

DEVELOPMENT OF A PROPAGATION MEDIUM

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It was a boy of 16 that I was taught the first rudiments of what in those days were "up-to-date propagation methods". On looking back — recalling methods, media used, facilities available, lack of relative hygiene and, perhaps the greatest factor of all, what we now see and know was an amazingly limited knowledge of the art, I cannot but be surprised at the results we achieved. I would think that something like 25 to 30% of all cuttings made and processed eventually became rooted plants. Losses were rarely attributable to anything except collapse through the medium becoming too dry, too wet, or similar human or accidental factors.

Propagation was done in 5" clay pots filled with sand which had been sieved and then washed by swirling in a bucket until the finer sediment was suspended in the water and poured off. I was told this was a slight variation to the system and methods well tried and proven in England over a great many years.

Many years later (immediately after the war) I faced the problems of plant propagation and production myself and had the forces of necessity as a master. A small leaky lean-to homemade "Heath Robinson" glasshouse, a wooden barrow with an iron wheel, a shovel, a knife and a "hope" and off we go. Many of us did just that, a few survived and are still with us. Perhaps five years of this "hit and miss" activity, hard work and an income that enabled me to live and pay my way had passed before I started to really wonder concerning progress. Talk among nurserymen in those days was concerned with what we were becoming increasingly conscious of — that of propagation hygiene and media. All manner of materials were then being tried as propagating media. I recall various sands, coarse clay, sand mixes, fine sand, coarse sand, then more daring leaf mould concoctions, sawdust, and all possible mixes — each carefully prepared and tried. Someone thought of pumice, and the soap works in Wanganui were soon doing a great trade in sacks of graded pumice, as this proved the best to date. Then also came vermiculite, etc., and so it went on.

I recall my efforts included silica sand from Taupo. This mixed with pumice, then coarse sand from roadside drains. This was reasonably coarse, sharp and gave a surprising measure of results with some subjects. Thus it went on. We were all after that elusive medium that would mean increased production and higher profits.

I think the first real clues that led me to my answer came from that roadside silty sand. I investigated crusher plants and eventually found a heap of sharp, clean sand. We were, at this time, being fed information on new discoveries and findings from various sources, such as Massey College, and from odd pieces of literature and, from what I had learned, this particular sand looked good.

However tests were necessary; thus I started trials — all carefully recorded — with this particular sand. Neat sand, sand/sawdust (another brain wave from heaven knows where), sand/pumice and several other mixes. My clean sand and sand/pumice mixes gave startling improvements but for a reason now forgotten I chose sand/pumice, possibly because pumice had been an earlier improvement.

For a few years only, the sand/pumice rooting medium held our attention and increasing numbers of plants were being produced. However several lines just would not do as I wished and neat sand gave me better results here; also pumice supplies became difficult. My dream was for a satisfactory medium that would suit everything and thus give us simplicity with economy. It gradually became obvious that improvements occurred in more open or loose friable mixes. (The old practice — taught me as a boy — was to have the medium very firm.)

I might also add that during all this period other forms of testing, such as rooting hormones, timing of cutting selection, bottom heat and misting were being put through their paces. Thus we slowly progressed.

Peat gradually became available and more understood and its importance more recognised. Someone mentioned possibilities of using peat in propagation of some lines. As if hit by a bomb I suddenly realised the possibilities of this peat as a means of keeping my sand in an open friable condition. After many tests I concluded that best results came from approximately $\frac{3}{4}$ good clean sand and $\frac{1}{4}$ peat. At present I am using New Zealand peat but hope to try imported peat in order to overcome the “packing” which sometimes occurs in our warm conditions under mist.

I trust that my method of giving this story leading up to what I have found to be a very satisfactory propagating medium gives you something to think about and perhaps gives you a few clues from which to make even just one more minor improvement in your own system. I am sure that clean crusher sand, with grit up to about $\frac{1}{4}$ ” diameter, must be available from many sources if you are interested, and clean peat should be readily available. There are many factors that combine to give success in propagation, but do not overlook the medium you use and how to use it.