Cut Flower Manual

Dear Cut Flower Enthusiast:

Today it's as easy to buy a bouquet of cut flowers as it is to pick up a loaf of bread. Just stop at the supermarket, and you'll see what I mean. Supermarket chains have entered the floral business in a big way. Nationwide, sales of cut flowers are rising faster in supermarkets than any other floral product.

Florists also report a booming business. But most sales do nothing to benefit Texas farmers. While Texans spend some $234 million annually on cut flowers and related products, 99 percent of cut flowers sold in our state are not grown here — a loss for agriculture and the Texas economy.

Between August 1999 and August 2000, nearly 275 million cut flowers and greenery stems crossed the Texas-Mexico border, headed for buyers in Texas and other states. Millions more were delivered from California, Florida, Michigan, Oregon, Arizona and New Mexico. Even the celebrated yellow rose of Texas history and legend is imported.

Clearly, there's a big market, but only about 25 Texas growers are helping to fill it. I believe we can do better. Texas ranks third nationally in horticulture. Nursery-greenhouse production is the state's second leading agricultural sector. In 2001, Texas nursery-greenhouse crops were valued at almost $1.2 billion, including $236 million in floriculture products, but cut flowers contributed a mere fraction of that total.

That's not to say anyone can grow cut flowers. It's a serious business that requires knowledge of crop production and a major investment of time and money. Like any type of agriculture, it's demanding work that calls for total commitment. To give you an idea of what it takes, the Texas Department of Agriculture has published the Texas Cut Flower Manual. This manual offers an overview of the industry and basic information on production, harvesting and marketing. It's a first step. If you are interested in going further, we have also published a Texas Cut Flower Resource Guide that lists a wealth of sources for more in-depth information.

TDA is committed to rural and agribusiness development. Helping producers diversify into crops such as cut flowers offers one opportunity to keep rural Texas healthy and growing.

After reading the manual, we hope you come away as excited as I am over the potential for our fledgling cut flower industry. Let's work together to capitalize on that potential. Thank you for your interest.

OVERVIEW

United States

Americans are spending more than ever on fresh cut flowers. The U.S. Department of Agriculture Economic Research Service reports that U.S. consumers purchased some $8.5 billion worth of cut flowers and greenery in 1998. Higher disposable incomes and an explosion of “how-to” home decorating and gardening television shows and Web sites have encouraged consumers to beautify their homes with one of nature’s loveliest gifts.

Cut flowers are also more accessible. Eighty percent of the country’s supermarkets have floral sections, including many that provide full floral services, promotional events and delivery. Florist shops, however, remain the major supplier of gifts for holidays, weddings and other special occasions. Florists also do a robust business with restaurants, hotels, caterers and event planners. Overall, the U.S. floral industry includes more than 27,000 retail florist shops; 23,000 supermarkets with floral departments; more than 10,000 retail nurseries, lawn and garden supply stores; 950 wholesalers; and more than 9,000 growers.

Without a doubt, the U.S. floral industry is blooming, but mostly with flowers grown outside the country. Import wholesalers supply almost 90 percent of cut flowers to the nation’s florist shops and 45 percent to supermarkets. The U.S. Department of Agriculture reports the value of U.S. imports of greenhouse and nursery products reached $1.1 billion in 1998. Cut flowers and cut greens accounting for 64 percent of that figure were imported from Latin America and the Netherlands. Domestic grower share of the U.S. floral market fell from 65 percent in 1991 to 47 percent in 1998.

On the brighter side, production values for floriculture crops have been rising. Total wholesale value for U.S. floriculture crops jumped 13 percent from 1999 to 2000.

Texas

By providing selection, quality and reasonable prices, Texas growers are developing a market niche for specialty cut flowers delivered faster and fresher to retail markets.

Specialty cut flowers represent a small segment of the state’s second-leading agricultural sector, the $1.2 billion nursery-greenhouse industry. Producers sell their colorful crops mostly to supermarkets with retail floral centers or directly to consumers at farmers markets and farm stands. A few sell to florists. Most produce various seasonal varieties sold in single or mixed bunches and bouquets.

With less than $500,000 in annual production, growers are barely tapping the state’s $234 million retail market of 3,000 florist shops and floral centers, including supermarket floral departments. Nearly all the flowers sold at these outlets are foreign or domestic imports. Only about 25 growers in the Hill Country, East Texas and a few other locations grow commercial quality cut flowers. More are needed to capture a bigger share of the

retail market. Vegetable and herb producers, greenhouse and nursery growers and traditional crop farmers willing to meet the challenges of intense horticultural production are among the likeliest candidates to convert this market potential into extra earnings.

While hotels, restaurants and caterers can be good local markets, supermarkets probably offer the best sales opportunities for growers who can produce quality flowers in large enough quantities. On average, supermarkets must discard 14 percent of cut flower purchases compared with 6 percent of fresh produce. Concerned about the high rate of loss, they are looking for in-state and local suppliers who can provide flowers with a longer vase life.

Texas-grown flowers have two distinct marketing advantages. First, they are fresher. In most cases, they can be ready for retail sale on the day of cutting or within 48 hours. Getting to market faster increases their shelf life, a plus for retailers, who would buy more if they could get them.

Second, Texas flowers cost less to transport. Prices for international and domestic imports reflect shipping costs including packing, freight and customs fees. Texas growers who minimize freight and packing costs without compromising quality or vase life increase their opportunity to compete successfully.

The state's regional and biological diversity offers a third benefit. Producers can diversify cut flower production with Texas native or naturalized flowers, woody ornamentals, trees and grasses. Native plants may be used for fresh and dried arrangements. While they bring a lower return than cut flowers, they are not as fragile or labor-intensive.

Texas Advantages – Market Potential

- Delicate flowers that ship poorly over long distances and may be expensive when available — Snapdragons, for example, must be shipped upright and not in boxes. When transported long distances, they may look less full or crushed. Zinnias also ship poorly and have little or no competition in Texas.
- Flowers either with a short vase life or similar to types with a short vase life when shipped long distances — These include delphiniums, sweet peas and snapdragons.
- Flowers marketed locally and regionally to reduce transportation and delivery costs — Big, heavy sunflowers, for instance, cost a lot to ship from out of state.
- Cultural preferences — Texans prefer big, bold flowers, making this a good market for sunflowers, zinnias and other large, brightly colored blooms.
- Early- and late-season crops — Certain varieties can be produced in winter, especially for holidays such as Christmas and Valentine's Day, when there is less competition. Early season gladiolas would face some competition from imports but beat the northern crop to market.

It is impossible to accurately predict the market potential for Texas-grown cut flowers, but clearly it is significant. As many as 1,100 jobs might be created directly and several hundred more indirectly from this new industry. These estimates assume that Texas flowers would simply replace flowers brought in from outside the state. The figures would be higher if a new and distinct market were created for Texas-grown cut flowers.

GETTING STARTED

10 Basic Things You Need to Know

.1.

Growing flowers requires intensive management and production skills. Intermediate to advanced knowledge of cut flower or similar crop production systems is recommended.

.2.

Whether your production site and irrigation source are adequate to grow cut flowers — Check with your county agent. Water and soil will probably have to be tested. Water volume must be sufficient to handle the size of the proposed crop. Drip irrigation works best and saves water, but sprinkler and furrow irrigation adapt to certain production systems and areas of the state.

.3.

How much money you need to get started --- Get an expert's advice. Visit existing farms and talk to the producers about costs and investments, as well as other issues they have encountered.

.4.

What type of harvest and storage facilities are required — You'll need a packing shed or shaded area to trim and prepare just-picked flowers and coolers or cold storage for storage and pre-conditioning.

.5.

For successful production, you'll need quality plugs or transplants to ensure hardiness and adaptability. Some growers strongly recommend that you have an on-site greenhouse to grow what you need, both for economic reasons and to give you more flexibility.

.6.

How many workers are needed — As a rough estimate, figure two field workers per acre in addition to management personnel.

.7.

How to manage crop losses caused by weather or pests — One grower recommends an "assembly line of plants" ready to transplant when hail or other problems destroy a crop. Cut flowers can be replanted quickly, provided new plugs and transplants are readily available. Clean out the field, take the loss and replant immediately (crop insurance for cut flower producers may be on the horizon, according to the USDA Risk Management Agency).

.8.

How to manage market and price fluctuations — Don't get caught up in following market prices and trends. Figure your costs, set your price and stick to it. Don't charge too little. Buyers will pay more for high-quality, locally grown products.

.9.

How to market your flower crops (wholesale, retail or direct marketing) — Crop size, varieties, price and quality are among the factors to consider.

.10.

How to transport and deliver flowers cost effectively — Will you deliver or ship flowers to market? Figure in the cost of one or more trucks or vans, fuel, maintenance, drivers, insurance, registration and inspection if you plan to deliver.

10 Basic Steps You Need to Take

Though by no means complete, this list will have you well on your way to establishing your cut flower business.

.1.

Test soil quality and water quality and volume on the proposed production site. A Texas Cooperative Extension horticulturist and county agent or a private consultant can help determine whether the site is suitable for growing cut flowers.

.2.

Determine your production system and necessary infrastructure.

.3.

Complete a full economic and capital investment plan. The plan must include cost of establishment,
construction, management, operation, production, harvesting, packing-grading, sales and marketing.

.4.

Obtain financing. Talk to your lender, find out what is available to you and what options you have.

.5.

Contact the Texas Comptroller of Public Accounts for information on taxes, licensing, permits and other agribusiness-related topics at (800) 252-9121; Web site (www.window.state.tx.us). Landowners who produce floriculture crops may be eligible for a special tax appraisal based on agricultural productivity.

.6.

File as a corporation, partnership or other business with the Texas Secretary of State. For information contact Corporations, P.O. Box 13697, Austin, Texas 78701-3697; (512) 463-5590; fax (512) 463-5709; Web site (www.sos.state.tx.us/index.html).

.7.

Obtain worker protection and compensation insurance if labor other than family members will work on the farm. Contact the Texas Workers' Compensation Commission, (512) 804-4435; fax (512) 804-4431; Web site (www.tdi.state.tx.us/wc/index.htm).

.8.

Make sure you have the proper licenses and registrations for on-farm and commercial vehicles. To register vehicles contact the Texas Department of Transportation, (512) 463-8588; Web site (www.dot.state.tx.us). For licenses, apply at your nearest Department of Public Safety office.

.9.

Apply to the Texas Department of Agriculture for a nursery/floral license. For information call (800) TELL-TDA or (512) 463-6477; fax (512) 463-8225; Web site (www.agr.state.tx.us).

.10.

If regulated herbicides or state-limited-use or restricted-use pesticides will be applied, obtain a private applicator license from TDA. For information call (800) TELL-TDA or (512) 936-2638; fax (512) 463-1618; Web site (www.agr.state.tx.us).

Step-By-Step Production

Your production site has passed the test for soil and water quality. You have completed an economic and capital investment plan. The bank has approved your loan. It's time to build your infrastructure, buy seed, bulbs and transplants and start growing flowers. Most cut flowers in Texas are raised outdoors in field-nursery production systems. The system requires a basic greenhouse to propagate transplants. For best adaptability and hardiness, choose high-quality, locally grown transplants or plugs. Patented varieties are available from contracted growers or suppliers.

A greenhouse also extends the growing season and lets you produce more flower varieties. It can be used for production during winter or whenever the weather is not conducive to growing outdoors. Certain flower varieties can be grown only in greenhouses, while others require greenhouse protection in areas of Texas with shorter growing seasons. Greenhouses should be equipped with automatic cooling, heating and light-shade adjustment systems. Irrigation may be manual or automated.

Fields are transplanted with greenhouse-grown transplants or direct planted with bulbs, tubers or rhizomes. Some growers seed their fields or plant from cuttings. Crops are planted in raised beds, furrows or as row crops, depending on cut flower type or grower preference. Many varieties require staking, trellising or netting or will have better quality when provided these supports. It may be necessary to erect shadehouses or hoophouses to give flower crops extra protection. These curved metal structures covered in plastic or shadecloth are placed over plants growing in the field. They are used for varieties that need modified growing conditions; to provide cooling and shade during summer; extend the production season into fall or winter; and as coldframes to produce early season crops or transplants for early spring planting. They may also be used to acclimate greenhouse-grown transplants for more adaptability and hardiness before planting.

Drip Irrigation

Overhead watering increases the chance of disease and reduces flower quality. Successful growers recommend installing drip irrigation, adaptable to greenhouse, shadehouse or field production. Although drip irrigation costs more to install and maintain than sprinkler or furrow systems, the lower water costs and increased water efficiency it provides make it preferable. Before investing in drip irrigation, be sure your irrigation source is adequate for the size of your operation and the quantity and quality of cut flowers you want to produce. A licensed professional irrigator is needed to design the system, which should include:

— a pump of the proper type and size
— a manual, digital or computer controller system for the irrigation cycle, pressure and water volume
— a flow meter to measure the quantity of water applied
— an adequate filter system
— an optional fertilizer or pesticide injector
— a back flow valve to prevent recharge back into the water source (required if a fertilizer or
pesticide injector is used)
— a main, header and lateral pipe supply lines, valves, controllers and connectors
— a drip tape or drip lines with internal emitters.

Harvest and Post-Harvest Handling

Cut flower quality should be at its peak at the moment of harvest. Some flowers are picked before opening, others when florets are half or fully open. Harvesting is usually done by hand with sheers or a sharp knife to prevent damage and maintain optimum freshness. Simple mechanical aids can also be used for some crops. Never lay flowers on the ground, or they may become contaminated by disease organisms.

Immediately after picking, put cut flowers in water mixed with a fresh floral preservative solution and keep in a cool, shaded area. Adequate post-harvest facilities and proper preparation materials and methods are essential to maintain marketable quality.

In a packing shed or shaded area, trim stems under water to the proper length and remove lower leaves. Apply bacteriacides, wetting agents and preservatives to extend shelf life.

Be sure to use clean buckets with clean water. For hard water and flowers that are difficult to rehydrate, substitute clean water containing an appropriate bacteriacide and enough citric acid for a pH of 3.5.

Although the USDA does not have cut flower grading standards, certain characteristics determine flower quality. Factors on which to base cut flower grading include stem length, straightness and strength, flower size, vase life, lack of defects, maturity, uniformity and foliage quality. Flowers that do not meet quality and maturity standards will fetch lower prices and have a reduced ability to sell. Tie trimmed flowers into bunches and insert into floral sleeves and containers for shipping or delivery. Completed bunches or flowers awaiting bunching in containers should be placed in cold storage before delivery or until they are sold on the farm. Storing flowers in cool temperatures is the most important factor in maintaining freshness.

Cool temperatures lower respiration rates and water loss. They also reduce ethylene production and flower sensitivity to ethylene. Recommended storage temperatures vary according to flower type and development stage when picked.

Flowers must be transported to buyers in a temperature- and humidity-controlled environment. It is important to conduct vase life tests to check the quality of flower varieties you produce. Professional florists and floral buyers can often recommend post-harvest treatments and materials to increase cut flower quality and vase life.

Marketing and Promotion

Congratulations! You've come this far. Now how do you market your crop?
Most Texas producers sell directly to local markets — supermarkets, full-service floral centers and florists. Labeled Texas Hill Country Bouquets, Texas Grown Bouquets and Texas Garden Bouquets, these products are creating market recognition for Texas-grown flowers. Small operations just starting out may want to begin by selling to local florists. To sell to supermarkets, first contact the floral buyer at the chain's corporate headquarters. Find out which flower types the buyer is looking for and the chain's packing specifications. Growers usually deliver mixed and single-flower bunches in standard floral wraps labeled with their farm logo, name and address, but this may vary depending on the customer. Be prepared to package deliveries exactly as the buyer specifies.

It is absolutely necessary to have pre-contract agreements on quality, quantity and delivery. The buyer will want to know how many floral items you can deliver over a certain time period, for example, 300 bunches a week for eight weeks. Usually flowers are transported in buckets or other containers of water and floral preservative solutions to a store or warehouse. If you want to sell to a local or area store, make that part of your negotiations. Retail grocery chains and wholesale buyers require Price Look Up (PLU) codes or UPS bar codes. Some add the codes after purchase, while others prefer flowers to be coded by the seller. Check to find out.

Retail florists, restaurants, hotels and caterers also offer potential sales. As with supermarkets, you need a pre-arranged commitment or contract and an agreement on quality, quantity and delivery. When direct delivery is not possible, producers package in standard floral boxes to overnight ship directly to retail floral shops.

Producers with small acreage may prefer to sell direct at on-farm "pick your own" operations and stands or at local farmers markets.

However you choose to sell, it is important to conduct vase life tests to check flower quality and to follow-up with buyers to determine whether flower quality and vase life meet their expectations.

GO TEXAN

GO TEXAN.

The Texas Department of Agriculture's GO TEXAN program can help you market your products to supermarkets, full-service floral centers and other florists by increasing recognition and markets for Texas-grown flowers. Launched in 1999, GO TEXAN has spread the word across the state, the country and the world that when you want the best, choose Texas. GO TEXAN promotes everything from Texas food, fiber and livestock to horticulture and forestry under one effort and logo, helping shoppers quickly spot Texas products at a glance. TDA has partnered with Texas retailers across the state to label fresh and processed Texas foods, plants and cut flowers with the GO TEXAN brand.

Signing Up

Texas agricultural producers and agribusinesses can apply for membership in the GO TEXAN program at any time. A $25 annual registration fee includes:

— Use of GO TEXAN logo
— Participation in the GO TEXAN database listed on the Texas Department of Agriculture's Web site and available to buyers around the world
— Participation in retail promotions
— Joint advertising opportunities
— Participation in statewide and national industry trade, consumer and livestock shows
— Marketing support through TDA's use of broadcast and print advertisements
— Info letters on upcoming marketing events and industry news and information
— International marketing opportunities

Learn more about GO TEXAN by visiting www.GOTEXAN.org or by calling (877) 99GO-TEX.

Growing Herbs in Texas

If you are interested in diversifying with crops such as cut flowers, you might also consider another growing market with great potential. Herb growing offers a niche market for potting herbs, fresh-cut culinary herbs, aromatics, phytomedicinals and processed herbal products.

Most Texas producers are small growers who raise potted plants for retail nurseries and direct sales to consumers. Those who grow fresh-cut culinary herbs usually sell to restaurants. However, one large grower in the Rio Grande Valley and East Texas markets field-grown culinary herbs year-round to supermarkets and foodservice distributors. Some growers raise herbs to sell in their retail nursery or shop, others make and sell herbal products, and a few combine growing herbs with edible flower and cut flower production.

Individual acreage in Texas ranges from less than one acre to 25 acres. Most producers grow in greenhouses, but some also raise herbs outdoors from spring to fall or year-round where winters are mild. Standard culinary herbs such as basil, thyme, oregano, parsley, rosemary and sage are most commonly grown for both the fresh-cut and potted plant markets.

Start Small and Grow

Start small, especially if you have limited experience in growing and marketing. The first year plant one acre or less of a few different varieties, about one quarter acre per variety. As your crop grows, you will gain information about production. During this time, you can also begin to develop marketing outlets. Most buyers want to see a product and evaluate its quality before committing to purchase.

Have a Business Plan

Before you start, know what your input costs will be and the prices buyers will pay. Many growers fail because they lack sound information and have unrealistic expectations. You will need a business plan to establish long-term goals and, if necessary, apply for a loan. The plan should include a detailed account of the planned operation including acreage, number of greenhouses, type of herbs, your business and agricultural skills, marketing strategy and other necessary information.

Join A Network

Network to learn from other growers and discover new markets. Joining the 59-member Texas Herb Growers and Marketers Association provides valuable information and contacts with established growers. THGMA holds an annual conference on herb production and sponsors herb markets in several cities. Visit THGMA's Web site at www.thgma.com for news of upcoming events. The American Botanical Council, an Austin-based non-profit educational organization, can be reached at www.herbalgram.org or (512) 331-8868.

Growing Herbs

Herbs are easier to grow than most plants. They use less water and are less likely to be seriously damaged by insects and disease. Most herbs require about six hours of daily sunlight. Some varieties tolerate more shade than others.

Set up a greenhouse about 35 feet by 90 feet for plant propagation and growing indoors. You can add space as necessary. One grower for the fresh-cut market expanded from one greenhouse to 10 as business increased. Greenhouses require heating for winter and exhaust fans for hot summer months.

Plant fast-growing annuals such as basil from seed, slower-growing woody perennials such as rosemary from plugs or transplants. Established woody plants can be propagated by cutting, layering or root division.

Water by hand with a hose and water wand according to variety and growth stage. Growers who plant in the ground inside a greenhouse generally use drip irrigation.

Growing Outdoors

Outdoor sites need plenty of direct sunlight and good drainage. Soil should be loose and well-aerated and have a neutral to slightly alkaline pH of about 7.5. If the soil has a pH of 6.5 or less, lime should be added. Your local county Extension agent can provide a test kit that can be sent to a Texas A&M University laboratory for soil analysis and recommendations.

Drip irrigation provides the deep soaking herbs need. A drip system will water the plants' roots, reducing evaporation and saving on water costs.

Harvesting

Fresh-cut herbs should be clipped, packed and delivered within 24 hours for maximum freshness. After cutting, place the herbs in a shed for cool-down and bagging. Then move cut herbs to a cooler for storage and packing. Package individual orders in sturdy cardboard lined with styrofoam for extra protection. Deliver orders in an air-conditioned vehicle or ship for overnight delivery. Boxes can be kept cool with a packaged gel ice product available at discount stores.

Marketing

Does the ease of growing and selling potted herbs intrigue you? Check with local nurseries and retail garden centers to find out whether they would be interested in buying and the sizes they prefer. Consider diversifying into native Texas plants and perennials that go well with ornamental and culinary herbs in a garden setting.

Do you want to grow fresh-cut culinary herbs for restaurants? Many chefs pride themselves on using only the freshest produce. Talk to chefs at area restaurants and find out which herbs they need, how much and how often they buy and whether they want an organically raised product. They will probably want to see samples before striking a deal. Selling to restaurants is not a seasonal business. You must be able to supply herbs year-round. For information on TDA's organic certification program, check the department's Web site at www.agr.state.tx.us or call (512) 463-7476 or (800) TELL-TDA.

Do you enjoy meeting the public? You may want to sell from your greenhouse, at local farmers markets and at herb markets scheduled around the state. Direct sales let you grow a wider variety of herbs than those commonly sold at supermarkets. In addition to

culinary herbs, consider popular “tea herbs” such as lemon balm and soothing aromatics like lavender. Invite the public to your greenhouse for workshops on the culinary and medicinal uses of herbs. If you grow outdoors or plan a demonstration garden, schedule educational walks. Herbs mystify many people. The more you can inform them about your products and their uses, the more likely they’ll become regular customers.

Does mail order sound interesting? Develop a Web site for direct sales of potted herbs and herbal products. Though few growers wholesale by mail, some do it successfully. One Texas producer has developed a healthy mail-order business with nurseries across the country. Keep in mind that Texas is under a fire ant quarantine and plant shipments to non-quarantine areas can be made only when a TDA inspector certifies that the plants are free of quarantine pests and diseases in order to meet the import requirements
of other states and foreign countries.

Interested in larger-scale production for supermarkets? A background in crop production, preferably raising vegetables, is necessary to farm larger acreage. Contact buyers at grocery chains’ corporate headquarters to determine interest in buying. As an alternative, talk to small local grocery stores and outlets specializing in organic produce.

Texas-Grown Commercial Cut Flowers

Cut Flower Types Produced Commercially in Texas

Growers raise more than 70 types of commercial cut flowers, including sunflowers, Gerbera daisies, alstroemeria, iris and delphinium --- some of the varieties in greatest demand at Texas supermarkets. One chain reported a decline in sales of carnations and greater interest in specialty flowers such as Texas-grown seasonal bunches and bouquets of single and mixed varieties. The change was attributed to greater consumer knowledge about cut flower types. Other flowers popular with Texas consumers include red roses, Stargazer lilies, orchid stems, tuberoses and tulips.

Though Texas roses generally are container or bare-rooted plants used for landscaping and gardening, the rose industry might be able to gain a niche producing cut garden roses for local and even commercial markets. Other products with market potential include Texas bluebonnets, currently grown in small quantities, Texas woody ornamentals and flowering trees. Native and adapted grasses and grains also provide cut flower and foliage sources. Most cut flowers are annuals, suited for field and greenhouse production, but bienniels also make excellent cut flowers. Bienniels require two growing seasons, including overwintering or cold treatment, before flowering.

Perennials produce each growing season but flower only during specific periods. Many will perform as annuals in more northern and western regions of Texas. Bulbs, corms, tubers and rhizomes are best suited for field production, generally flowering in spring, summer or fall. They can also be forced to bloom in greenhouse or shadecloth production systems.

The following cut flower types are produced commercially in Texas. Numerous varieties of these types have the greatest potential for quality production and marketability.

Texas List of Commercially Grown Cut Flowers

Achillea	Gypsophila	Statice (Rattail)
Acroclinum	Helenium	Stock
Ageratum	Hydrangea	Strawflower
Agrostemma	Iris	Sunflower
Allium	Kniphofia	Sweet Pea
Alstroemeria	Larkspur	Sweet William
Amaranthus	Lavender	Tansy
Ammi majus	Liatris	Trachelium
Ammobium	Lily	Tuberose
Anemone	Lisianthus	Tulip
Aquilegia	Lupine	Veronica
Asclepias	Monarda	Waxflower
Astilbe	Nigella	Zinnia
Calendula	Peony	
Calla	Phlox	
Campanula	Physostegia	
Caryopteris	Platycodon	
Celosia	Poppy Pods	
Centaurea	Queen Ann's Lace	
China Aster	Ranunculus	
Cosmos	Rudbeckia	
Crocosmia	Salvia	
Daffodil	Scabiosa	
Dahlia	Sedum	
Delphinium	Snapdragon	
Echinacea	Snowberry	
Fall Aster	Solidaster	
Feverfew	Specialty Roses	
Gerbera	Statice (Annual)	
Gladiolus	Statice (Caspia)	
Godetia	Statice (German)	
Gomphrena	Statice (Latifolia)	

Guide to Average Production Seasons for Texas Grown Cut Flowers

The chart on the following page lists the most common commercially produced flower types for Texas and the average statewide production season. These periods will be shorter or longer depending upon the growing season of the production region (i.e. High Plains, Far West Texas, East Texas, Rio Grande Valley) and the system of production (field/nursery, greenhouse, shadehouse or hoophouse).

Please keep in mind that growing seasons can also change based on advances in technology, weather and cultural practices. The area highlighted in green represents the typical months that each type of flower is produced and harvested in Texas.

The Field/Nursery designation indicates production in an open environment susceptible to elements such as wind, rain, insects, animals and other problems.

The Greenhouse designation indicates production that is carried out in some type of protected environment, including glass houses, plastic houses or other types of controlled growing environments.

The following table is a general guide meant for reference only. It is not meant to recommend or suggest which flowers should be field-grown or greenhouse-grown.

Average Production Season of Texas Cut Flowers

	January	February	March	April	May	June	July	August	September	October	November	December
Achillea				Field/Nursery								
Ageratum				Field/Nursery								
Agrostemma				Field/Nursery								
Allium				Field/Nursery								
Ammi majus				Field/Nursery								
Anemone		Field									Field	
Aquilegia				Field/Nursery								
Calendula	Greenhouse		Field/Nursery						Field/Nursery			Greenhouse
Calla			Greenhouse									Greenhouse
Campanula				Field/Nursery								
Caryopteris								Field/Nursery				
Celosia				Field/Nursery								
Centaurea				Field/Nursery								
Cosmos				Field/Nursery								
Daffodil			Field/Nursery									
Delphinium				Field/Nursery								
Echinacea				Field/Nursery								
Fall Aster									Field/Nursery			
Foxglove				Field/Nursery								
Gladiolus				Field/Nursery								
Godetia				Greenhouse								
Gomphrena				Field/Nursery								
Gypsophila				Field/Nursery								
Helenium								Field/Nursery				

Average Production Season of Texas Cut Flowers (cont.)

	January	February	March	April	May	June	July	August	September	October	November	December
Iris				Field/Nursery								
Kniphofia					Field/Nursery							
Larkspur				Field/Nursery								
Liatris							Field/Nursery					
Lily				Greenhouse								
Lisianthus					Field/Nursery							
Lupines	Greenhouse											
Nigella				Field/Nursery								
Phlox						Field/Nursery						
Physostegia						Field/Nursery						
Poppy Pods				Field/Nursery								
Queen Anne's Lace				Field/Nursery								
Ranunculus	Field											
Rudbeckia				Field/Nursery								
Salvia						Field/Nursery						
Scabiosa				Field/Nursery								
Snapdragon			Field/Nursery									
Solidaster									Field/Nursery			
Statice (Annual)				Field/Nursery								
Stock	Greenhouse											
Sunflowers				Field/Nursery								
Sweet Pea	Greenhouse											Greenhouse
Sweet William				Field/Nursery								
Trachelium						Field/Nursery						
Zinnia				Field/Nursery								

10 Frequently Asked Questions

Q. Can I grow cut flowers in my area of the state?

A. *Some types of cut flowers can be grown in most areas of Texas. To produce quality crops and reduce weather effects, your site should have natural or established protection. The soil should be tested and adequate for most horticulture crops. You can grow cut flowers in fields, greenhouses and shadehouses.*

Q. How can I find out if my farm has the right soil and other conditions to grow cut flowers?

A. *Texas Cooperative Extension horticulturists and county agents in your area can help determine your farm's potential. They can also provide soil and water quality test kits that you can send to Texas A&M laboratories for analysis and recommendations.*

Q. Where do I find sources of seeds and transplants?

A *Most major seed companies sell numerous cut flower types and varieties. The Association of Specialty Cut Flower Growers Directory and Buyers Guide advertises most major seed and propagation supply companies. Cut flower growers may have propagation materials or be able to refer you to growers with varieties they have selected, bred or propagated.*

Q. Where can I find information on how to grow cut flowers?

A. Many books and publications are available in major bookstores. Many state university and extension programs have publications on commercial production. There is also a resource list located at the back of the manual, which contains good reference material.

Q. What varieties will grow best in my area?

A. *Stephen F. Austin University has done extensive research on cut flowers and may be able to offer some insight on which varieties have worked best. Oklahoma State University and Kansas State University have numerous publications on cut flowers, including recommended varieties for the Southwest that apply to Texas (see listings in TDA's Cut Flower Resource Guide). Most seed or propagation material suppliers*

indicate growing regions for their varieties and may have a technical representative in your area who can assist you. You can also ask local producers and professional nurserymen to recommend suitable varieties.

Q. Where can I market cut flowers?

A. *Most Texas producers grow for local markets. Some sell at local farmers markets or on-farm at "pick-your-own" and farm stands. Most market directly to grocery stores and local florists. Hotels, restaurants and local catering services also provide good local markets. Some larger growers sell to floral buyers and distributors or ship to floral retailers in Texas and out of state. The Texas Department of Agriculture's GO TEXAN marketing and promotion program and TDA's statewide marketing staff can help you find buyers and assist you in promotion.*

Q. Is there a cut flower growers' organization or association in Texas?

A. *Texas is a member of the Association of Specialty Cut Flower Growers, Region 6-South, which also includes Arkansas, Louisiana, New Mexico and Oklahoma. The association publishes an annual directory and buyers' guide and a monthly newsletter,* The Cut Flower Quarterly*, which has reports and articles of interest to Texas and Southwestern growers. Region 6-South growers meet bi-annually, and the national organization holds an annual conference.*

Q. Where can I find a list of buyers or florists to purchase my cut flowers?

A. The Texas State Florists Association in Austin has a statewide membership of florists, floral buyers and producers. The association publishes an annual membership directory and buyers' guide and a monthly magazine, The Bloomin' Texan*, and hosts an annual trade show in July. TSFA, in conjunction with the Texas A&M Horticulture Department's Benz School of Florists, provides statewide seminars and training in floral arranging, marketing and promotion.*

Q. What kind of licenses do I need to grow cut flowers?

A. *The Texas Department of Agriculture requires producers, distributors and retailers of cut flowersin Texas to obtain the proper TDA nursery/floral registration. Producers who apply restricted-useor state-limited-use pesticides or regulated herbicides must get a private applicator license from TDA and obtain continuing education units to maintain their license.*

Q. Where can I get a listing of current cut flower growers?

A. *Contact the Texas Department of Agriculture's GO TEXAN program by calling(877) 99GO-TEX or visit the Pick Texas Web site at www.PickTexas.com.*

Texas-Grown Cut Flower Resources

Cut Flower Resource Directory

The Texas Department of Agriculture has compiled a resource directory packed with information to help you network with the experts and learn more about cut flower production. The directory lists invaluable contacts, publications and Web sites. It includes grower, commodity and trade associations; Texas Cooperative Extension horticulturists; and Texas college and university horticulture programs. You'll find names of contacts, addresses and Internet hyperlinks to publications and other resources on cut flower and nursery-greenhouse production, economics, marketing and floral design.

Grower, Commodity and Trade Associations
American Institute of Floral Designers, 720 Light St., Baltimore, Maryland, 21230, Phone: (410) 752-3318, Fax: (410) 752-8295, E-mail: info@aifd.org, Web site: www.aifd.org

Association of Specialty Cut Flower Growers, P.O. Box 268, Oberlin, Ohio, 44074, E-mail: judy@ascfg.org, Phone: (440) 774-2887, Fax: (440) 774-2435, Web site: www.ascfg.org

California Cut Flower Commission, 73 Hangar Way, Watsonville, California, 95076, Phone: (831) 728-7333, Fax: (831) 728-7337, Web site: www.ccfc.org

Georgia Commercial Flower Growers' Association, Doug Smith, President, 1280 Arnold Dairy Road, Social Circle, Georgia, 30279, Phone: (770) 464-3910

Produce/Floral Marketing Association, 1500 Casho Mill Road, P.O. Box 6036, Newark, Delaware,19714-6036, Phone: (302) 738-7100, Fax: (302) 731-2409, Web site: www.pma.com

Roses Inc., P. O. Box 99, Haslett, Michigan, 48840, Phone: (517) 339-9544, Fax: (517) 339- 3760, Web site: www.rosesinc.org

Texas State Florists Association, Diana L. Doss, Executive Director, P.O. Box 140255, 8309 Cross Park Dr, Austin, Texas, 78714, Phone: (512) 834-0361, Fax (512) 834-2150, Web site: www.tsfa.org

The Society of American Florists, 1601 Duke Street, Alexandria, Virginia, 22306, Phone: (703) 836-8700, Fax: (703) 836-8705, Web site: www.safnow.org

Publications

Field Grown Cut Flowers, 1998 2nd ed., Avatar's World, Edgerton, Wisconsin, 53534, ISBN 0- 9653065-0-X, Stevens, Dr. Alan B., Associate Professor of Horticulture, Kansas State University, 2021 Throckmorton Plant Sciences Center, Kansas State University, Manhattan, Kansas, 66506- 5506 Phone: (816) 898-1807 or (785) 532-6170, Fax: (785) 532-6949, E-mail: astevens@midusa.net, Web site: www.oznet.ksu.edu/dp_hfrr

Floriculture, Principles and Species, 1999, Prentice Hall, Upper Saddle River, New Jersey, 07458, ISBN 0-13-374703-4, Dole, Dr. John M., Professor of Floriculture, Oklahoma State University, Horticulture and Landscape Architecture Department, 360 AG Hall, Stillwater, Oklahoma, 74074- 6027, Phone: (405) 744-6510, E-mail: jmdole@okstate.edu, Web site: www.hortla.okstate.edu

Growing for Market, Lynn Byczynski, editor/publisher, monthly editions, Fairplain Publications, P.O. Box 3747, Lawrence, Kansas, 66046, Phone: (785) 748-0605 or (800) 307-8949, Fax: (785) 748-0609

Specialty Cut Flowers, 1993, Varsity/Timber Press, Portland, Oregon, 97204, ISBN 0-88192-225- 0, Armitage, Allan M., Professor of Horticulture, University of Georgia, 1111 Plant Sciences Building, Athens, Georgia, 30602, Phone: (706) 542-2471, E-mail: armitage@arches.uga.edu

The Bountiful Flower Garden, Growing and Sharing Cut Flowers in the South, William C. Welch and Neil Odenwald, Taylor Publishing Co., 1550 W. Mockingbird Lane**,** Dallas, Texas, 75235, Phone: (214) 819-8208, ISBN: 0-87833-233-9

The Cut Flower Quarterly & Directory and Buyers Guide, Association of Specialty Cut Flower Growers**,** P.O. Box 268, Oberlin, Ohio, 44074, E-mail: judy@ascfg.org, Phone: (440) 774-2887, Fax: (440) 774-2435, Web site: www.ascfg.org

The Flower Farmer - An Organic Grower's Guide to Raising and Selling Cut Flowers, Lynn Byczynski, 1997, Chelsea Green Publishing Co., ISBN 0-930031-94-6

We're Gonna Be Rich!, Growing Specialty Cut Flowers for Market, 1999, Frank and Pamela Arnosky, Fairplain Publications Inc., P.O. Box 3747, Lawrence, Kansas, 66043, Phone: (785) 748-0605

Industry Statistics
1998 Census of Horticulture Specialties, Web site:
www.nass.usda.gov/census/census97/horticulture/horticulture.htm

Floriculture and Environmental Horticulture Report 1998, Web site:
http://usda.mannlib.cornell.edu/reports/erssor/specialty/flo-bb or
http://usda.mannlib.cornell.edu/reports/erssor/specialty/flo-bb/flo-1999.pdf

Floriculture and Environmental Horticulture Yearbook, 1999 *Horticulture Yearbook*, 1991 - 1998

Floriculture Crops Summary 1999, Web site: http://usda.mannlib.cornell.edu

Texas Agricultural Statistics Service, P.O. Box 70, Austin, TX, 78767, Phone: (512) 916-5581, Web site: http://www.nass.usda.gov/tx/index.htm

U.S. Department of Agriculture (USDA) Economic Research Service, 5285 Port Royal Road,

Springfield, Virginia, 22161, Phone: (800) 999-6779 or (703) 605--6900, Web site:
www.ers.usda.gov/Prodsrvs/reports.htm

USDA National Agricultural Statistics Service, 5285 Port Royal Road, Springfield, Virginia, 22161, Phone: (800) 727-9540 or (202) 720-3878, Web site:
www.usda.gov/nass/pubs/catalog.htm

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Horticulture Economics

Texas A&M Extension Economics-Horticulture Marketing, 464B Blocker Building, College Station, Texas, 77843-2248, Phone: (979) 845-1772

Sales and Customer Service
http://aggie-horticulture.tamu.edu/greenhouse/nursery/guides/ornamentals/sales1.html

Top Ten Tips for Boosting Floral Impulse Purchases

http://aggie-horticulture.tamu.edu/greenhouse/nursery/guides/econ/merchandising/tips.html

Characteristics of Supermarket Floral Buyers
http://aggie-horticulture.tamu.edu/greenhouse/nursery/guides/econ/merchandising/buyers.html

Getting Into Supermarket Services
http://aggie-horticulture.tamu.edu/greenhouse/nursery/guides/econ/merchandising/services.html

10 Ways to Achieve Shrink Control
http://aggie-horticulture.tamu.edu/greenhouse/nursery/guides/ornamentals/shrink.html

Entomology-IPM

Dr. William (Pat) Morrison, Associate Department Head Professor and Extension Program Leader for Entomology, 411 Heep Building, College Station, Texas, 77843-2248, Phone: (979) 845-7026

Dr. Bastian M. Drees, Professor and Extension Entomologist (Fire Ant Coordinator), P.O. Box 2150, Bryan, Texas, 77806-2150, Phone: (979) 845-5878

Dr. Allen E. Knutson, Professor and Extension Entomologist (Nut Crops, Biological Control), 17360 Coit Road, Dallas, Texas, 75252-6599, Phone: (972) 952-9222

Dr. Michael E. Merchant, Assistant Professor and Extension Urban Entomologist (Homeowner Turf, Trees, Ornamentals), 17360 Coit Road, Dallas, Texas, 75252-6599, Phone: (972) 952-9204

Plant Pathology (plant diseases)

Dr. Larry W. Barnes, Professor and Extension Plant Pathologist (Ornamentals, Diagnostic Laboratory), 118C Peterson Building, College Station, Texas, 77843-2248, Phone: (979) 845-8000

Dr. George L. Philley, Professor and Extension Plant Pathologist (Fruit, Ornamentals, Christmas Trees, Pine Trees, Nuts, Vegetables), P.O. Box 38, Overton, Texas, 75684, Phone: (903) 824-6191

Dr. William T. Crow, Assistant Professor and Extension Plant Pathologist (Ornamentals, Master Gardener, Shade Trees, Turf), 17360 Coit Road, Dallas, Texas, 75252-6599, Phone: (972) 952-9242

Texas A&M Web sites (www.tamu.edu/)

Texas Cooperative Extension http://aggie-horticulture.tamu.edu/imagemap/taexmap/taexmap.html

Horticulture http://aggie-horticulture.tamu.edu

Ag Economics http://agecon.tamu.edu

Entomology http://entowww.tamu.edu

Horticulture IPM (HortIPM) http://hortipm.tamu.edu

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Tech Gardens: www.pssc.ttu.edu/vgarden

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www.rlc.dcccd.edu/annex/busdiv/hort1.htm

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www.sfasu.edu/ag/horticulture/index.htm

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