

## **PROPAGATING ROOTSTOCKS - STOOLING**

### **STOOLBEDS**

Stoolbeds are created to propagate new rootstock trees from by encouraging existing young trees to grow new branches which will develop roots that can then be removed and started as a new tree.

### **YEAR ONE**

#### **PREPARING BEDS**

Select an area where the ground gets plenty of sunlight, is well drained and is protected from the hot winds of summer. Ideally the beds need to be 750mm to a metre wide to make weeding and other activities workable.

The beds are dug over removing all the potential weed growth material possible so that the ground is just topsoil supplemented with suitable compost and fertiliser. We used bought in compost and added Nitrophoska Blue fertiliser.

#### **WEEDING**

Weeding has to be done by hand at regular intervals. Use of herbicide preparations such as Roundup® (Glyphosphate) must be avoided as its presence will effect the growth rate of the young trees at a later stage. Unfortunately this means that the weeding part of stoolbed growing becomes labour intensive.

#### **PLANTING**

Plant young rootstock trees four or five trees wide along the stoolbeds so that the tip of each tree when laying down will roughly reach the root area of the next tree along the bed. The trees are planted at a 45degree angle for their first year of establishing a root system.

#### **FUNGICIDE**

In early spring we spray the young mother trees with Bordeaux Mixture (fungicide) at the same time as spraying the general apple orchard as the buds swell.

#### **WATERING**

When there is insufficient rain, we water the beds with a low profile spray system using little spray nozzles screwed direct into 12mm polypipe used in dripper systems so that each spray nozzle is adjacent to the roots of the trees in the beds. Some growers fit fixed dripper tubing into the beds – but with this method it is difficult to control blockages in the tubing. With the adjustable spray nozzles you can determine where water is being sprayed by looking.

Through the summer we water each bed for an hour once a week – watering in the evening so that the foliage will not be wet when the sun hits the leaves the next day. If the leaves are allowed to become wet on summer days above 25deg C. the leaves will burn.

#### **WIND BREAKS**

It is essential to keep hot summer winds off the young tree growth. We have installed 180cm high fences on the north and west sides of the stool beds that are covered in brown shade cloth. The young trees need sunlight (not shade) so the shadecloth fences are installed 2metres away from the beds. We purposely use brown or black shadecloth as we have found that green shadecloth attracts the grasshoppers.

#### **FERTILISER**

Every 8 weeks the bed is fertilised with Nitrophosca® Blue granules until autumn comes and the leaves fall.

## **STRIPPING FIRST YEAR SHOOTS**

After the leaves fall (about the end of July in Australia) we prune the vertical standing shoots off the mother trees – the cut being about 5mm above the join – where new shoots will form next spring. They are discarded or put to use elsewhere in the garden as small stakes.

## **PEGGING DOWN**

The mother trees will at this stage will still be growing at an angle as they were planted. They should then be pegged down so that the trunk and any branches lay flat upon the ground. I prefer old rusty tent pegs – they hold in the ground better.

## **STOOLING - SUBSEQUENT YEARS**

### **CLEANING MOTHER TREES**

Any woodshavings overburden will have been removed in the harvesting of the young rootstocks and any pegging down maintained to keep the mother trees flat on the ground. Any residual mud, leaves or shavings are broomed and hosed off the dormant mother trees so that maximum sunlight can reach the mother trees when spring arrives.

### **WIND BREAKS**

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Avoid gaps in the shadecloth windbreak fence – where we lifted up the shadecloth to get access to a water tap, the hot wind was funnelled through the gap on the next hot day and it burnt off the leaves on adjacent young trees.

### **FUNGICIDE**

In early spring we spray the young mother trees with Bordeaux Mixture (fungicide) at the same time as spraying the general apple orchard as the buds swell.

### **INSECTICIDES**

The young shoots are likely to attract leaf eating insects like plant bugs, weevils or plague grasshoppers. You need to have suitable insecticide sprays in hand in case you have to use them at short notice to defend your young trees. If you are into organics, suitable insecticides can be both expensive and hard to get. I have not tried growing pyrethrum plant barriers around the stoolbeds – but I have thought about it.

### **FERTILISER**

The young trees are fertilised with Nitrophosca® Blue at the beginning of spring and then every two months until the middle of autumn.

### **WATERING**

When there is insufficient rain, we water the beds with a low profile spray system using little spray nozzles screwed direct into 12mm polypipe used in dripper systems so that each spray nozzle is adjacent to the roots of the trees in the beds. Some growers fit fixed dripper tubing into the beds – but with this method it is difficult to control blockages in the tubing. With the adjustable spray nozzles you can determine where water is being sprayed by looking. Through the summer we water each bed for an hour once a week – watering in the evening so that the foliage will not be wet when the sun hits the leaves the next day. If the leaves are

allowed to become wet on summer days above 25deg C. the leaves will burn.

### **WEEDING**

Weeding has to be done by hand at regular intervals. Use of herbicide preparations such as Roundup® (Glyphosphate) must be avoided as its presence will effect the growth rate of the young trees at a later stage. Unfortunately this means that the weeding part of stoolbed growing becomes labour intensive.

But as the woodshaving mounding of the bed increases into summer, the number of weeds will reduce with lack of available sunlight.

### **MOUNDING**

By the end of spring, many young shoots should have come up off the mother tree trunks and branches. This is the time to start mounding around the young shoots with wood shavings – leaving the leaves at the top to continue growing.

As the young shoots grow, more shavings are added each month until mid-autumn where the mounding will have built up to about 10cm thick and the young shoots should have reached 30cm or more.

The shavings kept the sunlight off the base of the young shoots which has encouraged them to grow roots into the shavings medium. At the same time the shavings will have discouraged further growth of weeds.

### **HARVEST**

By mid winter (about the end of July in Australia) the young rootstocks will shed their leaves and it is time to harvest rootstocks.

Remove the shavings gently to expose the young roots on the new rootstocks. Cut the rootstocks away about 5mm above the mother trunk and set aside the used shavings. The harvested rootstocks are then made into small bundles and placed back into dampened shavings awaiting shipment to customers. Where I am to hold the harvested rootstocks for more than a week or so, I heel them in in soft damp soil in our winter vegie garden and remove them gradually as the grafting process progresses into Springtime.

Where I have small stoolbeds, I by-pass the heeling in and harvest the rootstocks straight from the stoolbeds as I need them for grafting.

### **BUCKET PROPAGATION**

Start by planting a rootstock in the bottom of an old bucket (or large plant pot). Prune the top off the rootstock below the height of the bucket to encourage growth of side branches. At the end of spring there should be numerous side branches growing up out of the bucket and wood shavings are placed in the bucket to cover at least 5cm at the base of the side shoots. In mid winter when the leaves fall, each of the side branches should have roots and the rootstocks can be harvested by cutting them away below the roots.

By removing the shavings and cleaning up the remaining mother tree to allow the light in, it should be ready for another round of stooling style propagation in the next year.

Regular fertilising, weeding and watering should take place as for a stoolbed. To keep the bucket from overheating in summer, surround it with insulating material or sink the bucket into a garden bed.

### **WATERSHOOT PROPAGATION**

Rather than pruning young watershoots that develop at the base of your fruit trees, you can mound the watershoots like you would with potatoes using soft soil and mulch.

Another method is to place a bottomless pot containing potting mix or shavings over and at the base of the watershoots. A plant pot can easily heat up in summer and kill any young roots that develop on the watershoot, insulate the pot with soil or mulch around it.