

vegetative matters



University
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The Herb Revolution

These misunderstood crops can be an edible or ornamental treat.

By Rick Schoellhorn

Having just finished a great group of educational programs at the Southeast Greenhouse Conference, I feel obligated to focus on a group of crops that are often misunderstood and sadly shy of production information.

Herbs offer most growers a huge opportunity to make some extra money. They can be used in many of the same ways that ornamentals can and (theoretically) you can eat them as well, but when growers move into the herb market, there are a few production issues to consider. Additionally, cultivar selections make a big difference in the greenhouse and the landscape.

PRODUCTION ISSUES

Most growers mix their herbs with bedding plants and grow them under the same conditions, which implies that they are being grown for ornamental use. The question becomes: Are you growing edible or ornamental herbs? Semantics? You should consider the question carefully because if you grow edible herbs, you will need to use different pesticides than you would with ornamental crops. (There are not a lot of chemicals labeled for edible herb production.) Herbs fall somewhere in the gray area between ornamental crops and vegetables, currently they are a little bit of a red-headed step child, as chemical labels usually do not 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 know what is required to get organic certification for your crops. For organic certification, you will 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 U.S. Department of Agriculture; their organic herb production publication is a great overview at <http://attra.ncat.org/attra-pub/PDF/om-herb.pdf>.

MARKETING ISSUES

Producing and controlling a 4-inch crop of herbs is challenging; sales can be unpredictable, and overgrown pots can be difficult to move. Most 1-gal. herbs are too large for consumers to rationalize buying a full complement of varieties, 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 add value to your crops. Decorative containers, window boxes and hanging baskets with a complement of the more common herbs are hot items right now; even apartment dwellers can be potential customers when they can get



Top: Mint *Mentha piperita* 'Variegata' (Hista); Bottom, left to right: Dill 'DuKat' (Dæhnfeldt); Basil 'Red Robin' (Dæhnfeldt); Thyme *Thymus praecox* 'Creeping Red' (Hista).

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an instant kitchen garden. You will need to speak with your suppliers, select cultivars with compatible growth habits and avoid large forms. I have never seen a good looking hanging basket of dill, which doesn't mean it can't be done, but the point is to look for 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 to grow from seed and which to grow from cuttings. 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, plus 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 lavender, rosemary, tarragon, certain basil, marjoram, oregano, mint, sage and thyme. Herbs easily produced from seed include chives, cilantro, dill, fennel, parsley and some of the hybrid basil.

TYPES OF HERBS

Basil (*Ocimum basilicum* and hybrids). Lots and lots of cultivars are available, both vegetative and seed produced. How do you select which is right for you? Most growers look for the dwarf forms, as they have a better pack or 4-inch performance, but some of the larger forms are 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. Just because you are going to eat them doesn't mean they can't be good looking as well.

Two highly flowered cultivars of *Ocimum basilicum* are available. 'Magic Mountain' and 'Kasar' have large, salvia-like spikes of pink to violet flowers and good flavor. 'Purple Ruffles' is an older cultivar with purple ruffled foliage; newer purple forms are less disease (Fusarium) prone and may do better 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 splashed 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 the foliage — this herb has a habit of bolting when under any stress, such as heat, drought, insect pressure, etc., so maintain cool, bright light conditions. Cilantro is very fast growing, so cut back on fertilizer when plants are 2-2½ inches in diameter to keep them from outgrowing their pots and to reduce stretch. As with most seed-produced herbs, it is best to drop multiple seeds 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. The foliage has a stronger flavor that is used in most Caribbean cooking.

Dill (*Anethum graveolens*), fennel (*Foeniculum vulgare*) and parsley (*Petroselinum crispum*). These are all closely related genera with similar requirements in production; cool temperatures and bright light are essential.



Oregano *Origanum rotundifolium* 'Kent Beauty' (Yoder)

All are quick crops from seed, or they can be purchased as liners to make them a 2- to 3-week turnover crop. Again, in 4-inch production, cut back on fertility when plants are 2-3 inches in diameter so they don't overgrow their containers.

Lavender: There is a proliferation of new lavender hybrids on the market. Lavender is a Mediterranean crop, meaning it prefers low humidity, good air circulation and lower water levels. In general, you want to avoid afternoon watering, as most of the disease issues arise from water on the foliage for extended periods. English and French lavenders are the connoisseur's choice ▶

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for fragrance. Spanish lavenders (*Lavandula stoechas*) have colored petals arising from each spike like rabbit's ears and are good, tough garden or container crops. For Southern growers, most lavenders will suffer in the summer; 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. Other forms to look for include *Lavandula dentate*, which is good for northern and western climates, and the Madeira series (*Lavandula stoechas*).

Mint. There are many flavors, growth habits and foliage colors. Mint (*Mentha* species) is usually a very vigorous crop, so 4-inch 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- to 8-inch or

10-inch basket. Other forms to look for include *Mentha x gracilis*, *Mentha piperita* 'Variegata' and pineapple mint, 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*, and taxonomists debate if they are even different species; 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 and 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 include *Origanum aureum* 'Crinkle Leaf'; *Origanum onites* 'Aureum'; gold pot marjoram; *Origanum dictamnus* or Greek oregano, ornamental not culinary; *Origanum rotundifolium* 'Kent Beauty', also ornamental, totally different look with nodding green bracted spikes of pink flowers, good in baskets.

Thyme (*Thymus vulgaris*). This group of herbs is less well known in many markets. In general, it prefers very dry, well-drained conditions and low humidity, but the plants are 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, but it is a great plant for use between stepping-stones in the landscape. Other forms to look for include *Thymus x citriodorus* 'Doone Valley', which has gold and green foliage and pink flowers, and *Thymus praecox* or creeping red thyme, which has deep pinkish red flowers and green foliage.

Chives and 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, production takes 3-4 weeks for a 4-inch crop. Mostly sold when still juvenile, the flowers of chives are a real plus later in the season. Leaves and flowers are edible, and given bright light, chives are tolerant of a variety of production conditions. Shallots

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Figure 1. Herb cultivars based on U.S. location. These ideas come from Lloyd Traven, Peace Tree Farms, Kintnersville, Pa., and Bazemore of Gourmet Herbs by Shore Acres, Orlando, Fla. 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 varieties. 'Nufar' (sweet basil) is very Fusarium resistant. 'Genevieve' is the old standard and good as well. 'Ms. Burns' is a good lemon basil.	All year crop. Sweet basil is cold sensitive, but 'African Blue' is a perennial type in the Deep South.
Chives	Garlic and fine leaf are both strong. Curly chive must be propagated by division.	All do well.
Cilantro	'Jantar' (slow bolting) and 'Santo' for true cilantro, also Mexican coriander/culantro is good but slow.	Spring and fall crop. Look for slow bolting varieties. Also try culantro and Vietnamese coriander (<i>Polygonum odoratum</i>), which have better heat and humidity tolerance.
Dill	Spring crop only. 'Fern leaf' is easiest to grow with best habit, but better flavors in 'Ducat' and 'Bouquet'.	Spring and fall crop. 'Fern leaf' is shorter and more compact. 'Bouquet' blooms faster. 'Dukat' has more foliage emphasis but is taller.
Fennel	Spring crop only. Bronze and green leaf forms are good, but bronze out-sells green and has great landscape performance.	Spring and fall crop. Sweet fennel for foliage. Florence fennel for stem production. Bronze fennel is shorter and slow to bloom, with good bronze foliage color.
Hardy lavender	Spring and fall crop. Munstead and Hidecote are poor performers instead try 'Vera', which is easier and better lasting. Also look at some of the interspecific <i>L. intermedia</i> types, which have good summer performance.	Spring and fall crop. English lavenders are annuals, with poor heat and humidity tolerance.
Tender and sweet lavenders	Spring and fall crop. <i>L. dentata</i> 'Goodwin Creek' is really strong, 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 but smells like a litterbox. Fernleaf & <i>L. heterophylla</i> are both good.	All year crop. <i>L. dentata</i> and variegated forms are heat but not cold hardy, good fragrance. <i>L. multifida</i> is a prolific bloomer, also heat but not cold hardy, little lavender fragrance. <i>L. heterophylla</i> heat and cold hardy, good blooming, fragrant, perennial. Also Fernleaf Lavender does well.
Spanish lavender	Spring and fall crop. Madrid and Barcelona series are good, unlike other tender lavender, really like it dry and can be slow to establish. Produce as an ornamental.	Spring and fall crop. 'Otto Quast' 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 and 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 the Italian is best. Greek, Italian and Golden (of the gold forms 'Israeli' is best!). Variegated Greek are not really hardy. 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 and peppermint are no brainers, they sell well. Look into variegated pineapple mint (<i>Mentha suaveolens</i>) and chocolate mint.	Spearmint (<i>Mentha spicata</i>) 'Kentucky Colonel', also peppermint and chocolate mint (<i>Mentha piperita</i> forms).
Parsley	Curly sells 3-1 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. ♦

(*Allium cepa*) are less commonly grown, but the crop is sold as the mature leaf base used in cooking. 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 include 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. Large, upright garden forms are available that merit 1-gal. production, and creeping or prostrate types 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 grow-

ers will want to make sure plants are protected from afternoon rains to avoid disease problems. Other forms to look for include *Rosmarinus officinalis* 'Albus', a white flowered form; *Rosmarinus officinalis* 'roseus' a pink flowered form; *Rosmarinus officinalis* 'prostratus' or weeping rosemary; and *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, etc. Check with your suppliers and see what is available locally. In general, the more variegation on the plant, the slower it will grow, and ♦

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GENUS	CULTIVARS FOR THE NORTH	CULTIVARS FOR THE SOUTH
Rosemary	All year crop. <i>R. officinalis</i> is best seller bar none, but <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 crop. <i>R. erecta</i> 'Tuscan Blue', 'Gorizia' and 'Arp'. Prostrate forms: 'Severn Seas', 'Santa Barbara' and 'Haifa' have great foliage and flowering. Watch out for over watering.
Sage	They are all good and easy to grow. Mixed containers and specialty uses. Golden forms are good, tricolor 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.
Thyme	English and 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) and Lavender thyme (good flowering and a dainty form) all work.	Spring and fall crop. Generally poor outdoors in summer. Use Lemon and golden lemon thyme (<i>Thymus citriodorus</i>) or silver thyme (<i>Thymus argenteus</i>), also comes in a lemon scented form. Prostrate forms have more trouble in the heat.

for this crop, bright light is essential. Other forms to look for include *Salvia officinalis* 'Icterina', a yellow green variegation.

Tarragon (French, Russian, and Mexican). Here is the problem child of the herb group, True French tarragon (*Artemisia dracunculus* var. *sativa*) is the undisputed tarragon of choice. Best flavor but lots of production issues, and dormancy-related problems mean you really need to get this plant in as a vegetative liner. Bright light, cooler conditions and low fertilization produce best results. Russian Tarragon (*Artemisia dracunculus* subsp. *Dracunculoides*) is not considered to have the good qualities of French Tarragon but is more readily 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.

CONCLUSION

Any way you slice it, you will definitely be attracting a new audience by offering herbs as well as ornamentals. If you are going to invest in an herb program, 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 as 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. GPN

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More Information on Herbs and Herb Production

Bodger Seed

www.bodger.com
Madeira Series of lavenders

Hishtil Nursery

www.hishtil.com
Unrooted herb production is available through many brokers in the United States.

Dæhnfeldt Seed

www.dæhnfeldt.com
A new seed produced line of Elite herbs including basil, dill, parsley and others.

Peace Tree Farm

www.ballhort.com
Produces a full compliment of herbs as liners, exclusively available through Ball Seed.

Shore Acres Nursery Inc.

shoreacrfl@aol.com.
Produces a full selection of herb liners for northern and southern growers.

National Sustainable Agriculture Information Service (ATTRA)

http://attra.ncat.org
A Web site loaded with information on all aspects of production and marketing herbs.

North Carolina State University

www.ces.ncsu.edu/depts/hort/floriculture/hils/HIL509.pdf
The folks at NC state have a good article on production of 12 herb species.

The University of Nebraska

www.ianr.unl.edu/pubs/horticulture/nf105.htm
A comprehensive herb links page that is definitely worth looking at .

Richter's Herb Specialists

www.richters.com
Web site has a great list of FAQs for herb production and information on a lot of fringe herbs, as well as commodity crops.

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