

# Tree Architecture and Training

prepared by  
Craig Hornblow and John Wilton  
AgFirst

November 2006

## *Objectives*

To clarify tree architecture and training we need to be very clear on what we are trying to achieve. There are many systems, all with their own advantages and developed under differing economic constraints.

In Loop 1 several aims and goals were mentioned for intensification:

- Improved fruit quality: brix, colour, firmness
- Lower operating costs
- Simplification
- High consistent production
- Early production

Being very clear and prioritising these will help define the tree to best achieve the goal.

Previous discussion in loop 1 discussed density and its impact on early yield so now we need to focus on the other benefits.

Top performance in any field comes from doing the right thing and doing it consistently.

“Top performance comes from simple systems.” Tree architecture, pruning and training must be simple to achieve consistency in the task which in turn will achieve top results.

A simple tree structure allows all other tasks to be carried out and supervised easily.

Having a calm tree is the key to early production, regular and high yields and good fruit quality. This is achieved with little annual growth and therefore most of the trees energy is going to producing fruit not leaves and shoots. The objective may be the same the world over, but how we are achieve it can be very different.

Two very different examples of good performing systems are:

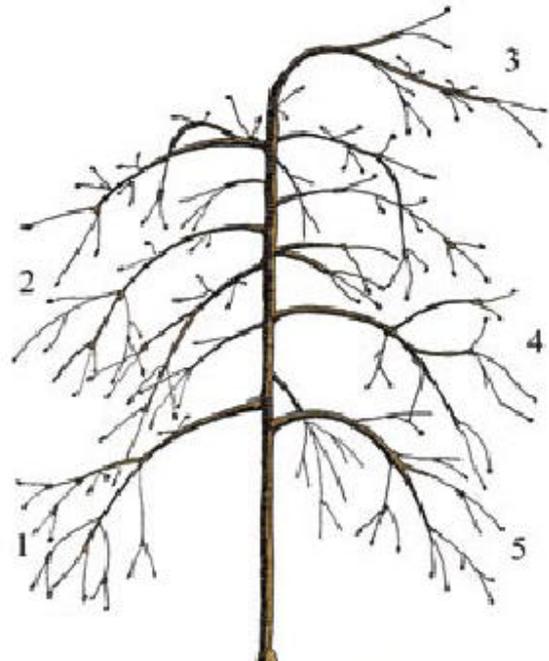
The tall spindle (Italian and recent plantings in NZ)

- Higher densities (2500 -3000)
- Many simple single lined branches,
- Calm tree achieved by minimal pruning and extensive tree training
- Light penetration managed by a narrow tree 600mm and windows in the top of the canopy not a hedge row.
- Tall tree for the row spacing to increase yield and lower the vigour of the upper tree.
- A very simple tree but the danger is letting the canopy become too dense.



The French Solaxe also adopted strongly in Chile

- Wider spacing's (1200 – 2000) Lower capital costs
- Combined with extinction pruning (spur pruning) to achieve good fruit size.
- Calm tree achieved by Minimal training and allowing the branches to fan out to fingers (each branch described as looking like human arm and hand.)
- Light penetration managed by keeping central chimney clear (i.e. summer pruning at the shoulder and between the base of the fingers.)
- Sometimes too many branches and these becoming umbrellas stacked on top of each other creating low light in the lower canopy.



There are many other systems we can discuss. The key is to define the best for each situation and then commit simple rules.