

Vegetables Respond to a Kick in the Roots

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Stimulation of root branching of okra seedlings affects production.



With a variety of woody plants research results have consistently shown that seedlings produced in conventional round pots are taller and more spindly compared to seedlings produced in RootMaker[®] 60, 32 or 18 cell trays. The difference is the fact that as soon as a seed germinates and sends the primary root plunging downward, when it hits the bottom of a smooth pots it begins to circle. On the other hand, in the RootMaker[®] containers, the tip of the taproot is strategically guided to an opening at the bottom where it is air-root-pruned. With the dehydration / death of the tip of the primary root, promptly, secondary roots are produced along the primary root axis and all the way back to the base of the seed. The advantage of the additional root branching is slow to be expressed initially, but momentum builds as the plant matures.

To test this hypothesis, okra seeds were planted and allowed to grow to about 6 inch height in 60 cell RootMaker[®] propagation containers and in 72 cell conventional trays with round pots. The individual cell volume was the same in order to avoid a container volume bias.

At the 6 inch height, there was no difference between the two type containers. The seedlings were transplanted into three gallon RootMaker[®] containers on July 1. Container growth medium was ground pinebark, peat and sand in a 3-1-1 ration by volume, with nutrient amendments, Micromax[®] 1.5 lbs, dolomite 3 lbs and Osmocote[®] 17-7-12, 14 lbs per cubic yard. Watering was by overhead sprinklers as needed. The study was replicated 10 times for accuracy.

In Stillwater, OK, much of July and even early August was unusually cool relative to historical average temperatures. The result was that the okra grew at only a moderate pace until summer heat arrived in mid August. On August 26, all fruits at all stages were removed from the plants. On Sept. 4, numbers of fruits produced per plant were recorded. Average number of fruits from plants propagated in the 60 cell RootMaker[®] trays was 6.4, whereas from plants propagated in conventional round pots 4.0. This translates to a 60% increase in production of marketable fruit. Okra plants propagated in the 60 cell RootMaker[®] trays had larger stem diameter.