

Warm Climate Production Guidelines for Herbs

Rick Schoellhorn

Herbs offer most growers a huge opportunity to make some extra money. They can be used in any of the same ways that ornamentals can be used and (theoretically) you can eat them as well, but when growers move into the herb market there are a few things to consider in the way of production issues and, as usual, a lot of cultivar selections which make a big difference in the greenhouse and in the retail to landscape markets depending on which part of the country you live in.

Production issues:

Most growers mix their herbs in with their bedding plants and grow them under the same conditions, which implies that you are only growing these herbs for ornamental use. The question becomes: Are you growing edible or ornamental herbs? Semantics? I think you should consider the question carefully, because if you are growing edible herbs, you will need to be using different pesticides than you would with your ornamental crops (and there are not a lot of chemicals labeled for edible herbs production). Herbs fall somewhere in the gray area between ornamental crops and vegetables, currently they are a little bit of red headed step child, as the labels of chemicals of either group of crops do not usually mention any herb crops. So, to be both moral and profitable you'll need to check with experts and see what is labeled for these crops. A good reference is the article by Dr. Jamie Gibson listed under the resources portion of the article.

Want to grow organic herbs? It is a great niche, but you need to view what is required to get organic certification for your crops.

For organic certification you will also need to use different fertilizers and manage the crop entirely separate from any ornamentals. Check out the publications from ATTRA (Appropriate Technology Transfer for Rural Areas), an organization funded by the US Department of Agriculture, their organic herb production publication is a great overview.

<http://attra.ncat.org/attra-pub/PDF/om-herb.pdf>

Marketing Issues

Producing and controlling a 4" crop of herbs is challenging, sales can be unpredictable, and overgrown pots difficult to move. Gallons of most herbs are too large for consumers to rationalize buying a full compliment of herbs, so how can you maximize on this high dollar market? The market is moving to the herbal mixed container, and here's where you can really value add your crops. Decorative



containers, window boxes, and hanging baskets with a compliment of the more common herbs are hot items right now; even apartment dwellers can be potential customers when they can get an instant kitchen garden. You will need to speak with your suppliers and make selections of cultivars with compatible growth habits, and avoid large forms. I have never seen a good looking hanging basket of dill, doesn't mean it can't be done, but the point is to look for the plants with a growth habit that will look good and last in mixed or specialty containers.

Vegetative or seed? It gets a bit confusing as to which herbs grow from seed and which to grow vegetatively. Here's a short breakdown.

Vegetative propagation of certain herbs is recommended for a variety of reasons. Seed produced forms may vary too much in flavor and habit to get reliable quality, many of the variegated or foliage interest types do not come true from seed, and some herbs are a bit tricky to propagate so buying in your liners may be the best bet.

Examples of herbs produced from cuttings would be Lavenders, Rosemary, Tarragon, certain basil cultivars, Marjoram, Oregano, Mint, Sage, and Thyme.

Herbs easily produced from seed include: Chives, Cilantro, Dill, Fennel, Parsley, and some of the hybrid basil. You'll need to make decisions based on your operation, propagation facilities and scheduling requirements.

Types of Herbs:



photo by Rick Schoellhorn

Basil (*Ocimum basilicum* & hybrids) – There are lots and lots of cultivars produced both vegetatively

and by seed. How do you select which is right for you? Most growers look for the dwarf forms of basil as they have a better pack & 4" habit, but some of the larger forms are really nice as well. There are some new cultivars with colorful flowers on the market so that the herb and ornamental crossover of these crops is really nice. I mean just because you are going to eat them doesn't mean they can't be good looking as well. Other forms to look for: Two highly flowered cvs. are available, *Ocimum basilicum* 'Magic Mountain' and *Ocimum* 'Kasar'— large, salvia-like spikes of pink to violet flowers and good flavor.



photo by Rick Schoellhorn

Purple Ruffles is an older cultivar that has purple ruffled foliage, newer improved purple forms are less disease (*Fusarium*) prone and may do better

for you in production. *Ocimum* x 'Spicy Globe' and other similar cultivars have a clove/cinnamon taste and a compact habit. 'African Blue' is larger cultivar with green leaves splotted purple and pale blue-white flowers.

Cilantro or Culantro– These are totally different plants with very different growth habits, but both have the soapy taste of Cilantro. If you are growing Cilantro (*Coriandrum sativum*), by the way it is the same herb as Coriander – Coriander is the seed, Cilantro is the foliage; you'll need cool, bright light conditions. This herb has a habit of bolting when under any stress at all, heat, drought, insect pressure, etc. Cilantro is very fast growing, so cut back on fertilizer when plants are 2-2.5" in diameter to keep plants from outgrowing their pots and to reduce stretch. As with most seed produced herbs, it is best to seed multiple seed per cell so that you get a fast, full pot that will be ready to sell as soon as possible. Culantro (*Eryngium foetidum*) is a much slower crop with fewer hassles, but it is also not as well known and may be a bit tougher sell without some effort. Foliage has a stronger flavor, but it used in most Caribbean cooking, as Cilantro prefers cooler climates.

Dill (*Anethum graveolens*), Fennel (*Foeniculum vulgare*) & Parsley (*Petroselinum crispum*)–

These are all closely related genera with similar preferred conditions in production.

Cool temperatures and bright light are



photo by Rick Schoellhorn

essential to good production. All are quick crops from seed, or can be purchased as liners to make them a 2-3 week turnover crop. Again, for 4" production be sure to cut back on fertilizer when plants are 2-3" in diameter so that they don't outgrow their containers.

Lavender – Lavender is a Mediterranean crop, meaning it prefers low humidity, good air circulation, and lower water levels to do its best. There is a proliferation of new lavender hybrids on the market and in general you want to avoid afternoon watering of lavender as most of the disease issues arise from water on the foliage for extended periods. The English & French lavenders are the connoisseur's choice for fragrance. Spanish lavenders (*Lavandula stoechas*) have

colored petals arising from each spike like rabbit's ears and good tough garden or container crops. For southern growers most lavender will suffer in the summer, so the



best options for southern growers include Fernleaf, French and Sweet Lavenders. Note: Lavender does better with a slightly higher pH than most other herbs 6.5-7.5 is best, so check your media frequently when growing this crop as overly acidic soils lead to problems. Other forms to look for: *Lavandula dentata* – good for northern and western climates, performs poorly in heat and humidity. Madeira series (*Lavandula stoechas*) is a new series from Bodger Botanicals.

Mint – Again, what do you want to grow, there are many flavors, growth habits,

variegated foliage, burgundy toned foliage, upright, and creeping forms. Mint (*Mentha* species) is usually a very vigorous crop, so 4" production is difficult because the plants grow in so quickly that they have a short sales window. This is a great crop to sell as a 6-8", or 10" basket crop. They are attractive and consumers can pick their fresh herbs on the patio or balcony. Other forms to look for: *Mentha x gracilis* – Ginger Mint, *Mentha piperita* 'Variegata'. Pineapple Mint is a variegated form with a pineapple-like fragrance.

Oregano (*Origanum vulgare*) and Marjoram (*Origanum majorana*) – Both of these crops

are from the same genus *Origanum*, taxonomists debate if they are even different species, so their growth and production are very similar. Easily grown from seed or purchased as liners, they are sold without flowers and can be turned over very quickly. Gourmets will tell you that the best Oreganos are those produced vegetatively, as they retain superior fragrance & taste. Look for cultivars with variegated and yellow foliage, which acts to boost sales and also makes for a great component plant in mixed containers.

Other forms to look for: *Origanum aureum* 'Crinkle Leaf', *Origanum onites* 'Aureum' – Gold Pot Marjoram, *Origanum dictamnus* – Greek Oregano, or Dittany of Crete is an Ornamental not a culinary herb. *Origanum rotundifolium* 'Kent Beauty' – ornamental as well, totally different look to this species with nodding green bracted spikes of pink flowers, good in baskets.

Thyme (*Thymus vulgaris* & others) – This group of herbs is less well known in many markets, in general it is a tough plant to grow in the south, it prefers very dry, well drained conditions and low humidity is also beneficial, but given this the plants very tough and cold hardy. Thyme needs some air so it is not the

best choice for mixed containers where crowding will lead to disease problems. Great plant for use between stepping-stones in the landscape in those areas of the US where it thrives. Other forms to look for: *Thymus x citriodorus* 'Doone Valley' – gold and green foliage, pink flowers. *Thymus praecox* – Creeping Red Thyme, deep pinkish red flowers, green foliage.

Chives & Shallots – Of these two onion relatives, only chives (*Allium schoenoprasum*) seems to have a really strong market. Easily grown from seed or purchased as liners, this is a very quick crop in the greenhouse. From liners it is 3-4 weeks for 4" crop. Mostly sold when still juvenile, the flowers of chives are a real plus later in the season. Leaves and flowers are edible and when given bright light chives are tolerant of a variety of production conditions. Shallots (*Allium cepa*) are less commonly grown, but the crop is sold as the mature leaf base used in cooking, and as a result it is primarily grown in the field and sold dry packaged. Shallots offer a small gourmet niche, but not necessarily as a greenhouse crop. Other forms to look for: Daehnfeltdt Seed has a new chives series called Buster.

Rosemary (*Rosmarinus hybrids*)– Luckily rosemary is an easy to grow crop, it prefers very bright light, slightly drier soil conditions, and good air circulation for the highest quality plants. There are large upright garden forms of the plant that merit gallon production, creeping or prostrate types that are excellent in hanging baskets. In the west Rosemary makes an excellent landscape plant, for those of us in the north and south a good annual. Southern growers will want to make sure plants are protected from afternoon rains to avoid disease problems.

Other forms to look for: *Rosmarinus officinalis* 'Albus' – white flowered, *Rosmarinus officinalis* 'roseus' – Pink Flowered, *Rosmarinus officinalis* 'prostratus' – Weeping Rosemary, *Rosmarinus officinalis* 'Haifa' – another prostrate form.

Sage – Oh for a sage that would thrive in the Deep South. Luckily the rest of the country has a lot of wonderful alternatives. From the classic, seed produced *Salvia officinalis* to all the wonderful new vegetative forms; there is a lot to select from. Purple foliage, variegated, large leaved, small leaved. Check with your suppliers and see what is available locally. In general the more variegation on the plant the slower it will grow and for this crop bright light is essential. Other forms to look for: *Salvia officinalis* 'Icterina' – yellow green variegation.

Tarragon (French, Russian, and Mexican) -- Here is the problem child of the herb group, true French tarragon (*Artemisia dracunculosa* var. *sativa*) is the undisputed tarragon of choice. Best flavor, but lots of production issues and dormancy related problems means you really need to get this plant in as a vegetative liner. Bright light, cooler conditions, and avoid over fertilization for best results. Russian Tarragon (*Artemisia dracunculosa* subsp. *Dracunculoides*) is not considered to have the good qualities of French Tarragon, but is available. If you have a high-end market you'll want to stick with French tarragon or commit the horrible social gaff of supplying the inferior variety. Lastly, for those of us in the deep south who cannot keep either of the above two growing all season, try Mexican tarragon (*Tagetes lucida*) which is a tough marigold relative with a similar flavor, and a lot better performance under heat and humidity. You won't fool Emeril, but you'll have a good substitute for yankee tarragon.

Any way you slice it, you will definitely be attracting a new audience to your nursery by offering herbs as well as ornamentals. If you are going to invest in an herb program however, do it right. Make selections that will do well in your region of the country, provide the right conditions for optimal growth and for the sake of all of us, use the correctly labeled pesticides on these crops. Once the product leaves your nursery even something sold as an ornamental is likely going to be used and an edible crop or at the least handled by customers who assume that the crop is pesticide free. If you are a retailer stress the importance to customers of washing any herbs well before using them. We can all appreciate a well-grown plant, but a huge part of the gardening experience is smell and taste as well so realize this and plan accordingly.

Need more information on Herbs & their production:

- Bodger Seed – <http://www.bodger.com>
Madeira Series of Lavenders
- Hishtil Nursery unrooted herb production is available through many of the main brokers in the U.S.
- Daehnfeldt Seed – <http://www.daehnfeldt.com> A new seed produced line of Elite herbs including basil, dill, parsley, and others.
- Peace Tree Farms, Kintnersville, PA – Produces a full compliment of herbs as liners, exclusively available through Ball Seed <http://www.ballhort.com>.
- Shore Acres Nursery Inc., Orlando, FL – Produces a full selection of herb liners for northern and southern growers. Contact Robin Bazemore. Phone - 407-

273-1922. Email shoreacrfl@aol.com. Also available through most brokers.

On-line resources:

- National Sustainable Agriculture Information Service (ATTRA) is a web site loaded with information on all aspects of production and marketing for herbs. <http://attra.ncat.org>
- The folks at NC state also have a good article on production of 12 Herb species.
- <http://www.ces.ncsu.edu/depts/hort/floriculture/hils/HIL509.pdf>
- The University of Nebraska has a comprehensive herb links page that is definitely worth looking at. <http://www.ianr.unl.edu/pubs/horticulture/nf105.htm>
- Richter's Herb Specialists website has a great list of FAQs for herb production, and information on a lot of fringe herbs as well as commodity crops. <http://www.richters.com>

A primer on selecting herb cultivars based on your location in the US. These ideas come from Lloyd Traven of Peace Tree Farms, and Bazemore of Gourmet Herbs by Shore Acres and their presentation at the southeast conference. Southern cultivars will take more humidity and heat; northern cultivars do well under cooler conditions and lower humidity.

Genus	Cultivars for the North	Cultivars for the South
Basil	Produced all year, 'Columnar' basil is great. Tall, non-flowering and great flowering. Nufar (A sweet basil) is very Fusarium resistant. Genevieve is the old standard and good as well. Ms. Burns is a good Lemon Basil.	All year crops. Sweet Basil is cold sensitive, but African Blue is a perennial type in deep south.
Chives	Garlic & Fine Leaf are both strong. Curly Chive must be propagated by division.	All do well.
Cilantro Options	Jantar (slow bolting) & Santo for true Cilantro, also Mexican Coriander/Culantro is good but slow in the north.	Spring & Fall Crop, look for slow bolting varieties. Also try Culantro and Vietnamese Coriander (<i>Polygonum odoratum</i>) which have better heat & humidity tolerance.
Dill	Spring crop only. Fern leaf is easiest to grow, with best habit but better flavors in Ducat & Bouquet.	Spring & Fall Crops, Fern leaf Dill, shorter and more compact. Bouquet blooms faster, Dukat more foliage emphasis, taller variety.
Fennel	Spring crop only. Bronze and green leaf forms are good, but bronze out sells green and has great landscape performance.	Spring & Fall Crops, Sweet Fennel for foliage, Florence Fennel for stem production. Bronze Fennel, shorter and slow to bloom, with good bronze foliage color.
Hardy Lavender	Spring and Fall Crops. Munstead & Hidecote are poor performers instead try L. 'Vera' is easier and better lasting. Also look at some of the interspecific <i>L. intermedia</i> types which have good summer performance	Spring or Fall Crop, English Lavenders are annuals, poor heat and humidity tolerance.
Tender & Sweet Lavenders	Spring and Fall Crops. <i>L. dentata</i> 'Goodwin Creek' low fragrance, but in all other areas excellent. <i>L. Buchii</i> is very upright, great foliage, and fast growing with the largest flowers of all lavenders, smells like a litterbox. Fernleaf & <i>L. heterophylla</i> are both good.	<i>L. dentata</i> & variegated forms, heat hardy but not winter hardy, good fragrance. <i>L. multifida</i> prolific bloomer, heat hardy, but winter hardy, little fragrance. <i>L. heterophylla</i> heat and cold hardy, good blooming, fragrance, perennial. Also Fernleaf.

Spanish Lavender	Spring and Fall Crops. Madrid & Barcelona series. Unlike other tender lavender these really like it dry, and can be slow to establish, produce them as an ornamental.	Spring & fall crop. 'Otto Quasti' seems to take heat and humidity best of this group.
Marjoram	Compacta has a good habit for production. Gold Tip Marjoram is one of the best herbs on the market, great color and very hardy. Also great in combo pots, similar to a Margarita Sweet Potato.	Spring & fall crop. Seed grown Sweet Marjoram suffers in the heat. In general Oreganos perform better in southern summers.
Oregano	Greek Oregano has the strongest best flavor, but most people think it is the Italian that is best. Greek, Italian, & Golden (of the gold forms Israeli is best!!), Variegated Greek, not really hardy but is a great plant for mixed containers and hanging baskets.	Some all year cultivars. Hot & Spicy, Italian, Kalitera, 'Variegata' and 'Aureum' but colored leaf forms cannot take full southern sun. Try (<i>Lippia graveolens</i>) Mexican Oregano, not winter hardy. Also look for Cuban Oregano (<i>Plectranthus amboinicus</i>), popular in Cuban cooking.
Mint	Spearmint & Peppermint are no brainers, they sell well; but look into variegated Pineapple Mint (<i>Mentha suaveolens</i>) and Chocolate mint.	Spearmint (<i>Mentha spicata</i>) 'Kentucky Colonel', also Peppermint & Chocolate Mint (<i>Mentha piperita</i> forms).
Parsley	Curly sells 3 to 1 over flat leaf, but flat leaf has the best flavor. Try marketing curly parsley in mixed containers and massed landscape plantings.	All year crops. Italian has better flavor.
Rosemary	All year crops. <i>R. officinalis</i> best seller bar none but the <i>R. prostrata</i> sells well too. Tuscan Blue is the best all around performer, with regards to flavor, color and landscape. Hardy Hill, BBQ (columnar), and Sawyer's Select are also great.	All year crops. <i>R. erecta</i> – 'Tuscan Blue', 'Gorizia', and 'Arp'. Prostrate forms 'Severn Seas', 'Santa Barbara', 'Haifa' great foliage and flowering. Watch out for over watering.

Sage	Grow all of them, they are all good, and easy to grow. Mixed containers and specialty uses. Golden forms are good, tricolor is weaker, 'Berggarten' also very strong.	Vegetative varieties are hardier. 'Israel' is a great performer, also try tri-color, purple, 'aurea', and Pineapple Sage (<i>Salvia elegans</i>).
Tarragon	French Tarragon, the only one, no cultivars because it is all produced from cuttings.	Don't mess with others we grow, Mexican Tarragon, year round crop.
Thyme	English, French are best for flavor, Variegated Lemon is good for both growth and decorative quality. Doone Valley, Oregano thyme (big leaf, vigorous, and open habit), Lavender thyme has good flowering and a dainty form.	Spring & fall crop. Generally poor outdoors in summer conditions. Lemon thyme & Golden Lemon Thyme (<i>Thymus citriodorus</i>), Silver Thyme (<i>Thymus argenteus</i>), also comes in a lemon scented form. Prostrate forms have more trouble in the southern heat, so they are grown as spring & fall crops.