

action or perhaps the N.Z. Apple and Pear Marketing Board could use some of its Levy Fund and cooperate with these other groups, and perhaps the government would subsidize a concerned effort from the combined forces of horticulture.

It will be necessary to consider some of the existing organisations that may be prepared to undertake propagation studies:

Nursery Research Institute at Massey

Ministry of Works Propagation Unit at Aokoutere

Forest Research Institute at Wakarewarewa

Plant Physiology Division at Palmerston North (research only)

Plant Propagators Ltd. (private firm at Havelock North)

Levin Horticulture Research Division

Each of these entries could undertake research in propagation methods and some could take the process a stage further and produce commercial quantities of plants on a cost basis. Once the methods of propagation had been developed, it would probably be necessary for private specialists to apply them commercially. It may be necessary for the combined nursery trade to support one such firm and regularly place contracts for the rapid bulking up of new introductions. Once established the specialists could also accept contracts from people outside the nursery trade, e.g. government research units, plant breeders and private individuals (e.g. a grower with a new red sport).

We desperately need this sort of fast bulking up service.

PEAT AS A PROPAGATING MEDIUM IN NEW ZEALAND

D.S. ANDERSON

*Smith Soil Industries Limited
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Smith Soil Industries of Auckland, New Zealand, began trading as E.R. Smith Ltd. in 1960. It was then an owner-operated business involved mostly with the supply of various grades of metal to the building industry, and screened topsoil to the horticultural trade. The Company operated from a quarry at Mangere.

The move into the topsoil business was the first step towards forging links with the horticultural trade and with the forming of N.Z. Peat Ltd., a wholly owned subsidiary company, whose purpose it was to mine peat at Ngatea on the Hauraki Plains. Following this the step to blending mixes of a U.C. type became apparent.

Using the Hauraki peat and mixing with a suitable grade

pumice sand, dredged from the Waikato river at Tuakau the company, which had now changed its name to Smith Soil Industries, began supplying mixes blended to each customer's requirements.

The use of slow-release nutrients became apparent and, with the addition of slow-release trace elements, container plant production expanded dramatically. While originally many mixes were steamed for hygiene reasons, the addition of Terazole was instrumental in largely eliminating the steaming of nursery growing mixes. Cost was another major factor.

During 1972 Ceramco acquired a 50% shareholding in Smiths and development of the sphagnum rich South Island peat deposits seemed likely. Meanwhile in Auckland the many slight variations of growers' mixes had been evaluated carefully and six standard mixes prepared. These were:

1. A 9 month controlled-release mix for trees and shrubs
2. A steam sterilized seed-raising mix
3. An acid tree and shrub growing mix
4. A 3 month controlled release mix for vegetable and seedling growers
5. A protea mix
6. An orchid mix

These 6 broad categories of mixes enabled Smiths' to have available more or less immediately a growing mix to suit any requirement, and facilitated streamlining of production at the plant.

The company will still blend mixes to individual specification if requested. The using of U.C. type mixes opened the door for some mechanization of the industry — in particular the "potting up" operation and here Smiths' were involved with the Javo potting machine from Holland. This machine enabled many nurseries to boost production and indeed today there are some 32 machines operated in New Zealand. Other machinery followed — all connected in some way with the horticultural trade.

The Baggaley Liquid Feeding Unit, a fully automatic and self adjusting proportioner imported from England followed as well as Olimex machinery from Holland. This range is used by the cut flower trade for deleafing, trimming, sorting, tying and wrapping of flower blooms.

Currently under evaluation is the Dyna Fog chemical insect control sprayer — common in use overseas and now about to be introduced to New Zealand.

During 1976 Ceramco acquired 100% holding of Smith Soil Industries, and development of the privately owned Southland

swamps began in earnest. With the trade name of "Kiwi Peat" (derived from a rare moss called *Sphagnum cristatum*), this Southland peat is light and fibrous with an outstanding capacity for high air and moisture retention, and is ideally suited for horticultural use. "Kiwi Peat" is now being extensively used by leading nurseries throughout New Zealand with particular emphasis toward propagation use. Export potential of the peat is also realized and some export orders have also been filled.

At Ngatea, on the Hauraki Plains, peat is mined from the Porarua dome and is a sphagnum peat but of lower quality than the southland "Kiwi Peat". After the removal of the top cover of vegetation the peat is tined and tilled over the dry summer months and forage harvested and stockpiled for supply during the wet months when access onto the peatlands is impossible. Due to local body problems, mining is restricted but at present Smiths' have adequate resources for the immediate future and mining applications in hand to last some 20 years.

Further peat crown land available for horticulture industries and trade in general will probably come from Kopuatai dome, an area to the south of the present site; however, conservation and flooding studies have to be done to evaluate long term effect in this area.

Smith Soil Industries now employ some 21 people in the North Island and 30 in the South Island. Although still a relatively small company, we are very confident about the future of our industry within New Zealand today and look forward with enquiring minds to the future developments of horticulture in New Zealand.

THE USE OF BARK IN POTTING MIXES

ANDREW D. MALOY

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Two years ago, due to the shortage of peat, we started to look for other materials that we could use as a substitute. Eighteen months ago we started supplementing the peat component in our mix with granulated pine bark. Initial trials were satisfactory and for the past nine months our container mix has been made up of 75% granulated pine bark, 25% pumice.

The mix that we pot our rooted cuttings and seedlings into has 25% peat, 25% bark, 50% pumice. This is because the particle size of the bark is too coarse for the young plants. The source of the bark is *Pinus radiata* from the Thames area and is