Senna sturtii (syn. *S. artemisioides* subsp. *sturtii*)	Chip + Hot H_2O	74	82
Senna helmsii (syn. *S. artemisioides* subsp. *helmsii*)	Chip + Hot H_2O	68	72
Senna pleurocarpa	Chip + H_2O @ 40°C	94	32
Solanum sturtianum	Fire over punnet	0	0
Trachymene glaucifolia	No treatment	0**	0
Trachymene villosa	No treatment	0**	0
Trichodesma zeylanicum	No treatment	10	14
Triodia spp.	No treatment	0**	0
Vigna lanceolata	Hot H_2O	90	NA

*Viability tested (cut test method).
**Above 80% viable.

Fifty Years of Change in the Nursery Industry©

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On 13 January1956 I started work. I was employed by the Master Gardener, Mr. Paul Sorensen, of Sorensen's Nursery in Leura as an apprentice for 5 years on a handshake and stayed for 14 years. During this time I did the Horticultural Certificate course at Ultimo in Sydney, now the Ryde School of Horticulture. I had no inkling then of the roller coaster ride I would have through horticulture up to the present day.

When I started my career, propagation was mainly hardwood cuttings under constant misting, using brass nozzles, outside under the shade of some high canopy trees. When the misting was left on in the winter there were times of the mist freezing and some quite spectacular displays created. The cuttings were stuck in community terracotta pots using a sand and peat mixture as the medium. Results were never very encouraging.

At this stage cold frames were built which consisted of a frame base of 16 ft long and 8 ft wide with a height of 18 inches. This was constructed of hardwood timber. The frame was covered with 8 ft × 4 ft-sash windows glazed with horticultural glass. In an effort to control the internal temperature, the frames were closed at night and opened to various levels during the day depending upon the weather. The unique thing about these frames was that they had a sloping side on one long side of the frame. The angle was 30° with the sheeting material being galvanised iron painted with silver paint for heat reflection. These frames were positioned in place, side facing true north, and they were sited in place with a compass.

Propagation was still hardwood cuttings, e.g., *Philadelphus, Deutzia, Kolkwitzia,* and *Berberis*. *Wisteria* cuttings were often bundled and held bottom end up until callus formed. These were then planted with often a good strike rate being achieved.

Propagation sand was coming out of the Nepean River. When a new source became available, washed quarry sand from Clarence, results improved markedly. I suspect that the river sand even in those times was infected with pathogens, nematodes, etc. German peat was coming out to Australia as deck cargo. This varied in quality depending upon the position it came from in the stacks. Coke breeze fines was also trialed, but it had to be aged because of the gas residue that could still be present.

Another method for propagation was being used. Again 16 ft × 8 ft hardwood frames with glass sashes but only 4 ft wide and with bottom heat. The bottom heat came from compost heaps. The heaps were comprised of layers of fowl offal and feathers that were collected daily from the killing houses around the Mountains. The material was levelled out in layers and covered with pine sawdust. We were the first nursery anywhere to have composted sawdust! The heaps would be 20 ft wide and built up to 4 ft high. After a couple of months a section would be turned by hand, exposing the heat from the centre. A frame would be moved on top of this section and the pots of cuttings placed inside. The actual pots would be buried into the heap. Temperature was controlled by the amount of opening of the frames and the application of water to reduce excessive heat but not kill all the heat in the heap. As a result of this method strike rate improved and we were able to propagate a wider range of plants, eg., *Photinia, Rhododendron, Kalmia,* Mollis azalea, and *Magnolia.* Magnolias were always a problem. Cuttings taken from stock trees grown at Leura in the Blue Mountains were unsuccessful. The problem was eventually overcome by purchasing stock trees that were grown in the Dandenongs, indicating that there was something different in the plant structure when grown on red soil rather than the ironstone soils of Leura. This program worked well but labour input was high.

As the nursery expanded dedicated stock display houses were constructed. The glasshouse became vacant and was refurbished as a dedicated propagation facility. The benches were constructed with corrugated asbestos sheeting and a layer of coke was placed on them for drainage and appearance. An oil-fired boiler was installed for hot water heating. This was excellent for raising the temperature of the building but the cutting pots were still cold. As a result of this observation part of one bench was replaced with steel sheeting and a shade cloth curtain installed at the front to force the heat upwards. This proved successful and a wider range of plants could now be propagated, e.g., *Acer palmatum* cultivars, *Prunus* taxa, a wider range of rhododendrons. Mollis azaleas were taken as soft-tip cuttings and struck in fresh sphagnum moss. Trials were also undertaken with a weekly foliar spray of honey.

Other taxa grown included *Erica, Calluna,* 32 taxa of *Osmanthus,* and many conifers. Production of many trees was from seed, e.g., *Abies, Picea, Larix, Prunus, Fagus,* and *Acer.* The seed was sourced from all over the world, including Germany, Denmark, and other parts of Europe. *Fagus* always had a low germination rate, so far more seed was ordered and sown than required. One season we got it right and every seed germinated. Seed was sown in shallow wooden boxes. Mycorrhizae was collected from under the species tree and mixed with the seed-raising media. Often seed boxes were placed under the species trees. Large numbers of *Cedrus deodara* and *Picea abies* (syn. *P. excelsa*) were grown for understock for grafting. Grafting took place in the first 2 weeks of August. Side-veneer grafts were made which were wrapped in sphagnum moss. The plants were moved onto a bench some 4 weeks prior to grafting, given extra water and foliar feeds with Maxicrop to promote sap movement. The bench was under shade cloth.

In earlier times all plants were grown in terracotta pots. After terracotta came various attempts at metal containers, then plastic bags, and as plastic technology improved, plastic pots. The range of sizes, shapes, and colours is vast today compared to the limited range in the early days. *Fagus* and *A. palmatum* were also used as rootstocks for grafting. These were grafted in the first 2 weeks of January as an approach graft. When the stock trees used for scion material grew a modification of the system was developed. This involved making stands with a ring to hold a 6-inch pot with two legs. These were made of steel rods and welded. The height of the stands was anything up to 6 ft. These were stood around the scion stock tree and the understock, in its pot, was taken to the scion for the approach graft. The grafts would be left for 4 to 8 weeks before cutting from the scion stock tree.

The containers used were those that could be obtained in any number and included 7-lb prune tins and honey tins (square tins also commonly used for kerosene). A wet-weather job was opening the tins ready for use. The tops were taken out using many different methods and drainage holes put in. The kerosene tin was often cut in half to give squat containers for rhododendrons, azaleas, kalmias, and even young weeping maples on short standards.

Potting mix consisted of soil, the soil had to be virgin soil from the bush and only the top soil to one-spades depth, the compost previously mentioned, and washed quarry sand. The fertiliser was a blend of hoof and horn, bone meal, superphosphate, and sulfate of potash with our own mixture of trace elements, which promoted vigorous growth in our plants. Compare this to today where there are so many preblended and slow-release fertilisers available. The soil mix was laid out on a concrete floor and the ingredients were placed in layers. This was then forked over, turned twice using a shovel, and then sieved. Now a days, just a phone call and the delivery comes already mixed. Labels were started as paddle or pop sticks or aluminium tie-on labels, which were written on with something pointed — like a biro — using a soft backing like cardboard. Compare this to the labels of today with so much information on them. Haven't we advanced a long way! There were no pre-emergence weed killers, so weed control was of prime importance using power kerosene (used in tractors as fuel prior to diesel) for spraying weeds along pathways.

SUMMARY

Today you only have to be an "organiser" because there are tube growers that produce stock for growing on, potting mix suppliers, fertiliser companies with all the information, label companies, etc. You don't even have to sell your own plants — there are wholesale agents with salespersons working on commission. Things have come along way in the last 50 years, from every nursery having their own propagation houses, mixing their own potting media, and relying on in-house sales.