

## PRODUCING FLOWERING WOOD

### What is flowering wood?

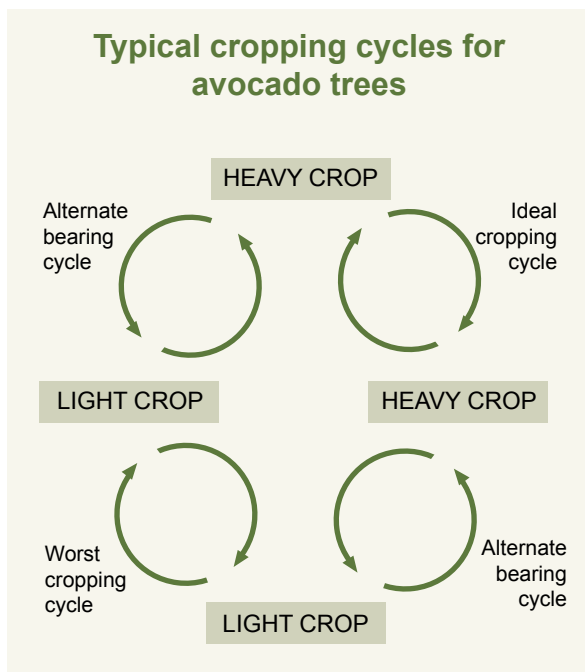
Vegetative shoots that flower and set fruit are termed flowering wood.

### Why is it important?

The quantity and quality of flowering wood on a tree determines how many flowers a tree has and therefore the potential crop a tree can set. A tree with large numbers of flowers usually sets a larger crop than a tree with few flowers.

### What is alternate bearing?

Alternate bearing is where trees alternate between a large crop in one year to a light crop in the following year. Sometimes the light crop can occur for two consecutive years. The diagram below illustrates the range of cropping cycles where a heavy crop each year is the ideal situation.

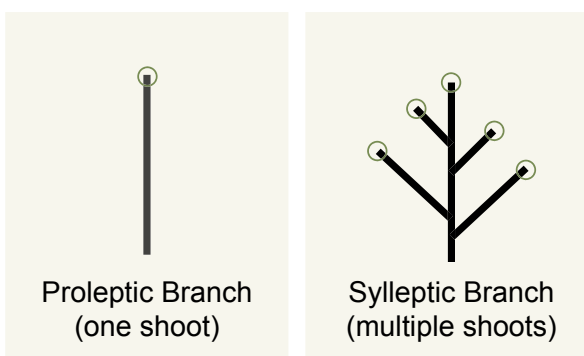


### How can the alternate bearing cycle be broken?

The alternate bearing cycle arises because there is only a small amount of flowering wood produced in the year of a heavy crop. Increasing the amount of flowering wood in a heavy cropping year should provide the potential to set a heavy crop the following year.

### What is the ideal flowering wood?

Best wood for flowering is the spring flush with lots of sylleptic growth that hardens off in January. Proleptic shoots have fewer axillary buds to form flowers. The shoots should be 10-15 mm in diameter, 300-400 mm long with many sylleptic shoots after the terminal bud push is completed. Leaves should be fully expanded and mature. Leaf B levels should be in the range of 30-40 ppm and leaf N content between 2.6% and 2.8%.



○ = Growing Point

### Key factors in producing flowering wood

Poor root function limits the ability of the tree to produce a shoot flush. Roots are affected by the soil condition, disease pressure, oxygen content of the soil and surface organic matter layer.

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**Key management activities are**  
(in order of importance):

**1) Avoid water stress**

- a. Irrigate according to need – at least once a week
- b. Mulch – maintain a layer of bulky wood material under each tree
- c. Shelter – prevent exposure to strong drying winds

**2) Maintain high nutrient levels**

- a. Nitrogen – apply extra with a heavy crop to stimulate a flush
- b. Potassium – essential for fruit growth and leaf function
- c. Magnesium – essential for strong photosynthetic activity
- d. Boron – important for developing flowers and fruit set, deficiency symptoms can be common
- e. Zinc – needed for fruit and healthy leaves

**3) Control Phytophthora well**

- a. Inject with phosphorous acid at the right time – if pressure is high a second injection may be needed

**4) Ensure high light levels all around the trees**

- a. Thinning – shading reduces the amount of new flush
- b. Spacing – crowded trees flush mostly at the top of the tree

**5) Minimise competition for carbohydrate**

- a. Harvesting strategy – get majority of fruit off early
- b. Leaf condition – apply foliar N and Mg in winter for maximum photosynthetic capability in spring
- c. Dominance effects – carbohydrate levels need to be high so that fruit do not dominate flowers and new shoot flushes



Above: Example of a strong fruiting branch. Note the bunches of fruit hanging in clusters below a strong vigorous shoot. This shoot has produced sufficient leaves to support the growth of the fruit below minimising competition effects.

