

## HERBS: COMMERCIAL PRODUCTION IN CONTAINERS

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*Jost Greenhouses  
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Jost Greenhouses are located in a very-affluent, residential section of St. Louis County. Needless to say, the business is as welcome as a boil.

Our growing area consists of 22,000 sq ft of very old glass greenhouses plus about  $\frac{3}{4}$  acre of cold frames. The basic business concerns itself with the wholesale production of perennials, herbs, and assorted ground covers.

The production of containerized herbs has been sort of like "Topsy"—it just grew year after year. Now, after seven years of production we are up to approximately 350,000 3-in. pots, plus some few hundred quarts and gallons.

Our herb houses are all benched with a bio-therm type heating system. Some of the houses are also equipped with rolling benches, thus making greater use of existing area.

All of the herbs, whether culinary or aromatic, are sold with tags that supply minimal cultural information. Some tags have pictures.

Stock pots are always tagged in that many of the rosemary's, as well as other plants, take on a different look when almost constantly cropped for cuttings. To avoid confusion, tagging is an absolute must.

Some plants such as the bay tree offer questionable profitability in anything other than small pot sizes. They just take too long to grow. French tarragon is possibly an exception to the previous statement in that we can never grow enough in any pot size.

Lavender and rosemary can be sold in almost any pot size from 3 in. up to 2 gal. patio plants with good return.

Our regular 3-in. pot fits a 3-in. Kord tray that holds 28 individual pots. We do not sell mixed flats. At one time, we did with a 20% mixing charge which proved to be a real pain.

Some of our cuttings like the tri-color sage are propagated in a 128 cavity tray using Redi-Earth as the rooting medium. Using 75° F soil temperature and manual misting about three times a day, we are able to root these soft tips in about ten days. They are then potted to 3-in. pots using a very open mix from Fisons and are ready for sale 25 to 28 days from cutting date. Some plants like lettuce leaf basil are even faster.

Thyme, and it really doesn't differ much with the species or cultivar, is slow. We stick multiple cuttings and cut back severely after rooting. It probably takes close to two months to produce a heavy 3-in. pot.

Decoration pots with plants such as the Puerto Rican oregano are placed around our home gardens so that our clients might have a better idea of what finished herbs look like and how to use them.

Scented geraniums, while not really herbs, are sold as aromatics. We only grow about ten selections but we always sell out, particularly of apple, nutmeg and old rose.

Our watering is all done by hand in that most herbs are extremely sensitive to “wet feet”. Watering is always a judgement call—generally we say if it needs water today—wait until tomorrow.

We consider six major cultural considerations of extreme importance in growing containerized herbs and these are as follows:

- 1) They all, both culinary and aromatic, need to be pest and pesticide free. Insects and diseases are not tolerated by the trade. For a minor crop as herbs, no pesticide manufacturer will risk the litigation potential of labeling their products for these plants.
- 2) Most, not all, are very prone to root rots, induced physiologically by overwatering, or pathologically by overwatering, thereby setting up an environment that is favorable to the proliferation of the various root pathogens.
- 3) Herbs need warm soils to prosper and really grow—balancing a temperature and a moisture regime is tenuous.
- 4) Herbs require high light, most particularly those of Mediterranean origin, as are a lot of the culinary selections.
- 5) Seed viability. Good seed that offers high germination percentages, seedling vigor, and is really true to name is quite hard to find. Very few hybrids are available so most of the open-pollinated material is, at best, variable.
- 6) Low fertilizer requirements seem to be in order for most herbs that we grow. Peters 9-45-15 is about the best we have found to date. Thank goodness our product is not benched long enough to have real fertilizer needs. Stock plants are usually treated with a single application of Osmocote (R) 13-13-13.

High intensity sodium vapor lamps have proven to be a real help to us particularly where we are doing an accelerated tip cutting program. St. Louis has its dark winter days too, so from December 15th to almost April 1st, we supplement with 18 hours of light per day. The fixtures are expensive to buy and install but very inexpensive to operate. We figure that we have paid for them in two years just by enhancing our basil and tarragon production.

Some stock pots are carried over the benches as a means of saving bench area for production pots.

Inexpensive 20-in. box fans (\$17.99 at Ace Hardware) have all but solved our *Botrytis* and foliar *Rhizoctonia* problems. In bad years, prior to the acquisition of the fans and instituting a program

of horizontal air flow, we on occasion dumped as many as 1200 to 1600 flats of basil and sweet marjoram.

We grow about 46 different species of herbs and probably too many cultivars but the 12 best selling ones for us in St. Louis are:

Basil—6 selections, lettuce leaf the best  
Parsley—2 selections, Italian flat is the most flavorful  
Marjoram  
Oregano—2 selections, Greek and Mexican sell equally well  
Thyme—4 selections, all are good but lemon probably best  
Chives—2 selections, grass outsells garlic  
Rosemary—3 selections, but we have 8, all are good  
Tarragon, French—only one but we never have enough  
Lovage—just one but it sells well  
Coriander (cilantro) the yuppie herb—sells like mad  
Dill—dill bouquet—the shorter one is best for us  
Lavender—3 selections—English outsells the French

Questions always come up as to what is easy or hard to grow and we always have to say that our site, under our conditions, using the techniques that work well for us, we can say that:

Easy to grow herbs are.

Parsley	Culinary sage
Chives	Pineapple sage
Mints	Lemon verbena

More difficult subjects are:

Basil	Dittany
Lavender	Golden sage
Tarragon	Curry plant

Some differentiation need be made between propagating and growing-on. Sixty percent of production is from seed with the remaining 40% from cuttings. A good numbers of our herbs are produced from cuttings since it assures us reproducibility of a pretty exacting nature and, in the case of French tarragon, and some of the scented geraniums where no seed is set, it is the only way we can increase our number of plants. Generally we produce the following herbs from cuttings:

Basil (tips)	Tarragon (roots & tips)
Marjoram (tips)	Lavender (tips)
Oregano (tips)	Mints (roots & tips)
Thyme (tips)	Pineapple sage (tips)
Rosemary (tips)	Scented geraniums (stem)

In many ways, because of some unusual needs, herbs are a real pain. However, they offer a great deal of product flexibility and allow a grower to get in or out of a crop cycle in a very short expanse of time.

For the last five years, we have increased our thru-put at 15% per year. We now have no more dedicated square footage to use unless we decrease the amount of space allocated to ground cover plants.

Nothing on the place makes us as much money as herbs. So that is why we grow them. The average 3-in. pot in three rotations at our wholesale prices produces \$46.24 per square foot of bench space.