

# THE USE OF FRESH PINE SAWDUST AS A BASE FOR INDOOR PLANT POTTING MIXES

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The potting mix currently in use at Kasteel's Nursery is the result of several years development. I intend in this paper to outline some of the more interesting facets of this development process.

About six years ago we used two basic potting mixes. The first, a peat, sand, perlite mix, was used for all plants up to 6" pot size. The second, a mixture of soil, ash, cow manure and wood shavings, was bought premixed and delivered by the truckload and used for all plants in 8 in. or larger containers.

The decision to look for another potting mix was made when the price of German peat moss was rising almost every day and it seemed reasonable at the time to use one mix for all container sizes.

On the strength of a free sample which looked and felt good, a proprietary mix based on composted hardwood sawdust and coarse sand was tried. By the time we were using the third truckload the first batch of plants had stopped growing and developed severe yellowing of the upper leaves and tips. Although I was able to correct the problem by liquid feeding with iron chelates and a high nitrogen formulation, we were not very happy.

The next mixes came from a different supplier who included milled pine bark in his mix. Very similar results were obtained and corrected the same way. I was able to prevent this from then on by delivering a special brew of fertilizer to the supplier who included this in each mix made for Kasteel's Nursery.

Although this procedure worked there were still some difficulties. One of these was the problem of waterlogging which became apparent after some time in the pot. A terrible odor was usually associated with the waterlogging. It seemed that the composting process was continuing in the pot causing very fine particles of sawdust to block the drainage and allowing the growth of evil smelling anaerobic bacteria.

This was partly solved by addition of rice husks to open up the mix. However the supplier refused to mix them through, saying they were too messy, so this extra mixing had to be done at the nursery.

Four years ago I attended a horticultural refresher course at Gatton Agricultural College and was interested to see them using raw sawdust in a mix. At that time I spoke to other nursery people who had tried using hardwood sawdust in potting mixes. I discovered that they all complained of similar problems, whether the sawdust was fresh or composted.

I put down some trials using a mixture of fresh hardwood sawdust, river sand, and rice husks plus what I hoped was a balanced fertiliser mix. Growth and vigour of the plants in the trial was equal to or better than the controls in our composted sawdust mixes from the same supplier.

One mix delivered seemed to have a more granular appearance and larger particle size than previously supplied. We found that the supplier had accidentally prepared this using fresh pine instead of fresh hardwood sawdust. Since then fresh pine sawdust has been used in all mixes for two reasons: firstly, although we had never had any trouble due to toxicity from phenolic compounds in hardwood sawdust, by using pine sawdust this possibility could be avoided. Secondly, the larger particle size seemed to give a better "feel" to the mix.

For the past two years all mixes have been made on the nursery premises from raw material stockpiles. Sandy loam has taken the place of coarse sand to provide better water retention during summer.

The present mix which has now been unchanged for 18 months seems to have met the initial requirements of: (a) low cost, (b) ready availability, (c) suitability for all plants grown by this nursery, regardless of size.

#### *Pine mix A:*

*Physical components: (25 cubic yards).*

56% fresh pine sawdust. (15 buckets on front-end loader)

22% sandy loam. (6 loader buckets)

22% rice husks. (3 bales)

*Chemical nutrient components: for 25 cubic yards.*

75 kg. Nutricote

8 kg. urea

50 kg. dolomite lime

2.5 kg. manganese sulfate

25 kg. Mo-super

1.0 kg. zinc sulfate

10 kg. potassium nitrate

400g copper sulfate

12 kg. iron sulfate

320g borax

In the past 12 months Kasteel's Nursery has used approximately 800 cubic yards of this mix, which we have called Pine Mix A.

Each new batch is tested for pH and salinity. The pH is usually between 5.7 and 6.0 while the salinity is generally about 2,500 ppm total salts. This level of total soluble salts

