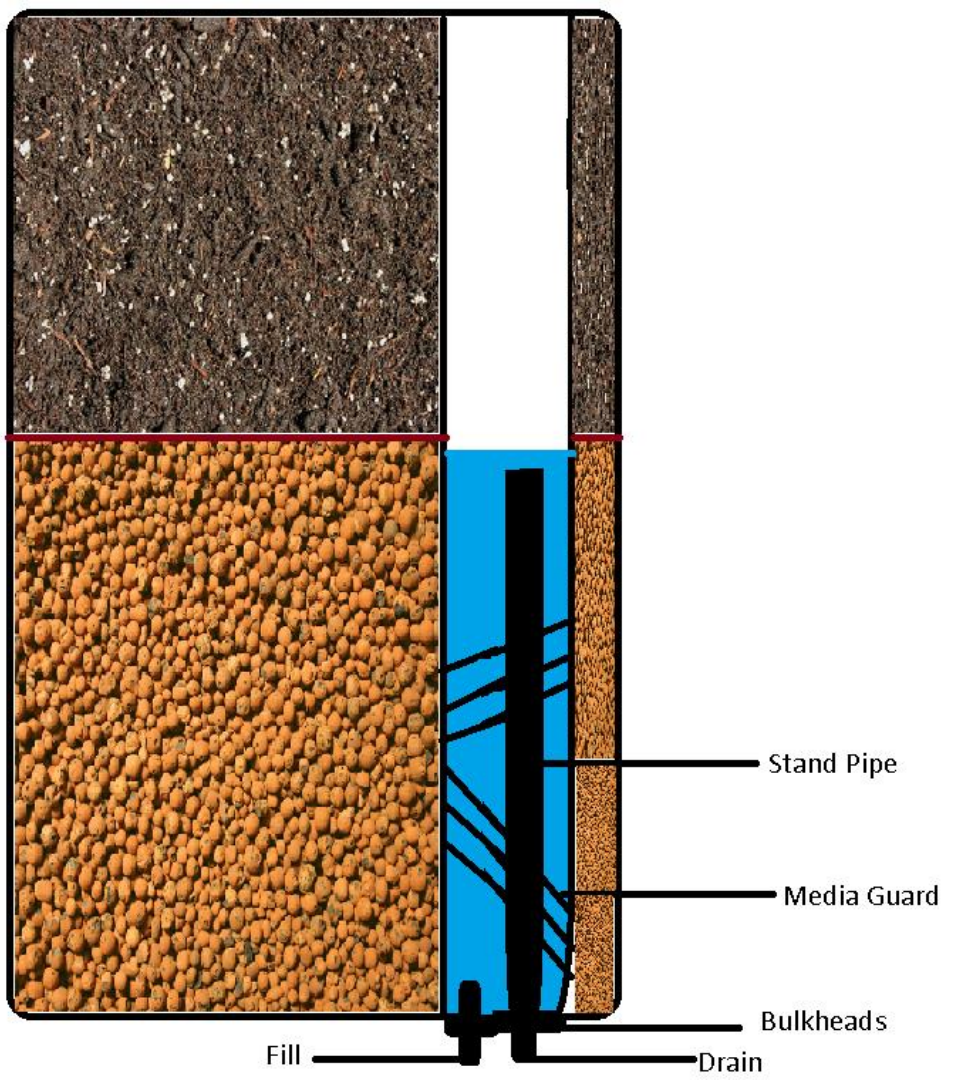
Cold Hardy trees can require a minimum number of winter hours below 45 degrees fahrenheit or a shorter photoperiod depending on species.
A greenhouse can be designed around these winter temps and still produce hardier winter salad greens, kales, chards and such or trees can be placed in a garage or other cool but not frozen area.

Grow Bed Style

Flood and Drain utilizing Dual Root Zone
So you can control wet / dry times as well as proper nutrient levels

Hardware

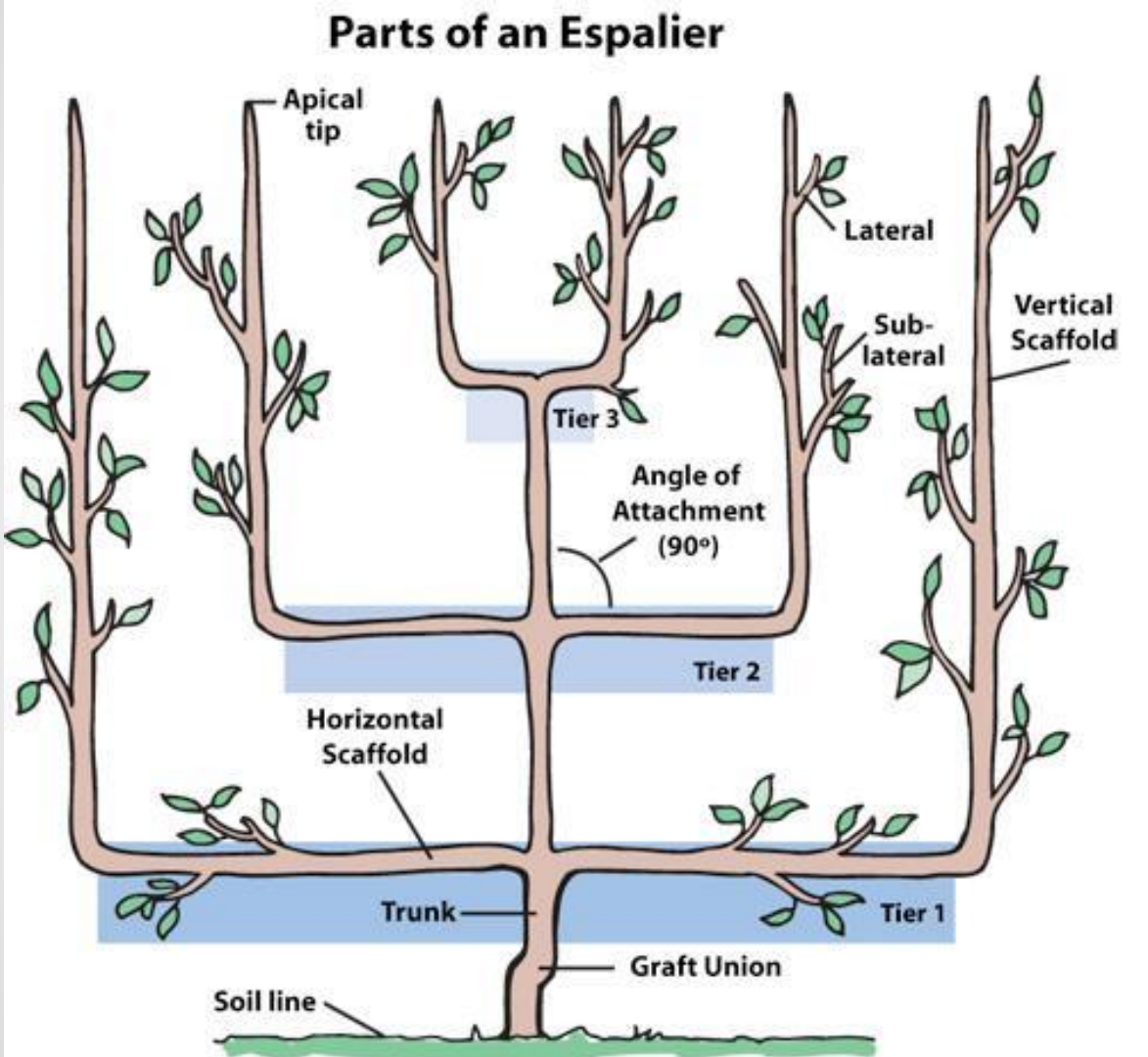
55 Gallon barrel
Mediaguard
Bulkhead & screen for fill
Bulkhead & riser for fill height standpipe
Pump & Timer


Stand Pipe
Media Guard
Bulkheads
Fill
Drain

Pruning

Growing in a greenhouse can be limiting.
Utilizing dwarf varieties, planter size, and pruning techniques you can control fruiting plants growth, footprint, and shading.

This may be a great time to practice Espaliering!


Parts of an Espalier
Apical tip
Lateral
Sub-lateral
Vertical Scaffold
Tier 3
Angle of Attachment (90°)
Tier 2
Horizontal Scaffold
Trunk
Tier 1
Graft Union
Soil line

Dual Root Zone Care

Flood and drain water level in gravel/clay medium only to within a couple of inches of upper medium, you may play with this dependent on the species you are growing. Based on growth rate and seasonal demand you may add nutrients to the upper medium such as Phosphorus and Potassium. These can be required at much higher levels during fruiting and growth periods than a typical aquaponic system can supply. Zinc and other nutrients can also be supplied via foliar treatments as needed.