

# Field Production of Cut Flowers: Potential Crops

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This table provides an overview of genera and/or species suitable for field production of cut flowers in the southeastern U.S. (USDA hardiness zones 6 to 8). These are the most widely-grown species. However, there seems to be a limitless abundance of species with “specialty cut” potential. Species better-suited to cooler climates and/or greenhouse production have not been included. This information has been distilled from Armitage (1993; 1997), Stevens (1996), and numerous articles from the Cut Flower Quarterly newsletter of the ASCFG (see references). For an overview of culture and marketing of cut flowers, as well as a comprehensive list of resources, see *Getting Started in the Production of Field-grown Cut Flowers*, Virginia Cooperative Extension Publication 426-618.

Botanical name and (common name)	Annual (A) Biennial (B) Perennial (P) Woody (W)	Use: Fresh (F) or Dried (D)	Propagation: Seed (S) Vegetative (V) Bulb (B), Corm (C) or Rhizome (R)	Planting season for the Southeast <sup>1</sup>	-Harvest period <sup>2</sup> -Stage of development	Postharvest Treatment	Miscellaneous
<i>Achillea</i> spp. and hybrids (Yarrow)	P	F, D	S, V	F	- Begin early summer - Visible pollen	No special requirements; store at 40F. Air-dry to preserve.	<i>Achillea</i> suitable for cuts include A. ‘Coronation Gold’, <i>A. filipendulina</i> , <i>A. millefolium</i> , and <i>A. ptarmica</i> .
<i>Acidanthera bicolor</i> (Absynnian Gladiolus)	Grow as A	F	C	F	- Late summer - 1-2 flowers open	Place in preservative quickly, store at 40-45F. Store upright.	Cv. ‘Muralis’ recommended. Harvest period of approx. 3 weeks.
<i>Aconitum</i> spp. (Monkshood)	P	F	S, V	Fc	- Early summer - 1-3 basal flowers open on raceme	Floral preservative; STS may help. Do not store below 45F	All parts of the plant are poisonous. Not a good performer in the South, prefers cool conditions.
<i>Ageratum</i> hybrids (Blue Flossflower)	A	F, D	S	SS	-Throughout summer - Flowers just opening - does not store/ship well.	Use floral preservative. Good for local markets	Cv. ‘Blue Horizon’ recommended. Good summer source of hard-to-find blue color.

1 Planting Season: Fall (F), Spring (S), F. The code Fc means to plant out in fall because the species requires or benefits from cold temperatures in order to flower. Pre-chilled (vernalized) plugs or bulbs can be planted in the spring.  
2 Harvest Period: The general season for harvesting the plant is listed. Flowering time often varies by cultivar. Within a species, planting several cultivars with a succession of targeted blooming times can extend the harvest period.

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<i>Agrostemma githago</i> (Agrostemma)	A	F	S	ES	-Early summer -1-2 flowers open on inflorescence	Use floral preservative, store upright at 40F. Dry shipping O.K.	Successive sowings recommended - 2 weeks apart. Cvs. 'Milas', 'Purple Queen'.
<i>Allium</i> spp. (Ornamental Onion)	P	F	B	Fc	- Summer -1/4 to 1/2 of florets open	Floral preservative, store at 36-43F.	Yield declines after two years.
<i>Alstromeria</i> hybrids (Peruvian Lily)	P (zones 8-10)	F	R	F or ES	- Variable - First flowers fully colored	STS or other preservative. Store at 38-40F. Can ship dry.	A complicated crop with various timing, light and temperature requirements. Hard to compete with Californian, European, and South American growers.
<i>Amaranthus</i> spp. (Love- (Amaranthus))	A	F, D	S	S	- Summer - 3/4 flowers on inflorescence are open (for dried - harvest after seed set)	Store at 36-41F in water. Air-dry upside down.	Many colorful spp. and varieties. <i>A. caudatus</i> lovelies-bleeding) most commonly grown.
<i>Ammi majus</i> (False Queen Anne's Lace)	A	F, D	S	F or ES	- Late spring - 80% of flower heads open	Use floral preservative. Store at 37-40F. Air dry in darkness to maintain color.	Plants reach 5-6' and require mesh support. Note that the sap causes contact dermatitis. Wear protective gear when harvesting.
<i>Anemone coronaria</i> (Poppy Anemone)	P	F	S, T	Fc	- Early spring - Sepals start to sepa- rate from the center, but not fully open	Very sensitive to ethylene. Consult the literature for other specifics and techniques for drying.	Many cultivars. Greatest market demand prior to Mother's Day.
<i>Antirrhinum majus</i> (Snapdragon)	A	F	S	F or ES	- Spring - 1/2 to 2/3 of flowers are open (1/3 open if shipping long distances)	Store in water at 40F. Preservatives/fungicides necessary for longer-term storage. Must be stored and shipped upright.	Be sure to choose a cultivar bred specifically for field production. Avoid overhead irrigation.
<i>Asclepias tuberosa</i> (Butterfly Weed)	P	F	S, V	Fc	- Variable (7-9 weeks from planting out) -1/2 to 2/3 flowers open	Floral preservative, store at 40-45F immediately, some benefit from STS.	Plants are late to emerge in Spring, do not disturb crowns. Over-watering and high fertility invites spider mite invasion.
<i>Aster</i> spp. and hybrids (Aster)	P	F	V	F or S	- Late summer, fall - 2-4 flowers in inflorescence open	Floral preservative, . store at 40F	Asters provide cuts for fall (when little else is flowering. Useful spp. include <i>A. ericoides</i> , <i>A.</i> <i>novibelgii</i> , <i>A. cordifolius</i> , and <i>A tataricus</i> (in the South).

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<i>Astilbe x arendsii</i> (False Goat's Beard)	P	F, D	S, V	Fc	- Early summer - 1/2 to 2/3 flowers open, upper buds showing color	Immediately put cuts in hot water, allow to cool, then place in preservative. Ethylene-sensitive, pulse with STS. Store at 33-40F. Can be air-dried.	<i>Astilbe</i> requires some shading in the South. Adequate moisture must be maintained for maximum yield.
<i>Astrantia major</i> (Masterwort)	P	F, D	S	ES	- Late spring - Uppermost flowers open	No special requirements. Silica gel recommended for drying.	<i>Astrantia</i> performs poorly at warm temperatures
<i>Buddleia davidii</i> (Butterfly Bush)	W	F, D	V	F	- Midsummer through frost - 1/2 flowers on inflorescence open, before open flowers fade	Pre-cut under water. Condition by placing in 80-100F water. Use floral preservative, store at 40-45F	Bears flowers on new growth. Can be cut heavily. Cut back to 1/3 height or to the ground in late fall. <i>Buddleia</i> spp. other than <i>B. davidii</i> may prove useful.
<i>Callicarpa</i> spp. (Beautyberry)	W	F	S, V	F or S	- Fall fruits - Basal fruits colored, terminal fruits still green, or all fruits colored.	Recut, place in hot water. Can be stored at 32-36F. Remove any foliage from stems.	The multi-stemmed shrub flowers on new wood - may be cut back severely each year.
<i>Callistephus chinensis</i> (China Aster)	A	F, D	S	S	- Late spring - Outside ray florets open	Pulse with silver nitrate to extend vase life. Store at 33-35F.	Cultivars are available in a spectrum of colors. Plants can be grown under cloth to screen-out leafhoppers - the vector of aster yellows virus.
<i>Campanula</i> spp. (Bellflower)	P	F	S, V	Fc	- Summer - 1-2 flowers open on inflorescence	Floral preservative. Carnation Chrysal <sup>TM</sup> recommended.	Most <i>Campanula</i> spp. prefer cool temperatures.
<i>Caryopteris incana</i> (False Blue Spirea)	P	F, D	S, V	F or S	- Late summer - Buds show color, 1st whorl open	Store in water or preservative at 34-40F. Hang upside down to air-dry.	Another "summer blue." Harvest the entire stem for longer cuts or harvest the short terminal first and then cut the subsequent laterals (stems shorter, but greater quantities)."
<i>Celosia</i> spp. (Cockscomb)	A	F, D	S	S	- Summer - Flowers fully developed	Remove foliage as it declines. Store in water at 36-41F. Hang upside down to dry.	Three main forms of <i>Celosia</i> - var. <i>cristata</i> , var. <i>spicata</i> (wheat celosia), and var. <i>plumosa</i> .

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<i>Centranthus ruber</i> (Red Valerian)	P	F	S	ES	- Late spring - 1st flowers in inflorescence fully open	Floral preservative.	Amend beds to raise pH above 6.0. Limit fertilizer. Not a great performer for the South.
<i>Consolida</i> spp. (Larkspur)	A	F, D	S	Fc	- Spring - 1/4 to 1/3 of basal flowers on stem	Highly sensitive to ethylene; STS or preservative with silver recommended. Store upright at 36-41F.	Cultivars available in white, pink, lilacs and shades of blue. A variety of pathogens attack <i>Consolida</i> - consult the literature for control recommendations.
<i>Cornus</i> spp. (Dogwood)	W	F, D	V	F or S	- Spring flowering, late fall stems - For stems - after leaves have dropped; for flowers - before pollen formation. Flowers can be forced - cut when buds are swollen	Place in floral preservative. Store at 65-70F to force. Condition fresh flowering stems by placing in hot water.	Can grow in partial shade. <i>C. florida</i> and <i>C. mas</i> are grown for their flowers, <i>C. sericea</i> cultivars have bright red or yellow stems.
<i>Cosmos</i> hybrids (Cosmos)	A	F, D	S	S	- Summer into fall - Petals on 1st flower just opening, not flattened out. Allow flowers to completely open for drying.	Cosmos do not store well - good for local markets. Keep at 36-40F if necessary. Use preservative solution.	Sequential plantings recommended. There are many good cultivars. The 3-5' stems require support mesh.
<i>Craspedia</i> (Drumstick)	A	F, D	S	F or S	- Spring/summer - Yellow flower heads fully developed.	Floral preservative helpful but not necessary. Hang to air-dry.	Requires good drainage. Do not overhead-irrigate.
<i>Crocasmia x crocosmiiflora</i> (Montbretia)	Bulbous P	F, D	C	W	- Summer - 1st few buds showing color but need not be open	No special treatments. Flowers and sword-like foliage may be air-dried.	Plant corms 3" deep and 6" apart. Needs good drainage.

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<i>Dahlia</i> hybrids	P in zones 7-10	F, D	S, V, T	S	- Summer - 3/4 to fully open but before outer petals decline	Water or opening solution. Store (37-40F) or ship in water. Dry in silica gel.	Allow plenty of space (2' x 2') between plants. Support required. Various pinching and disbudding techniques - consult the literature. Valuable for local markets, but require a rigorous preventative spray program
<i>Delphinium</i> hybrids	A in the South	F	S	Fc	- Spring - 1/4 to 1/3 of flowers on stem open	Pulse cuts with preservative + STS -or treat with EthylBloc	Avoid overhead irrigation. Provide support for stems. Fungicides are beneficial.
<i>Dianthus barbatus</i> (Sweet William)	B	F	S, V	Fc	- Spring - 10-20% of flowers in inflorescence open	STS for maximum vase life.	Can store dry at 34-36F or wet at 40F. Move trans plants to field early in the fall so plants are established before cold temperatures.
<i>Echinacea purpurea</i> (Purple Cone Flower)	P	F, D	S, V	F or S	- Midsummer until frost - When petals are expanding. Can use just the "cone" - remove petals once disk is desired color	Floral preservatives; note petals will droop. Can remove petals and air-dry the cone.	White cultivars also available.
<i>Echinops bannaticus</i> (Globe Thistle)	P	F, D	S, V	Fc	- Summer - 1/2 to 3/4 of the globe has turned blue	No special treatment. Store wet at 40F to intensify color. Air-dry, do not remove leaves.	Some shading may be helpful. The species <i>E. ritro</i> is also excellent for cuts/drying.
<i>Emilia javanica</i> (Tassel Flower)	A	F, D	S	F or S	- Summer - 1st flower is fully opened	Does not store well - good local crop. No special treatment.	Extremely prolific/floriferous; holds up to heat and humidity. Can be air-dried (fades a bit).
<i>Eryngium</i> spp. (Sea Holly)	P	F, D	S, V	Fall. Cold re- quired for flowering.	- Summer - Flower head + bracts are blue	No special treatment. Flowers persist longer than foliage. 38-40F intensifies color.	Can tolerate some shading - reduces yield but enhances color (especially in the South). Recommended species include <i>E. planum</i> , <i>E. amethystinum</i> , and <i>E. alpinum</i> .
<i>Euphorbia marginata</i> (Snow-on-the- mountain)	A	F	S	S	- Fall - Bracts fully colored, flowers not yet opened	Note that the sap can be an irritant. Removing foliage underwater causes the latex sap to coagulate. No other special treatment	Showy variegated bracts surround inconspicuous flowers. Bracts have a relatively long vase life.

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<i>Eustoma grandiflorum</i> (Lisianthus)	P, but grow as A	F	S	S	- Summer - 1 flower in inflorescence fully colored (remove central bud)	Flower color will fade if stored in low light. Use a floral preservative solution.	Long seedling stage - plants best purchased as mature plugs. Plants require excellent drainage and stem support in the field.
<i>Gladiolus</i> spp.	Treat as an A	F	B	S	- Summer - 1 to 5 flowers on spike showing color	Floral preservative containing sugar. Condition stems overnight at 70F. Store at 35-40F. Note sensitivity to fluoride present in municipal water.	Sequential planting provides a much longer harvest period. Watch for thrips, <i>Botrytis</i> , and various corm rots. Corms can be dug up and replanted north of zone 8; usually new corms are used each year.
<i>Gomphrena globosa</i> (Globe Amaranth)	A	F, D	S	S	- Summer - Flowers showing color but not fully opened	Fresh flowers best for local markets; storage not recommended. Air-dry upside-down. Remove foliage.	Great annual crop for the Southeast. Can be mechanically harvested. Use the largest, cleanest seed available. Two recommended cultivars are 'Strawberry Fields' and 'Cramer's Raspberry'
<i>Gypsophilia paniculata</i> (Baby's Breath)	P, can grow as A in South	F, D	S, V	Fc	- Throughout summer - Fresh: 60-70% flowers open; Dried: 80-90% flowers open	Use floral preservative - acidify water to pH 3.5. STS and germicide recommended. Air dry or use a glycerin solution - consult Armitage (1993) for details.	Best results when grown at higher pH - amend soil with dolomitic lime. Requires good drainage.
<i>Helianthus annuus</i> (Sunflower)	Annual	F, D	S	SS	- Throughout summer if sequentially sown - Flowers almost completely open	1 hour pulse with 0.01% non-ionic detergent solution (Triton X-100); store 36-41F	Try the new pollenless cultivars. Some perennial <i>Helianthus</i> species are also suitable for cuts.
<i>Hydrangea</i> spp.	W	F, D	V	F	- Summer - 1/2 of flowers on panicle open. Cut <i>H. macrophylla</i> when fully open.	May benefit from searing. Condition for 12 hours in cold, slightly acidic (pH 4.0) water.	Many spp. are suitable for fresh or dried cuts. <i>H. arborescens</i> 'Annabelle'; <i>H. macrophylla</i> , <i>H. paniculata</i> , and <i>H. quercifolia</i> .
<i>Ilex verticillata</i> (Winterberry Holly)	W	F	V	S	- Spring - Before fruit reaches maturity	Can remove foliage if desired. Store stems dry at 32-33F.	Both the deciduous and evergreen hollies are useful in the florist trade. Be sure to interplant some male hollies as pollinators - only the female plants bear fruit.

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<i>Iris</i> hybrids (Dutch Iris)	Ap	F	B	F	- Spring - Flower fully emerged from sheath (pencil stage)	Rehydrate in warm (100F) water. store upright at 32F.	Use largest bulbs available. Plant immediately upon receipt. Cultivars of the perennial Siberian iris ( <i>I. siberica</i> ) also produce nice cuts, seed pods, and foliage.
<i>Lavatera trimestris</i> (Mallow)	A	F	S	S	- Summer - Flowers are uncurling, just beginning to open	Best for local markets; storage not recommended.	Susceptible to myriad pests and diseases - spray accordingly. Grow on the dry side with generous spacing/aeration.
<i>Lavandula</i> spp. (Lavender)	P	F, D	S, V	F or S	- Summer - 1/2 of florets open (showing color)	Store at cool temps. Dry in cool, dry conditions	Requires excellent drainage. Grow fairly dry. Avoid dwarf cultivars for cuts.
<i>Liatriis</i> spp. (Blazing Star, Gayfeather)	P	F	S, V, C	Fc	- Late summer - 3-4 flowers open; fully opened to dry	Preservative/sucrose solution prolongs vase life. store at 32-35F with good air circulation. Air dry upside-down, strip leaves	Many superior cultivars for cuts; <i>L. spicata</i> 'Kobold' and 'Floristan Violet'
<i>Lilium</i> hybrids (Lily)	Ap, P	F	B	Fc	- Summer - 1st flower not open but fully colored	Pulse with STS, then store in preservative solution. Can store wet or dry (wrap flowers in poly film) at 33F	Consult DeHertogh (1989) for cultivars and hybrids postharvest specifics. Consult Armitage (1993) for discussion of field production in the Southeast (+ other potential Lily spp. for cuts)
<i>Limonium sinuatum</i> (Statice)	A	F, D	S	Fc or ES	- Summer through fall - 80% flower head open	No special requirements; can store dry for 2-3 weeks at 36-41F.	May be air-dried or preserved with glycerin. Perennial spp. <i>L. latifolium</i> , <i>L. tataricum</i> and <i>L. altaica</i> are also excellent cuts.
<i>Lobelia</i> spp. and hybrids	P	F	S, V	F	- Fall - 1/3 to 1/2 flowers open on stem	Floral preservative.	Requires generous watering and light shade for best performance. Good for late summer production.
<i>Lunaria annua</i> (Money Plant, Honesty)	B	D	S	Fc	- Spring - Pods are fully developed	Air dry upside-down in a dark place. Fresh cuts are o.k. for local markets but the flowers tend to shatter.	Biennial. Light shade necessary in the South.
<i>Lysimachia clethroides</i> (Gooseneck Loosestrife)	P	F	S, V	Fc	- Summer - Flowers 1/3 to 1/2 open	Floral preservative drastically extends vase life. Store at 36-41F.	Vigorous, rhizomatous spreader. Provide mesh support.

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<i>Narcissus hybrids</i> (Daffodil)	P	F	B	Fc	- Spring - Singles - bud closed but showing color (goose-neck stage) Doubles - flowers beginning to open.	Preservative not necessary. Store upright at 32-36F. Daffodil "sap" is detrimental to many other cut spp. - see Armitage (1993) for pretreatments.	Consult Armitage (1993) or your local bulb specialist for appropriate cultivars.
<i>Nerine sarniensis</i> (Guernsey Lily)	P	F	B	Fc	- Late summer, fall - 1st flower beginning to open. Note that flowers appear prior to the foliage in the fall. Bulbs go dormant in warm weather.	No special preservatives required. Store fairly warm - temperatures below 41F will damage flowers.	Some shade beneficial in the South. Behaves similar to <i>Lycoris</i> - Resurrection lily.
<i>Nigella damascena</i> (Love-in-a-mist)	A	F, D	S	F or ES	- Summer - Flowers fully colored but petals not fully separated. Pods: harvest when purple-bronze	Use preservative, store only if necessary at 36-41F. Can air dry fully-opened flowers or seed pods.	Successive plantings recommended. Some shade is beneficial in the South. Best pods are from terminal flowers.
<i>Paeonia hybrids</i> (Peony)	P	F, D	V	Fc	- Spring - 1st true color appears at top of tight bud. Double flowered types should be further developed than singles, also red cvs. more so than whites	Store at 32-36F in water. Remove lower leaves from stem. Several options for drying.	Peonies are a profitable crop, however, culture in zone 7 is a bit more complicated than in northern zones. Consult the literature for appropriate cultivars and growing tips.
<i>Phlox paniculata</i> (Garden Phlox)	P	F	V	F	- Early summer - 1/2 flowers open on inflorescence	Sensitive to ethylene. Treat w/ a silver-based preservative + floral preservative. Store at 38F.	Pinch once plants are established, leaving 4-5 leaf pairs. Use mildew-resistant cultivars.
<i>Physalis alkekengi</i> (Chinese Lantern)	A	F, D	S	S	- Summer - Fruit fully colored	Store fresh at 36-41F in water. Hang stems to air-dry.	Keep well-watered to prevent malformed fruit.

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<i>Phystostegia virginiana</i> (Obedient Plant)	P	F	S, V	Fc	- Summer - Spikes are fully elongated yet flowers not open	Floral preservative, sugar, and STS pulses all improve vase life. Quickly cool and store at 40F.	Plants are vigorous and spread rapidly. Division every 2-3 years is recommended.
<i>Platycodon grandiflorus</i> (Balloonflower)	P	F	S, V	Fc	- Summer - 2-3 flowers open on stem	Floral preservative, can store at 40F.	Provide stem supports. Best yield after the first year.
<i>Polianthes tuberosa</i> (Tuberose)	P	F	T	ES	- Late summer - 2-4 flowers open, others showing color	Store at 45-50F (but not below) in water.	Wonderful fragrance. Survives zone 7 winters if well mulched. Lift bulbs in more northern zones.
<i>Salix</i> spp. (Willow)	W	F, D	S, V	F or S	- Spring (for catkins) fall (for stems) - Harvest leafless stems at peak of color	Place in water after harvest. Remove foliage if necessary.	Cut willows back to the ground in early spring. Grow different spp. for catkins, contorted stems, or colorful winter stems (red, gold).
<i>Salvia leucantha</i> (Velvet Sage, Mex. Bush Sage)	A	F, D	V	S	- Fall - 1st 3-4 basal flowers fully opened	Water w/ floral preservative. STS pulse useful. Can store briefly at 35-40F. Air-dry.	Plants form large clumps - space accordingly (1.5-2' centers). Other perennial and half-hardy Salvias are gaining garden popularity - many species may make fine cuts.
<i>Saponaria officianalis</i> (Bouncing Bet)	P	F	S, V	S	- Summer - 1st flowers open	Water w/ floral preservative. Store at 35-40F.	Do not overfertilize. Pinch back in spring to encourage branching.
<i>Scabiosa</i> spp. (Pincushion Flower)	A, P	F	S, V	SS (annual) F (perennial)	- Summer - <i>S. caucasica</i> (perennial): as soon as flower color visible. <i>S. atropurpurea</i> (annual): when flower is almost fully opened	Water w/ floral preservative. Store at 40F.	The annual Scabious is more heat tolerant than the perennial species.
<i>Solidago</i> spp. (Goldenrod)	P	F, D	S, V	F or S	- Early fall - 1/2 of flowers open on inflorescence	Water w/ floral preservative. Store at 40F in water or dry. Air dry flowers upright.	Prone to rust ( <i>Coleosporium asterum</i> ). Do not plant near pine trees (alternate hosts to the rust).

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<i>x Solidaster luteus</i> (Solidaster)	P	F, D	V	F or S	- Early fall - 1/3 flowers open	Water with floral preservative. Store at 40F in water or dry. Air dry flowers upright.	Hybrid between Solidago and Aster. Also susceptible to rusts and aster diseases.
<i>Thalictrum</i> spp. (Meadow-rue)	P	F, D	S, V	F	- Late spring - Most of the flowers are open	Water with floral preservative. Storage not recommended.	Both <i>Thalictrum delavayi</i> and <i>T. aquilegifolium</i> are useful as airy filler flowers. Some afternoon shade may be helpful.
<i>Trachelium caeruleum</i> (Throatwort)	A	F	S	Early F	- Late winter, spring - 1/4 to 1/3 of flowers open	Store in water. STS pulse helpful but not necessary. Store at 40F.	A great blue color. Difficult to grow <i>Trachelium</i> during the summer in the South.
<i>Triteleia laxa</i> (Brodiaea)	P	F	C	F or W	- Late spring - 4-6 flowers open	Water with floral preservative - recut stem at each water change.	This West Coast native requires good drainage. Soil fungicides are helpful.
<i>Tulipa hybrids</i> (Tulip)	A	F	B	Fc	- Spring (cv.-dependent) - 1/2 to 3/4 of the flower is colored	Store at 32-35F, wet or dry. Note phototropic response - stems bend toward light. Consult the literature for recommended growth regulators and other post-harvest handling techniques.	Extend the time of harvest with early, mid, and late spring blooming cultivars.
<i>Veronicastrum virginicum</i> (Culver's Root)	P	F	S, V	F	- Early summer - Remove terminal flower, cut when laterals are 1/3 open	Water with floral preservative. Storage not recommended.	Pinching out the center flower produces fuller, more attractive inflorescences.
<i>Zantedeschia</i> spp and hybrids (Calla Lily)	P	F	R	S	- Early summer - Cut when spathes unroll; almost fully open	Pretreat cuts with a conditioning solution. Store at 42-46F, ship dry.	Clay soils and poor drainage lead to bacterial soft rot ( <i>Erwinia</i> spp.) of the rhizome. Refer to the literature concerning the use of growth regulators (increase # of stems), prevention of various pathogens and production techniques for growing Callas.
<i>Zinnia elegans</i> (Zinnia)	A	F, D	S	SS	- Throughout summer - Flowers are fully mature	Floral preservative; store at 36-40F.	Do not use overhead irrigation: promotes powdery mildew. 'Oklahoma' and 'Benary's Giant' series recommended.

## ***References***

- Armitage, Allan M.. 1993. Specialty Cut Flowers. The production of annuals, perennials, bulbs, and woody plants for fresh and dried cut flowers. Varsity Press/Timber Press, Portland, OR (800.327.5680)
- Armitage, Allan M.. 1997. Herbaceous perennial plants, 2nd ed. Stipes Publishing, Champaign, IL
- Stevens, Alan. 1996. Field grown cut flowers: a practical guide & source book. Avatar's World (800.884.4730)
- Cut Flower Quarterly. The Association of Specialty Cut Flower Growers. ASCFG, Inc. MPO Box 268, Oberlin, OH 44074. (440.774.2887)