TRIAL N ERROR ON MIAPPLE FARM – by Peter Cooke

ROOTSTOCKS.

MM111 – (Maling Merton developed in UK) is my first choice. The rootstock is more vigorous, I have a 95% graft success rate and a subsequent loss of about 5% in following years. The rootstock is drought tolerant and fairly disease resistant but I have found it does not like wet feet and won't survive in waterlogged soil.
I have experienced a reasonable recovery rate where trees on MM111 have been attacked by Australian weevils. The rootstock produces a tree about 3.5 metres high.

M26 – Being a dwarf rootstock trees produced are only about 2 metres high and are inherantly weaker with less resistance to disease and adverse environment. The general graft success rate is about 85% but only 50% of the grafts take on Triploids like Bramley Seedling half of the remainder break at the graft on a windy day. While there are some varieties (not triploids) that took the graft well and have continued to grow in pots for 8 years, I have abandoned the use of M26 because of the losses.

MM102 – This is a dwarf rootstock now more popular among orchardists who want to grow a smaller tree espalier style on to a wire fence-like frame. It has also been popular with city people who want a small tree a little over 2 metres high in their back yard. I have a 90% graft success rate with a subsequent loss of a further 5% in my potted tree stocks. Some customers (who I did not supply) tell me that their MM102 based trees grew well, fruited in 2 to 3 years and then died after further 3 or 4 years.
In my own orchard MM102 based trees died in the spring following a weevil attack the previous summer. Those that survived weevils have died after fruiting for a couple of years when faced with drought conditions despite watering to keep them alive.
There are no MM102 based trees left in my orchard

Northern Spy – I have 3 of these one within in my orchard – but have never used them as a rootstock because they produce a tree over 4 metres high.
One has been watered regularly with the rest of my orchard and I have had to prune it regularly to keep it below the netting line – but it has only produced one apple in 9 years.
Another has grown to full size outside my orchard never watered and has lived in the full force of the weather elements. It has survived but never produced an apple and rarely flowered.
The remaining tree also outside my orchard consists of a bunch of water shoots that arose from the roots after transplanting the tree that produced one apple. I rarely water the bunch of rootling shoots keeping them in case I want to develop a batch of Northern Spy rootstocks in the future.

MM793 – This was a variety used by the state Apple Research station near Upwey in Victoria It supposedly produces a tree about 3 metres tall. I have had a 90% grafting success rate with subsequent nursery losses of about 10%. The tree on this rootstock is a lot less vigorous than MM111 or MM102 in a potted tree environment. On the other hand when planted in a rootstock stooling bed it has far outgrown the other varieties. It is noteably resistant to Woolly Aphid and collar rot and I want to persevere with it to determine the resistance to sunburn and drought in our hot dry environment.

Granny Smith Seedling.

Grown from the pip of a Granny Smith apple. The rootstock you get is a cross between Granny Smith and who knows what.

A GS seedling will produce a full sized tree. I only have one tree on a GS rootstock and after it was attacked by weevils, the tree a Prima recovered and produced a bumper crop of apples the very next season. In the following season of drought the tree produced only a small number of apples and I believe that GS is not all that tollerent to drought. It is supposed to be a good rootstock for crab apples.

I have found the GS rootstock to have similar attributes to that of MM793 in a potted tree environment. I had a 90% grafting success rate with a following nursery loss of 15%. - keeping in mind that being a seedling, every GS rootstock will have a different set of genes only half of them orriginating from the GS.

M9 and M26 both produce dwarf apple trees for commercial use and are not suited to home growers.

Northern Spy, MM111 and MM793 are all supposed to be Woolly Aphis and Collar Rot resistant. I have my reservations on this subject as these rootstocks were developed for use in the milder climates of Europe.

In my own orchard where unprotected from the sun, I have noticed the occurrence of sunburn lesions on the west side of the MM111 rootstocks which have been folllowed by a collar rot like loss of bark at the base of the tree where the sun damaged bark has let disease get access under the bark.

Apple tree re-plant syndrome

occurs where a tree has died in your orchard and the replacement tree simply will not grow.

Experts suggest that a replacement tree must have a vigorous rootstock like Northern Spy or a pip grown rootstock like Granny Smith for a replacement tree to succeed. But the experts are referring to replanting experiments taking place in Europe or North America.

I have chosen to use MM111 for re-plants because of its vigour in early life and ability to withstand the Australian summer drought.

Re-plant trees on M26 and MM102 did not survive in my orchard.