

Trees for Life® news

The newsletter of Frank P Matthews Ltd.

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Air-Pots – the way forward

The root of the problem

Growing trees in pots is primarily for the convenience of the gardener rather than for the good of the tree. We are all aware of the spiralling root system which can prevent successful tree establishment by strangling and causing poor anchorage in later life.



How many trees must get planted like this?

There has also been an additional problem with stone fruit trees (peaches, nectarines, plums, damsons etc) where container grown tree losses have in some years been considerable. We know because we have the credit records to prove it!

The solution

Although you may not have noticed, all our stone fruit trees both 12L bush and 20L trained that have been delivered this past season have been grown in an Air-Pot, a revolutionary new pot. Just before delivery these trees were transferred into a conventional pot since the current cost of this pot is prohibitive unless it can be



Recently potted plum trees

re-used. We also needed to test that our theories would work before passing on this information.

In the past we have generally lost up to 20% of our stone fruit trees caused by what we believe to be damaged roots which attract secondary bacterial canker infection. These roots are damaged primarily because of excessive wet in the bottom of the pot during winter and because all the main root arteries are in a spiral on the very inside of the pot wall – unprotected and exposed to unnatural temperature fluctuations, frost damage included.

The good news is that by June we have had less than 0.5% reports of tree losses in plums, peaches and nectarines, the worst offenders.

This year we will be growing all our stone fruit in the Superroots Air-Pot once again and as before they will be delivered in conventional pots. Our aim for the 2004/2005 season, economics allowing, is to deliver these trees in the actual Air-Pot because we believe that there will be even further added benefit for these trees to continue their life in this pot in the garden centre. An additional benefit will be quicker and more successful establishment in the garden.

How the Air-Pot works

The unusual shape of the Air-Pot with inward and outward pointing cones provides a 'three dimensional root manipulation', which is what makes the Air-Pot such a successful 'air-pruning' system. There are no flat surfaces to deflect roots and start the spiralling process. The inward pointing cones direct the roots towards the hole in the outward pointing cones. When the air density in the soil is too great the apical cells in the root tip dehydrate, or are air-pruned. The response of the plant to this air pruning is to send out more roots to compensate for the loss, which leads to the build up of a dense and fibrous radial root system in a dramatically short time.



The dense fibrous root system on Juglans regia

On removal of an Air-Pot, unlike a standard container, there is little root activity to be seen, just a mass of root tips. But on brushing away the soil, one quickly sees how dense the root system is.

The other major advantage of the porosity of the Air-Pot is that air density in the potting mix remains far more constant than in standard containers, generating better conditions for bacterial activity, consequently increasing the amount of nutrient available. Plant vigour and health in general is therefore greater.



The plum root grown in an Air-Pot

The fact that the root activity is throughout the growing media – not at the container wall, as in other pots – has the added bonus of making Air-Pot stock much less vulnerable to extremes of cold and heat. Air-Pots have successfully countered many of the root problems growing north of the Arctic Circle and in the Tropics.

We would be keen to hear your thoughts on having this type of pot available in the garden centre.