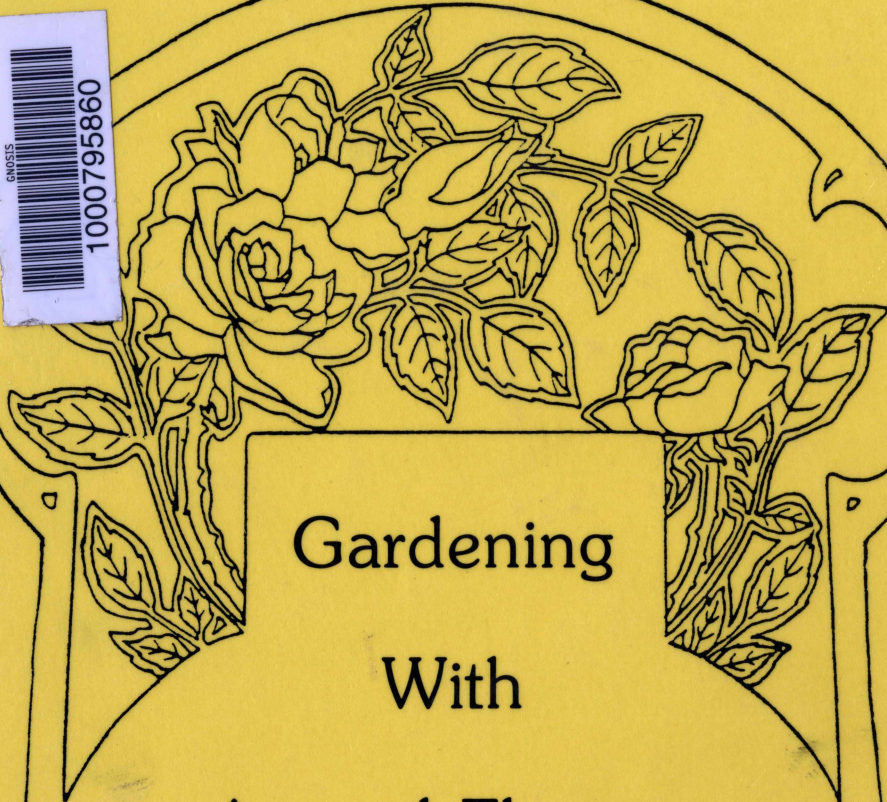


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Gardening
With
Annual Flowers
In Interior Alaska

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Cultural and Forestry Experiment Station
School of Agriculture and Land Resources Management
University of Alaska-Fairbanks
James V. Drew, Dean and Director

"Circular (University of Alaska, Fairbanks.
Agricultural and Forestry Experiment
Station)"



Gardening with Annual Flowers In Interior Alaska

By

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Circular 59

April 1987

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Introduction

Flowers beautify our surroundings and stimulate our senses with their color and fragrance. Annual flowers are the mainstay of many flower gardens in interior Alaska. Because of the unique summer environment, with long hours of daylight and moderate temperatures, a wide range of flower types can be grown successfully here, including heat-loving types and those requiring cooler conditions. Annual flowers are extremely versatile and can be used as temporary landscaping, as a supplement to existing perennial landscaping, and as bedding plants. They can also be planted in combination with vegetable gardens and in a wide variety of containers.

Annual flowers have several advantages over perennials. First, they generally have a longer seasonal bloom period than do perennial flowers. Second, perennials, especially woody perennials such as trees and shrubs, are more expensive to purchase than annuals. The variety of perennial plants which will survive in interior Alaska is limited by the harsh winter conditions, and even established plants may die out if the winter is unusually hard or if the plants are weakened in some way. Finally, as deep soil cultivation usually occurs seasonally before annuals are planted, perennial weeds do not usually become established, making weed control easier.

This list of recommended annual flower varieties includes information on several hundred annual flower cultivars. The recommended varieties were selected from flowers grown in 1985 and 1986 at the Agricultural and Forestry Experiment Station Farm at the University of Alaska-Fairbanks. While this is by no means a complete listing of varieties suitable for Interior gardens, it does reflect many years of experience in annual flower production at the AFES farm. The methods used to evaluate the flowers and definitions for terms used in the listing can be found under Data Collection.

The flower types are listed alphabetically by common name. Although growth and bloom information has been listed individually for each recommended flower variety, the information has also been arranged in several appendices to assist in the process of flower garden design.

These appendices list recommended varieties by color, bloom period, plant height, and special purposes. For those interested in producing bedding plants, the seed sources, seeding dates, seed germination requirements, and greenhouse production techniques have also been included.

Methods

Bedding Plant Production

Annual flowers were started in the University of Alaska-Fairbanks Agricultural and Forestry Experiment Station West Ridge Greenhouse. Greenhouse temperatures were roughly 70 °F days with 60 °F nights, and lighting was primarily natural light. Seeds were sown in 4-inch plastic pots containing moistened, sterile, soilless medium (Redi-Earth or Jiffy Mix). To reduce moisture loss, pots were covered with clear plastic which was removed as soon as the first seeds germinated. Seeding dates and germination requirements for each flower type are listed in Appendix 1. Thermostatically controlled heating mats were used to provide bottom heat for flower varieties requiring warmer germination temperatures. Supplemental lighting (fluorescent or sodium HID) was used over the heating mat for varieties requiring light for germination and to prevent "legginess" (excessive elongation) of seedlings. When 50 percent or greater germination was achieved, pots were removed from bottom heat.

After the first two true leaves had fully expanded, seedlings of most flower types were transplanted into wooden flats. Begonias required from 5 to 6 weeks before transplanting, and impatiens were allowed to develop five or six true leaves before being transplanted. Flats were divided into growing compartments with plastic bands and were then filled with sterile (steam aerated) potting mix (2 parts local peat, 1 part soil, 1 part sand), with pH approximately 6.0. The band size used for most flower types was 2.5 inches square, with 1.25- or 1.5-inch square bands for some of the smaller types and 3-inch square bands for those types requiring more space. Geraniums and hollyhocks were grown in 4-inch pots. All flowers were transplanted as singles, except for lobelia, which was transplanted in clusters of two to six plants. One week after transplanting, flats were treated with Banrot fungicide (0.5 teaspoon/gal as a drench) to prevent damping off. Fertilization began approximately 1 week after transplanting, using soluble fertilizer. In 1985, Peters 20-20-20 at 475 ppm N (1 tablespoon/gal) was used once

a week, and in 1986 Peters 15-16-17 at 150 ppm N constant feed was used (for weekly or biweekly application, about 1.3 tablespoon/gal). Growth regulators were used on geraniums (Cycocel), petunias (B-Nine), and sunflowers (B-Nine) at recommended times and rates. The entire label should be read before using any growth regulator, and all instructions and precautions (e.g. protective clothing) should be carefully followed.

Plants were moved to a cold frame with fiberglass (FRP) covering for at least 6 days of "hardening off" prior to transplanting out into the demonstration gardens. The hardening off process is used to acclimate young plants to the more stressful sunlight, temperature, and humidity conditions found outdoors. The cold frame covers were open for 1 hour the first day, 2 hours the next, then 4, 6, and 8 hours on the 3 subsequent days, and finally were closed only at night. Plants were watered only when they approached the wilting point.

Field Conditions

Flowers were planted in the demonstration garden located at the Agriculture and Forestry Experiment Station Farm on June 4 both years. The soil type in the demonstration garden is Tanana silt loam, which was amended with Lemeta peat (local) in 1980. Each year, the garden was fertilized with 10-20-20 fertilizer (1500 lb/A or 3.5 lb/100 ft²), rototilled, and harrowed. The beds in the garden were of varying lengths, each 4 feet wide, laid out in a semicircular pattern. All flowers were grown under full sun conditions, except for types requiring partial shade (e.g. begonias and impatiens) which were grown in a lathe house. Suggestions for flower types which tolerate light shade are found in Appendix 5. Bands or pots containing the plants were removed from the flats and set out in the beds at the appropriate spacing, then the bands or pots were removed and the plant transplanted in that spot at the same depth it had previously been growing. Transplants were watered in by hand as soon as they were planted, then overhead sprinklers were used to irrigate the beds thoroughly. Overhead sprinklers were used throughout the season when irrigation was required. All weeding in the beds was done by hand; the aisles between beds were cultivated with a Troy Bilt rototiller. Dead blooms were generally not removed from the plants.

Weather Conditions

The flowers got off to a slow start in 1985, with June temperatures below average and precipitation above average. Temperatures were 70 °F or higher for 4 weeks beginning in mid-July, then August temperatures were again cooler than average. The first frost (31 °F) was on September 5. In 1986, temperatures were warm in June with precipitation far below average. This combination stressed the newly transplanted flowers, and some varieties were stunted as a result. Rainfall was higher than average in both July and August, with temperatures warm in July and cooler than average in August. The first frost was on August 22.

Table 1. Climatic Data for Growing Seasons and the Long-Term Average.

	Average Temperature (°F)			Precip.(in)
	Daily max.	Daily min.	Daily mean	
	May			
1985	58.7	33.4	46.1	0.45
1986	58.7	34.4	46.5	0.43
40-year average	60.2	33.7	46.9	0.74
	June			
1985	69.3	47.4	58.3	2.42
1986	73.4	48.5	61.0	0.89
40-year average	71.6	44.3	58.0	1.50
	July			
1985	73.7	49.8	61.8	1.08
1986	73.6	51.4	62.5	2.85
40-year average	72.6	47.3	60.0	2.14
	August			
1985	65.5	45.0	55.3	1.91
1986	64.3	43.3	53.8	2.90
40-year average	66.9	43.0	55.1	2.38
	September			
1985	50.9	35.3	43.1	3.10
1986	55.2	36.6	45.9	0.74
40-year average	55.3	33.7	44.6	1.40

Data Collection

Data on bloom period for the different varieties were taken once each week, beginning June 14 in 1985 and June 19 in 1986. Plant height was measured in mid-August both years. Plant spacing was measured in June of 1986. In 1985, plant spread was measured in mid-August, then plant spacing was approximated later. Observations on frost resistance were noted several days after a frost of 30 degrees Fahrenheit.

Overall ratings and flower quality ratings were determined after the season was over from a series of color slides taken during the season and from notes taken on varieties during the season. Flower quality ratings were based on consideration of color, flower size relative to plant size, number of flowers at any given time, display of flowers on plant, and weather resistance. Overall ratings were based on plant habit, uniformity, disease resistance, and weather resistance, as well as flower quality. Ratings of poor, fair, good, very good, or excellent were assigned. Flower varieties were included on the recommended list if their overall rating was very good or above for both years. In a few cases, varieties were included with only one year's data if they were new and had high ratings, if few other varieties were tested, if they were unique for some reason, or if both overall and flower quality ratings were excellent.

The following terms are used in the List of Recommended Annual Flower Varieties.

Year refers to the growing season in which data on growth and flowering were collected.

Seed Source lists origin of the flower seed used in the trials. Seeds may be available from other companies. Full names and addresses of the seed sources are listed in Appendix 6, page 101.

Height is the average distance from ground level to top of plant, measured in mid-August.

Spacing is the distance between plants needed to achieve good visual effect without overcrowding.

Bloom Period lists the inclusive dates when plants were in flower. For varieties which did not survive a frost of 30 °F, the end of the bloom period was noted as "frost." When the end of the bloom period is designated by "end," varieties withstood a frost of 30 °F and continued to bloom until killed by a hard frost or until the garden was rototilled (usually mid-September).

100% Bloom lists the date by which all plants had bloomed.

Frost Hardy indicates whether the foliage and/or flowers of a given variety survived a 30 °F frost. "Y" means the foliage and/or flowers survived the frost without damage. "SL" indicates plants were slightly frost hardy. "N" signifies that the plant variety was killed or severely damaged by a light frost.

List of Recommended Annual Flower Varieties

Acroclinium (Sunray)

Helipterum roseum

Sutton's Special Mix

Color: white, pink, rose

Use: dried flower, cut flower, bedding

Comment: everlasting, narrow-leaved foliage, numerous semidouble blooms

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Su	21	10	6/14-end	7/24	Y	Y
1986	Su	24	10	6/19-end	7/18	Y	Y

African Daisy (Cape Marigold)

Dimorphotheca sinuata (D. aurantiaca)

Mix, no named variety

Color: buff, white, orange, salmon

Use: bedding, border, cut flower

Comment: daisy-like flowers with dark center, somewhat sprawling

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	P	19	8	6/28-frost	7/24	SL	N
1986	NK	17	10	7/2-frost	7/22	SL	N

Ageratum (Floss Flower)

Ageratum houstonianum

Blue Danube

Color: lavender blue

Use: edging, border, container

Comment: compact, very uniform, large flowers

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Bo	6	8	6/14-frost	6/14	N	N
1986	Bo	4	6	6/19-frost	6/19	N	N

Blue Tango

Color: lavender blue

Use: edging, border, container

Comment: vigorous, numerous smaller flowers

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	G	6	9	6/14-frost	6/14	N	N
1986	G	6	6	6/19-frost	6/19	N	N

Althea Zebrina (Mallow)

Malva sylvestris var. *zebrina*

No named variety

Color: lavender striped with deeper purple

Use: background, tall border

Comment: single blooms, free flowering, somewhat bushy plants

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	P	42	15	6/14-end	6/14	Y	Y
1986	P	34	12	6/19-end	6/19	Y	Y

Alyssum, Sweet

Lobularia maritima

Carpet of Snow

Color: white

Use: border, edging, bedding, container, rock garden

Comment: fragrant, uniform, mounding habit, spreads to 17"

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	NK	8	8	6/14-end	6/28	Y	Y
1986	NK	7	8	6/19-end	6/19	Y	Y

Snowcloth

Color: white

Use: border, edging, bedding, container, rock garden

Comment: fragrant, spreading habit, less uniform

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	V	9	8	6/14-end	6/21	Y	Y
1986	V	10	8	6/19-end	6/19	Y	Y

Other acceptable varieties: Rosebud, Wonderland Deep Rose

Note: pink and purple varieties seem more susceptible to *Rhizoctonia*, a fungal disease attacking plant roots and lower stem

Ammobium (Winged Everlasting)

Ammobium alatum

No named variety

Color: white

Use: dried flower, cut flower

Comment: everlasting, branching plants, tall showy flowers with yellow center

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	WD	34	12	6/21-end	7/17	Y	Y
1986	WD	36	12	6/26-end	7/11	Y	Y

Asperula (Blue Woodruff)

Asperula orientalis (syn. azurea)

No named variety

Color: lavender blue

Use: bedding, border, cut flower

Comment: masses of small flowers, light fragrance, may go to seed early

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Su	15	6	6/14-end	6/14	Y	Y
1986	Su	14	8	6/19-end	6/19	Y	Y

Aster (China Aster)

Callistephus chinensis (Aster sinensis)

Dwarf Spider Mix

Color: red, blue, pink, white

Use: bedding, container

Comment: large double, quilled flowers

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	10	10	7/3-end	8/1	Y	Y

Ladies Formula Blend

Color: pink, blue, rose, white, purple

Use: cut flower, bedding

Comment: large blooms, height somewhat variable

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	32	16	7/11-end	8/1	Y	Y
1986	St	32	12	7/11-end	8/8	Y	Y

Princess Mix

Color: blue, yellow, pink, white, crimson

Use: cut flower, bedding

Comment: fully double flowers, crested center, uniform, some disease resistance

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	P	31	10	7/11-end	7/24	Y	Y
1986	P	30	10	7/11-end	8/8	Y	Y

Other acceptable varieties: Pink Lady, Meteor Carmine Red, Blue Ribbon, Pink Ribbon

Begonia, Wax

Begonia × *semperflorens-cultorum*

Glamour Mix

Color: red, pink, white

Use: bedding, border, container, hanging basket

Comment: uniform, good color mix, larger blooms, prefers partial shade

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1986	P	10	6	6/26-frost	7/11	N	N

Pink Charm

Color: pink

Use: bedding, container, hanging basket

Comment: angel-wing foliage, covered with blooms, can take full sun

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	P	12	10	6/17-frost	6/17	N	N
1986	P	10	10	6/19-frost	6/26	N	N

Pizzazz Mix

Color: red, pink, white

Use: bedding, border, container, hanging basket

Comment: fairly uniform, covered with blooms, mounding

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1986	P	8	7	6/29-frost	6/26	N	N

Other acceptable varieties: Horse Racing Mix, White Charm

Black-Eyed Susan (see Rudbeckia)

Blue Woodruff (see Asperula)

Burning Bush (see Kochia)

Busy Lizzie (see Impatiens)

Butterfly Flower (see Schizanthus)

Cabbage, Flowering or Ornamental (see Flowering Cabbage)

Calendula (Pot Marigold, English Marigold) *Calendula officinalis*

Anagoor

Color: orange

Use: bedding, cut flower

Comment: large double flowers, many blooms, neat appearance

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Ag	23	12	6/14-end	6/14	Y	Y
1986	Ag	20	10	6/19-end	6/19	Y	Y

Ball Gold Improved

Color: gold

Use: cut flower, bedding

Comment: excellent blooms, plants somewhat uneven

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	G	27	15	6/14-end	6/14	Y	Y
1986	G	26	10	6/19-end	6/19	Y	Y

Bon Bon Mix

Color: yellow, orange, apricot

Use: border, bedding

Comment: new, large flowers on compact, mounding plants

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1986	Bo	12	10	6/19-end	6/19	Y	Y

Fiesta Gitana Mix

Color: orange, yellow, primrose

Use: bedding

Comment: compact, wide color range, some dark centers, disbudding helpful

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	P	14	12	6/14-end	6/14	Y	Y
1986	P	12	10	6/19-end	6/19	Y	Y

Radio

Color: orange

Use: bedding, cut flower

Comment: quilled petals, uniform, disbudding helpful

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Su	28	10	6/14-end	6/14	Y	Y
1986	Su	28	10	6/19-end	6/26	Y	Y

Other recommended varieties (only one year's data): Indian Prince, Orange Gem

Other acceptable varieties: Pacific Beauty Mix, Princess Yokosuka

California Poppy (see Poppy, California)

Cape Daisy (see Venidium)

Cape Marigold (see African Daisy)

Carnation (Clove Pink)

Dianthus caryophyllus

Knight Mix

Color: crimson, crimson picotee, orange, rose, white, yellow

Use: bedding, container, cut flower

Comment: fragrant, large fully double flowers, upright plants

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	13	11	7/11-frost	8/7	Y	N
1986	St	12	11	7/2-frost	8/1	Y	N

Other acceptable variety: Scarlet Luminette

Celosia (Cockscomb)

Crested, or Cockscomb, type (*Celosia cristata*)

Plumed, or Feathery, type (*C. cristata* var. *plumosa*)

Crested, or Cockscomb, type

Jewel Box Mix

Color: yellow, pink, red, orange, salmon, bronze

Use: border, bedding, dried flower

Comment: crested type, very good color mix, dwarf plants, large combs

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1986	P	5	6	6/26-frost	7/18	N	N

Plumed, or Feathery, type

Apricot Brandy

Color: apricot-orange

Use: bedding, cut flower, dried flower

Comment: feathery plume, basal branching, striking orange cast to foliage

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	AAS	10	7	7/24-frost	8/28	N	N
1986	AAS	12	7	7/11-frost	8/1	N	N

Century Mix

Color: scarlet, gold, yellow, apricot

Use: bedding, cut flower, dried flower

Comment: feathery plume of good quality, brilliant colors, uniform, both green and bronze foliage

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	AAS	13	7	7/24-frost	8/7	N	N
1986	AAS	17	10	7/11-frost	8/1	N	N

Kewpie Red

Color: scarlet

Use: border, bedding, dried flower

Comment: brilliant color, large plumes, uniform

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	G	9	6	7/11-frost	8/28	N	N
1986	G	10	6	7/2-frost	8/1	N	N

Kewpie Yellow

Color: golden yellow

Use: border, bedding, dried flower

Comment: very good plumes, fairly uniform

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	G	9	6	7/11-frost	8/20	N	N
1986	G	10	6	7/11-frost	7/25	N	N

China Aster (see Aster)

Chrysanthemum, Annual (Tricolor Chrysanthemum, Painted Daisy)

Chrysanthemum carinatum

Rainbow Mix

Color: yellow, gold, bronze, rose, red, pink

Use: bedding, cut flower

Comment: wide color range, zone of contrasting color around dark flower center, some doubles

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	GM	29	10	6/14-frost	7/11	SL	N
1986	GM	26	12	6/19-frost	7/11	SL	N

Tricolour Mix

Color: yellow, orange, red, maroon, pink

Use: bedding, cut flower

Comment: bright colors, many flowers, zoned, some double and semidouble

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	GM	30	10	6/14-frost	8/7	SL	N
1986	GM	26	12	6/26-frost	8/1	SL	N

Other acceptable variety: Merry Mix

Chrysanthemum Coronarium (Crown Daisy)

Chrysanthemum coronarium

No named variety

Color: yellow, white

Use: bedding, cut flower

Comment: button-type double flowers, fern-like foliage, may need tying

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	GM	29	12	6/14-end	8/1	Y	Y
1986	GM	26	12	6/19-end	7/2	Y	Y

Chrysanthemum Multicaule (Clump Chrysanthemum)

Chrysanthemum multicaule

Dwarf Yellow

Color: golden yellow

Use: edging, bedding, rock garden

Comment: single flowers, shiny petals, blooms held above spreading foliage

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	GM	14	10	6/14-end	6/14	Y	Y
1986	GM	18	8	6/19-end	6/19	Y	Y

Chrysanthemum Paludosum (Swamp
Chrysanthemum)
Chrysanthemum paludosum

No named variety

Color: white with yellow centers

Use: border, bedding, container, rock garden

Comment: flowers abundant, single, uniform habit

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Bu	16	14	6/14-end	6/14	Y	Y
1986	Bu	13	10	6/19-end	6/19	Y	Y

Clump Chrysanthemum (see
Chrysanthemum Multicaule)

Cockscomb (see Celosia)

Cone Flower (see Rudbeckia)

Cosmos

Cosmos bipinnatus

C. sulphureus

C. bipinnatus

Psyche Mix

Color: pink, white, crimson

Use: bedding, cut flower

Comment: large flowers, semidouble and single, lacy foliage, may need tying

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Ag	34	12	7/11-frost	8/1	N	N
1986	Ag	24	12	7/2-frost	8/1	N	N

C. sulphureus

Sunny Gold

Color: golden yellow

Use: bedding

Comment: semidouble flowers, bushy plants, best performance early in season

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	P	28	12	6/14-frost	6/14	N	N
1986	Bo	15	12	6/19-7/25	6/19	N	N

Sunny Red

Color: bright red to scarlet orange

Use: bedding

Comment: large, semidouble flowers, bushy plants with good foliage, longer bloom period, plants not all uniform

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	AAS	19	12	6/14-frost	7/24	N	N
1986	AAS	20	12	6/19-frost	8/8	N	N

Crown Daisy (see Chrysanthemum Coronarium)

Dahlia

Dahlia pinnata

Border Jewels

Color: mix, wide color range with emphasis on stronger shades

Use: bedding, cut flower

Comment: large flowers, double and semidouble

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1986	P	28	12	7/2-frost	8/1	N	N

Figaro

Color: mix, wide color range

Use: bedding, cut flower

Comment: double flowers, early blooming, compact

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	16	12	6/14-frost	7/24	N	N
1986	H	16	10	6/19-frost	8/8	N	N

Rigoletto

Color: yellow, red, orange, pink, white

Use: bedding, cut flower

Comment: double and semidouble flowers, early blooming

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	G	20	15	6/14-frost	7/24	N	N
1986	G	25	12	6/19-frost	7/25	N	N

Other acceptable varieties: Dandy, Mignon

Daisy, African (see African Daisy)

Daisy, Cape (see Venidium)

Daisy, Crown (see Chrysanthemum Coronarium)

Daisy, English (see English Daisy)

Daisy, Gloriosa (see Rudbeckia)

Daisy, Livingstone (see Livingstone Daisy)

Daisy, Painted (see Chrysanthemum, Annual)

Daisy, Shasta (see Shasta Daisy)

Dianthus, Annual (Pinks)

Dianthus chinensis

Crimson Charms

Color: crimson

Use: bedding, border, container

Comment: large flowers held above foliage, many blooms, uniform plants

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	G	9	9	6/14-end	7/11	Y	Y
1986	G	10	6	6/19-end	7/11	Y	Y

Firestorm

Color: bright scarlet

Use: bedding, cut flower

Comment: provides mass of color, very uniform

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	GI	17	12	6/14-end	6/14	Y	Y

Magic Charms Mix

Color: scarlet, pink, white, coral, crimson

Use: bedding, border, container

Comment: large fringed flowers, compact, vigorous growth

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Tw	11	12	6/14-end	7/24	Y	SL
1986	St	8	8	6/19-end	6/26	Y	SL

Princess Scarlet (*D. chinensis* × *barbatus*)

Color: intense red

Use: bedding, border, container

Comment: early blooming, well branched, some foliage held above blooms

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	P	12	12	6/14-end	6/21	Y	Y
1986	St	10	10	6/19-end	6/18	Y	Y

Princess White (*D. chinensis* × *barbatus*)

Color: white

Use: bedding, border, container

Comment: flowers not damaged by rain, well branched, some foliage held above flowers

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	12	12	6/28-end	7/11	Y	Y
1986	St	12	10	6/19-end	7/2	Y	Y

Snowfire

Color: white with cherry red center

Use: bedding, border, container

Comment: weather resistant, well branched, many blooms

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Tw	12	9	6/14-end	7/17	Y	Y
1986	Tw	11	8	6/19-end	7/2	Y	Y

Telstar Mix

Color: scarlet, crimson, salmon, rose, pink, white, bicolor

Use: bedding, border, container

Comment: early blooming, vigorous

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	GM	12	12	6/14-end	6/14	Y	Y
1986	GM	10	10	6/19-end	7/2	Y	Y

Other recommended variety (only one year's data): Queen's Court Mix

Digitalis (see Foxglove)

Dusty Miller

Chrysanthemum ptarmiciflorum

Senecio cineraria (Cineraria maritima)

C. ptarmiciflorum

Silver Lace

Color: silver foliage

Use: border, edging

Comment: finely cut lacy foliage, well branched, upright

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	G	17	12	—	—	Y	—
1986	G	11	10	—	—	Y	—

S. cineraria

Silver Queen

Color: silver-white foliage

Use: border, edging, container

Comment: decorative, finely divided foliage, some size variation

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	P	8	8	—	—	Y	—
1986	P	7	8	—	—	Y	—

Snow Crystals

Color: silvery white foliage

Use: border, edging, container

Comment: very uniform, compact, well-fringed leaves

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	G	6	8	—	—	Y	—
1986	G	6	8	—	—	Y	—

Dwarf Morning Glory (see Morning Glory, Dwarf)

Echium (Viper's Bugloss)

Echium plantagineum

Monarch Dwarf Hybrids

Color: blue, lavender, rose, white

Use: bedding, border

Comment: trumpet shaped flowers, numerous, hardy plants

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	GM	14	12	6/14-end	6/14	Y	Y
1986	GM	14	8	6/19-end	6/18	Y	Y

English Daisy *Bellis perennis*

Mixed Buttons

Color: red, white, rose

Use: bedding, border, rock garden

Comment: small quilled double blooms held above foliage

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	9	10	6/14-end	7/24	Y	Y
1986	St	9	10	6/19-end	7/11	Y	Y

English Marigold (see Calendula)

Fairy Wings (see Lobelia)

Feverfew (see Matricaria)

Flanders Poppy (see Poppy, Tulip)

Floss Flower (see Ageratum)

Flowering Cabbage or Kale (Ornamental Cabbage)

Brassica oleracea, Acephala group

Tokyo Mix

Color: red, pink, or white on green

Use: bedding, border, container

Comment: smooth wavy edged leaves, good color even before frost, white plants more compact (first measurement listed)

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1986	G	12-14	15-18	—	—	Y	—

Other acceptable varieties: most do well, including flowering ornamental kales

Flowering Kale (see Flowering Cabbage)

Flowering Tobacco (see Nicotiana)

Foxglove

Digitalis purpurea

Foxy Mix

Color: rose, lavender, cream, white, yellow, purple

Use: border, background, cut flower, medicinal

Comment: showy flowers with spotted throats, late blooming

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	55	15	7/24-end	8/28	Y	Y
1986	St	42	12	8/1-end	8/22	Y	Y

Gazania (Treasure Flower)

Gazania rigens

Chansonette Mix

Color: rose, bronze, salmon, red, orange, yellow

Use: bedding, edging, ground cover, container

Comment: large, single flowers, many with rings and dark centers, closed in cloudy weather

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	P	11	11	7/11-end	8/6	Y	Y
1986	P	11	10	7/2-end	7/18	Y	Y

Mini-Star Mix

Color: yellow, gold, tangerine-orange, white, russet, pink

Use: bedding, edging, container

Comment: silvery green foliage, compact, flowers open on overcast days

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	12	12	7/17-end	8/20	Y	Y
1986	St	10	10	7/2-end	7/18	Y	Y

Mini-Star Tangerine

Color: vibrant orange

Use: bedding, edging, container, rock garden

Comment: silvery green foliage, even flower height, concentrated color, flowers open on overcast days

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	AAS	10	10	7/11-end	8/1	Y	Y
1986	AAS	11	10	7/2-end	7/18	Y	Y

Geranium

Pelargonium × *hortorum*

Cherry Border

Color: cherry red

Use: bedding, container

Comment: large flower heads, little blossom shatter, compact

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Bu	16	12	6/21-end	7/11	Y	Y
1986	Bu	15	12	6/26-end	7/2	Y	Y

Ice Queen

Color: white

Use: bedding, container

Comment: pure white color, little blossom shatter, early

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	B	16	12	6/14-end	6/14	Y	Y
1986	P	18	12	6/19-end	6/26	Y	Y

Mustang

Color: deep scarlet

Use: bedding, container

Comment: large and abundant flower heads, zoned leaves, little blossom shatter

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	17	12	6/14-end	7/17	Y	Y
1986	St	14	12	6/19-end	6/26	Y	Y

Ringo Scarlet

Color: bright scarlet

Use: bedding, container

Comment: large flower heads, zoned leaves, little blossom shatter, early

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	15	13	6/14-end	6/14	Y	Y
1986	B	13	13	6/19-end	6/19	Y	Y

Rose Diamond

Color: bright rose pink

Use: bedding, container

Comment: early, zoned leaves, some blossom shatter

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	AAS	15	12	6/14-end	6/14	Y	Y
1986	AAS	12	12	6/19-end	6/19	Y	Y

Other recommended varieties (only one year's data): Jolly Red Giant, Jolly Red Wink, Orbit Cherry, Orbit Coral, Smash Hit Rose Pink, Sundance Orange Scarlet

Other acceptable varieties: Red Elite, Scarlet Border

Gloriosa Daisy (see Rudbeckia)

Godetia (Satin Flower)

Godetia grandiflora

Dwarf Gem Mix

Color: pink, red, white

Use: bedding, rock garden

Comment: bushy, compact plants, covered with single blooms, good color range

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	NK	11	12	6/28-frost	8/1	SL	N
1986	NK	14	12	6/19-frost	7/11	SL	N

Hollyhock

Alcea rosea

Pinafore Mix

Color: yellow, white, pink, red

Use: tall, showy bedding plant

Comment: annual, flowers early, semidouble blooms, susceptible to *Rhizoctonia* (fungal disease attacking plant roots and lower stem)

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Bu	33	18	6/14-end	8/1	Y	Y
1986	Bu	30	12	6/19-end	6/19	Y	Y

Ice Plant (see Livingstone Daisy)

Impatiens (Busy Lizzie, Sultana, Snapweed, Patience Plant)

Impatiens wallerana

Blitz Orange

Color: scarlet orange

Use: semishade, bedding, border, container, house plant

Comment: large-flowered, vigorous, many blooms, uniform

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1986	AAS	10	10	6/19-frost	6/26	N	N

Crazy Quilt Mix

Color: bicolor; cherry red, scarlet, rose, orange, and pink, with white

Use: semishade, bedding, border, container, house plant

Comment: bicolored flowers, good color mix, uniform

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1986	P	7	8	6/19-frost	6/26	N	N

Mini Mix

Color: cherry red, coral, orange, rose, violet, white

Use: semishade, container, border, bedding, house plant

Comment: very dwarf, low branching plants, abundant flowers

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1986	PA	4	8	6/19-frost	6/26	N	N

Super Elfin Mix

Color: orchid, pink, scarlet, rose, orange, coral, white

Use: semishade, bedding, border, container, house plant

Comment: good color mix, some with eyes, abundant flowers, slightly uneven habit

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1986	Tw	6	10	6/19-frost	6/26	N	N

Other acceptable varieties: Blitz Violet, Accent Mix

Jewel of the Veld (see Ursinia)

Kale, Flowering or Ornamental (see Flowering Cabbage)

Kochia (Burning Bush, Summer Cypress) *Kochia scoparia* f. *trichophylla*

Acapulco Silver

Color: bright green frosted with silvery white

Use: border, annual hedge, accent

Comment: tall, with fern-like leaves, uniform

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	AAS	34	15	—	—	Y	—
1986	AAS	36	12	—	—	Y	—

Other acceptable variety: Childsii

Lavatera (Annual Mallow, Tree Mallow) *Lavatera trimestris*

Mont Blanc

Color: luminous white

Use: border, bedding, cut flower

Comment: hollyhock-like blooms, dark foliage, may go to seed before end of season

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	V	24	12	7/11-end	7/24	Y	Y
1986	V	12	10	6/19-end	6/26	Y	Y

Silver Cup

Color: rose pink

Use: border, background, cut flower

Comment: showy blooms, dark green foliage, may go to seed before end of season

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	V	30	12	6/28-end	7/11	Y	Y
1986	V	16	10	6/19-end	6/26	Y	Y

Other acceptable variety: Loveliness

Layia (Tidy Tips)

Layia platyglossa campestris (L. elegans)

Cutting Gold

Color: yellow with white tips

Use: border, bedding, cut flower

Comment: mass of single, daisy-like flowers, prefers cooler weather

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	P	36	10	6/14-end	7/11	Y	Y
1986	P	16	10	6/19-end	6/26	Y	Y

Linaria (Baby Snapdragon, Toadflax)

Linaria maroccana

Fairy Bouquet Mix

Color: pink, cream, yellow, lavender, white

Use: bedding, rock garden, cut flower

Comment: good early color, dainty spikes of flowers, may go to seed before end of season

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1986	GM	18	6	6/19-end	6/26	Y	Y

Livingstone Daisy (Ice Plant)

Dorotheanthus bellidiformis (*Mesembryanthemum criniflorum*)

Magic Carpet

Color: rose, crimson, buff, apricot

Use: ground cover, bedding, container

Comment: daisy-like flowers which open in the sun, spreading habit

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	T&T	6	10	6/17-end	8/1	Y	Y
1986	T&T	6	10	6/26-end	8/22	Y	Y

Other acceptable variety: Lunette

Lobelia (Fairy Wings)

Lobelia erinus

Blue Crystal

Color: violet blue

Use: bedding, edging, border, container

Comment: uniform, compact, pure green leaves

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	5	8	6/14-end	6/14	Y	Y
1986	St	6	8	6/19-end	6/19	Y	Y

Crystal Palace

Color: violet blue

Use: bedding, edging, border, container

Comment: attractive bronze-green foliage, compact

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	NK	9	8	6/14-frost	6/28	SL	SL
1986	NK	7	8	6/19-frost	6/19	SL	SL

White Lady

Color: white

Use: bedding, edging, border, container

Comment: light green foliage, mounding habit, bloom period may be shorter, usually a few blue rogues

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Hb	8	8	6/14-frost	6/14	SL	SL
1986	St	6	8	6/19-frost	6/19	SL	SL

Lupine

Lupinus polyphyllus

Russell Hybrids Mix

Color: lavender, blue, pink, red, white, yellow

Use: border, bedding, background, cut flower

Comment: attractive flower spikes and foliage, late blooming

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	31	15	6/21-end	8/21	Y	Y
1986	St	30	14	7/19-end	—	Y	Y

Mallow (see Althea Zebrina)

Mallow, Annual or Tree (see Lavatera)

Malope

Malope trifida

No named variety

Color: deep pink

Use: bedding, background

Comment: showy flowers, tall, slightly unkempt

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Al	48	12	6/21-end	7/24	Y	Y
1986	Al	14	12	6/26-end	7/18	Y	Y

Marigold

Tagetes erecta (African or American)

T. filifolia (Irish Lace)

T. hybrid (Tetraploid Hybrid)

T. patula (French)

T. patula × *erecta* (Triploid Hybrid)

T. tenuifolia (*T. signata pumila*) (Signet or Rock Garden)

African or American

Deep Orange Lady

Color: deep orange

Use: bedding, border, container, cut flower

Comment: semidwarf, carnation flowered, flowers held above foliage

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Bu	13	10	7/11-frost	7/24	N	N
1986	Bu	11	10	7/2-frost	7/11	N	N

Diamond Jubilee

Color: yellow

Use: bedding, border, container, cut flower

Comment: large flowers held above bushy foliage, strong stems

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Bo	20	12	6/28-frost	7/17	N	N
1986	P	14	12	6/26-frost	7/2	N	N

First Lady

Color: bright yellow

Use: bedding, border, container, cut flower

Comment: showy double flowers held above foliage, neat, compact, chosen #1 all-time favorite All America Winner

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	P	13	10	7/11-frost	7/24	N	N
1986	Bu	12	10	7/2-frost	7/11	N	N

Gold Lady

Color: gold

Use: bedding, border, container, cut flower

Comment: large double carnation type flowers, neat habit

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Bu	15	10	7/11-frost	7/24	N	N
1986	Bu	12	10	7/11-frost	7/11	N	N

Inca Mix

Color: gold, yellow, orange

Use: bedding, border, container

Comment: extra large, fully double flowers, sturdy plant habit

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	P	12	9	7/11-frost	7/24	N	N
1986	P	10	9	7/11-frost	7/18	N	N

Primrose Lady

Color: pale primrose yellow

Use: bedding, border, container, cut flower

Comment: uniform, double carnation blooms held well above foliage, good weather resistance as with all the Lady series

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Bu	14	10	7/17-frost	7/24	N	N
1986	Bu	13	10	7/11-frost	7/11	N	N

Other recommended varieties (only one year's data): Burpee's Experimental White, Jubilee Mix, Orange Lady

French

Bonanza Yellow

Color: clear yellow

Use: border, edging, bedding, container

Comment: large flower size, crested blooms, compact plants

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	9	10	6/14-frost	6/14	N	N
1986	St	9	10	6/19-frost	6/19	N	N

Cheerful Mix

Color: light yellow, red, gold, orange, mahogany

Use: border, bedding, edging, container

Comment: uniform, flower types include carnation and crested, numerous blooms

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Bu	8	8	6/14-frost	6/14	N	N
1986	Bu	6	8	6/19-frost	6/19	N	N

Fiesta

Color: deep red edged with yellow

Use: border, bedding, container

Comment: striking color, abundant blooms, neat habit

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	GM	13	10	6/14-frost	6/14	N	N
1986	GM	13	10	6/19-frost	6/19	N	N

Hero Red

Color: deep mahogany red, with gold accents

Use: border, bedding, container

Comment: numerous crested blooms, very large, uniform habit

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Bo	8	8	6/14-frost	6/14	N	N
1986	Bo	6	8	6/19-frost	6/19	N	N

Honey Sophia

Color: russet red with yellow edging

Use: border, bedding, container

Comment: large anemone flowered blooms, bushy, compact

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Tw	10	10	6/21-frost	6/21	N	N
1986	P	12	10	6/19-frost	6/26	N	N

Janie

Color: golden orange

Use: border, edging, bedding, container

Comment: abundant crested blooms, dwarf type, uniform

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Tw	7	8	6/14-frost	6/14	N	N

Janie Flame

Color: red and gold bicolor

Use: border, edging, bedding, container

Comment: excellent flower coverage, compact plants

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Go	14	8	6/14-frost	6/14	N	N
1986	St	7	8	6/19-frost	6/19	N	N

Janie Yellow

Color: bright yellow

Use: border, edging, bedding, container

Comment: abundant crested blooms, compact, may need disbudding

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	8	8	6/14-frost	6/14	N	N
1986	St	5	8	6/19-frost	6/19	N	N

Orange Boy

Color: deep orange

Use: border, edging, bedding, container

Comment: good flower coverage, crested blooms, dwarf

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	NK	8	8	6/14-frost	6/14	N	N
1986	NK	7	8	6/19-frost	6/19	N	N

Queen Sophia

Color: bronze and russet with gold margin

Use: bedding, border, container

Comment: covered with fully double anemone-type flowers, compact rounded plants

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	NK	11	10	6/14-frost	6/28	N	N
1986	Bo	11	10	6/19-frost	6/26	N	N

Red Cherry

Color: mahogany red

Use: bedding, border, container

Comment: excellent color, well-branched plants

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	9	8	6/14-frost	6/14	N	N
1986	B	7	8	6/19-frost	6/19	N	N

Red Marietta

Color: bright red and gold

Use: bedding, border, container

Comment: vivid single blooms, compact, uniform

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	9	8	6/14-frost	6/14	N	N
1986	D	8	8	6/19-frost	6/19	N	N

Scarlet Sophia

Color: deep scarlet

Use: bedding, border, container

Comment: striking color, good performer

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Bo	12	10	6/14-frost	6/21	N	N
1986	Bo	8	10	6/19-frost	6/26	N	N

Silvia

Color: golden yellow

Use: border, edging, bedding, container

Comment: single blooms, small and abundant, attractive foliage, uniform

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	GM	8	8	6/14-frost	6/14	N	N

Sophia Mix

Color: mix of Scarlet, Orange, Honey, Yellow, and Queen Sophia

Use: bedding, border, container

Comment: excellent mix, fairly uniform

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Bo	11	10	6/14-frost	7/11	N	N
1986	Bo	10	10	6/19-frost	6/26	N	N

Susanna

Color: red with gold margin

Use: bedding, border, container

Comment: single daisy-like blooms, free flowering, uniform

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Su	14	10	6/28-frost	7/11	N	N
1986	Su	14	10	6/19-frost	6/26	N	N

Other recommended varieties (only one year's data): Golden Anniversary, Orange Sophia, Yellow Sophia

Other acceptable varieties: Little Devil Mix, Sunfire

Irish Lace

Irish Lace

Color: bright green foliage

Use: border, edging, container

Comment: uniform, mound shape, fern-like foliage

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	P	6	6	—	—	N	—
1986	P	9	6	—	—	N	—

Signet (Rock Garden)

Lemon Gem

Color: lemon yellow

Use: edging, border, container, rock garden

Comment: mounding shape, covered with small single blooms

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	NK	14	10	6/14-frost	6/28	N	N

Little Giant

Color: golden orange with purple at petal base

Use: edging, border, container, rock garden

Comment: fern-like foliage, compact plants covered with blooms

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	15	10	6/14-frost	6/14	N	N

Starfire Mix

Color: golden yellow, gold with red, red

Use: edging border, container, rock garden

Comment: good color mix with single bicolored flowers, some size variation

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Bo	15	10	6/28-frost	7/17	N	N
1986	Bo	13	10	6/19-frost	7/2	N	N

Tetraploid Hybrid

Super Star Orange

Color: bright orange

Use: bedding, border, container

Comment: showy, abundant carnation-type blooms, some variation

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Bu	14	12	6/14-frost	6/14	N	N
1986	Bu	12	10	6/19-frost	6/19	N	N

Triploid Hybrid

Hi-G Yellow

Color: bright yellow

Use: bedding, border, container

Comment: large double, crested flowers, free flowering, early

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	P	13	10	6/14-frost	6/14	N	N
1986	P	11	10	6/19-frost	6/19	N	N

Little Nell

Color: gold with red accent at petal base

Use: bedding, container

Comment: large single flowers, numerous, slightly uneven heights

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Bo	13	10	6/21-frost	7/17	N	N
1986	Gl	13	10	6/19-frost	6/19	N	N

Orange Fireworks

Color: bright orange

Use: bedding, border, container

Comment: free blooming, large flowers, bushy compact plants

Table continues on page 61.

Photo Section



The mound-shaped plants of ageratum 'Blue Tango' are covered with fluffy blue blossoms.

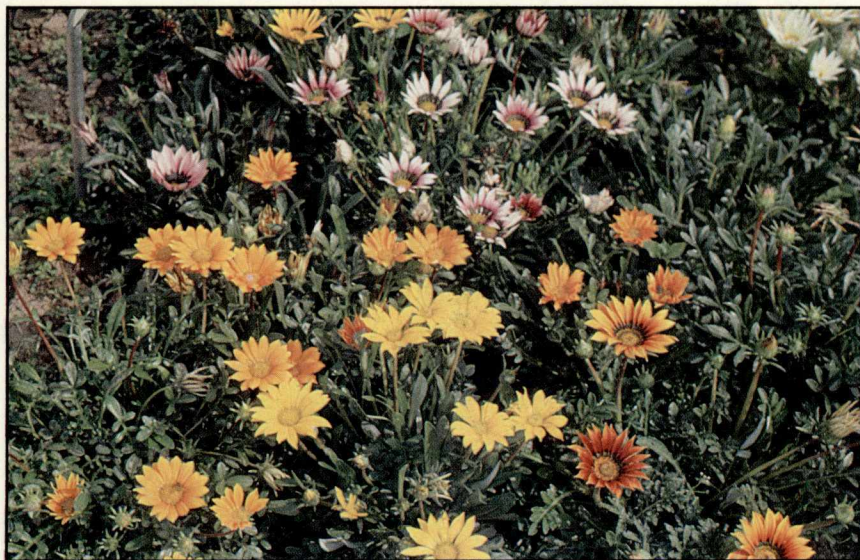


Popular shade-tolerant varieties are the begonia 'Glamour' (left) and large-flowered 'Blitz' impatiens (right).

Photo Section, continued



The large "cockscombs" of 'Jewel Box Mix' crested-type celosia come in vivid colors and last the entire season.



Both chrysanthemum coronarium (left) and the calendula 'Anagoor' (right) are hardy and nice for cutting.

Photo Section, continued



Dahlias grown from seed ('Border Jewels,' left, and 'Rigoletto,' right) produce showy flowers in a wide range of colors.



'Mini-Star Mix' is an outstanding gazania as its flowers are open even on cloudy days.

Photo Section, continued



The large flower heads of 'Rose Diamond' and 'Cherry Border' geraniums make a nice display in the garden or in containers.



The silvery foliage of 'Silver Dust' dusty miller (right) provides a nice contrast to 'Derby Rose Pink' verbena (center) and 'Dwarf Gem' godetia (left).

Photo Section, continued



A bright display of color is provided by the marigolds 'Inca Gold' (center) and 'Inca Yellow' (right).



The nasturtium 'Alaska' is distinctive with its variegated foliage. This showy, versatile flower can be used in many different settings.

Photo Section, continued



Uniformity and abundant flowers make 'Domino' series nicotiana a good choice ('White,' left, and 'Pink with White Eye,' right).



The leaves of flowering kale 'Nagoya Red' form a decorative rosette whose colors become more intense with cool fall temperatures.

Photo Section, continued



The rich bronze shades of the pansy 'Swiss Giant Firebeacon' make an outstanding display all season long.



Eye-catching color and good performance make these grandiflora petunias favorites: 'Red Flash' (left), 'Flash Mix' (center), and 'Pink Daddy' (right).

Photo Section, continued



Bright satiny flowers and finely cut foliage make 'Mission Bells' California poppy an attractive bedding plant.



The rudbeckias 'Marmalade' (left), 'Nutmeg' (center), and 'Monarch Mix' (right) provide rich gold and bronze color and long-stemmed blooms.

Photo Section, continued



The salvias 'Ryco' (left) and 'Hotline' (right) provide a brilliant display of intense scarlet.

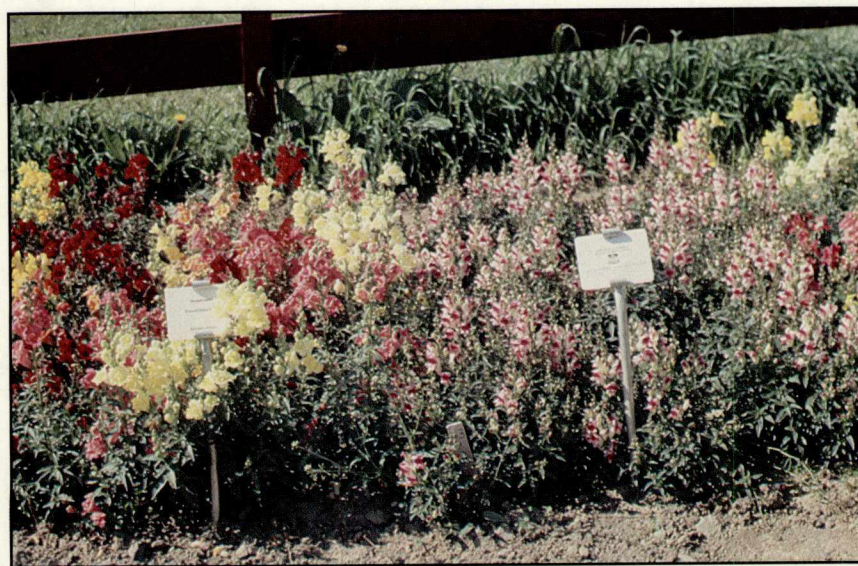


The deep violet blue spikes of the salvia 'Victoria' are attractive as cut flowers as well as massed in borders.

Photo Section, continued



Orchid-like 'Dr. Badger's Hybrids' schizanthus and the more sprawling African daisy are welcome additions to any garden.



'Sweetheart Mix,' (left), is a double open-faced snapdragon, while 'Princess White with Purple Eye' (right) is a unique bicolor, "snapping" form.

Photo Section, continued



Covered with brilliantly colored flowers, the strawflower 'Bright Bikinis Mix' is excellent for cutting and drying.



The large scarlet flowers of 'Red Monarch' Sweet William (left) and the fragrant blooms of 'Knight Mix' carnation (right) make good cut flowers.

Photo Section, continued



Venidium thrives in full sun, and the brilliant orange flowers with shiny black centers make good cut flowers.



The showy zinnias, 'Border Beauty Mix' (left) and 'Fantastic Light Pink' (right), make an outstanding garden display and long-lasting cut flowers.

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Bu	12	10	6/14-frost	6/14	N	N
1986	Bu	12	10	6/19-frost	6/19	N	N

Sunrise

Color: golden orange with red at petal base

Use: bedding, border, container

Comment: large flowers, free blooming, foliage and flowers at same height

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Bo	15	10	6/14-frost	6/14	N	N

Suzie Wong

Color: bright yellow

Use: bedding, border, container

Comment: single blooms with large petals, somewhat uneven growth habit

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	14	12	6/21-frost	6/21	N	N
1986	St	14	12	6/19-frost	6/19	N	N

Other acceptable varieties: Moll Flanders, Yellow Fireworks

Matricaria (Feverfew)

Chrysanthemum parthenium

White Gem

Color: white

Use: border, bedding, container, cut flower

Comment: mounding habit, covered with blooms

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Su	10	12	7/3-frost	7/17	Y	N
1986	Su	7	10	7/2-frost	7/11	Y	N

Other recommended variety (only one year's data): White Stars

Monarch of the Veldt (see Venidium)

Morning Glory, Dwarf

Convolvulus tricolor

Dwarf Rainbow Flash

Color: blue, lavender, pink, purple

Use: bedding, border, container

Comment: somewhat spreading, flowers with white throats, yellow centers

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	GM	11	10	6/14-end	7/24	Y	Y
1986	GM	13	12	6/19-end	7/2	Y	Y

Nasturtium

Tropaeolum majus

Alaska Mix

Color: scarlet, orange, salmon, gold, mahogany

Use: bedding, edging, walls, container, rock garden

Comment: striking variegated foliage, single blooms mostly above foliage

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	21	12	6/28-frost	7/11	N	N
1986	St	13	12	6/26-frost	7/11	N	N

Other acceptable variety: Empress of India

Nemesia

Nemesia strumosa

Carnival Mix

Color: scarlet, crimson, rose, gold, yellow, cream

Use: border, bedding, container, rock garden

Comment: good color mix, large flowers, provides mass of color

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	P	15	12	6/14-frost	6/14	Y	SL
1986	P	14	12	6/19-frost	6/19	Y	SL

Other acceptable variety: Blue Gem

Nicotiana (Flowering Tobacco)

Nicotiana alata

Domino Crimson

Color: crimson red

Use: bedding, border

Comment: compact, covered with blooms, light fragrance, may have occasional white flowered plant

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Gl	22	15	6/21-frost	7/11	Y	N
1986	Gl	18	12	6/19-frost	6/26	Y	N

Domino Pink with White Eye

Color: deep pink with white throat

Use: bedding, border

Comment: compact, very uniform, covered with blooms, light fragrance

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Gl	22	15	6/21-frost	7/3	Y	N
1986	Gl	20	12	6/19-frost	6/19	Y	N

Domino White

Color: white

Use: bedding, border

Comment: compact, well-branched plants, many blooms, light fragrance

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Bo	22	15	6/21-frost	7/11	Y	N

Nicki White

Color: white

Use: bedding, border

Comment: well-branched plants, good foliage, many blooms, light fragrance

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Gl	21	15	6/21-frost	7/17	Y	N
1986	Gl	23	12	6/19-frost	6/19	Y	N

Orchid, Poor Man's (see Schizanthus)

Ornamental Cabbage or Kale (see Flowering Cabbage)

Painted Daisy (see Chrysanthemum, Annual)

Pansy

Viola × *wittrockiana* (*V. tricolor hortensis*)

Butterfly Mix

Color: pastel shades; pink, rose, buff, orchid, yellow, salmon

Use: bedding, border, edging, container

Comment: large ruffled blooms, nice faces and markings

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	P	9	8	6/14-end	6/14	Y	Y
1986	P	14	8	6/19-end	6/19	Y	Y

Clear Crystals Mix

Color: yellow, purple, scarlet, white, orange, light blue, lilac

Use: bedding, border, edging, container

Comment: clear colors without blotches, medium size blooms

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Bu	8	8	6/14-end	6/14	Y	Y
1986	Bu	13	8	6/19-end	6/14	Y	Y

Majestic Giant Mix

Color: blue, purple, red, rose, scarlet, bronze, white, yellow

Use: bedding, border, edging, container

Comment: very large flowers, all with dark blotch, good color mix

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1986	G	15	10	6/19-end	6/19	Y	Y

Regency Mix

Color: purple, scarlet, yellow, lavender, orange, white

Use: bedding, border, edging, container

Comment: clear faced, medium sized blooms, free flowering

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	B	12	10	6/14-end	6/14	Y	Y
1986	B	11	10	6/19-end	6/19	Y	Y

Silver Princess

Color: creamy white, rosy red blotch

Use: bedding, border, edging, container

Comment: large flower size, abundant blooms, uniform

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1986	St	10	10	6/19-end	6/19	Y	Y

Springtime Azure Blue

Color: light blue, shading darker toward center

Use: bedding, border, edging, container

Comment: good bloom size, abundant flowers, uniform

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	H	11	9	6/14-end	6/14	Y	Y

Saint Tropez Mix

Color: red, rose, white, scarlet, bronze, purple, blue, yellow

Use: bedding, border, edging, container

Comment: Swiss Giant type, large flowers with faces, good color mix

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	WD	13	8	6/14-end	6/14	Y	Y
1986	St	11	8	6/19-end	6/19	Y	Y

Steele's Jumbo Mix

Color: violet, purple, bronze, yellow, red, some multicolors

Use: bedding, border, container

Comment: large flowers in pastel shades, lightly waved petals, abundant blooms

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1986	P	15	8	6/19-end	6/19	Y	Y

Swiss Giant Alpenglow

Color: mahogany red with dark blotch

Use: bedding, border, container

Comment: large, long-stemmed blooms, some variation in color

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	13	8	6/14-end	6/14	Y	Y
1986	St	13	8	6/19-end	6/19	Y	Y

Swiss Giant Berna

Color: dark violet blue with dark blotch

Use: bedding, border, container

Comment: vigorous plants, large, long-stemmed blooms

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	G	11	10	6/14-end	6/14	Y	Y
1986	St	13	10	6/19-end	6/19	Y	Y

Swiss Giant Jungfrau

Color: pure white

Use: bedding, border, container

Comment: large blooms covering plants, vigorous

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	14	8	6/14-end	6/14	Y	Y
1986	St	14	8	6/19-end	6/19	Y	Y

Swiss Giant Lake of Thun

Color: mid-blue with dark blotch

Use: bedding, border, container

Comment: erect habit, large flowers

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	13	10	6/14-end	6/14	Y	Y
1986	B	14	10	6/19-end	6/19	Y	Y

Universal Blue with Blotch

Color: blue with purple blotch

Use: bedding, border, container

Comment: free-flowering, flowers slightly smaller than Swiss Giants

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	G	15	10	6/14-end	6/14	Y	Y
1986	G	13	8	6/19-end	6/19	Y	Y

Universal Deep Yellow

Color: golden yellow, no blotch

Use: bedding, border, edging, container

Comment: abundant flowers give mass of color, uniform

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Tw	12	8	6/14-end	6/14	Y	Y
1986	St	9	8	6/19-end	6/19	Y	Y

Universal Light Blue

Color: azure blue with dark blotch

Use: bedding, border, edging, container

Comment: good flower size, compact, mounding habit

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	G	7	10	6/14-end	6/14	Y	Y
1986	St	10	10	6/19-end	6/19	Y	Y

Universal Red

Color: bright red, darker blotch

Use: bedding, border, edging, container

Comment: mounding habit, some variation in color, height

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Tw	8	8	6/14-end	6/14	Y	Y
1986	St	11	8	6/19-end	6/19	Y	Y

Universal True Blue

Color: clear blue, no blotch

Use: bedding, border, edging, container

Comment: good flower coverage, less compact, mounding habit

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	G	12	10	6/14-end	6/14	Y	Y
1986	G	14	8	6/19-end	6/19	Y	Y

Other recommended varieties (only one year's data): Crystal Bowl Mix, Imperial Pink, Lyric Mix, Sunny Boy, Swiss Giant Coronation Gold, Swiss Giant Blue, Swiss Giant Winered

Patience Plant (see Impatiens)

Petunia

Petunia × *hybrida*

Appleblossom

Color: pastel pink

Use: bedding, border, container

Comment: single grandiflora, large flowers, uniform

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	16	9	6/14-end	6/14	Y	Y
1986	St	16	9	6/19-end	6/19	Y	Y

Cherry Frost

Color: deep cherry red with white outer edge

Use: bedding, border, container

Comment: single grandiflora, some variability in color pattern

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	B	16	10	6/14-end	6/14	Y	Y
1986	Se	15	10	6/19-end	6/19	Y	Y

Plum Madness

Color: deep orchid

Use: bedding, border, container

Comment: single floribunda, disease and weather resistant, prolific blooms, uniform

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1986	B	16	10	6/19-end	6/19	Y	Y

Purple Pirouette

Color: violet purple edged with white

Use: bedding, border, container

Comment: double grandiflora, large ruffled blooms, color pattern variable

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	AAS	17	9	6/14-end	6/14	Y	Y
1986	AAS	16	10	6/19-end	6/19	Y	Y

Red Flash

Color: intense scarlet red

Use: bedding, border, container

Comment: single grandiflora, good flower size and number, compact

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	12	9	6/14-end	6/14	Y	Y
1986	St	13	11	6/19-end	6/19	Y	Y

Red Joy Improved

Color: deep scarlet red

Use: bedding, border, container

Comment: single multiflora, large flowers, good show of color

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Bu	17	9	6/14-end	6/14	Y	Y
1986	St	14	11	6/19-end	6/19	Y	Y

Red Picotee

Color: bright red with white edging

Use: bedding, border, container

Comment: single grandiflora, large flowers, with somewhat wavy petals, upright

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	AAS	18	9	6/14-end	6/14	Y	Y
1986	AAS	12	10	6/19-end	6/19	Y	Y

Rose Picotee

Color: deep rose with white edging

Use: bedding, border, container

Comment: single grandiflora, large flowers, somewhat variable color pattern

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	P	17	9	6/14-end	6/14	Y	Y
1986	P	16	10	6/19-end	6/19	Y	Y

Summer Madness

Color: rosy red, deep rose veined throat

Use: bedding, border, container

Comment: single floribunda, smaller, abundant blooms, some disease and weather resistance

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	B	16	9	6/14-end	6/14	Y	Y
1986	B	15	9	6/19-end	6/19	Y	Y

Ultra Mix

Color: red, white, blue, salmon, pink, burgundy

Use: bedding, border, container

Comment: single grandiflora, good color mix, fairly uniform, some weather tolerance

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	15	9	6/14-end	6/14	Y	Y
1986	St	14	9	6/19-end	6/19	Y	Y

Ultra Red

Color: bright red

Use: bedding, border, container

Comment: single grandiflora, large and abundant flowers, spreading

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	18	9	6/14-end	6/14	Y	Y
1986	St	12	9	6/19-end	6/19	Y	Y

Other recommended varieties (only one year's data): Blue Frost, Capri, Coral Sea, Countdown Mix, Double Sure, Flair Mix, Flash Mix, Old Glory Red, Old Glory White, Pink Bouquet, Pink Daddy, Red Flair, Ultra Blue

Phlox, Annual

Phlox drummondii

Cecily

Color: pink, red, plum, lavender, rose, white

Use: bedding, border, edging, container
 Comment: compact, covered with large clustered blooms

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	P	11	12	6/14-end	7/17	Y	Y
1986	P	12	10	6/19-end	7/18	Y	Y

Other acceptable varieties: Dwarf Beauty Mix, Dwarf Early Mix

Pink, Clove (see Carnation)

Pinks (see Dianthus, Annual)

Poppy, California

Eschscholtzia californica

Mission Bells

Color: gold, rose, scarlet, orange, pink

Use: bedding

Comment: finely cut foliage, double and semidouble blooms, best sown outdoors where they are to grow

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	19	4	7/24-end	8/7	Y	Y

Orange King

Color: bright orange

Use: bedding

Comment: single flowers, spreading plants with finely cut foliage, best sown outdoors where they are to grow

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	WD	16	4	7/24-end	8/7	Y	Y
1986	WD	16	4	7/11-end	7/18	Y	Y

Poppy, Tulip (Flanders Poppy)

Papaver glaucum

Lady Bird

Color: deep scarlet with black blotches

Use: bedding, border

Comment: shiny single flowers, profuse bloomer, bloom period can be extended by removing seed heads

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	WD	22	10	6/14-frost	7/11	SL	SL
1986	WD	22	10	6/19-frost	7/2	SL	SL

Pot Marigold (see Calendula)

Rudbeckia (Gloriosa Daisy, Black-Eyed Susan, Cone Flower)

(Rudbeckia hirta)

Marmalade

Color: golden orange with brown centers

Use: bedding, cut flower

Comment: many single blooms, strong stems, slightly sprawling

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Se	21	12	6/14-end	6/14	Y	Y
1986	Se	24	12	6/19-end	7/2	Y	Y

Nutmeg

Color: rusty red, bronze shades

Use: cut flower, bedding

Comment: distinctive color, double and semidouble blooms, variable heights

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	H	26	12	6/28-frost	8/7	Y	SL
1986	H	18	12	7/2-frost	7/11	Y	SL

Other recommended varieties (only one year's data): Monarch Mix, Mixed Colors (*R. hirta burpeeii*)

Other acceptable variety: Goldilocks

Sage, Mealycup or Scarlet (see Salvia)

Salvia

Salvia farinacea (Mealycup Sage)

S. splendens (Scarlet Sage)

Mealycup Sage

Victoria

Color: deep violet blue

Use: border, bedding, cut flower, dried flower

Comment: striking color, slender flower spikes, bushy plants, uniform

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	18	10	6/14-end	6/14	Y	Y
1986	St	26	10	6/19-end	7/2	Y	Y

Other recommended variety (only one year's data): Silver White

Other acceptable variety: White Bedder

Scarlet Sage

Cleopatra Mix

Color: white, pink, rose, scarlet, violet

Use: bedding, border, container

Comment: dense flower spikes, good color mix, plant form variable

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	P	14	10	6/14-frost	6/21	N	N
1986	P	14	10	6/19-frost	6/26	N	N

Hotline

Color: bright red

Use: bedding, border, container

Comment: stocky flower spikes, well-branched plants, good concentration of color

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	P	14	10	6/14-frost	6/21	N	N
1986	P	15	10	6/19-frost	6/26	N	N

Ryco

Color: bright red

Use: bedding, border, container

Comment: compact, dark green foliage, free flowering

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	13	10	6/14-frost	7/11	N	N
1986	St	14	10	6/19-frost	6/19	N	N

Other acceptable variety: Laser Purple

Satin Flower (see Godetia)

Schizanthus (Butterfly Flower, Poor Man's Orchid)

Schizanthus xwisetonensis

Dr. Badger's Hybrids

Color: white, pink, rose, lavender, purple

Use: bedding, container, cut flower

Comment: large flowers, well branched plants, finely cut foliage

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	T&T	23	12	7/11-frost	7/24	SL	N

Star Parade

Color: white, pink, rose, crimson, purple

Use: bedding, border, container

Comment: compact, mounding plants, covered with large blooms

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	G	12	10	6/28-frost	7/24	SL	N
1986	G	14	8	6/26-frost	7/18	SL	N

Shasta Daisy

Chrysanthemum × *suberbum* (*C. maximum*)

Alaska

Color: white

Use: cut flower, bedding

Comment: large single blooms, long stems for cutting

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	NK	33	15	6/14-frost	8/20	Y	N
1986	St	24	12	7/18-frost	8/22	Y	N

Little Miss Muffet (also sold as Silver Princess)

Color: white

Use: bedding

Comment: many flowers, plants not particularly uniform

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	NK	11	13	6/14-end	8/20	Y	Y
1986	P	15	12	6/19-end	7/25	Y	Y

Other acceptable variety: Starburst

Snapdragon

Antirrhinum majus

Giant Tetra

Color: mix

Use: bedding, cut flower

Comment: large bicolor flowers, stems not always erect

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	V	24	10	6/14-end	6/14	Y	Y
1986	V	25	10	6/19-end	7/2	Y	Y

Kolibri Mix (also sold as Early Carpet)

Color: mix, also available in separate colors

Use: bedding, container

Comment: excellent colors, fairly uniform

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Hb	11	12	6/14-end	6/14	Y	Y
1986	St	12	12	6/19-end	7/11	Y	Y

Little Darling

Color: mix

Use: bedding, cut flower

Comment: butterfly or open-faced bloom, base branching, good colors

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	15	14	6/14-end	7/11	Y	Y
1986	St	16	12	6/19-end	6/26	Y	Y

Princess White with Purple Eye

Color: white flower, purple eye

Use: edging, bedding

Comment: new, bicolor flowers, closely spaced, many flower spikes

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1986	AAS	16	12	6/19-end	7/11	Y	Y

Rocket Mix

Color: mix, also available in separate colors

Use: cut flower, tall bedding

Comment: good colors, uniform, sturdy stems with tall flower spikes

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	P	35	12	6/14-end	7/11	Y	Y
1986	St	34	8	6/19-end	6/26	Y	Y

Sweetheart Mix

Color: mix

Use: bedding, cut flower

Comment: double azalea-type flowers, uniform, produce mass color effect

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	G	19	11	6/14-end	6/14	Y	Y
1986	G	20	10	6/19-end	7/11	Y	Y

Other acceptable varieties: Cinderella Mix, Supreme Mix

Snapdragon, Baby (see Linaria)

Snapweed (see Impatiens)

Stocks

Matthiola incana

Ten Week White

Color: white

Use: bedding, cut flower

Comment: fragrant, high percentage of doubles, strong flower spikes

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	GM	16	10	6/28-end	7/17	Y	Y
1986	GM	15	8	6/19-end	6/26	Y	Y

Other acceptable varieties: Brilliant Double Purpose, Ten Week Mix

Strawflower

Helichrysum bracteatum

Bright Bikinis Mix

Color: dark red, yellow, hot red, pink, white

Use: dried flower, cut flower, bedding

Comment: vivid colors, early flowering, dwarf

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	WD	22	12	6/14-end	7/17	Y	Y
1986	WD	20	10	6/26-end	7/11	Y	Y

Other acceptable variety: Monstrosum Finest Mix

Sultana (see Impatiens)

Summer Cypress (see Kochia)

Sunflower

Helianthus annus

Dwarf Sungold

Color: golden yellow

Use: bedding, border

Comment: extremely double flowers, many blooms, uniform

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1986	P	22	14	6/26-frost	7/2	SL	N

Teddy Bear

Color: golden yellow

Use: bedding, border

Comment: double flowered chrysanthemum type, sturdy branched plants

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	NK	22	15	7/11-frost	8/1	SL	N
1986	St	26	14	6/26-frost	7/2	SL	N

Sunray (see Acrolinium)

Swamp Chrysanthemum (see Chrysanthemum Paludosum)

Sweet Alyssum (see Alyssum, Sweet)

Sweet William

Dianthus barbatus

Red Monarch

Color: scarlet

Use: bedding, cut flower

Comment: upright plants, large flower heads, striking color

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	14	12	7/11-frost	7/24	Y	SL
1986	St	18	10	7/2-frost	7/25	Y	SL

Other acceptable variety: Summer Beauty

Tidy Tips (see Layia)

Toadflax (see Linaria)

Tobacco, Flowering (see Nicotiana)

Treasure Flower (see Gazania)

Tricolor Chrysanthemum (see
Chrysanthemum Annual)

Tulip Poppy (see Poppy, Tulip)

Ursinia (Jewel of the Veld)

Ursinia anethoides

No named variety

Color: bright orange with dark purple center ring

Use: bedding, rock garden

Comment: mounding habit, covered with daisy-like blooms, finely cut foliage

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	18	10	7/11-end	7/17	Y	Y
1986	St	15	10	7/2-end	7/11	Y	Y

Venidium (Monarch of the Veldt, Cape Daisy)

Venidium fastuosum

No named variety

Color: rich orange with purple-black zone around center

Use: bedding, border, cut flower

Comment: large flowers, daisy-like with dark centers, grey-green foliage

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	GM	34	12	7/3-end	7/24	Y	Y
1986	GM	30	12	6/26-end	7/2	Y	Y

Verbena (Vervain)

Verbena × *hybrida*

Amethyst

Color: violet-blue with white eye

Use: bedding, border, edging

Comment: compact, uniform plants, good bloomer

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	9	9	7/17-end	7/24	Y	Y

Blaze

Color: bright scarlet

Use: bedding, border, cut flower

Comment: large bloom size, compact, uniform, excellent performer

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Bu	11	9	7/17-end	7/24	Y	Y

Derby Rose Pink

Color: bright rose

Use: bedding, border, cut flower

Comment: large and abundant blooms, uniform, outstanding

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Bo	11	9	7/11-end	7/24	Y	Y

Rainbow Strain

Color: pink, rose, salmon, white, lavender

Use: bedding, border, cut flower

Comment: good flower size, long stems

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Tw	14	9	7/11-end	7/24	Y	Y
1986	Tw	11	9	6/19-end	7/11	Y	Y

Sangria

Color: bright burgundy with small white eye

Use: bedding, border, cut flower

Comment: large flower heads, somewhat spreading habit

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	AAS	10	8	7/11-end	7/24	Y	Y
1986	AAS	10	8	6/26-end	7/11	Y	Y

Showtime Blaze

Color: bright scarlet

Use: bedding, border, cut flower

Comment: good bloom size, compact, dark green foliage

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	D	9	10	7/17-end	7/24	Y	Y
1986	D	10	10	6/19-end	7/11	Y	Y

Trinidad

Color: medium rose pink

Use: bedding, border, cut flower

Comment: upright habit, uniform, blooms held well above the foliage

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	AAS	11	9	7/17-end	7/24	Y	Y
1986	AAS	11	9	6/19-end	7/11	Y	Y

Other recommended variety (only one year's data): Showtime Mix

Vervain (see Verbena)

Viola

Viola cornuta

Blue Perfection

Color: clear medium blue

Use: bedding, border, edging, container, rock garden

Comment: large flowers, very uniform, vigorous

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	12	8	6/14-end	6/28	Y	Y
1986	St	10	8	6/19-end	6/19	Y	Y

Finest Mix

Color: wine red, blue, white, yellow, dark blue—mostly bicolors

Use: bedding, border, edging, container, rock garden

Comment: most with faces, free flowering

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	10	8	6/14-end	6/19	Y	Y
1986	St	10	8	6/19-end	6/19	Y	Y

Viper's Bugloss (see Echium)

Wax Begonia (see Begonia, Wax)

Winged Everlasting (see Ammobium)

Youth and Old Age (see Zinnia)

Zinnia (Youth and Old Age)

Zinnia elegans

Border Beauty Mix

Color: yellow, cream, salmon, deep orange, rose, scarlet

Use: bedding, border, cut flower

Comment: semi- to fully double dahlia-type blooms, good color mix, sturdy plants

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Bu	24	10	6/14-frost	6/14	N	N
1986	Bu	24	10	6/19-frost	6/19	N	N

Border Beauty Rose

Color: rose pink highlighted with salmon

Use: bedding, border, cut flower

Comment: large dahlia-type blooms, bushy plants, good foliage

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	AAS	20	10	6/14-frost	6/14	N	N
1986	Bu	20	10	6/19-frost	6/19	N	N

Dasher Orange

Color: clear light orange

Use: bedding, border, container

Comment: vibrant color, very large blooms, free flowering, uniform

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Bo	14	8	6/14-frost	6/14	N	N
1986	Bo	14	10	6/19-frost	6/26	N	N

Dasher Scarlet

Color: deep scarlet

Use: bedding, border, container

Comment: large double flowers, compact plants, uniform

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Bo	15	8	6/14-frost	6/14	N	N
1986	Bo	15	10	6/19-frost	6/26	N	N

Fantastic Light Pink

Color: deep pink, maturing to light pink

Use: bedding, border, cut flower

Comment: extremely large dahlia-type flowers, sturdy plants, weather resistant, uniform

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	AAS	20	8	6/21-frost	7/11	N	N
1986	Tw	20	10	6/19-frost	6/26	N	N

Florida Red

Color: deep scarlet

Use: bedding, cut flower, border

Comment: good flower quality, well-branched plants, good foliage

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Bo	23	10	6/21-frost	7/11	N	N
1986	Bo	23	12	6/19-frost	6/26	N	N

Gold Sun

Color: bright gold

Use: bedding, background, cut flower

Comment: large (4'') fully double blooms, bushy plants, uniform

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	St	20	12	6/14-frost	6/14	N	N
1986	St	24	12	6/19-frost	6/26	N	N

King of Hearts

Color: deep scarlet

Use: background, cut flower

Comment: very large dahlia-type flowers, well-branched plants, uniform

Year	Seed Source	Height (in)	Spacing (in)	Bloom Period	100% Bloom	Frost Hardy	
						Foliage	Flowers
1985	Bo	29	12	6/21-frost	7/17	N	N
1986	Bo	28	12	6/26-frost	7/11	N	N

Other recommended varieties (only one year's data): Dreamland Coral, Dreamland Pink, Small World Pink

Other acceptable varieties: Florida Orange, Pink Ruffles, Small World Cherry, Starlet Mix, Yellow Marvel

Appendixes

Appendix 1

Seeding Information

Date refers to date of sowing in the greenhouse. Dates listed are the seeding dates used to obtain growth and bloom data given in the text, unless noted under comments.

Temp is the temperature in degrees Fahrenheit required for seed germination. Please note this is the temperature of the medium and not air temperature. Evaporation at the surface can lower the temperature of the germination medium 5-10 degrees below air temperature.

Cover indicates whether seeds should be covered with the germination medium (Y =yes, N =no, Sl =slightly covered). If either light (L) or dark (D) is required for seed germination, the appropriate letter is listed. Seeds requiring light should not be covered. Seeds requiring dark should be covered completely with the germination medium unless they are very small, in which case the seeding pot should be covered with something to block out light, such as newspaper or black plastic. Very small seed should be sprinkled on the surface and lightly pressed into the medium. Larger seed should be covered to a depth of about twice the seed diameter.

Days gives the number of days for seed germination to occur. Under good conditions, germination may occur more rapidly.

Name	Date	Temp	Cover	Days
Acroclium (<i>Helipterum roseum</i>)	4/11	65-75	Y	14-20
African Daisy (<i>Dimorphotheca sinuata</i>)	4/11	60-70	Y	10-15
Ageratum (<i>Ageratum houstonianum</i>)	4/4	70-75	N-L	5-10
Althea Zebrina (<i>Malva sylvestris</i> var. <i>zebrina</i>)	3/26	70	Sl-L	10-14
Alyssum, Sweet (<i>Lobularia maritima</i>)	4/11	65-70	N-L	8-15
Ammobium (<i>Ammobium alatum</i>)	4/4	68-75	Y	7-14
Asperula (<i>Asperula orientalis</i>)	4/4	70	Y	7-14
Aster (<i>Callistephus chinensis</i>)	4/4	70	Y	10-14
Begonia, Wax (<i>Begonia</i> × <i>semperflorens-cultorum</i>)	3/5	70-75	N	15-20
Calendula (<i>Calendula officinalis</i>)	4/11	70	Y-D	10-14
Carnation (<i>Dianthus caryophyllus</i>)	3/21	70	Y	14-21
Celosia (Cockscomb) (<i>Celosia cristata</i>)	4/23	70-75		10-15
Chrysanthemum, Annual (<i>Chrysanthemum</i> spp.: <i>C. carinatum</i> , <i>C. coronarium</i> , <i>C. multicaule</i> , <i>C. paludosum</i>)	4/4	68-70	Y	10-18

Appendix 1, continued

Name	Date	Temp	Cover	Days
Cosmos (<i>Cosmos</i> spp.)	4/11	68-86	Y	5-10
Dahlia (<i>Dahlia pinnata</i>)	4/11	69-86	Y	5-10
Dianthus, Annual (<i>Dianthus chinensis</i>)	4/4	70	Y	5-10
Dusty Miller (<i>Chrysanthemum ptarmiciflorum</i>)	3/21	70	Y	20-25
Dusty Miller (<i>Senecio cineraria</i>)	3/26	65-75	Y	10-15
Echium (<i>Echium plantagineum</i>)	4/4 ¹	70	Y	7-14
English Daisy (<i>Bellis perennis</i>)	3/12	70	Y	10-15
Flowering Cabbage and Kale (<i>Brassica oleracea</i>)	4/23	70-75	Y	7-10
Foxglove (<i>Digitalis purpurea</i>)	3/12	70	Y	15-20
Gazania (<i>Gazania rigens</i>)	4/11 ²	68-86	Y-D	8-14
Geranium (<i>Pelargonium</i> × <i>hortorum</i>)	3/5	75	Y	5-15
Godetia (<i>Godetia grandiflora</i>)	4/4	70	Y	7-14
Hollyhock (<i>Alcea rosea</i>)	3/12	70	SI	10-14
Impatiens (<i>Impatiens wallerana</i>)	4/4	70-75	N	15-20
Kochia (<i>Kochia scoparia</i> f. <i>trichophylla</i>)	4/4	70-75	N-L	10-15
Lavatera (<i>Lavatera trimestris</i>)	4/18	70	Y	15-20
Layia (<i>Layia platyglossa campestris</i>)	4/11	70-75	Y	8-12
Linaria (<i>Linaria maroccana</i>)	4/11	55-60	Y	10-15
Livingstone Daisy (<i>Dorotheanthus bellidiformis</i>)	3/26 ¹	65-75	N-D	15-20
Lobelia (<i>Lobelia erinus</i>)	3/21	70-75	Y	15-20
Lupine (<i>Lupinus polyphyllus</i>)	3/20 ³	55-70	Y	15-20
Malope (<i>Malope trifida</i>)	4/4	70	Y	7-14
Marigold (<i>Tagetes</i> spp.)	4/23	70-75	Y	5-7
Matricaria (<i>Chrysanthemum parthenium</i>)	4/4 ²	70	N-L	10-15
Morning Glory, Dwarf (<i>Convolvulus tricolor</i>)	4/17 ⁴	68-86	Y	5-7
Nasturtium (<i>Tropaeolum majus</i>)	4/23	65	Y-D	7-12
Nemesia (<i>Nemesia strumosa</i>)	3/26	55-70	Y-D	7-14
Nicotiana (<i>Nicotiana alata</i>)	4/11	68-86	N-L	10-20
Pansy (<i>Viola</i> × <i>wittrockiana</i>)	3/26	70	Y-D	10-20
Petunia (<i>Petunia</i> × <i>hybrida</i>)	3/26	75-80	N-L	10
Phlox, Annual (<i>Phlox drummondii</i>)	4/4	55-65	Y-D	10-15
Poppy, California (<i>Eschscholtzia californica</i>)	— ⁵	—	—	—
Poppy, Tulip (<i>Papaver glaucum</i>)	4/11	55	Y-D	10-15
Rudbeckia (<i>Rudbeckia hirta</i>)	3/26	70-75	Y	5-10
Salvia (<i>Salvia farinacea</i>)	3/12	70	Y	12-15
Salvia (<i>Salvia splendens</i>)	4/4	70	SI-L	12-15

Appendix 1, continued

Name	Date	Temp	Cover	Days
Schizanthus (<i>Schizanthus</i> × <i>wisetonensis</i>)	4/23	60-70	N-D	20-25
Shasta Daisy (<i>Chrysanthemum</i> × <i>superbum</i>)	3/21	70-75	N-L	10-14
Snapdragon (<i>Antirrhinum majus</i>)	4/4	70	N	10-14
Stocks (<i>Matthiola incana</i>)	4/11	70	N-L	7-10
Strawflower (<i>Helichrysum bracteatum</i>)	4/11	70	N-L	7-10
Sunflower (<i>Helianthus annuus</i>)	4/18	68-86	Y	10-14
Sweet William (<i>Dianthus barbatus</i>)	4/4	70	Y	5-10
Ursinia (<i>Ursinia anethoides</i>)	4/23	70	Y	7-14
Venidium (<i>Venidium fastuosum</i>)	4/23	70-75	N-L	15-25
Verbena (<i>Verbena</i> × <i>hybrida</i>)	3/26 ⁶	70-75	Y-D	20-25
Viola (<i>Viola cornuta</i>)	3/26	70	Y-D	10-20
Zinnia (<i>Zinnia elegans</i>)	4/18	70-75	Y	5-7

¹ Seeded 1 week earlier in 1985.

² Seeded 1 week later in 1985.

³ Soak for 24 hrs. in warm water prior to seeding; requires careful transplanting due to long tap root.

⁴ Soak for 24 hrs. in warm water prior to seeding.

⁵ Sown outdoors directly in flower bed.

⁶ Seeded 2 weeks later in 1985.

Appendix 2

Flower Varieties by Color

Blue, Purple

Ageratum	Swiss Giant Lake of Thun
Blue Danube	Universal Blue with Blotch
Blue Tango	Universal Light Blue
Asperula	Universal True Blue
Aster	Petunia
Blue Ribbon	Blue Frost
Echium	Capri
Monarch Dwarf Hybrids	Plum Madness
Impatiens	Purple Pirouette
Blitz Violet	Ultra Blue
Lobelia	Salvia
Blue Crystal	Laser Purple
Crystal Palace	Victoria
Nemesia	Snapdragon
Blue Gem	Princess White with Purple Eye
Pansy	Verbena
Springtime Azure Blue	Amethyst
Swiss Giant Berna	Viola
Swiss Giant Blue	Blue Perfection

Red, Pink

Althea Zebrina	Dianthus, Annual
Alyssum	Crimson Charms
Rosebud	Firestorm
Wonderland Deep Rose	Princess Scarlet
Aster	Geranium
Meteor Carmine Red	Cherry Border
Pink Lady	Jolly Red Giant
Pink Ribbon	Jolly Red Wink
Begonia, Wax	Mustang
Pink Charm	Orbit Cherry
Celosia	Orbit Coral
Kewpie Red	Red Elite
Cosmos	Ringo Scarlet
Sunny Red	Rose Diamond

Appendix 2, continued

Red, Pink, continued

Geranium, continued

- Scarlet Border
- Smash Hit Rose Pink
- Sundance Orange Scarlet
- Lavatera
 - Silver Cup
 - Loveliness
- Malope
- Marigold
 - Fiesta
 - Hero Red
 - Janie Flame
 - Red Cherry
 - Red Marietta
 - Scarlet Sophia
 - Susanna
- Nasturtium
 - Empress of India
- Nicotiana
 - Domino Crimson
 - Domino Pink with White Eye
- Pansy
 - Imperial Pink
 - Swiss Giant Alpenglow
 - Swiss Giant Winered
 - Universal Red
- Petunia
 - Appleblossom
 - Cherry Frost
 - Coral Sea
 - Double Sure
 - Old Glory Red
 - Pink Bouquet
- Pink Daddy
- Red Flair
- Red Flash
- Red Joy Improved
- Red Picotee
- Rose Picotee
- Summer Madness
- Ultra Red
- Poppy, Tulip
 - Lady Bird
- Salvia
 - Hotline
 - Ryco
- Sweet William
 - Red Monarch
- Verbena
 - Blaze
 - Derby Rose Pink
 - Sangria
 - Showtime Blaze
 - Trinidad
- Zinnia
 - Border Beauty Rose
 - Dasher Scarlet
 - Dreamland Coral
 - Dreamland Pink
 - Fantastic Light Pink
 - Florida Red
 - King of Hearts
 - Pink Ruffles
 - Small World Cherry
 - Small World Pink

Appendix 2, continued

Red, Pink and White Mixes

Acroclinium	Queen's Court Mix
Sutton's Special Mix	Telstar Mix
Begonia, Wax	English Daisy
Glamour Mix	Mixed Buttons
Horse Racing Mix	Godetia
Pizzazz Mix	Dwarf Gem Mix
Cosmos	Sweet William
Psyche Mix	Summer Beauty
Dianthus, Annual	
Magic Charms Mix	

White

Alyssum	Pansy
Carpet of Snow	Silver Princess (red blotch)
Snowcloth	Swiss Giant Jungfrau
Ammobium	Petunia
Begonia, Wax	Old Glory White
White Charm	Salvia
Chrysanthemum Paludosum	Silver White
Dianthus, Annual	White Bedder
Princess White	Shasta Daisy
Snowfire (red center)	Alaska
Lavatera	Little Miss Muffet
Mont Blanc	Starburst
Lobelia	Stocks
White Lady	Ten Week White
Matricaria	
White Gem	
Nicotiana	
Domino White	
Nicki White	

Appendix 2, continued

Yellow, Orange, Gold

Calendula	Jubilee Mix
Anagoor	Lemon Gem
Ball Gold Improved	Little Devil Mix
Bon Bon Mix	Little Giant
Fiesta Gitana Mix	Little Nell
Indian Prince	Moll Flanders
Orange Gem	Orange Boy
Pacific Beauty Mix	Orange Fireworks
Princess Yokosuka	Orange Lady
Radio	Orange Sophia
Celosia	Primrose Lady
Apricot Brandy	Queen Sophia
Kewpie Yellow	Silvia
Chrysanthemum Coronarium	Sophia Mix
Chrysanthemum Multicaule	Starfire Mix
Dwarf Yellow	Sunfire
Cosmos	Sunrise
Sunny Gold	Super Star Orange
Gazania	Suzie Wong
Mini-Star Tangerine	Yellow Fireworks
Impatiens	Yellow Sophia
Blitz Orange	Nasturtium
Layia	Alaska mix
Cutting Gold	Pansy
Livingstone Daisy	Swiss Giant Coronation Gold
Lunette	Universal Deep Yellow
Marigold	Poppy, California
Bonanza Yellow	Orange King
Cheerful Mix	Rudbeckia
Deep Orange Lady	Goldilocks
Diamond Jubilee	Marmalade
First Lady	Mixed Colors
Golden Anniversary	Monarch Mix
Gold Lady	Nutmeg
Hero Red	Sunflower
Hi-G Yellow	Dwarf Sungold
Honey Sophia	Teddy Bear
Inca Mix	Ursinia
Janie	Venidium
Janie Yellow	

Appendix 2, continued

Yellow, Orange, Gold, continued

Zinnia	Gold Sun
Dasher Orange	Yellow Marvel
Florida Orange	

Mixed Colors

African Daisy Mix	Mini Mix
Aster	Super Elfin Mix
Dwarf Spider Mix	Linaria
Ladies Formula Blend	Fairy Bouquet Mix
Princess Mix	Livingstone Daisy
Carnation	Magic Carpet
Knight Mix	Morning Glory, Dwarf
Celosia	Dwarf Rainbow Flash
Century Mix	Nemesia
Jewel Box Mix	Carnival Mix
Chrysanthemum, Annual	Pansy
Merry Mix	Butterfly Mix
Rainbow Mix	Clear Crystals Mix
Tricolour Mix	Crystal Bowl Mix
Dahlia	Lyric Mix
Border Jewels	Majestic Giant Mix
Dandy	Regency Mix
Figaro	Saint Tropez Mix
Mignon	Steele's Jumbo Mix
Rigoletto	Petunia
Foxglove	Countdown Mix
Foxy Mix	Flair Mix
Gazania	Flash Mix
Chansonette Mix	Ultra Mix
Mini-Star Mix	Phlox
Hollyhock	Cecily
Pinafore Mix	Dwarf Beauty Mix
Impatiens	Dwarf Early Mix
Accent Mix	Poppy, California
Crazy Quilt Mix	Mission Bells

Appendix 2, continued

Mixed Colors, continued

Salvia	Strawflower
Cleopatra Mix	Bright Bikinis Mix
Schizanthus	Verbena
Dr. Badger's Hybrids	Rainbow Strain
Star Parade	Showtime Mix
Snapdragon	Viola
Cinderella Mix	Finest Mix
Giant Tetra	Zinnia
Kolibri Mix (Early Carpet)	Border Beauty Mix
Little Darling	Starlet Mix
Rocket Mix	
Supreme Mix	
Sweetheart Mix	

Foliage Only

Dusty Miller	Kochia
Silver Lace	Acapulco Silver
Silver Queen	Childsii
Snow Crystals	Marigold
Flowering Cabbage	Irish Lace
Tokyo Mix	

Appendix 3

Bloom Period

Early Season (100% bloom by mid-June)

Ageratum—all listed varieties	Hero Red
Althea Zebrina	Hi-G Yellow
Asperula	Janie
Calendula—all listed varieties	Janie Flame
Chrysanthemum Multicaule	Janie Yellow
Chrysanthemum Paludosum	Little Giant
Cosmos	Orange Boy
Sunny Gold	Red Cherry
Echium	Red Marietta
Monarch Dwarf Hybrids	Silvia
Geranium	Super Star Orange
Ringo Scarlet	Nemesia
Rose Diamond	Carnival Mix
Lobelia—all listed varieties	Pansy—all listed varieties
Marigold	Petunia—all listed varieties
Bonanza Yellow	Zinnia
Cheerful Mix	Border Beauty Mix
Fiesta	Border Beauty Rose

All Season (blooms from mid-June until frost)

Acroclinium	Chrysanthemum Multicaule
Sutton's Special Mix	Dwarf Yellow
Ageratum—all listed varieties	Chrysanthemum Paludosum
Althea Zebrina	Dianthus, Annual
Alyssum—all listed varieties	Crimson Charms
Ammobium	Firestorm
Asperula	Magic Charms Mix
Begonia	Princess Scarlet
Pink Charm	Snowfire
Pizzazz Mix	Telstar Mix
Calendula—all listed varieties	English Daisy
Chrysanthemum, Annual	Mixed Buttons
Rainbow Mix	Geranium
Chrysanthemum Coronarium	Ice Queen

Appendix 3, continued

All Season, continued

Geranium, continued

Mustang	Sunrise
Ringo Scarlet	Super Star Orange
Rose Diamond	Suzie Wong
Hollyhock	Morning Glory, Dwarf
Pinafore Mix	Dwarf Rainbow Flash
Impatiens—all listed varieties	Nemesia
Layia	Carnival Mix
Cutting Gold	Pansy—all listed varieties
Linaria	Petunia—all listed varieties
Fairy Bouquet Mix	Phlox, Annual
Lobelia—all listed varieties	Cecily
Marigold	Poppy, Tulip
Bonanza Yellow	Lady Bird
Cheerful Mix	Rudbeckia
Fiesta	Marmalade
Hero Red	Salvia
Hi-G Yellow	Cleopatra
Janie	Hotline
Janie Flame	Ryco
Janie Yellow	Victoria
Lemon Gem	Shasta Daisy
Little Giant	Little Miss Muffet
Orange Boy	Snapdragon—all listed varieties
Orange Fireworks	Viola—all listed varieties
Queen Sophia	Zinnia
Red Cherry	Border Beauty Mix
Red Marietta	Border Beauty Rose
Scarlet Sophia	Dasher Orange
Silvia	Dasher Scarlet
Sophia Mix	Gold Sun

Midseason (100% bloom during July)

African Daisy	Chrysanthemum, Annual
Ammobium	Tricolour Mix
Begonia, Wax	Cosmos
Glamour Mix	Sunny Red

Appendix 3, continued

Midseason, continued

Dahlia—all listed varieties	Starfire Mix
Dianthus	Susanna
Princess White	Matricaria
Gazania—all listed varieties	White Gem
Geranium	Nasturtium—all listed varieties
Cherry Border	Nicotiana—all listed varieties
Godetia	Rudbeckia
Dwarf Gem Mix	Nutmeg
Lavatera—all listed varieties	Schizanthus—all listed varieties
Livingstone Daisy	Stocks—all listed varieties
Magic Carpet	Strawflower—all listed varieties
Malope	Sunflower—all listed varieties
Marigolds	Sweet William
Deep Orange Lady	Red Monarch
Diamond Jubilee	Ursinia
First Lady	Venidium
Gold Lady	Verbena—all listed varieties
Honey Sophia	Zinnia
Inca Mix	Fantastic Light Pink
Little Nell	Florida Red
Primrose Lady	King of Hearts

Late Season (100% bloom occurs in August)

Aster	Cosmos
Dwarf Spider Mix	Psyche Mix
Ladies Formula Blend	Foxglove
Princess Mix	Foxy Mix
Carnation—all listed varieties	Lupine
Celosia	Russell Hybrids Mix
Apricot Brandy	Shasta Daisy
Century Mix	Alaska
Kewpie Red	
Kewpie Yellow	

Appendix 3, continued

Frost Resistant (foliage survives frost to 30 °F)

Acroclinium	Linaria
Sutton's Special Mix	Fairy Bouquet Mix
Althea Zebrina	Livingstone Daisy
Alyssum—all varieties listed	Magic Carpet
Ammobium	Lupine
Asperula	Russell Hybrids Mix
Aster—all listed varieties	Malope
Calendula—all listed varieties	Matricaria
Carnation—all listed varieties	White Gem
Chrysanthemum Coronarium	Morning Glory, Dwarf
Chrysanthemum Multicaule	Dwarf Rainbow Flash
Chrysanthemum Paludosum	Nemesia—all listed varieties
Dianthus, Annual—all listed varieties	Nicotiana—all listed varieties
Dusty Miller—all listed varieties	Pansy—all listed varieties
Echium	Petunia—all listed varieties
Monarch Dwarf Hybrids	Phlox, Annual—all listed varieties
English Daisy	Poppy, California—all listed varieties
Mixed Buttons	Rudbeckia—all listed varieties
Flowering Cabbage or Kale	Salvia
Tokyo Mix	Victoria
Foxglove	Shasta Daisy—all listed varieties
Foxy Mix	Snapdragon—all listed varieties
Gazania—all listed varieties	Stocks—all listed varieties
Geranium—all listed varieties	Strawflower—all listed varieties
Hollyhock	Sweet William
Pinafore Mix	Red Monarch
Kochia—all listed varieties	Ursinia
Lavatera—all listed varieties	Venidium
Layia	Verbena—all listed varieties
Cutting Gold	Viola—all listed varieties

Appendix 4

Plant Heights

Short Varieties (to 12 inches)

Ageratum—all listed varieties	Lobelia—all listed varieties
Alyssum—all listed varieties	Marigold
Aster	Bonanza Yellow
Dwarf Spider Mix	Cheerful Mix
Begonia	Hero Red
Glamour Mix	Honey Sophia
Pink Charm	Irish Lace
Pizzazz Mix	Janie
Calendula	Janie Flame
Bon Bon Mix	Janie Yellow
Celosia	Orange Boy
Apricot Brandy	Queen Sophia
Jewel Box Mix	Red Cherry
Kewpie Red	Red Marietta
Kewpie Yellow	Scarlet Sophia
Dianthus, Annual	Silvia
Crimson Charms	Sophia Mix
Magic Charms Mix	Matricaria
Princess Scarlet	White Gem
Princess White	Pansy
Snowfire	Butterfly Mix
Telestar Mix	Clear Crystals Mix
Dusty Miller	Regency Mix
Silver Queen	Silver Princess
Snow Crystals	Springtime Azure Blue
English Daisy	Universal Deep Yellow
Mixed Buttons	Universal Light Blue
Gazania—all listed varieties	Universal Red
Godetia	Phlox, Annual
Dwarf Gem Mix	Cecily
Impatiens—all listed varieties	Snapdragon
Livingstone Daisy	Kolibri Mix (Early Carpet)
Magic Carpet	Viola—all listed varieties

Appendix 4, continued

Medium Varieties (12 to 24 inches)

Aroclinium	Gold Lady
Sutton's Special Mix	Hi-G Yellow
African Daisy	Inca Mix
Asperula	Lemon Gem
Calendula	Little Giant
Anagoor	Little Nell
Fiesta Gitana Mix	Orange Fireworks
Carnation	Primrose Lady
Knight Mix	Starfire Mix
Celosia	Sunrise
Century Mix	Super Star Orange
Chrysanthemum Multicaule	Susanna
Dwarf Yellow	Suzie Wong
Chrysanthemum Paludosum	Morning Glory, Dwarf
Cosmos	Dwarf Rainbow Flash
Sunny Gold	Nasturtium
Sunny Red	Alaska Mix
Dahlia	Nemesia
Figaro	Carnival Mix
Rigoletto	Nicotiana
Dianthus, Annual	Domino Crimson
Firestorm	Domino Pink with White Eye
Dusty Miller	Domino White
Silver Lace	Nicki White
Echium	Domino White
Monarch Dwarf Hybrids	Majestic Giant Mix
Flowering Cabbage or Kale	Saint Tropez Mix
Toyko Mix	Steele's Jumbo Mix
Geranium—all listed varieties	Swiss Giant Alpenglow
Lavatera	Swiss Giant Berna
Mont Blanc	Swiss Giant Jungfrau
Layia	Swiss Giant Lake of Thun
Cutting Gold	Universal Blue with Blotch
Linaria	Universal True Blue
Fairy Bouquet Mix	Petunia—all listed varieties
Marigold	Poppy, California
Deep Orange Lady	Mission Bells
Diamond Jubilee	Orange King
Fiesta	Poppy, Tulip
First Lady	Lady Bird

Appendix 4, continued

Medium Varieties, continued

Salvia	Rudbeckia
Cleopatra Mix	Marmalade
Hotline	Nutmeg
Ryco	Sunflower
Victoria	Dwarf Sungold
Schizanthus—all listed varieties	Teddy Bear
Shasta Daisy	Sweet William
Little Miss Muffett	Red Monarch
Snapdragon	Ursinia
Little Darling	Verbena—all listed varieties
Princess White with Purple Eye	Zinnia
Sweetheart Mix	Border Beauty Mix
Strawflower	Border Beauty Rose
Bright Bikinis Mix	Dasher Orange
Stocks	Dasher Scarlet
Ten Week White	Fantastic Light Pink
	Florida Red
	Gold Sun

Tall Varieties (over 24 inches)

Althea Zebrina	Hollyhock
Ammobium	Pinafore Mix
Aster	Kochia—all listed varieties
Ladies Formula Blend	Lavatera
Princess Mix	Silver Cup
Calendula	Lupine
Ball Gold Improved	Russell Hybrids Mix
Radio	Malope
Chrysanthemum	Shasta Daisy
Rainbow Mix	Alaska
Tricolour Mix	Snapdragon
Chrysanthemum Coronarium	Giant Tetra
Cosmos	Rocket Mix
Psyche	Venidium
Dahlia	Zinnia
Border Jewels	King of Hearts
Foxglove	
Foxy Mix	

Appendix 5

Flowers for Special Purposes

Hanging Baskets

African Daisy	Nasturtium—all listed varieties
Ageratum—all listed varieties	Nemesia—all listed varieties
Alyssum—all listed varieties	Pansy—all listed varieties
Begonia—all listed varieties	Petunia—all listed varieties
Gazania—all listed varieties	Schizanthus
Impatiens—all listed varieties	Star Parade
Layia	Verbena—all listed varieties
Lobelia—all listed varieties	Viola—all listed varieties
Morning Glory, Dwarf	

Light Shade

Ageratum	Nasturtium
Alyssum	Nicotiana
Aster	Pansy
Begonia*	Phlox, Annual
Dianthus, Annual	Rudbeckia
English Daisy	Salvia
Foxglove*	Cleopatra Mix
Impatiens*	Victoria
Linaria	Schizanthus
Lobelia	Shasta Daisy*
Lupine	Viola
Matricaria	

* Will tolerate more than light shading (up to 50%)

Walls

African Daisy	Layia
Alyssum	Livingstone Daisy
Dwarf Morning Glory	Nasturtium

Appendix 5, continued

Rock Garden

Ageratum	Livingstone Daisy
Alyssum	Marigold, Signet
Dianthus, Annual—all short varieties	Pansy—all short varieties
Echium	Phlox
Gazania	Poppy, California

Background

Althea Zebrina	Lupine
Cosmos	Russell Hybrids Mix
Psyche Mix	Malope
Foxglove	Snapdragon
Foxy Mix	Rocket Mix
Hollyhock	Sunflower
Pinafore Mix	Sunbird
Kochia—all listed varieties	Zinnia
Lavatera	King of Hearts
Loveliness	
Silver Cup	

Appendix 6

Seed Sources

- AAS* All-America Selections, 1311 Butterfield Rd., Suite 310, Downers Grove, IL 60515
- Ag Agway, Inc. Seed Plant, 1225 Zeager Rd., Elizabethtown, PA 17022
- AL Alberta Nurseries & Seeds Ltd., Box 20, Bowden, Alberta T0M 0K0, Canada
- B Ball Seed Co., P.O. Box 335, W. Chicago, IL 60185
- Bo* Bodger Seed, Ltd., P.O. Box 5090, El Monte, CA 91734-1090
- Bu W. Atlee Burpee Co., 300 Park Ave., Warminster, PA 18976
- D* Denholm Seed Co., P.O. Box 1381, Lompoc, CA 93438
- G H.G. German Seeds, Inc., Box 398, Smethport, PA 16749
- Gl Fred C. Gloeckner & Co., Inc., 15 East 26th Street, New York, NY 10010
- GM Garden Magic Seed Co., 310 Main St., East Haven, CT 06512
- Go* Goldsmith Seeds, P.O. Box 1349, Gilroy, CA 95020
- H Harris Moran Seed Co., 1155 Harkins Rd., Salinas, CA 93901
- Hb** Herbst Brothers Seedsmen
- NK Northrup King & Co., P.O. Box 959, N.E., Minneapolis, MN 55440
- P George W. Park Seed Co., Box 31, Greenwood, SC 29647
- PA* Pan-American Seed Co., P.O. Box 438, West Chicago, IL 60185
- Se Seedway, Inc., Hall, NY 14463
- St Stokes Seeds, Inc., P.O. Box 548, Buffalo, NY 14240
- Su Sutton Seeds, Hele Road, Torquay, Devon TQ2 7QJ, England
- T&T T&T Seeds, Ltd., Box 1710, Winnipeg, Manitoba R3C 3P6, Canada
- Tw Otis S. Twilley Seed Co., Inc., P.O. Box 65, Trevoise, PA 19047
- V Vesey's Seeds, Ltd., P.O. Box 9000, Houlton, ME 04730-0814
- WD William Dam Seeds, P.O. Box 8400, Dundas, Ontario L9H 6M1 Canada

* Company does not sell seed.

**Company no longer in business

\$3.00

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