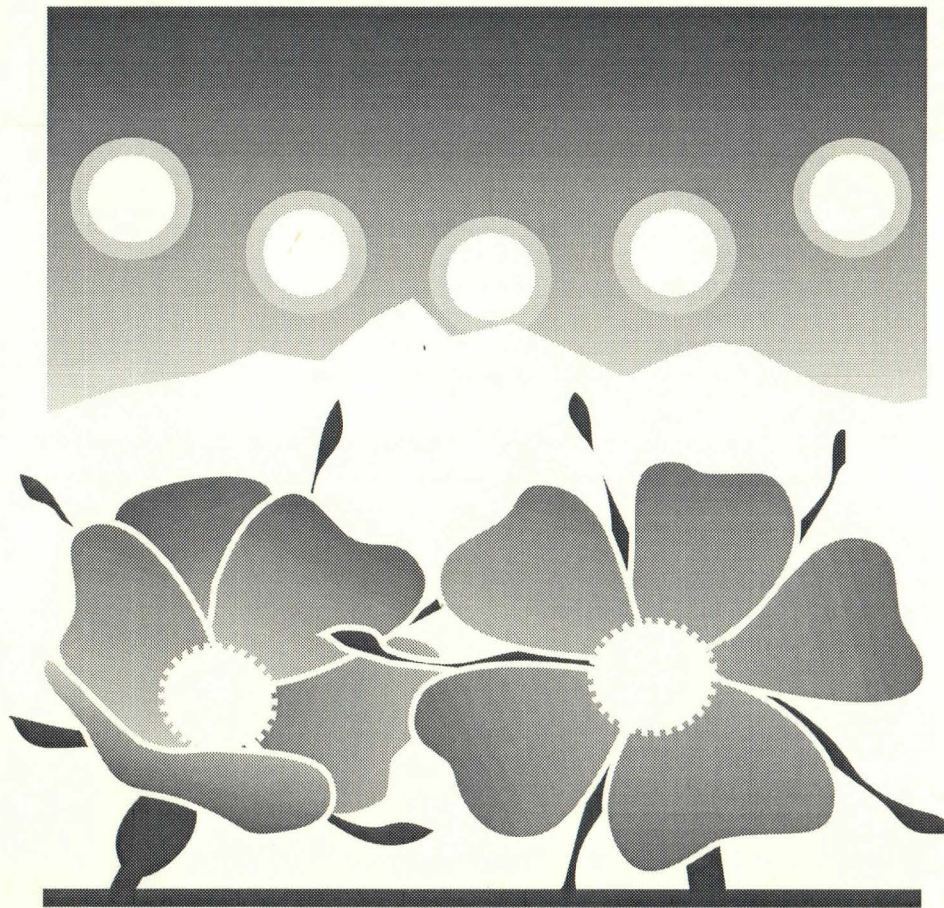


Annual Flower and Perennial Landscape Plant Evaluations 1994

Gregii



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Agricultural and Forestry Experiment Station

School of Agriculture and Land Resources Management

GEORGESON BOTANICAL GARDEN

Circular 102

February 1995

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ACKNOWLEDGEMENTS

We gratefully acknowledge the assistance of the following employees and volunteers who helped plant and maintain the research test gardens:

Cliff Alton	Ann Guhman	Girl Scout Troop #61
Eddie Barbour	Becky Gutierrez	Sheri Layral
Sally Berry	Clare Hill	Gina Baker
Karen Binkley	Julie Houghton	Rebecca King
David Boyd	Laura Jacobs	Nicole Layral
Georgene Brennen	Thekla Johnson	Maria Chavez
Judy Bush	Sharon Lee	Sparrow Chavez
Bev Byington	Hope Lockwood	Natasha England
Fran Chauvin	Paula Lotspeich	Girl Scout Troup #46
Patty Christian	Teresa MacDonald	Davya Baker
Susan Dearborn	Julia Martin	Sharon Baker
Floss Caskey	Mary Moriarty	Destiny Charlen
Kathy Davis	Jan Morrow	Candace Chase
Terrence Davis	Terri Nault	Erin Konefal
Tone Deehr	Deb Neumayr	Azara Mohammadi
Andrea Dick	Ria Peep	Ellen Olson
Catherine Eagan	Kathy Seim	Kalee Scholle
Barbara Fay	Cheryl Walker	Nora Smithhisler
Gayle Garrigues	Judy Webber	Emily Sousa
Ginger Gauss	Dan Wilson	Kaylan Wood
		Marni Zabel
		Tess Zabel

Special thanks to the following commercial businesses and individuals for donating seeds or plants to the garden:

Alaska Plant Materials Center
 Ball Seed Company
 W. Atlee Burpee Company
 Clause Seeds
 Mike Emmers
 Ginger Gauss
 Johnny's Selected Seeds
 New England Wildflower Society
 North Central Regional Plant Introduction Station
 Park Seed Company, Inc.
 Stokes Seeds, Inc.
 Thompson & Morgan
 Robert Van Veldhuizen
 Vaughan's Seed Co.

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Introduction

In 1989, a systematic evaluation of woody and herbaceous perennial landscape plants was begun at the University of Alaska Fairbanks Georgeson Botanical Garden (64°51'N, 147°52'W). These evaluations were expanded to include annual flowers in 1992 and ferns in 1993. The purpose of this research is to identify hardy perennials capable of surviving in subarctic environments; to evaluate the ornamental potential of perennials and annuals; and to fulfill a growing demand for information on landscape plant materials by homeowners, commercial growers, and landscapers.

The collection includes both indigenous and non-indigenous species that were obtained as plants or propagules from wild stands, botanical gardens, plant materials centers, commercial nurseries and seed companies in North America and the circumpolar North (Appendix 1). Plants are grown on a south-facing slope, elevation 475 - 487 feet. Soils are classified as Fairbanks silt-loam and have been cultivated since about 1910. All plants receive full sun except those located in the shade house (Plot No 1). Plants are watered with overhead irrigation as needed. Weed control is primarily by hand and rototiller.

The perennials are grown in the Herbaceous Perennial and Woody Ornamental Test Garden (see map on page 59). When available, ten plants of each herbaceous perennial ornamental are evaluated for a minimum of five years, and five plants of each woody landscape plant are evaluated for ten years. Subsequently, hardy perennials will be propagated and tested at other locations throughout the Interior and released for commercial propagation. Soils in the perennial test garden were amended with 1-2

inches of Lemeta peat in 1988. The perennial beds with the exception of the lily trials were fertilized with 500 lb per acre 10-20-20S fertilizer on July 10, 1994. Lilies received 1500 lb per acre 10-20-20S on July 11, 1994. Unless otherwise noted, plants received no special winter protection such as mulching or screening.

The annual flowers were grown in the Perennial Landscape and All America Selections Display Garden. Plants were grown in unreplicated beds and varied in number according to bed size. Soils were fertilized with 1500 lb per acre 10-20-20 prior to tilling. Planting occurred on June 1-3, 1994.

Weather data are compiled annually from a U.S. Weather Service station (elevation 475 ft) located approximately 350 ft west of the test garden. A summary of pertinent weather statistics for 1990 through 1994 is shown in Table 1.

The 1994 season

Although injury from the severe 1992-93 season was still evident on many woody perennials, the effect in the garden was significantly diminished over last season. Perennials such as *Populus tremula* 'Erecta' showed very good regrowth from the crown, and the old European birdcherry trees (*Prunus padus*), had ample flowers and fruit. The 1994 season was a fairly good growing season except for prolonged rains in June. Measurable rainfall was recorded on all but one day between June 15 and June 29 for a total 3.29 inches. The cool, wet weather delayed flowering in the annual flower plots

and interfered with pollination on some fruit crops, particularly raspberries, causing low fruit yields and misshapen fruit.

The 1994 season also sported an overwhelming population of wasps, yellow jackets and aphids. Wasps and yellow jackets did not cause plant damage, but made working outdoors uncomfortable and often painful. Gardeners and commercial growers in the Tanana Valley, especially those located in wooded areas battled an ever-increasing population of wasps and yellow jackets until frost. Few people working outdoors made it through the season without being stung.

Both birch and birdcherry aphids were abundant in the Tanana Valley in 1994. They caused significant stunting on annual flowers such as calendula, godetia, helichrysum and verbena as well as herbaceous perennials (especially *Delphinium grandiflorum*) and many trees and shrubs. Native plants such as fireweed (*Epilobium angustifolium*), tilse sage (*Artemisia tilesii*) and Nootka lupine (*Lupinus nootkatensis*) experienced severe damage to flowers and fruit. By mid August, aphids had developed wings. Visitors to the garden in early evening often were covered with aphids (especially if they happened to be wearing light-colored clothing) as clouds of insects billowed through the garden about six feet off the ground. Although no formal records have been kept on aphid populations, employees of the Agricultural and Forestry Experiment Station, some of whom have worked there since the mid 1970's cannot recall ever seeing as many aphids as in the 1994 season.

The annual flower gardens continue to be plagued by stem rot, *Sclerotinia sclerotiorum*, which devastated beds of snapdragons, lobelia, nemesia, petunias, and some sunflowers. We have been conducting experiments with a cold-tolerant strain of *Trichoderma* sp. in order to find a biological control for this disease. In 1993, we applied the *Trichoderma* once on July 7 as a soil drench to half of all petunia plots. This drench had no effect. In 1994, we conducted an experiment with *Prism Rose Halo* petunias grown on soils that were "salted" with stem rot sclerotia. Flats of petunia were drenched just prior to transplanting. A second group of plants received the pre-transplant drench and also weekly applications of *Trichoderma* throughout the growing season. These treatments were compared with a control (no treatment) and a fungicide treatment (Chipco 26019®). Neither the *Trichoderma* nor the fungicide gave adequate control of the stem rot. This experiment will be repeated in 1995 with greenhouse applications of *Trichoderma* drench.

Plant Evaluation Tables

The information is summarized in four tables. Table 2 lists all the perennial plant materials currently being evaluated. Table 3 lists all perennials that have been evaluated but did not survive the minimum five-year evaluation period for herbaceous perennials and grasses or the minimum ten-year evaluation period for woody perennials. Table 4 lists current year's plantings of perennials that have not yet been evaluated for winter survival. Each of the three tables on perennials is further divided into four sections: herbaceous perennials, ornamental grasses, woody perennials, and ferns. Table 5 lists all

annual flowers that were evaluated in 1994.

Explanation of Tables 2 through 4 (Perennials)

NAME AND COMMON NAME: The following references, listed in order, were consulted for scientific and common names.

- L.H. Bailey Hortorium. 1976. *Hortus III*. MacMillan Publishing Co., NY.
Fernald, M.L. 1970. *Gray's Manual of Botany*. 8th ed. D. Van Nostrand Company. Hulten, NY. E. 1974. *Flora of Alaska and Neighboring Territories*. Stanford University Press, CA.
Harkness, M.G. and D. D'Angelo, eds. 1986. *Bernard E. Harkness Seedlist Handbook*. Timber Press, Portland.
Bluebird Nursery, Inc. 1990. Catalog. Clarkson, NE.

SOURCE: This column lists the private individual, botanical garden, agency, organization or commercial business that provided the plants or propagules. Complete names and addresses for the commercial sources and organizations are listed in Appendix 1.

NUMBER OF PLANTS: The total number of plants evaluated.

WINTER INJURY: A visual rating of winter injury was recorded each spring beginning in 1990. Data represent an average rating for the total number of plants evaluated using the scale listed below. Data are cumulative over all the years plants were evaluated.

- 0 = no visible injury
1 = slight winter injury
2 = moderate winter injury, recovery likely
3 = severe setback from winter injury, recovery questionable
4 = winterkilled

HEIGHT AND SPREAD: The maximum height and spread of herbaceous perennials and ornamental grasses and the average height and spread of woody landscape plants were recorded each summer. Some plants showed a significant difference in height between foliage and flowers/seed pods. For these plants, the first number listed is the foliage height, and the number in parentheses is the flower/seed pod height.

FLOWERING PERIOD: The flower symbol in each column denotes the weeks in each month when plants were flowering. For ornamental grasses, only the first observation of flowering is noted because the flowers are insignificant and the seed heads are usually present until snowfall. The fruit symbol in the woody landscape plants section indicates the weeks when ornamental fruits are present.

FROST TOLERANT: A plus sign in each column indicates that the foliage or flowers of a particular plant showed no obvious damage after several nights of below-freezing temperatures (to 28°F) in late August and early September). A negative sign means frost damage.

PLOT LOCATION: The number in this column indicates the plot in the test garden where the specific test plants are located. Refer to the map on the back page of this publication for the physical location of each plot.

NUMBER OF YEARS SURVIVED: The total number of years that one or more of the evaluated plants survived. Causes of plant death could be winterkill, improper site conditions, inadequate or improper field management practices, or mechanical injury. Suspected cause for a particular species or cultivar, if known, is listed by code in the comments section. Codes are defined in a footnote at the bottom of each page.

Explanation of Table 5 (Annuals)

PLANT HEIGHT: The average (most common) height of plants including flowers to the nearest inch was recorded in mid August, 1994. If height of individual plants or flowers differed by more than 2 inches, the range in heights from shortest to tallest was recorded.

SPACING: The recommended spacing is the distance between plants which provides good coverage but does not promote disease.

BLOOM DATE: Data on flowering were collected weekly beginning June 8, 1994. The * symbol indicates first bloom, whereas the ☼ symbol indicates full bloom.

BLOOM SIZE: The maximum diameter to the nearest ¼ inch of individual blossoms was recorded for flowers with single blossoms such as daisies, asters and pansies. Spike-type flowers such as snapdragons, lupine and salvia were recorded as length x width (i.e. 12 x 3*) of the entire spike. The maximum diameter to the nearest ¼ inch was recorded for all clustered flowers such as sweet alyssum and verbena. The measurements of spike and clustered flowers are identified by an "*" notation following the measurement (i.e. 3*)

FROST TOLERANT: Frost tolerance was evaluated on August 25 on foliage and flowers after an overnight low of 28°F on August 23 and 24, 1994.

CUTTING: A plus sign indicates this variety is suitable as a cut flower.

DRIED: A plus sign indicates this variety is suitable as a dried flower.

COMMENTS: The disease problems noted under comments refer to the fungal disease, Sclerotinia (cottony rot or white mold) unless otherwise noted. Sclerotinia infects many different types of flowers. Petunias and schizanthus are particularly susceptible. Plants eventually wilt due to blockage of the vascular tissue by small, hard, black fungal fruiting bodies. These fruiting bodies overwinter in the soil and re-infect plants in later years. The number of fruiting bodies present in the soil, as well as environmental conditions such as humidity and soil moisture, can affect the spread of the disease. Cultivars that showed no damage in 1994 are not necessarily resistant.

Table 1. Weather records for the test years.

	Season				
	1990	1991	1992	1993	1994
Average temperature °F					
May	52.2	48.9	40.6	51.9	52.0
June	59.6	60.8	59.1	60.5	57.0
July	64.1	59.7	63.0	64.5	62.0
August	58.4	53.0	55.9	55.5	51.0
September	44.3	47.9	31.4	42.5	43.0
Maximum temperature °F					
	90	93	90	91	89
Growing season					
Last spring frost	May 23	May 16	June 7	May 1	May 6
First fall frost	Sept 8	Aug 27	Sept 5	Sept 1	Aug 23
Frost-free days	108	103	90	123	109
Thaw degree days ¹	—	3069.0	2568.0	3547.5	3476.3
Rainfall (inches) ²	13.20	6.28	8.78	6.67	7.21
Previous winter season					
Minimum temperature °F	-45	-49	-35	-52	-37
snowfall (inches)	71.4	131.6	103.8	131.7	36.3
¹ May through September 32°F base temperature					
² May through September					

Table 2. All plant materials evaluated in 1994

TABLE
2

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	No. OF PLANTS	WINTER INJURY*	HEIGHT (IN)	SPREAD (IN)
HERBACEOUS PERENNIALS							
<i>Achillea borealis</i>	Yarrow	Nauriaq	Jul-92	10	0.4	30	36
<i>Achillea millifolium</i> 'Summer Pastels'	Common yarrow	AAS	Aug-90	10	1.3	13(19)	28
<i>Achillea Ptarmica</i>	Sneezewort	Fairbanks, AK	Oct-91	3	0.1	36	32
<i>Achillea Ptarmica</i> 'The Pearl'	Sneezewort	Vaughan's	Jul-93	10	0.9	22	45
<i>Achillea taygetea</i> 'Debutante'		Park	Jul-92	10	2.7	20	36
<i>Allium cernuum</i>	Nodding onion	NEWFS	Aug-91	10	2.1	15(21)	12
<i>Allium Schoenoprasum</i>	Chives	Novosibirsk, Russia	Aug-91	10	0.1	30	24
<i>Amsonia tabernaemontana</i>		NEWFS	Aug-93	2	2.5	12	14
<i>Amsonia Tabernaemontana</i> var. <i>salicifolia</i>		NEWFS	Jul-93	10	3.0	18	15
<i>Anemone alpina</i> subsp. <i>sulfurea</i>	Sulfur alpine anemone	ANPS	Jun-91	3	3.1	6(11)	9
<i>Anemone Halleri</i>	Haller anemone	ANPS	Jun-91	7	3.5	13(20)	17
<i>Anemone multifida</i>	Argentine anemone	ANPS	Aug-89	8	1.2	15(30)	17
<i>Anemone virginiana</i>	Thimbleweed	NEWFS	Jun-91	10	0.9	22(34)	14
<i>Aquilegia atrata</i>		ARGS	Aug-91	7	2.6	17(37)	17
<i>Aquilegia Buergerana</i>		ARGS	Aug-91	10	3.3	17(23)	24
<i>Aquilegia canadensis</i>	Wild columbine	NEWFS	Aug-93	10	2.4	15 (25)	26
<i>Aquilegia formosa</i>	Sitka columbine	ANPS	Aug-91	10	1.5	23(38)	32
<i>Aquilegia pyrenaica</i>	Pyrenees columbine	ARGS	Aug-91	7	0.8	16(38)	32
<i>Aquilegia sibirica</i>	Siberian columbine	ARGS	Aug-91	10	0.7	13(33)	24

*Winter Injury Rating: 0=no visible injury; 1=slight winter injury; 2=moderate winter injury, recovery likely; 3=severe setback from winter injury, recovery questionable; 4=winterkilled.

MAY	WEEKLY BLOOM PERIOD					BLOOM COLOR	FROST TOLERANT		COMMENTS	PLOT LOCATION	SCIENTIFIC NAME
	JUN	JUL	AUG	SEP	flowers		foliage				
		***	***	***	***	white	+	+		4	<i>Achillea borealis</i>
			***	***	***	mix/pastels	+	+	attractive color mix	12	<i>Achillea millefolium</i> 'Summer Pastels'
			***	***	***	white	+	+		4	<i>Achillea Ptarmica</i>
		***	***	***	***	white	+	+		7	<i>Achillea Ptarmica</i> 'The Pearl'
		***	***	***	***	mix /rose, pink, white	+	+		15	<i>Achillea taygetea</i> 'Debutante'
			***	***	***	lavender	+	+	nodding flower heads	13	<i>Allium cernuum</i>
	***	***	***			purple		+		13	<i>Allium Schoenoprasum</i>
								+		18	<i>Amsonia tabernaemontana</i>
								+		11	<i>Amsonia Tabernaemontana</i> var. <i>salicifolia</i>
				*		greenish yellow		+	one plant remaining	15	<i>Anemone alpina</i> subsp. <i>sulfurea</i>
***	***	***	***	*		wine red		+	striking flower display	15	<i>Anemone Halleri</i>
	**		**		*	red violet		+		4	<i>Anemone multifida</i>
	***	***				greenish white		+	flowers seem short lived, seed heads are showy, persist in winter	15	<i>Anemone virginiana</i>
	***	***	***	*		deep purple		+	one plant remaining	13	<i>Aquilegia atrata</i>
	***	***	***			mix/pink, purple		+	many small blooms	13	<i>Aquilegia Buergerana</i>
	***	***	***			red/yellow		+	small flowers, short-spurred	16	<i>Aquilegia canadensis</i>
	***	***	***	***	***	scarlet/yellow	+	+		13	<i>Aquilegia formosa</i>
	***	***	***	***	***	burgundy	+	+	similar to A. atrata	13	<i>Aquilegia pyrenaica</i>
***	***	***	*	*		deep purple		+	nodding heads, short incurved spurs very showy early in season	13	<i>Aquilegia sibirica</i>

Table 2. (continued)

TABLE
2

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	No. OF PLANTS	WINTER INJURY*	HEIGHT (IN)	SPREAD (IN)
<i>Aquilegia</i> sp.	Columbine	Novosibirsk, Russia	Aug-92	10	1.4	20(40)	22
<i>Aquilegia</i> sp.	Columbine	Berdsk, Russia	Aug-92	10	1.0	21(39)	22
<i>Aquilegia</i> sp. 'Dynasty'		South Slope	Jun-91	10	2.9	15(29)	24
<i>Aquilegia</i> sp. 'McKana Giant Hybrids'		T&M	Aug-91	10	2.8	19(40)	26
<i>Aquilegia</i> sp. 'Nora Barlow'		Park	Aug-91	10	2.8	18(36)	20
<i>Aquilegia</i> sp. 'Star McKana Mix'		Park	Aug-91	6	3.2	17(32)	18
<i>Aquilegia vulgaris</i>	Garden columbine	T&M	Aug-91	2	0.0	20(44)	28
<i>Aquilegia vulgaris</i> 'Michael Stromminger'	Garden columbine	T&M	Aug-93	10	1.7	13(26)	19
<i>Arabis caucasica</i>	Wall rock cress	I. Berger	Aug-93	10	0.7	9	16
<i>Arnica alpina</i>		ARGS	Jul-92	10	2.5	26	34
<i>Arnica alpina</i>		Nauriaq	Jul-92	8	3.3	23	12
<i>Arnica cordifolia</i>		ARGS	Jul-92	3	0.5	9(30)	16
<i>Arnica Lessingii</i>		ARGS	Jun-90	10	0.1	15	
<i>Arnica montana</i>		I. Berger	Aug-93	10	0.5	8(15)	16
<i>Artemisia Dracunculus</i> var. <i>sativa</i>	French tarragon	Richters	Jul-93	3	0.7	40	48
<i>Artemisia campestris</i> subsp. <i>borealis</i>		ARGS	Oct-90	10	2.7	7(14)	14
<i>Artemisia Tilesii</i> 'Caiggluk'	Tilesy sage	PMC	Jul-92	10	1.0	54	48
<i>Asparagus</i> 'Greenwich'	Asparagus	Nourse	Aug-91	10	2.0		
<i>Asparagus</i> 'Jersey Giant'	Asparagus	Nourse	Aug-91	10	1.1		
<i>Asparagus</i> 'Jersey King'	Asparagus	Nourse	May-93	10	0.7		

*Winter Injury Rating: 0=no visible injury; 1=slight winter injury; 2=moderate winter injury, recovery likely; 3=severe setback from winter injury, recovery questionable; 4=winterkilled.

MAY	WEEKLY BLOOM PERIOD					BLOOM COLOR	FROST TOLERANT		COMMENTS	PLOT LOCATION	SCIENTIFIC NAME
	JUN	JUL	AUG	SEP	flowers		foliage				
	✿✿✿✿✿✿	✿✿✿✿✿✿	✿✿✿✿✿✿			purple or pink		+	purple flowers small and nodding, pink flowers larger	13	<i>Aquilegia</i> sp.
		✿✿✿✿✿✿	✿✿✿✿✿✿	✿✿✿✿✿✿		dusty pink	+	+		15	<i>Aquilegia</i> sp.
		✿✿✿✿✿✿	✿✿✿✿✿✿			mix blue/white		+	nodding heads, large flowers, 2 plants remaining	16	<i>Aquilegia</i> sp. 'Dynasty'
		✿✿✿✿✿✿	✿✿✿✿✿✿		✿✿	yellow/crimson, rose	+	+	long spurs, attractive blooms	13	<i>Aquilegia</i> sp. 'McKana Giant Hybrids'
		✿✿✿✿✿✿				rose/cream		+	small, double flowers, nodding heads, no spur	13	<i>Aquilegia</i> sp. 'Nora Barlow'
		✿✿✿✿✿✿	✿✿✿✿	✿✿✿		rose/cream; scarlet/yellow	+	+	large blooms, long spurs	13	<i>Aquilegia</i> sp. 'Star McKana Mix'
		✿✿✿✿✿✿	✿✿✿✿	✿✿✿		deep blue	+	+	large blooms, long spurs	13	<i>Aquilegia vulgaris</i>
		✿✿✿✿✿✿	✿✿✿✿	✿✿		pink	+	+	small-flowered	16	<i>Aquilegia vulgaris</i> 'Michael Stromminger'
✿✿✿✿✿✿				✿✿✿✿✿✿		white	+	+	showy	18	<i>Arabis caucasica</i>
		✿✿✿✿✿✿	✿✿✿✿✿✿	✿✿✿✿✿✿	✿✿✿✿	bright gold	+	+		11	<i>Arnica alpina</i>
		✿✿✿✿✿✿				bright gold		+	2 plants remaining	4	<i>Arnica alpina</i>
		✿✿✿✿✿✿	✿✿✿✿✿✿	✿✿✿✿		bright gold	+	+		11	<i>Arnica cordifolia</i>
			✿✿✿✿✿✿	✿✿✿✿✿✿	✿✿✿✿	bright gold	+	+	invasive, spreads from roots & reseeds, on sides attempted to limit spread by digging out roots	11	<i>Arnica Lessingii</i>
	✿✿✿✿✿✿	✿✿✿✿✿✿	✿✿✿✿✿✿			gold		+		18	<i>Arnica montana</i>
				✿✿		white	+	+		10	<i>Artemisia Dracunculus</i> var. <i>sativa</i>
			✿✿✿✿			yellow	+	+	rangy form, unattractive	15	<i>Artemisia campestris</i> subsp. <i>borealis</i>
			✿✿✿✿✿✿	✿✿		yellow	+	+	fragrant, attracts aphids	16	<i>Artemisia Tilesii</i> 'Caiggluk'
	✿							+	started from seed	13	<i>Asparagus</i> 'Greenwich'
	✿							+	started from seed	13	<i>Asparagus</i> 'Jersey Giant'
	✿							+	planted as crowns	13	<i>Asparagus</i> 'Jersey King'

Table 2. (continued)

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	No. OF PLANTS	WINTER INJURY*	HEIGHT (IN)	SPREAD (IN)
<i>Asparagus</i> 'Jersey Knight'	Asparagus	Nourse	May-93	10	0.7		
<i>Asparagus</i> 'Jersey Prince'	Asparagus	Nourse	Aug-91	10	0.5		
<i>Asparagus officinalis</i> var. <i>pseudoscaber</i>	Lace-veil asparagus fern	Ball seed	Jul-93	10	1.0	21	19
<i>Asparagus</i> 'SYN 4-56'	Asparagus	Nourse	Aug-91	10	0.9		
<i>Asparagus</i> 'Viking KB3'	Asparagus	Nourse	May-93	10	0.5		
<i>Aster alpinus</i>		I. Berger	Aug-93	1	0.0	7(13)	12
<i>Aster sibiricus</i>	Siberian aster	Big Dipper	Jul-92	10	0.8	15	24
<i>Bergenia cordifolia</i> 'Redstart'	Heartleaf bergenia	Park	Sep-89	10	2.7	15	23
<i>Bergenia cordifolia</i> 'Rose'	Heartleaf bergenia	Park	Sep-89	10	2.7	13	25
<i>Campanula glomerata</i> <i>superba</i>		T&M	Aug-92	10	2.3	29	17
<i>Campanula glomerata</i> var. <i>dahurica</i>	Clustered bellflower	ARGS	Aug-92	1	1.5	25	16
<i>Campanula takisimana</i>		T&M	Jul-93	10	0.9	10(24)	23
<i>Centaurea montana</i>	Mountain bluet	I. Berger	Aug-93	5	1.0	20	24
<i>Cerastium Beeringianum</i>		C.Parker	Aug-89	10	1.0	6(9)	40
<i>Cerastium tomentosum</i>	Snow-in-Summer	T&M	Jun-90	10	1.3	8	38
<i>Chrysanthemum arcticum</i> 'Roseum'	Arctic chrysanthemum	NCRPIS	Aug-90	10	3.3	10	12
<i>Chrysanthemum coccineum</i> 'Robinson's Dark Crimson'		Vaughan's	Jul-92	10	3.4	7	7
<i>Chrysanthemum Leucanthemum</i>	Oxeye daisy	WNS	Jun-91	10	1.6	15(34)	28
<i>Clematis integrifolia</i>	Solitary clematis	Northern Lights	Oct-91	1	1.0	12	45
<i>Crocus chrysanthus</i> 'Princess Beatrix'		de Jager	Aug-93	10	3.8		

*Winter Injury Rating: 0=no visible injury; 1=slight winter injury; 2=moderate winter injury, recovery likely; 3=severe setback from winter injury, recovery questionable; 4=winterkilled.

MAY	WEEKLY BLOOM PERIOD				BLOOM COLOR	FROST TOLERANT		COMMENTS	PLOT LOCATION	SCIENTIFIC NAME
	JUN	JUL	AUG	SEP		flowers	foliage			
		*					+	planted as crowns	13	<i>Asparagus</i> 'Jersey Knight'
		*					+	started from seed	13	<i>Asparagus</i> 'Jersey Prince'
							+		7	<i>Asparagus officinalis</i> var. <i>pseudoscaber</i>
			*				+	started from seed	13	<i>Asparagus</i> 'SYN 4-56'
			*				+	planted as crowns	13	<i>Asparagus</i> 'Viking KB3'
		* * * * *			lavender		+		18	<i>Aster alpinus</i>
	* * * * *	* * * * *	* * * * *	* * * * *	lavender	+	+	some browning of foliage by end of season	4	<i>Aster sibiricus</i>
					bright rose		+		1	<i>Bergenia cordifolia</i> 'Redstart'
	* * *				bright rose		+	2 plants remaining	1	<i>Bergenia cordifolia</i> 'Rose'
			* * * * *	* * * * *	purple	+	+	attractive to voles	6	<i>Campanula glomerata</i> <i>superba</i>
			* * * * *	* * * * *	blue	+	+	showy flowers	7	<i>Campanula glomerata</i> var. <i>dahurica</i>
			* * * * *	* * * * *	white/purple spots	+	+	large bell-shaped flowers, speckled inside	11	<i>Campanula takisimana</i>
		* * * * *	* * * * *	* * * * *	bright blue	+	+	attractive to bees	16	<i>Centaurea montana</i>
	* * * * *	* * * * *		*	white		+	seed heads too prominent, not attractive	4	<i>Cerastium Beeringianum</i>
	* * * * *			* * *	white	+	+	silvery foliage, forming mounds	7	<i>Cerastium tomentosum</i>
							+		12	<i>Chrysanthemum arcticum</i> 'Roseum'
					bright rose		+	one weak plant remaining	16	<i>Chrysanthemum coccineum</i> 'Robinson's Dark Crimson'
		* * * * *	* * * * *	* * * * *	white	+	+	reseeds readily	15	<i>Chrysanthemum Leucanthemum</i>
		* * * * *	* * * * *	* * * * *	violet blue	+	+	nodding flower heads, twisted petals	16	<i>Clematis integrifolia</i>
								dies back by mid season	19	<i>Crocus chrysanthus</i> 'Princess Beatrix'

Table 2. (continued)

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	No. OF PLANTS	WINTER INJURY*	HEIGHT (IN)	SPREAD (IN)
<i>Crocus chrysanthus</i> 'Snow Bunting'		de Jager	Aug-93	10	2.0	1.5	
<i>Crocus Tomasinianus</i> 'Ruby Giant'		de Jager	Aug-93	4	2.3		
<i>Crocus versicolor</i> 'Picturatus'		de Jager	Aug-93	10	2.5		
<i>Delphinium glaucum</i>	Sierra larkspur	C. Parker	Oct-91	2	2.9	11	13
<i>Delphinium grandiflorum</i>	Siberian larkspur	NCRPIS	Jul-91	10	1.2	56(106)	34
<i>Delphinium laxiflorum</i>		NCRPIS	Jul-91	10	2.3	40(75)	32
<i>Delphinium X Belladonna</i> (Bellamosum) 'Improved'		Park	Aug-93	10	1.4	33	23
<i>Dianthus arenarius</i>	Sand pink	ARGS	Jun-90	10	2.3	9(12)	28
<i>Dianthus arenarius</i> (pink)	Sand pink	ARGS	Jun-90	10	1.9	9(13)	32
<i>Dianthus arenarius</i> subsp. <i>borussicus</i>	Sand pink	ARGS	Jun-90	10	1.4	4(13)	19
<i>Dianthus callizonus</i>	Zoned pink	ARGS	Jun-90	6	3.3	17	24
<i>Dianthus carthusianorum</i>	Carthusian pink	T&M	Jun-90	10	1.2	6(17)	17
<i>Dianthus chinensis</i>	Chinese pink	NCRPIS	Jun-90	10	1.7	22	36
<i>Dianthus deltoides</i>	Maiden pink	South Slope	Jun-91	10	2.0	7(11)	28
<i>Dianthus deltoides</i>	Maiden pink	ARGS	Aug-93	10	2.7	7(14)	17
<i>Dianthus</i> 'Orchid Lace'	Cottage pink	T&M	Jun-90	10	2.7	21	22
<i>Dianthus plumarius</i>	Cottage pink	Novosibirsk, Russia	Aug-91	19	3.1	12(22)	26
<i>Dianthus plumarius</i> 'Smokey'	Cottage pink	NCRPIS	Jul-90	9	1.7	10(20)	25
<i>Dianthus repens</i>	Bering pink	ARGS	Jun-90	4	2.2	15	21
<i>Dianthus</i> sp. 'Ipswich Pinks Mixed'		T&M	Aug-93	10	1.3	6(16)	22

*Winter Injury Rating: 0=no visible injury; 1=slight winter injury; 2=moderate winter injury, recovery likely; 3=severe setback from winter injury, recovery questionable; 4=winterkilled.

MAY	WEEKLY BLOOM PERIOD					BLOOM COLOR	FROST TOLERANT		COMMENTS	PLOT LOCATION	SCIENTIFIC NAME
	JUN	JUL	AUG	SEP	flowers		foliage				
						white			bloomed in April, dies back by mid season	19	<i>Crocus chrysanthus</i> 'Snow Bunting'
									dies back by mid season	19	<i>Crocus Tomasinianus</i> 'Ruby Giant'
									dies back by mid season	19	<i>Crocus versicolor</i> 'Picturatus'
						purple		+	remaining plant weak	4	<i>Delphinium glaucum</i>
		✿✿✿✿✿✿✿✿			✿	deep blue	+	+	attractive to aphids	4	<i>Delphinium grandiflorum</i>
	✿✿✿✿✿✿✿				✿✿	deep blue	+	+	needs staking	4	<i>Delphinium laxiflorum</i>
		✿✿✿✿✿✿✿✿✿✿✿✿				royal blue	+	+		18	<i>Delphinium X Belladonna</i> (Bellamosum) 'Improved'
	✿✿✿✿✿✿✿✿✿✿✿✿					white	+	+	fragrant flowers, one plant remaining	7	<i>Dianthus arenarius</i>
		✿✿✿✿✿✿✿✿✿✿✿✿				light pink	+	+		7	<i>Dianthus arenarius</i> (pink)
	✿✿✿✿✿✿✿✿✿✿✿✿					white	+	+	lacy flowers	7	<i>Dianthus arenarius</i> subsp. <i>borussicus</i>
	✿✿✿✿✿✿✿✿✿✿✿✿					lavender	+	+	one plant remaining	7	<i>Dianthus callizonus</i>
	✿✿✿✿✿✿✿✿✿✿✿✿					bright pink	+	+		7	<i>Dianthus carthusianorum</i>
		✿✿✿✿✿✿✿✿✿✿✿✿				bright pink	+	+		11	<i>Dianthus chinensis</i>
	✿✿✿✿✿✿✿✿✿✿✿✿					magenta	+	+		16	<i>Dianthus deltoides</i>
	✿✿✿✿✿✿✿✿✿✿✿✿					white or rose	+	+		19	<i>Dianthus deltoides</i>
	✿✿✿✿✿✿✿✿✿✿✿✿					bright orchid	+	+	very attractive in bloom	7	<i>Dianthus</i> 'Orchid Lace'
	✿✿✿✿✿✿✿✿✿✿✿✿					pink	+	+		7	<i>Dianthus plumarius</i>
		✿✿✿✿✿✿✿✿✿✿✿✿				light pink	+	+		11	<i>Dianthus plumarius</i> 'Smokey'
			✿✿✿✿✿✿✿✿✿✿			bright pink	+	+	one plant remaining	7	<i>Dianthus repens</i>
	✿✿✿✿✿✿✿			✿✿✿✿✿✿		rose pink	+	+		19	<i>Dianthus</i> sp. 'Ipswich Pinks Mixed'

Table 2. (continued)

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	No. OF PLANTS	WINTER INJURY*	HEIGHT (IN)	SPREAD (IN)
<i>Dianthus superbus</i> 'Fantasy Mix'	Lilac pink	T&M	Jun-90	10	0.7	27	36
<i>Dodecatheon cusickii</i>		ARGS	Jul-92	1	1.0	5(15)	8
<i>Dodecatheon dentatum</i>		ARGS	Sep-93	1	1.0	2	5
<i>Dodecatheon Jeffreyi</i>		ARGS	Jul-92	5	2.3	3(10)	4
<i>Dodecatheon Meadia</i>	Shooting star	ARGS	Jul-92	8	1.9	5(17)	9
<i>Draba densifolia</i>		ARGS	Aug-91	3	0.0	3	4
<i>Echinacea</i> sp. 'White Swan'		Park	Jul-93	10	3.6	25	16
<i>Erigeron glabellus</i>	Smooth fleabane	ANPS	Jun-90	10	1.2	12(25)	24
<i>Erigeron humilis</i>	Fleabane	ANPS	Aug-91	5	1.8	3	4
<i>Erigeron</i> sp. 'Pink Jewel' (?)		South Slope	Jun-91	10	3.1	21	16
<i>Filipendula vulgaris</i>	Dropwort	Park	Aug-89	7	2.0	21(51)	26
<i>Filipendula vulgaris</i>	Dropwort	I. Berger	Aug-93	10	0.4	17(27)	24
<i>Galium boreale</i>	Northern bedstraw	Big Dipper	Jul-92	10	0.9	30	32
<i>Galium odoratum</i>	Sweet Woodruff	Richters	Jul-93	4	1.5	12	21
<i>Gentiana Freyniana</i>		ARGS	Aug-91	10	1.7	10	20
<i>Gentiana septemfida</i>		ARGS	Aug-91	15	2.0	15	26
<i>Geranium Regelii</i> (grandiflorum var. alpinum)		VB&S	Jun-90	10	1.8	18	36
<i>Geranium sanguineum</i>	Blood-red geranium	ARGS	Jun-90	10	3.0	22	42
<i>Gypsophila paniculata</i> 'Snow White'	Baby's-breath	Johnny's	Jul-93	10	2.3	20	36
<i>Helenium autumnale</i> 'Red and Gold Hybrids'	Autumn sunspray	Ball Seed	Jul-93	10	1.5	37	20

*Winter Injury Rating: 0=no visible injury; 1=slight winter injury; 2=moderate winter injury, recovery likely; 3=severe setback from winter injury, recovery questionable; 4=winterkilled.

MAY	WEEKLY BLOOM PERIOD					BLOOM COLOR	FROST TOLERANT		COMMENTS	PLOT LOCATION	SCIENTIFIC NAME
	JUN	JUL	AUG	SEP	flowers		foliage				
		*	*	*	*	light lavender	+	+		7	<i>Dianthus superbus</i> 'Fantasy Mix'
	**	**				light magenta				16	<i>Dodecatheon cusickii</i>
										16	<i>Dodecatheon dentatum</i>
	**	**				magenta				16	<i>Dodecatheon Jeffreyi</i>
	**	**	**			white				16	<i>Dodecatheon Meadia</i>
		*	*	*	*	yellow	+	+	forms small, dense mound, evergreen foliage	11	<i>Draba densifolia</i>
				*	*	white				7	<i>Echinacea</i> sp. 'White Swan'
	*	*	*	*	*	pale lavender to white	+	+	reseeds readily	11	<i>Erigeron glabellus</i>
						white	+	+		13	<i>Erigeron humilis</i>
		*	*	*	*	pink	+	+		16	<i>Erigeron</i> sp. 'Pink Jewel' (?)
		*	*	*		white, pink buds		+		4	<i>Filipendula vulgaris</i>
	*	*	*	*	*	white	+	+		18	<i>Filipendula vulgaris</i>
	*	*	*	*	*	white	+	+	very small flowers, fragrant	4	<i>Galium boreale</i>
								+		10	<i>Galium odoratum</i>
			*	*	*	deep blue	+	+		13	<i>Gentiana Freyniana</i>
			*	*	*	deep blue	+	+		13	<i>Gentiana septemfida</i>
	*	*	*	*	*	blue violet	+	+		11	<i>Geranium Regelii</i> (grandiflorum var. alpinum)
	*	*	*	*	*	blue violet	+	+		11	<i>Geranium sanguineum</i>
			*	*	*	white	+	+		7	<i>Gypsophila paniculata</i> 'Snow White'
			*	*	*	yellow or red & gold	+	+		11	<i>Helenium autumnale</i> 'Red and Gold Hybrids'

Table 2. (continued)

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	No. OF PLANTS	WINTER INJURY*	HEIGHT (IN)	SPREAD (IN)
<i>Helianthemum nummularium</i>		I. Berger	Aug-93	10	1.5	6	27
<i>Hemerocallis minor</i>	Grass-leaf daylily	NCRPIS	Aug-90	9	2.3	28	14
<i>Hemerocallis</i> sp.	Day lily	CSBG	Aug-91	10	1.0	27(30)	20
<i>Hemerocallis</i> 'Stella d'Oro'	Daylily	Park	Sep-93	6	0.7	15	14
<i>Heracleum Sphondylium</i> subsp. <i>montanum</i>	Cow parsnip	NEWFS	Oct-90	6	2.0	20(29)	20
<i>Hieracium umbellatum</i>	Yellow hawkweed	ANPS	Aug-89	10	0.2	36	36
<i>Inula hirta</i>		I. Berger	Aug-93	10	0.5	9	8
<i>Iris Kaempferi</i> (?)	Japanese iris	ANPS	Jun-91	10	0.6	40	36
<i>Iris missouriensis</i> (?)	Western blue flag	Estes Park, CO	Jul-92	10	0.6	22	20
<i>Iris palustris</i>		SAAS	Aug-92	6	1.7	31	24
<i>Iris Pseudacorus</i>		White Flower	Aug-93	10	3.6	37	9
<i>Iris setosa</i>	Wild iris	Kodiak, AK	Aug-92	2	0.5	24	22
<i>Iris setosa</i>		ARGS (Germany)	Jul-92	6	2.9	11	6
<i>Iris setosa arctica</i>		ARGS	Jul-92	2	1.8	9	6
<i>Iris setosa nana</i>		ARGS	Jul-92	10	2.1	27	20
<i>Iris setosa</i> var. <i>canadensis</i>	Beachhead iris	ARGS	Jul-92	2	0.8	10	10
<i>Iris sibirica</i>	Siberian iris	AHS	Aug-91	10	3.2	23	14
<i>Jasione laevis</i>		I. Berger	Aug-93	10	1.7	13	13
<i>Leontopodium stellatum</i>		Magadan, Russia	Aug-93	10	1.7	5(?)	11
<i>Liatrix aspera</i>		NEWFS	Aug-93	5	1.8	12	8

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MAY	WEEKLY BLOOM PERIOD					BLOOM COLOR	FROST TOLERANT		COMMENTS	PLOT LOCATION	SCIENTIFIC NAME
	JUN	JUL	AUG	SEP	flowers		foliage				
	✿✿✿✿✿	✿✿✿✿✿	✿✿✿✿✿	✿✿✿✿✿	bright yellow	+	+		18	<i>Helianthemum nummularium</i>	
		✿✿✿			gold		+		12	<i>Hemerocallis minor</i>	
		✿✿✿✿✿			bright yellow		+		12	<i>Hemerocallis</i> sp.	
	✿✿✿✿✿	✿✿✿✿✿	✿✿✿✿✿		gold		+		12	<i>Hemerocallis</i> 'Stella d'Oro'	
		✿✿✿			white		+	aphid infestation	15	<i>Heracleum Sphondylium</i> subsp. <i>montanum</i>	
		✿✿✿✿✿	✿✿✿✿✿	✿✿✿✿✿	yellow	+	+	reseeds readily, may be invasive	4	<i>Hieracium umbellatum</i>	
		✿			yellow		+		18	<i>Inula hirta</i>	
	✿✿✿✿✿				deep purple		+		15	<i>Iris Kaempferi</i> (?)	
	✿				blue		+		15	<i>Iris missouriensis</i> (?)	
	✿✿✿✿✿				blue		+	small flowers	13	<i>Iris palustris</i>	
							+		19	<i>Iris Pseudacorus</i>	
	✿				deep purple		+		13	<i>Iris setosa</i>	
							+		15	<i>Iris setosa</i>	
							+		15	<i>Iris setosa arctica</i>	
							+		15	<i>Iris setosa nana</i>	
							+		15	<i>Iris setosa var. canadensis</i>	
							+	2 plants remaining	13	<i>Iris sibirica</i>	
	✿✿✿✿✿	✿✿✿✿✿	✿✿✿✿✿	✿✿✿✿✿	blue	+	+	blooms look like pin cushions	18	<i>Jasione laevis</i>	
	✿✿				silvery		+		19	<i>Leontopodium stellatum</i>	
				✿✿✿✿✿	pink	+	+		18	<i>Liatrix aspera</i>	

Table 2. (continued)

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	No. OF PLANTS	WINTER INJURY*	HEIGHT (IN)	SPREAD (IN)
<i>Liatriis borealis</i>		NEWFS	Aug-93	10	2.5	10(26)	18
<i>Liatriis punctata</i>		NEWFS	Aug-93	7	2.3	7	10
<i>Liatriis pycnostachya</i>		NEWFS	Aug-93	10	0.6	13(36)	20
<i>Lilium</i> 'America'	Asiatic hybrid lily	Waushara	Jul-93	10	0.0	23	16
<i>Lilium</i> 'Antarctica'	Asiatic Hybrid Lily	Wayside	Jul-93	10	0.3	36	23
<i>Lilium canadense</i>	Canada lily	AHS	Jul-92	3	3.0		
<i>Lilium canadense</i>	Canadian lily	NEWFS	Jul-92	3	3.5	4	3
<i>Lilium</i> 'Chinook'	Asiatic Hybrid Lily	Wayside	Jul-93	10	0.3	48	16
<i>Lilium</i> 'Coho'	Asiatic Hybrid Lily	Waushara	Jul-93	10	0.0	38	20
<i>Lilium</i> 'Corina'	Asiatic hybrid lily	VB&S	Aug-90	10	0.5	43	28
<i>Lilium</i> 'Corsica'	Asiatic hybrid lily	South Slope	Jun-91	10	0.8	34	19
<i>Lilium</i> 'Crete'	Asiatic Hybrid Lily	Waushara	Aug-93	6	0.2	25	12
<i>Lilium</i> 'Crimson Beauty'	Asiatic Hybrid Lily	Waushara	Jul-93	10	0.2	42	17
<i>Lilium</i> 'Dreamland'	Asiatic hybrid lily	South Slope	Jun-91	10	0.4	34	39
<i>Lilium</i> 'Fireball'	Asiatic hybrid lily	VB&S	Aug-90	10	1.1	29	13
<i>Lilium</i> 'Freckles'	Asiatic hybrid lily	VB&S	Aug-90	10	1.0	34	18
<i>Lilium</i> 'French Vanilla'	Asiatic hybrid lily	VB&S	Aug-90	10	0.7	28	22
<i>Lilium</i> 'Geneve'	Asiatic Hybrid Lily	Waushara	Jul-93	8	1.1	36	10
<i>Lilium</i> 'Graceland'	Asiatic Hybrid Lily	Waushara	Jul-93	10	0.1	39	16
<i>Lilium Henryi</i>		de Jager	Aug-93	1	0.0	17	5

*Winter Injury Rating: 0=no visible injury; 1=slight winter injury; 2=moderate winter injury, recovery likely; 3=severe setback from winter injury, recovery questionable; 4=winterkilled.

MAY	WEEKLY BLOOM PERIOD					BLOOM COLOR	FROST TOLERANT		COMMENTS	PLOT LOCATION	SCIENTIFIC NAME
	JUN	JUL	AUG	SEP	flowers		foliage				
				✿✿✿✿		red violet	+	+		18	<i>Liatris borealis</i>
								+		18	<i>Liatris punctata</i>
				✿✿✿✿		red violet	+	+		18	<i>Liatris pycnostachya</i>
		✿✿✿				orange-red		+	quite spectacular in bloom	6	<i>Lilium 'America'</i>
		✿✿✿✿				white		+		6	<i>Lilium 'Antarctica'</i>
									remaining plant died back early in the season	11	<i>Lilium canadense</i>
								+	one plant remaining	11	<i>Lilium canadense</i>
			✿✿✿✿			orange	+	+		6	<i>Lilium 'Chinook'</i>
		✿✿				pale gold		+		6	<i>Lilium 'Coho'</i>
		✿✿✿✿✿				bright orange	+	+		12	<i>Lilium 'Corina'</i>
		✿✿✿				pink		+	some vole damage during summer of 93, recovered in 94	16	<i>Lilium 'Corsica'</i>
		✿✿✿				burgundy		+		19	<i>Lilium 'Crete'</i>
		✿✿✿				dark crimson		+		11	<i>Lilium 'Crimson Beauty'</i>
			✿✿✿✿✿			bright yellow/ gold throat	+	+		16	<i>Lilium 'Dreamland'</i>
			✿✿✿✿✿			burgundy	+	+		12	<i>Lilium 'Fireball'</i>
			✿✿✿✿✿			scarlet	+	+		12	<i>Lilium 'Freckles'</i>
		✿✿✿✿✿				light yellow	+	+		12	<i>Lilium 'French Vanilla'</i>
		✿✿✿✿				pale peach		+		11	<i>Lilium 'Geneve'</i>
		✿✿✿✿				orange		+		6	<i>Lilium 'Graceland'</i>
										19	<i>Lilium Henryi</i>

Table 2. (continued)

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	No. OF PLANTS	WINTER INJURY*	HEIGHT (IN)	SPREAD (IN)
<i>Lilium 'Jolanda'</i>	Asiatic hybrid lily	South Slope	Jun-91	10	0.3	54	27
<i>Lilium 'Juliana'</i>	Asiatic hybrid lily	VB&S	Aug-90	10	0.4	28	22
<i>Lilium lanciflorum</i>	Tiger lily	J. Gordon	Aug-92	10	1.3	26	8
<i>Lilium lancifolium</i>	Tiger lily	U. Park School	Aug-93	10	0.0	45	20
<i>Lilium Martagon 'Mix'</i>	Martagon lily	T&M	Jul-92	6	2.4	4	6
<i>Lilium 'Pink Chiffon'</i>	Asiatic hybrid lily	VB&S	Aug-90	10	1.5	29	22
<i>Lilium 'Pink Perfection'</i>	Asiatic Hybrid Lily	de Jager	Aug-93	3	3.0	16	7
<i>Lilium 'Poet's Dream'</i>	Asiatic hybrid lily	VB&S	Aug-90	10	0.8	32	20
<i>Lilium 'Prince Carnival'</i>	Asiatic hybrid lily	VB&S	Aug-90	10	1.0	29	20
<i>Lilium 'Rainbow'</i>	Asiatic hybrid lily	VB&S	Aug-90	10	1.2	32	26
<i>Lilium 'Red Night'</i>	Asiatic Hybrid Lily	Waushara	Jul-93	10	0.5	31	12
<i>Lilium regale</i>		de Jager	Aug-93	3	2.3	25	7
<i>Lilium 'Roma'</i>	Asiatic Hybrid Lily	Waushara	Jul-93	10	0.1	41	12
<i>Lilium 'Rose Fire'</i>	Asiatic hybrid lily	VB&S	Aug-90	10	1.1	16	13
<i>Lilium speciosum 'Rubrum'</i>	Showy Japanese lily	de Jager	Aug-93	2	3.0		
<i>Lilium 'Sterling Star'</i>	Asiatic hybrid lily	South Slope	Jun-91	10	0.3	39	28
<i>Lilium superbum</i>	Turk's-cap lily	NEWFS	Jul-92	10	3.7	10	4
<i>Lilium 'Tribute'</i>	Asiatic hybrid lily	VB&S	Aug-90	10	0.6	24	20
<i>Lilium 'Vanessa'</i>	Asiatic hybrid lily	VB&S	Aug-90	10	0.7	33	23
<i>Linaria alpina</i>		T&M	Aug-93	10	2.7	6	8

*Winter Injury Rating: 0=no visible injury; 1=slight winter injury; 2=moderate winter injury, recovery likely; 3=severe setback from winter injury, recovery questionable; 4=winterkilled.

MAY	WEEKLY BLOOM PERIOD					BLOOM COLOR	FROST TOLERANT		COMMENTS	PLOT LOCATION	SCIENTIFIC NAME
	JUN	JUL	AUG	SEP	flowers		foliage				
			✿✿✿✿✿			bright orange	+	+		16	<i>Lilium 'Jolanda'</i>
		✿✿✿✿				cream		+		12	<i>Lilium 'Juliana'</i>
			✿✿✿✿			orange	+	+		12	<i>Lilium lanciflorum</i>
		✿✿✿✿		✿ ✿		red	+	+		18	<i>Lilium lancifolium</i>
								+		11	<i>Lilium Martagon 'Mix'</i>
		✿✿✿✿				pink		+		12	<i>Lilium 'Pink Chiffon'</i>
										19	<i>Lilium 'Pink Perfection'</i>
		✿✿✿✿✿				pink, white and burgundy	+	+		12	<i>Lilium 'Poet's Dream'</i>
		✿✿✿✿				pink, spotted throat	+	+		12	<i>Lilium 'Prince Carnival'</i>
		✿✿✿✿				scarlet	+	+		12	<i>Lilium 'Rainbow'</i>
		✿✿				dark red		+		6	<i>Lilium 'Red Night'</i>
		✿				purple/yellow throat		+		19	<i>Lilium regale</i>
		✿✿✿✿				light yellow	+	+		6	<i>Lilium 'Roma'</i>
		✿✿				orange/gold		+		12	<i>Lilium 'Rose Fire'</i>
										19	<i>Lilium speciosum 'Rubrum'</i>
		✿✿✿				white/spotted throat		+		16	<i>Lilium 'Sterling Star'</i>
									one plant remaining	12	<i>Lilium superbum</i>
		✿✿				coral		+		12	<i>Lilium 'Tribute'</i>
			✿✿✿			bright yellow	+	+		12	<i>Lilium 'Vanessa'</i>
			✿✿✿	✿✿		violet/orange splotch	+	+		18	<i>Linaria alpina</i>

Table 2. (continued)

**TABLE
2**

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	No. OF PLANTS	WINTER INJURY*	HEIGHT (IN)	SPREAD (IN)
<i>Lupinus nootkatensis</i>		Valdez, AK	Sep-89	7	1.2	24	72
<i>Lychnis viscaria</i>		Tack's	Aug-92	10	0.8	12(33)	18
<i>Mentha</i> sp.	Mint	South Slope	Jun-91	1	0.0	23	creeping
<i>Monarda didyma</i> 'Marshall's Delight'	Bee balm	Richters	Aug-93	2	1.0	26	16
<i>Muscari armeniacum</i>	Grape hyacinth	J&P	Aug-92	10	1.0	5(10)	8
<i>Muscari botryoides</i> 'Album'	Common grape hyacinth	de Jager	Aug-93	10	2.2		
<i>Muscari</i> sp. 'Early Giant'		de Jager	Aug-93	10	0.2		
<i>Muscari Tubergenianum</i>		de Jager	Aug-93	10	1.4		
<i>Myrrhis odorata</i>	Sweet cicely	Richters	Jul-93	3	2.7	26	23
<i>Paeonia</i> sp.	Single peony	J. Gordon	Jul-92	10	1.0	22	29
<i>Physalis Alkekengi</i> (Franchetii)	Chinese-lantern plant	Burpee	Jul-92	10	2.4	24	24
<i>Physostegia virginiana</i>	Obedience	NEWFS	Jul-93	10	1.3	27	29
<i>Platycodon grandiflorus</i> 'Hakone Double Blue'	Balloon flower	T&M	Aug-93	10	3.5	12	13
<i>Polemonium caeruleum</i> 'Cashmerianum'		T&M	Jul-92	10	3.4	5	4
<i>Polemonium caeruleum</i> var. <i>lacteum</i> (album)		T&M	Jul-92	10	3.1	27	14
<i>Polemonium reptans</i>	Creeping polemonium	NEWFS	Oct-91	4	2.7	17	26
<i>Polemonium reptans</i> 'Blue Pearl'		Vaughan's	Jul-92	10	3.3	27	11
<i>Polemonium reptans</i> var. <i>villosum</i>		NEWFS	Jul-92	1	1.0	7	9
<i>Polygonatum biflorum</i> (?)	Solomon's seal	K. Collette	Sep-93	10	3.2	8	4
<i>Potentilla argrophylla</i>		T&M	Aug-93	10	1.3	12	20

*Winter Injury Rating: 0=no visible injury; 1=slight winter injury; 2=moderate winter injury, recovery likely; 3=severe setback from winter injury, recovery questionable; 4=winterkilled.

WEEKLY BLOOM PERIOD					BLOOM COLOR	FROST TOLERANT		COMMENTS	PLOT LOCATION	SCIENTIFIC NAME
MAY	JUN	JUL	AUG	SEP		flowers	foliage			
		✿✿	✿		blue/white			self seeds	4	<i>Lupinus nootkatensis</i>
	✿✿✿✿✿✿	✿✿✿✿		✿✿✿	deep rose	+	+	showy flowers, unattractive seedheads	10	<i>Lychnis viscaria</i>
			✿✿✿✿✿✿		blue (light lavender)			invasive	16	<i>Mentha</i> sp.
		✿✿✿✿✿✿			rose	+	+		16	<i>Monarda didyma</i> 'Marshall's Delight'
✿✿✿✿✿✿					blue			die back later in summer	12	<i>Muscari armeniacum</i>
✿✿✿✿					white			die back later in summer	19	<i>Muscari botryoides</i> 'Album'
✿✿✿✿					blue			die back later in summer	19	<i>Muscari</i> sp. 'Early Giant'
✿✿✿✿					sky blue			die back later in summer	19	<i>Muscari Tubergenianum</i>
	✿✿✿✿✿✿				white		+		10	<i>Myrrhis odorata</i>
							+	attractive to aphids	11	<i>Paeonia</i> sp.
		✿✿✿✿✿✿			creamy white	+	+	bright orange lanterns (seed pods) in fall	15	<i>Physalis Alkekengi</i> (Franchetii)
			✿✿✿✿✿✿		white or pink	+	+		11	<i>Physostegia virginiana</i>
							+		16	<i>Platycodon grandiflorus</i> 'Hakone Double Blue'
					deep blue		+	self seeds	15	<i>Polemonium caeruleum</i> 'Cashmerianum'
	✿✿✿✿✿✿	✿✿✿✿✿✿		✿✿✿✿✿✿	white	+	+		15	<i>Polemonium caeruleum</i> var. <i>lacteum</i> (album)
✿✿✿✿	✿✿✿✿✿✿	✿✿✿✿			light lavender		+		7	<i>Polemonium reptans</i>
	✿✿✿✿✿✿	✿✿✿✿✿✿	✿✿✿✿✿✿	✿✿✿✿✿✿	blue	+	+		15	<i>Polemonium reptans</i> 'Blue Pearl'
					cream		+		15	<i>Polemonium reptans</i> var. <i>villosum</i>
							-		4	<i>Polygonatum biflorum</i> (?)
							+		18	<i>Potentilla argrophylla</i>

Table 2. (continued)

TABLE 2	SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	No. OF PLANTS	WINTER INJURY*	HEIGHT (IN)	SPREAD (IN)
	<i>Potentilla megalantha</i>			T&M	Aug-93	10	0.3	12
<i>Potentilla tridentata</i>	Three-toothed cinquefoil		Northern Lights	Jun-91	10	2.0	8(11)	28
<i>Potentilla x 'Melton Fire'</i>			T&M	Aug-93	10	1.9	11(15)	30
<i>Pycnanthemum virginianum</i>			NEWFS	Aug-93	10	3.5	8	12
<i>Rubus parvifolius</i>	Japanese raspberry		NCRPIS	Sep-89	5	1.5	38	60
<i>Salvia officinalis</i>	Common salvia		Gorno-Altaiisk, Russia	Jun-91	10	0.0	54	32
<i>Sedum acre</i>	Golden-carpet		I. Berger	Aug-93	10	2.6	3	20
<i>Silene Schafta</i>			I. Berger	Aug-93	10	1.6	5(9)	11
<i>Silene sp.</i>			Novosibirsk, Russia	Sep-91	10	0.1	42	54
<i>Silphium perfoliatum</i>	Cup plant		NEWFS	Aug-92	8	0.2	76	56
<i>Solidago decumbens</i>	Decumbent goldenrod		ANPS	Aug-89	10	2.3	15(21)	23
<i>Stellaria monantha</i>			D.Dinkel	Aug-89	10	2.3	6	30
<i>Tanacetum vulgare</i>	Common tansy		South Slope	Jun-91	10	0.0	39	
<i>Thalictrum dioicum</i>	Early meadow rue		NEWFS	Aug-92	3	3.3	10	14
<i>Thalictrum sparsiflorum</i>			ANPS	Sep-91	4	0.5	32	30
<i>Tiarella cordifolia</i>	Foamflower		NEWFS	Jul-93	10	3.3	8	13
<i>Trollius europaeus</i>	Globeflower		P. Holloway	Jul-92	4	1.0	16(34)	22
<i>Trollius laxus</i>	Spreading globeflower		NEWSF	Jul-92	10	1.7	12(18)	16
<i>Tulipa Batalinii</i>			de Jager	Aug-93	6	2.5		
<i>Tulipa Batalinii 'Bright Gem'</i>			de Jager	Aug-93	10	3.5		

*Winter Injury Rating: 0=no visible injury; 1=slight winter injury; 2=moderate winter injury, recovery likely; 3=severe setback from winter injury, recovery questionable; 4=winterkilled.

MAY	WEEKLY BLOOM PERIOD					BLOOM COLOR	FROST TOLERANT		COMMENTS	PLOT LOCATION	SCIENTIFIC NAME
	JUN	JUL	AUG	SEP	flowers		foliage				
	✿✿✿✿✿✿				✿✿✿✿	bright lemon yellow	+	+		18	<i>Potentilla megalantha</i>
	✿✿✿✿✿✿	✿✿✿✿✿✿	✿✿✿✿✿✿	✿✿✿✿✿✿	✿✿✿✿	white	+	+	mounding habit	15	<i>Potentilla tridentata</i>
		✿✿✿✿✿✿	✿✿✿✿✿✿	✿✿✿✿✿✿	✿✿✿✿✿✿	red & lemon	+	+		18	<i>Potentilla</i> x 'Melton Fire'
								+		18	<i>Pycnanthemum virginianum</i>
		✿✿✿✿				pink		+	groundcover, may be invasive, flowers are unobtrusive, has thorns	7	<i>Rubus parvifolius</i>
	✿✿✿✿✿✿	✿✿✿✿✿✿	✿✿✿✿			lavender pink		+	attractive to bees, interesting seed heads	16	<i>Salvia officinalis</i>
		✿✿✿✿			✿✿	yellow	+	+		19	<i>Sedum acre</i>
			✿✿✿✿✿✿	✿✿✿✿✿✿		rose	+	+		18	<i>Silene Schafta</i>
		✿✿✿✿✿✿	✿✿✿✿✿✿	✿✿✿✿✿✿		white	+	+	weedy, reseeds readily, needs staking	6	<i>Silene</i> sp.
		✿✿✿✿✿✿	✿✿✿✿✿✿	✿✿		bright yellow	+	+		6	<i>Silphium perfoliatum</i>
		✿✿✿✿✿✿	✿✿✿✿✿✿	✿✿✿✿		yellow	+	+		4	<i>Solidago decumbens</i>
	✿✿✿✿✿✿	✿✿✿✿✿✿	✿✿	✿✿✿✿✿✿		white	+	+	mounds of grey-green foliage, losing vigor	4	<i>Stellaria monantha</i>
		✿	✿✿✿✿✿✿	✿✿✿✿		yellow	+	+	aromatic, attractive to moose, invasive	16	<i>Tanacetum vulgare</i>
								+		11	<i>Thalictrum dioicum</i>
		✿✿✿✿✿✿	✿✿			lavender		+	very small flowers	11	<i>Thalictrum sparsiflorum</i>
								+		1	<i>Tiarella cordifolia</i>
	✿✿✿✿✿✿	✿✿✿✿✿✿	✿✿	✿✿✿✿		lemon yellow	+	+		11	<i>Trollius europaeus</i>
	✿✿✿✿✿✿	✿✿✿✿	✿✿✿✿✿✿	✿✿✿✿✿✿		pale yellow	+	+		15	<i>Trollius laxus</i>
									dies back by mid-season	19	<i>Tulipa Batalinii</i>
									dies back by mid-season	19	<i>Tulipa Batalinii</i> 'Bright Gem'

Table 2. (continued)

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	No. OF PLANTS	WINTER INJURY*	HEIGHT (IN)	SPREAD (IN)
<i>Tulipa Clusiana</i>	Lady tulip	de Jager	Aug-93	10	2.8		
<i>Tulipa pulchella</i> 'Persian Pearl'		de Jager	Aug-93	10	2.3		
<i>Tulipa tarda</i>		de Jager	Aug-93	9	0.2		
<i>Verbena hastata</i>	Blue vervain	NEWFS	Aug-93	10	2.9	47	15
<i>Veronica incana</i>	Wooly speedwell	T&M	Jun-91	10	1.4	24	34
FERNS							
<i>Athyrium filix-femina</i>	Lady fern	NEWFS	Jul-93	10	2.3	14	13
<i>Cystopteris bulbifera</i>	Bulblet bladder fern	NEWFS	Jul-93	10	3.0	5	12
<i>Dennstaedtia punctilobula</i>	Hay-scented fern	NEWFS	Jul-93	2	3.5	5	3
<i>Dryopteris campyloptera</i> (austriaca)	Mountain wood fern	NEWFS	Jul-93	10	1.1	13	12
<i>Dryopteris filix-mas</i>	Male fern	NEWFS	Jul-93	10	0.4	14	15
<i>Dryopteris fragrans</i>	Fragrant wood fern	Fish Creek, AK	Jul-93	10	3.1	4	3
<i>Dryopteris marginalis</i>	Marginal wood fern	NEWFS	Jul-93	10	1.8	14	12
<i>Phegopteris connectilis</i> (Thelypteris phegopteris)	Northern beech fern	NEWFS	Jul-93	3	1.7	10	15
<i>Polypodium virginianum</i>	American wall fern	NEWFS	Jul-93	10	2.8	5	8
<i>Polystichum acrostichoides</i>	Christmas fern	NEWFS	Jul-93	6	3.0	8	7

*Winter Injury Rating: 0=no visible injury; 1=slight winter injury; 2=moderate winter injury, recovery likely; 3=severe setback from winter injury, recovery questionable; 4=winterkilled.

MAY	WEEKLY BLOOM PERIOD					BLOOM COLOR	FROST TOLERANT		COMMENTS	PLOT LOCATION	SCIENTIFIC NAME
	JUN	JUL	AUG	SEP	flowers		foliage				
									dies back by mid-season	19	<i>Tulipa Clusiana</i>
✿						fuschia, yellow center			dies back by mid-season	19	<i>Tulipa pulchella</i> 'Persian Pearl'
✿						bright yellow, white edges			dies back by mid-season	19	<i>Tulipa tarda</i>
			✿✿✿✿✿✿	✿✿✿✿✿✿		purple (blue)	+	+		16	<i>Verbena hastata</i>
		✿✿✿✿✿✿	✿✿✿✿✿✿	✿✿✿✿✿✿	✿✿✿✿✿✿	blue	+	+	silver foliage	15	<i>Veronica incana</i>
										1	<i>Athyrium filix-femina</i>
										1	<i>Cystopteris bulbifera</i>
										1	<i>Dennstaedtia punctilobula</i>
										1	<i>Dryopteris campyloptera</i> (austriaca)
										1	<i>Dryopteris filix-mas</i>
										1	<i>Dryopteris fragrans</i>
									some plants may be misidentified	1	<i>Dryopteris marginalis</i>
										1	<i>Phegopteris connectilis</i> (Thelypteris phegopteris)
										1	<i>Polypodium virginianum</i>
										1	<i>Polystichum acrostichoides</i>

Table 2. (continued)

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	No. OF PLANTS	WINTER INJURY*	HEIGHT (IN)	SPREAD (IN)
ORNAMENTAL GRASSES							
<i>Arctagrostis latifolia</i> 'Kenai'	Polar grass	PMC	Jul-92	10	0.4	31(61)	43
<i>Beckmannia syzigachne</i> 'Egan'	American sloughgrass	PMC	Jul-92	10	0.3	17(38)	20
<i>Calamagrostis acutiflora</i> var. <i>stricta</i>	Feather reed grass	Bluebird	Aug-90	1	1.7	32	27
<i>Calamagrostis arundinacea</i> 'Karl Foerster'		Bluebird	Aug-90	2	1.4	32	33
<i>Deschampsia beringensis</i> 'Norcoast'	Bering hair grass	PMC	Jul-92	10	0.1	22(50)	46
<i>Deschampsia caespitosa</i> 'Goldgehaenge'	Tufted hair grass	Bluebird	Aug-90	4	1.8	21(34)	27
<i>Deschampsia flexuosa</i>	Crinkled hair grass	Bluebird	Aug-89	12	3.2	7	14
<i>Festuca amethystina</i>	Large blue fescue	Bluebird	Aug-89	10	2.6	11(25)	13
<i>Festuca valesiaca</i> 'Glaucua'	Swiss fescue	Bluebird	Aug-90	3	2.6	8(14)	11
<i>Koeleria glauca</i>	Blue hair grass	T&M	Jul-90	10	3.4	5(20)	14
<i>Koeleria glauca</i>	Blue hair grass	Bluebird	Aug-89	10	2.7	7	10
<i>Phalaris arundinacea</i> var. <i>picta</i>	Ribbon grass	Bluebird	Aug-89	11	0.4	46	96+
<i>Poa alpina</i> 'Gruening'	Alpine bluegrass	PMC	Jul-92	10	0.5	11(19)	16
<i>Poa ampla</i> 'Service'	Big bluegrass	PMC	Jul-92	10	1.3	11(34)	14
<i>Poa glauca</i> 'Tundra'	Greenland bluegrass	PMC	Jul-92	10	2.8	14(31)	12

*Winter Injury Rating: 0=no visible injury; 1=slight winter injury; 2=moderate winter injury, recovery likely; 3=severe setback from winter injury, recovery questionable; 4=winterkilled.

MAY	WEEKLY BLOOM PERIOD					BLOOM COLOR	FROST TOLERANT		COMMENTS	PLOT LOCATION	SCIENTIFIC NAME
	JUN	JUL	AUG	SEP	flowers		foliage				
		✿						+	coarse foliage	8	<i>Arctagrostis latifolia</i> 'Kenai'
		✿						+	susceptible to disease (powdery mildew)	8	<i>Beckmannia syzigachne</i> 'Egan'
								+		8	<i>Calamagrostis acutiflora</i> var. <i>stricta</i>
								+		8	<i>Calamagrostis arundinacea</i> 'Karl Foerster'
		✿						+	fine seed head	8	<i>Deschampsia beringensis</i> 'Norcoast'
		✿						+		8	<i>Deschampsia caespitosa</i> 'Goldgehaenge'
		✿						+	3 plants remaining	8	<i>Deschampsia flexuosa</i>
		✿						+	3 plants remaining	8	<i>Festuca amethystina</i>
		✿						+	one plant remaining	8	<i>Festuca valesiaca</i> 'Glauc'
		✿						+		8	<i>Koeleria glauca</i>
								+	one plant remaining	8	<i>Koeleria glauca</i>
		✿						+	striking variegated foliage, spreads by rhizomes, may be invasive	8	<i>Phalaris arundinacea</i> var. <i>picta</i>
		✿						+	slight mildew problem late in season	8	<i>Poa alpina</i> 'Gruening'
		✿						+	feathery look	8	<i>Poa ampla</i> 'Service'
		✿						+		8	<i>Poa glauca</i> 'Tundra'

Table 2. (continued)

TABLE
2

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	No. OF PLANTS	WINTER INJURY*	HEIGHT (IN)	SPREAD (IN)
WOODY PERENNIALS							
<i>Acer ginnala</i> 'Bergiana Flame'	Amur maple superior red	Lawyer	Jul-93	5	1.4	56	45
<i>Acer saccharum</i>	Sugar maple	NCRPIS	Jul-92	3	3.5	15	13
<i>Amelanchier alnifolia</i>		NCRPIS	Jul-92	2	1.3	37	48
<i>Ampelopsis glandulosa</i> var. <i>brevipedunculata</i>	Porcelain vine	NCRPIS	Jul-93	5	0.8	17	49
<i>Aronia arbutifolia</i>	Chokeberry	NCRPIS	Jul-92	3	2.2		
<i>Aronia melanocarpa</i>		NCRPIS	Jul-92	2	1.0	46	42
<i>Berberis koreana</i> x <i>Thunbergii</i> 'Emerald Carousel'	Hybrid barberry	NCRPIS	Jul-93	5	0.2	28	44
<i>Betula michauxii</i>		ARGS	Sep-90	5	1.0	22	64
<i>Betula occidentalis</i>	Water birch	NCRPIS	Jun-90	3	1.6	42	50
<i>Betula</i> sp.		NCRPIS	Jun-90	3	2.4	66	92
<i>Buddleia</i> sp.	Butterfly bush	Fairbanks, AK	Aug-93	1	1.0	37	46
<i>Caragana arborescens</i>	Siberian pea tree	PMC	Sep-91	3	0.3	95	32
<i>Caragana frutex</i>	Russian pea shrub	NCRPIS	Aug-93	3	1.3	12	11
<i>Crataegus columbiana</i>	Columbia hawthorn	Lawyer	Jul-93	5	1.0	69	34
<i>Forsythia ovata</i> 'Nakai'	Early forsythia	NCRPIS	Sep-90	5	2.9	55	48
<i>Larix sibirica</i>	Siberian larch	CSBG	Aug-91	5	3.4	25	21
<i>Lonicera hybrida</i> 'Honey Rose'		NCRPIS	Aug-93	4	0.3	52	46
<i>Lonicera tatarica</i> 'Beavermor'	Tatarian honeysuckle	Beaverlodge	Sep-89	5	1.0	62	63
<i>Malus baccata</i> var. <i>mandsurica</i>	Siberian crab	PMC	Sep-91	5	1.0	66	71

*Winter Injury Rating: 0=no visible injury; 1=slight winter injury; 2=moderate winter injury, recovery likely; 3=severe setback from winter injury, recovery questionable; 4=winterkilled.

WEEKLY BLOOM PERIOD					BLOOM COLOR	FROST TOLERANT		COMMENTS	PLOT LOCATION	SCIENTIFIC NAME
MAY	JUN	JUL	AUG	SEP		flowers	foliage			
							+		3	<i>Acer ginnala</i> 'Bergiana Flame'
							+	one plant remaining	14	<i>Acer saccharum</i>
	*						+		2	<i>Amelanchier alnifolia</i>
			* * *		green		-		3	<i>Ampelopsis glandulosa</i> var. <i>brevipedunculata</i>
							+	2 plants came back from roots	5	<i>Aronia arbutifolia</i>
		*			white		+		5	<i>Aronia melanocarpa</i>
	* *				yellow		+		3	<i>Berberis koreana</i> x <i>Thunbergii</i> 'Emerald Carousel'
							+	creeping growth habit	14	<i>Betula michauxii</i>
							+	heavy winter pruning by moose, 2 plants seem diseased	3	<i>Betula occidentalis</i>
							+	one plant remaining	3	<i>Betula</i> sp.
			* * * * *		pink	+	+		5	<i>Buddelia</i> sp.
							+		5	<i>Caragana arborescens</i>
							+		5	<i>Caragana frutex</i>
							+		3	<i>Crataegus columbiana</i>
							+	one plant remaining	14	<i>Forsythia ovata</i> 'Nakai'
							+	one plant remaining	9	<i>Larix sibirica</i>
	* * *		*		bright rose, red fruits	+	+		5	<i>Lonicera hybrida</i> 'Honey Rose'
	* * * * *	* *	*		white, red fruits		+		2	<i>Lonicera tatarica</i> 'Beavermor'
							+		5	<i>Malus baccata</i> var. <i>mandsurica</i>

Table 2. (continued)

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	No. OF PLANTS	WINTER INJURY*	HEIGHT (IN)	SPREAD (IN)
<i>Malus prunifolia</i> 'Kerr'	Kerr crabapple	Lawyer	Aug-93	5	0.8	53	81
<i>Malus Sargentii</i>		Hudson	Jul-92	5	1.5	20	12
<i>Parthenocissus inserta</i>		NCRPIS	Jul-92	3	3.5	20	42
<i>Physocarpus</i> sp.	Ninebark	NCRPIS (?)	Sep-89	5	0.9	65	76
<i>Picea Engelmannii</i>	Engelmann spruce	Schumacher	Sep-89	5	1.8	14	13
<i>Picea glauca</i> var. <i>albertiana</i>	Alberta spruce	GBG	Sep-89	5	0.1	32	25
<i>Picea pungens</i> X <i>glauca</i>	Spartan spruce (TM)	BTI	Aug-91	5	2.9	16	11
<i>Pinus cembra</i>	Swiss stone pine	Schumacher	Sep-89	5	1.7	14	15
<i>Pinus cembra sibirica</i>	Stone pine	SAAS	Aug-93	5	1.2	5	6
<i>Pinus resinosa</i>	Red pine	Lawyer	Aug-93	3	0.3	23	12
<i>Pinus sibiricus</i>	Siberian pine	SAAS	Aug-93	5	1.0	5	6
<i>Populus tremula</i> 'Erecta'	Upright European ash	KHN	Jun-90	5	1.5	88	36
<i>Prunus fruiticosa</i>	European dwarf cherry	BCN	Sep-89	5	2.6	30	47
<i>Prunus fruiticosa</i> 'Scarlet'	European dwarf cherry	NCRPIS	Sep-89	5	1.8	32	54
<i>Prunus salicina</i> var. <i>mandshurica</i>	Manchurian plum	BCN	Sep-89	5	2.8	56	61
<i>Prunus tenella</i>	Dwarf Russian almond	Lawyer	Aug-93	1	1.0	42	35
<i>Prunus</i> X <i>cistena</i>	Purple-leaf sand cherry	Lawyer	Jul-93	5	2.0	48	39
<i>Rhododendron dahuricum</i>		Chamal, Russia	Jul-93	5	3.4	5	6
<i>Rosa rugosa</i> PI 277 432	Turkestan rose	PMC	Aug-91	5	3.1	22	32
<i>Rosa</i> sp. 'Lac Majeau'		PMC	Aug-91	5	0.8	45	55

*Winter Injury Rating: 0=no visible injury; 1=slight winter injury; 2=moderate winter injury, recovery likely; 3=severe setback from winter injury, recovery questionable; 4=winterkilled.

MAY	WEEKLY BLOOM PERIOD					BLOOM COLOR	FROST TOLERANT		COMMENTS	PLOT LOCATION	SCIENTIFIC NAME
	JUN	JUL	AUG	SEP	flowers		foliage				
								+		2	<i>Malus prunifolia</i> 'Kerr'
								+		14	<i>Malus Sargentii</i>
								-	one plant remaining	3	<i>Parthenocissus inserta</i>
	***	***	***	***	***	white	+	+	fruits insignificant, a few blooms in September	2	<i>Physocarpus</i> sp.
									one plant remaining	9	<i>Picea Engelmannii</i>
										9	<i>Picea glauca</i> var. <i>albertiana</i>
									one plant remaining	9	<i>Picea pungens</i> X <i>glauca</i>
									one plant remaining	9	<i>Pinus cembra</i>
										9	<i>Pinus cembra sibirica</i>
										9	<i>Pinus resinosa</i>
										9	<i>Pinus sibiricus</i>
								+		3	<i>Populus tremula</i> 'Erecta'
								+	comes back from roots some years	2	<i>Prunus fruiticosa</i>
								+	comes back from roots, some suckering	2	<i>Prunus fruiticosa</i> 'Scarlet'
								+		2	<i>Prunus salicina</i> var. <i>mandshurica</i>
								+		5	<i>Prunus tenella</i>
	**					white		+	deep red foliage	3	<i>Prunus</i> X <i>cistena</i>
								+		3	<i>Rhododendron dahuricum</i>
				***	***	deep rose	+	+	single flowers, large rose hips, one plant remaining	14	<i>Rosa rugosa</i> PI 277 432
	***	***	***	***	***	white/pink centers	+	+	fragrant, double flowers, dark red, ornamental hips	14	<i>Rosa</i> sp. 'Lac Majeau'

Table 2. (continued)

**TABLE
2**

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	No. OF PLANTS	WINTER INJURY*	HEIGHT (IN)	SPREAD (IN)
<i>Rosa</i> sp. 'Prairie Wren'		PMC	Aug-91	2	2.0	50	72
<i>Rosa Woodsii</i>	Wood's rose	NCRPIS	Aug-91	5	1.7	40	58
<i>Salix</i> sp.		GBG	Aug-91	5	1.6	63	86
<i>Sorbaria sorbifolia</i>	False spiraea	NCRPIS	Jun-90	3	1.0	51	73
<i>Spiraea chamaedryfolia</i>		NCRPIS	Jul-92	5	1.0		
<i>Staphylea Bumalda</i>	Bladdernut	NCRPIS	Aug-93	4	2.5	13	22
<i>Syringa pekinensis</i>	Pekin lilac	NCRPIS	Sep-91	3	3.2	14	7
<i>Viburnum Lentago</i>	Sheepberry	NCRPIS	Jun-90	5	2.3	34	22
<i>Viburnum trilobum</i>	Cranberry bush	Schumacher	Sep-91	5	2.9	30	20

*Winter Injury Rating: 0=no visible injury; 1=slight winter injury; 2=moderate winter injury, recovery likely; 3=severe setback from winter injury, recovery questionable; 4=winterkilled.

MAY	WEEKLY BLOOM PERIOD					BLOOM COLOR	FROST TOLERANT		COMMENTS	PLOT LOCATION	SCIENTIFIC NAME
	JUN	JUL	AUG	SEP	flowers		foliage				
		☼☼☼☼				white		+	single flowers, one plant remaining	14	<i>Rosa</i> sp. 'Prairie Wren'
		☼☼☼				light pink		+		14	<i>Rosa Woodsii</i>
								+		2	<i>Salix</i> sp.
					☼☼☼☼☼☼☼☼☼☼	white	+	+	comes back from roots after hard winters	2	<i>Sorbaria sorbifolia</i>
		☼☼☼☼☼☼			☼☼☼☼	white	+	+	nice red and gold fall foliage color	5	<i>Spiraea chamaedryfolia</i>
		☼☼☼				white				5	<i>Staphylea Bumalda</i>
								+	one plant remaining	5	<i>Syringa pekinensis</i>
								+		3	<i>Viburnum Lentago</i>
									one plant remaining	2	<i>Viburnum trilobum</i>

Table 3. All plants that have been evaluated but did not survive the minimum number of test years.

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	NUMBER OF PLANTS	NUMBER YEARS SURVIVED	COMMENTS
HERBACEOUS PERENNIALS						
<i>Aconitum volubile</i>	Monkshood	T&M	Sep-91	2	0	A
<i>Adenophora Bulleyana</i>	Ladybells	T&M	Jul-92	10	1	
<i>Aquilegia brevistyla</i>	Yukon columbine	ANPS	Jun-91	10	2	
<i>Alchemilla alpina mollis</i>	Mountain ladysmantle	Park	Sep-91	10	0	A
<i>Anemone (Pulsatilla) patens</i>	Pasque flower	M. Earp	Aug-89	10	2	G
<i>Armeria</i> sp.		South Slope	Jun-91	3	0	A
<i>Arnica frigida</i>		C. Parker	Aug-89	18	2	G
<i>Arnica latifolia</i>	Broadleaf anemone	ANPS	Jun-90	10	1	F
<i>Arnica louiseana</i>		NEWFS	Jun-90	10	1	
<i>Artemisia Absinthium</i>	Common wormwood	Johnny's	Jun-91	10	1	
<i>Artemisia eriantha</i>		ARGS	Oct-90	3	1	
<i>Artemisia frigida</i>	Fringed sagebrush	Ft. Yukon, AK	Jun-91	10	0	A
<i>Artemisia Schmidtiana</i> 'Silver Mound'		Lamb	Jun-91	10	1	
<i>Aster alpinus</i> var. <i>vierhapperi</i>		NEWFS	Sep-91	4	0	A
<i>Babiana nana</i>	Hardy gladiolus	T&M	Aug-93	10	0	A
<i>Calamintha Nepeta</i>		T&M	Jul-92	10	0	A
<i>Campanula carpatica</i>	Tussock bellflower	I. Berger	Jul-93	10	0	A
<i>Campanula rotundifolia</i>	Harebell	ANPS	Aug-89	9	2	G
<i>Centranthus ruber</i> 'Roseus'	Keys of Heaven	Park	Jul-92	10	0	A
<i>Cephalaria gigantea</i>		T&M	Jul-92	2	0	A
<i>Chrysanthemum arcticum</i> 'Schwefelglanz'	Arctic chrysanthemum	NCRPIS	Aug-90	9	1	F
<i>Cimicifuga racemosa</i>	Black snakeroot	T&M	Sep-91	4	0	A
<i>Clematis</i> sp.	Clematis	Montana	Jul-92	3	1	
<i>Clematis columbiana</i>	Columbian rock clematis	ANPS	Oct-91	1	0	A
<i>Cornus X unalaschkensis</i>		ARGS	Oct-91	2	0	B
<i>Delpinium cardinale</i>		Park	Aug-93	10	0	A
<i>Delphinium grandiflorum</i> 'Blue Elf'		Harris Moran	Jul-91	10	0	A
<i>Delphinium</i> sp. 'Stand Up'		Park	Jul-91	10	1	
<i>Dianthus arenarius</i>	Sand pink	T&M	Jun-90	2	1	
<i>Dianthus armeria</i>	Deptford pink	NCRPIS	Jun-90	10	1	
<i>Dianthus capitatus</i>		NCRPIS	Jun-90	10	0	A
<i>Dianthus Freynii</i>		ARGS	Jun-90	6	2	
<i>Dianthus glacialis</i>	Ice pink	T&M	Jun-90	1	0	A
<i>Dianthus gratianopolitanus</i> 'T&M Hybrid Mix'	Cheddar pink	T&M	Jun-90	9	2	
<i>Dianthus gratianopolitanus</i> 'Elfin's Hat'	Cheddar pink	T&M	Jun-90	9	2	
<i>Dianthus pavonius</i>		ARGS	Jun-90	10	3	
<i>Dianthus plumarius</i>	Cottage pink	Novosibirsk, Russia	Aug-91	31	1	
<i>Dianthus plumarius</i>	Cottage pink	Novosibirsk, Russia	Aug-91	19	1	

Key to Comments: A=did not survive first winter; B=mechanical injury caused loss; C=spring drought may have caused mortality; D=weak going into fall; E=very weak after winter; F=late spring snow may have increased disease &/or mortality; G=may require better (faster?) drainage, H=high summer mortality; I = early record snowfall may have increased mortality.

SCIENTIFIC NAME	COMMON NAME	SOURCE	YEAR PLANTED	NUMBER OF PLANTS	NUMBER YEARS SURVIVED	COMMENTS
<i>Dianthus plumarius</i> 'Ballad Blend'	Cottage pink	Stokes	Jul-91	10	0	A
<i>Dianthus plumarius</i> 'Sonate Double Mix'	Cottage pink	Park	Jul-91	10	0	A
<i>Dianthus superbus</i>	Lilac pink	NCRPIS	Jun-90	10	0	A
<i>Dodecatheon Meadia</i> 'Album'	White shooting-star	ARGS	Jul-92	1	0	A
<i>Draba kamtschatica</i>		ANPS	Jul-91	10	1	H
<i>Dryas Drummondii</i>	Drummond dryad	ANPS	Aug-89	10	1	C
<i>Echinacea purpurea</i>	Purple coneflower	Johnny's	Jul-93	10	0	A
<i>Echinacea purpurea</i> 'Bravado'		Park	Jul-93	10	0	A
<i>Erigeron compositus</i>	Fernleaf fleabane	ANPS	Jun-90	10	1	
<i>Erigeron eriocephalus</i>	Fleabane	ANPS	Jun-90	10	0	A
<i>Erigeron purpuratus</i>	Fleabane	ANPS	Aug-89	10	1	B,C
<i>Eupatorium rugosum</i>	White snakeroot	NEWFS	Sep-91	2	0	A
<i>Geranium Endressii</i> 'Wargrave'	Endres cranesbill	VB&S	Jun-90	10	1	
<i>Geranium maculatum</i>	Wild geranium	NEWFS	Aug-91	10	0	A
<i>Geranium Renardii</i>		ARGS	Sep-91	4	0	A
<i>Geranium sanguineum</i>	Blood-red geranium	VB&S	Jun-90	6	1	
<i>Geranium sanguineum</i> 'Album'		ARGS	Sep-91	2	0	A
<i>Gypsophila cerastioides</i>	Mouse ear gypsophila	ARGS	Jun-90	8	0	A
<i>Gypsophila globulosa</i>		NCRPIS	Jun-90	10	0	A
<i>Hedysarum Mackenzii</i>	Wild sweet pea	ANPS	Aug-89	3	1	B,G
<i>Hedysarum Mackenzii</i>	Wild sweet pea	PMC	Jul-92	10	0	A,D,G
<i>Heuchera americana</i> 'Palace Purple'	Rock geranium	T&M	Jun-91	10	0	A
<i>Heuchera glabra</i>	Alumroot	ANPS	Jun-91	10	0	A
<i>Heuchera sanguinea</i> 'Bressingham Hybrids'	Coral bells	T&M	Jun-91	10	0	A
<i>Hypericum perforatum</i>	Common St. Johnswort	SBG	Sep-91	1	0	A
<i>Iris Bulleyana</i>	Hollowstem iris	ARGS	Sep-91	1	0	A
<i>Iris scariosa</i>		Russia	Sep-89	7	2	
<i>Iris sibirica</i> 'Snow Queen'	Siberian iris	ARGS	Aug-91	8	0	A
<i>Kitaibela vitifolia</i>		NCRPIS	Jun-90	10	0	A
<i>Lavandula angustifolia</i> 'Lady'	English lavender	AAS	Jul-93	10	0	A
<i>Lavandula angustifolia</i> 'Munstead'	English lavender	Johnny's	Jul-93	10	0	A
<i>Levisticum officinale</i>	Lovage	Vermont Bean	Jul-93	10	1	
<i>Levisticum officinale</i>	Lovage	Vermont Bean	Jun-91	10	1	G
<i>Liatriis borealis</i>		NEWFS	Jun-91	10	0	A
<i>Liatriis punctata</i>	Dotted gayfeather	NEWFS	Jun-91	10	0	A
<i>Lychnis Coronaria</i>	Mullein pink	Tack's	Aug-92	10	0	A
<i>Lysimachia punctata</i>	Garden loosestrife	T&M	Aug-90	10	3	
<i>Linum perenne</i> subsp. <i>Lewisii</i>	Blue flax	Nauriaq	Jul-92	10	0	A

Key to Comments: A=did not survive first winter; B=mechanical injury caused loss; C=spring drought may have caused mortality; D=weak going into fall; E=very weak after winter; F=late spring snow may have increased disease &/or mortality; G=may require better (faster?) drainage, H=high summer mortality; I = early record snowfall may have increased mortality.

Table 3. (continued)

TABLE
3

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	NUMBER OF PLANTS	NUMBER YEARS SURVIVED	COMMENTS
<i>Lupinus</i> sp.		Fairbanks Ck., AK	Aug-92	10	0	A, G
<i>Malva moschata</i>	Musk mallow	T&M	Jun-90	9	1	
<i>Malva sylvestris</i>	High mallow	T&M	Jun-90	10	0	A
<i>Monarda didyma</i> 'Panorama Mix'	Bee balm	Johnny's	Jul-92	8	0	A
<i>Myosotis alpestris</i>	Alpine forget-me-not	ANPS	Jun-90	10	1	
<i>Papaver alaskanum</i>	Alaska poppy	ANPS	Jun-90	10	1	
<i>Papaver kernerii</i>	Poppy	ARGS	Jun-90	7	0	A,D
<i>Patrinia scabiosifolia</i> 'Nagoya'	Dahurian patrinia	Park	Jul-91	10	0	A
<i>Penstemon heterophyllus</i> 'Blue of Zurich'		Park	Jul-92	10	0	A
<i>Penstemon procerus</i>	Littleflower penstemon	ANPS	Aug-91	2	1	
<i>Phuiopsis stylosa</i>		I. Berger	Aug-93	10	0	A
<i>Physostegia virginiana</i>	Obedience	NEWFS	Sep-91	6	0	A
<i>Polemonium caeruleum</i> subsp. <i>villosum</i>	Jacob's-ladder	Eagle Summit, AK	Aug-89	4	2	H
<i>Polemonium</i> sp. 'Apricot Delight'		T&M	Jul-92	5	0	A
<i>Potentilla pensylvanica</i>	Pennsylvania cinquefoil	J. Grant	Sep-89	3	0	A
<i>Potentilla</i> sp.		ANPS	Aug-89	10	1	
<i>Potentilla villosa</i>	Hairy cinquefoil	NEWFS	Jun-91	10	0	A
<i>Primula incana</i>		Fairbanks, AK	Aug-89	10	3	H
<i>Primula scotia</i>	Scotch primrose	ANPS	Jun-91	10	0	A
<i>Primula vulgaris</i> 'Dania Mix'	English primrose	Daehnfeldt	Sep-89	10	0	A
<i>Prunella vulgaris</i>	Common selfheal	ANPS	Aug-89	10	0	A
<i>Sidalcea</i> sp. 'Party Girl'		Burpee	Aug-92	10	0	A
<i>Silene caroliniana</i>	Wild pink	NEWFS	Jun-91	6	0	A
<i>Silene</i> (?) sp.		ANPS	Sep-91	6	0	A
<i>Silphium terebinthinaceum</i>	Prairie dock	NEWFS	Jul-91	10	0	A
<i>Sisyrinchium littorale</i>	Blue-eyed grass	ANPS	Jun-91	4	0	A
<i>Smelowskia pyriformis</i>		Alaska Range, AK	Aug-89	3	0	A,D,G
<i>Solidago odora</i>	Sweet goldenrod	NEWFS	Jul-92	10	0	A
<i>Solidago puberula</i>	Downy goldenrod	NEWFS	Sep-91	10	0	A
<i>Taraxacum carneocoloratum</i>		Alaska Range, AK	Aug-89	9	1	
<i>Telekia speciosa</i>		T&M	Jun-91	10	0	A
<i>Tellima grandiflora</i>	Alaska fringecup	NEWFS	Sep-89	10	0	A
<i>Thermopsis lupinoides</i>		ARGS	Jul-92	9	0	A
<i>Thymus X citriodorus</i> 'Lemon'	Lemon thyme	DBG	Jun-91	2	0	A
<i>Thymus X citriodorus</i>	Silver thyme	DBG	Jun-91	3	0	A
<i>Thymus X citriodorus</i>	White thyme	DBG	Jun-91	4	0	A
<i>Thymus Serphyllum</i>	Lemon variegated thyme	DBG	Jun-91	4	0	A
<i>Thymus Serphyllum</i> 'Pink Chintz'		DBG	Jun-91	4	0	A
<i>Thymus</i> sp.	Lemon thyme	DBG	Jun-91	8	0	A
<i>Tripleurospermum phaeocephalum</i>		ANPS	Jun-90	10	1	

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SCIENTIFIC NAME	COMMON NAME	SOURCE	YEAR PLANTED	NUMBER OF PLANTS	NUMBER YEARS SURVIVED	COMMENTS
<i>Valeriana sitchensis</i>	Sitka valerian	ANPS	Jun-91	2	0	A
<i>Veronica fruticulosa</i>		ARGS	Aug-92	10	0	A
<i>Veronica saturejoides</i>		ARGS	Aug-92	2	0	A
<i>Viola labradorica</i>	Labrador violet	NEWFS	Jul-92	4	0	A
<i>Viola pedata</i>	Bird-foot viola	NEWFS	Sep-91	10	0	A
<i>Xerophyllum tenax</i>	Bear grass	Lawyer	Aug-90	10	1	E
<i>Zigadenus glaucus</i>	White camas	NEWFS	Aug-92	3	0	A
FERNS						
<i>Cystopteris protrusa</i>	Lowland brittle fern	NEWFS	Jul-93	10	0	A
<i>Polystichum aleuticum</i>	Aleutian shield-fern	Adak, AK	Aug-93	2	0	A
<i>Polystichum lachenense</i>		Nantou Co., Taiwan, China	Aug-93	2	0	A
<i>Polystichum lonchitis</i>	Northern holly fern	Adak, AK	Jul-93	2	0	A
ORNAMENTAL GRASSES						
<i>Andropogon Gerardii</i> 'Pawnee'	Big bluestem	Bluebird	Aug-90	3	2	
<i>Arrhenatherum elatius</i> 'Variegatum'	Tall oat grass	Bluebird	Aug-90	2	1	
<i>Bouteloua curtipendula</i> 'Trailway'	Sideoats grama	Bluebird	Aug-90	4	0	A
<i>Bouteloua gracilis</i>	Blue grama	Bluebird	Aug-89	7	1	
<i>Carex Morrowii</i> var. <i>aureo-variegata</i> 'Old Gold'	Variegated Japanese sedge	Bluebird	Aug-89	11	0	A
<i>Carex muskingumensis</i>	Palm sedge	NEWFS	Jul-90	8	1	F
<i>Carex nigra</i>	Black sedge	Bluebird	Jul-90	9	1	F
<i>Carex ornithopoda</i> 'Variegata'		Bluebird	Aug-89	10	1	
<i>Carex pendula</i>	Sedge grass	Bluebird	Aug-89	11	0	A
<i>Chasmanthium latifolium</i>	Sea oats	Bluebird	Aug-90	1	0	A
<i>Deschampsia caespitosa</i> 'Bronzeschleier'	Tufted hair grass	Bluebird	Aug-90	2	2	D
<i>Deschampsia caespitosa</i> 'Goldschleier'	Tufted hair grass	Bluebird	Aug-90	1	1	
<i>Eragrostis trichodes</i>	Sand love grass	Bluebird	Aug-89	10	0	A
<i>Festuca scoparia</i>	Bearskin grass	Bluebird	Aug-90	1	1	
<i>Helictotrichon sempervirens</i>	Blue oat grass	Bluebird	Aug-90	1	2	
<i>Hystrix patula</i>	Bottle brush grass	Bluebird	Aug-89	12	1	F
<i>Imperata cylindrica</i> var. <i>rubra</i> 'Red Baron'	Japanese blood grass	Bluebird	Aug-90	4	0	A
<i>Melica ciliata</i>	Silky-spike melic	Bluebird	Aug-89	10	3	D
<i>Panicum virgatum</i> 'Pathfinder'	Switch-grass	Bluebird	Aug-89	12	0	A
<i>Pennisetum alopecuroides</i>	Chinese pennisetum	Bluebird	Aug-89	11	0	A

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Table 3. (continued)

**TABLE
3**

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	NUMBER OF PLANTS	NUMBER YEARS SURVIVED	COMMENTS
<i>Pennisetum flaccidum</i>		Bluebird	Aug-89	10	0	A
<i>Schizachyrium scoparium</i> 'Blaze'	Little bluestem	Bluebird	Aug-89	11	1	
<i>Sesleria autumnalis</i>	Autumn moor grass	Bluebird	Aug-90	2	1	
<i>Sorghastrum avenaceum</i>	Indian grass	Bluebird	Aug-89	11	0	A
<i>Sporobolus airoides</i>	Greater dropseed	Bluebird	Aug-90	2	0	A
WOODY PERENNIALS						
<i>Actinidia kolomikta</i>	Kolomikta kiwi	BCN	Sep-89	5	3	I
<i>Betula occidentalis</i>	Water birch	ANPS	Sep-89	4	0	A
<i>Betula populifolia</i>	Gray birch	Barnaul, Russia	Aug-91	5	0	A
<i>Caragana arborescens</i>	Siberian pea	Chamal R., Gorno-Altaysk, Russia	Sep-91	5	1	
<i>Ceanothus integerrimus</i>	Deerbush	Schumacher	Sep-89	5	0	A
<i>Cercarpus montanus</i>	Mountain mahogany	NCRPIS	Sep-89	1	0	A
<i>Cotoneaster horizontalis</i>	Rock cotoneaster	Schumacher	Sep-89	5	1	
<i>Cotoneaster horizontalis</i>	Rock cotoneaster	Schumacher	Sep-91	5	1	
<i>Cotoneaster integerrimus</i> 'Centennial'	European cotoneaster	NCRPIS	Sep-89	5	1	
<i>Cotoneaster nitens</i>	Pinkblush cotoneaster	NCRPIS	Sep-91	5	1	
<i>Crataegus monogyna</i>	Single-seed hawthorn	NCRPIS	Jun-90	3	2	E
<i>Sorbus reducta</i>		NCRPIS	Jun-90	2	0	A,D
<i>Caragana manshurica</i>		NCRPIS	Sep-90	5	1	
<i>Forsythia ovata</i>	Early forsythia	NCRPIS	Sep-90	5	1	
<i>Jamesia americana</i>		NCRPIS	Jul-92	1	1	
<i>Larix decidua</i>	European larch	PMC	Sep-90	5	2	
<i>Larix Gmelinii</i> var. <i>Gmelinii</i>	Dahurian larch	PMC	Sep-90	4	2	
<i>Larix Gmelinii</i> var. <i>olgensis</i>	Dahurian larch	PMC	Sep-90	5	2	
<i>Larix Gmelinii</i> var. <i>principis</i>	Dahurian larch	PMC	Sep-90	5	2	E
<i>Lonicera Maackii</i>	Amur honeysuckle	NCRPIS	Jun-90	5	2	
<i>Lonicera tatarica</i> 'Siberica'	Tatarian honeysuckle	NCRPIS	Jun-90	3	2	
<i>Myrica Gale</i>	Sweet gale	Fish Creek, AK	Aug-92	2	0	A
<i>Physocarpus opulifolius</i> 'Nugget'	Ninebark	NCRPIS	Sep-89	5	3	I
<i>Picea obovata</i> (blue form)	Siberian spruce	SAAS	Jul-92	5	0	A
<i>Pinus Cembra</i> var. <i>sibirica</i>	Swiss stone pine	SAAS	Jul-92	3	0	A
<i>Pinus pumila</i>	Dwarf stone pine	Schumacher	Sep-89	5	3	E
<i>Pinus sibiricus</i>	Siberian pine	SAAS	Jul-92	2	0	A
<i>Populus deltoides</i> X <i>Petrowskiana</i> 'Brooks #6'		NCRPIS	Jun-90	5	2	I
<i>Populus</i> 'Tower'		PMC	Jun-90	2	2	I
<i>Potentilla mandshurica</i>		SAAS	Sep-91	10	1	

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Table 4. Plantings from 1994 that have not yet been evaluated for winter survival.

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	NUMBER OF PLANTS
HERBACEOUS PERENNIALS				
<i>Actaea rubra</i> subsp. <i>rubra</i>	Baneberry	Fairbanks, AK	Aug-94	9
<i>Anemone Nuttalliana</i>	Pasque-flower	NEWFS	Jul-94	9
<i>Anemone</i> sp.		Seeds of AK	Jul-94	9
<i>Anthemis tinctoria</i>	Golden marguerite	ARGS	Jul-94	1
<i>Aquilegia glandulosa</i>		ARGS	Aug-94	2
<i>Aquilegia viridiflora</i>		T&M	Jul-94	10
<i>Arnica latifolia</i>		Seeds of AK	Jul-94	10
<i>Aruncus dioicus</i>	Goatsbeard	Park	Jul-94	10
<i>Aster acuminatus</i>	Whorled aster	NEWFS	Jul-94	10
<i>Aster linearifolius</i>		NEWFS	Jul-94	10
<i>Aster ptarmicoides</i>	White upland aster	NEWFS	Jul-94	1
<i>Campanula alliariifolia</i>		ARGS	Jul-94	10
<i>Campanula rotundifolia</i> var. <i>Marchesettii</i>	Harebell	T&M	Jul-94	10
<i>Carlina acaulis</i>		ARGS	Aug-94	1
<i>Chelone Lyonii</i>		NEWFS	Jul-94	3
<i>Cimicifuga racemosa</i>	Black cohosh	NEWFS	Jul-94	10
<i>Codonopsis mollis</i>		ARGS	Jul-94	6
<i>Crepis aurea</i>		ARGS	Jul-94	10
<i>Digitalis ferruginea</i>	Rusty foxglove	ARGS	Jul-94	10
<i>Digitalis X mertonensis</i>		ARGS	Jul-94	10
<i>Digitalis X sibirica</i>		ARGS	Jul-94	10
<i>Dryas Drummondii</i>		Seeds of AK	Jul-94	8
<i>Erigeron Karvinskyanus</i> 'Profusion'		Park	Jul-94	10
<i>Eupatorium rugosum</i>	White snakeroot	NEWFS	Jul-94	1
<i>Galium verum</i>	Yellow bedstraw	Richters	Jul-94	10
<i>Hedysarum coronarium</i>	French honeysuckle	T&M	Jul-94	10
<i>Heuchera</i> 'Firefly'	Coral bells	Park	Jul-94	10
<i>Heuchera micrantha</i> 'Purple Palace'	Coral bells	Park	Jul-94	10
<i>Leontopodium alpinum</i>	Edelweiss	T&M	Jul-94	10
<i>Lychnis chalconica</i>	Maltese cross	Applewood	Jul-94	10
<i>Lychnis Flos-cuculi</i>	Cuckoo flower	ARGS	Jul-94	10
<i>Lychnis Flos-jovi</i>	Flower-of-Jove	ARGS	Jul-94	10
<i>Macleaya microcarpa</i>	Plume poppy	T&M	Jul-94	10
<i>Malva churinskaya</i>		PMC	Jul-94	5
<i>Mentha suaveolens</i>	Applemint	Richters	Jul-94	10
<i>Mentha suaveolens</i> 'Variegata'	Pineapple mint	Richters	Jul-94	10
<i>Monarda didyma</i>	Bee balm	NEWFS	Jul-94	10
<i>Monarda punctata</i>	Dotted mint	NEWFS	Jul-94	10

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	NUMBER OF PLANTS
<i>Papaver alboroseum</i>		Seeds of AK	Jul-94	10
<i>Penstemon Digitalis</i>		NEWFS	Jul-94	10
<i>Phacelia sericea</i>		Upper Yukon River, AK	Jul-94	10
<i>Polemonium reptans</i> var. <i>villosum</i>		NEWFS	Aug-94	2
<i>Potentilla argyrophylla</i> 'Leucochroa'		ARGS	Jul-94	6
<i>Potentilla recta</i>		ARGS	Jul-94	10
<i>Rudbeckia fulgida</i> 'Goldsturm'		T&M	Jul-94	10
<i>Sanguisorba menziesii</i>		Seeds of AK	Jul-94	10
<i>Sanguisorba officinalis</i>	Great burnet	Ft. Yukon, AK	Jul-94	10
<i>Saponaria officinalis</i>	Bouncing bet	ARGS	Jul-94	10
<i>Solidago mutiradiata</i>	Goldenrod	NEWFS	Aug-94	1
<i>Solidago rigida</i>	Stiff goldenrod	NEWFS	Aug-94	1
<i>Stachys grandiflora</i> (macrantha)		ARGS	Jul-94	10
<i>Stachys officinalis</i>	Betony	Richters	Jul-94	10
<i>Veronica Allionii</i>		ARGS	Jul-94	10
<i>Veronica alpina</i>		ARGS	Jul-94	6
<i>Veronica spicata</i> 'Sightseeing Mix'		Stokes	Jul-94	10
<i>Veronica spicata</i> 'Nana'		ARGS	Jul-94	10
FERNS				
<i>Asplenium</i> (Phyllitis) <i>scolopendrium</i>	Hart's-tongue fern	HFF	Jul-94	5
<i>Dryopteris arguta</i>	Coastal wood fern	HFF	Jul-94	5
<i>Dryopteris bissetiana</i>		HFF	Jul-94	5
<i>Dryopteris dilatata</i> 'Jimmy Dyce'		HFF	Jul-94	5
<i>Dryopteris dilatata</i> 'Lepidota cristata'		HFF	Jul-94	5
<i>Dryopteris filix-mas</i> 'Undulata robusta'		HFF	Jul-94	5
<i>Osmunda regalis</i>	Royal fern	HFF	Jul-94	4
<i>Osmunda regalis</i> 'Purpurascens'	Royal fern	HFF	Jul-94	5
<i>Osmunda regalis</i> 'Undulata'	Royal fern	HFF	Jul-94	1
<i>Phegopteris</i> (Thelypteris) <i>decursive-pinnata</i>	Beechwood fern	HFF	Jul-94	5
<i>Polystichum setiferum</i> 'Divisilobum'	Divided soft shield fern	HFF	Jul-94	5

Table 4. (continued)

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	NUMBER OF PLANTS
WOODY PERENNIALS				
<i>Carex Grayi</i>		NEWFS	Aug-94	4
<i>Betula alleghaniensis</i> 'Morton No. 10'	Yellow birch	NCRPIS	Jul-94	5
<i>Betula lenta</i> 'Morton No. 9'	Cherry birch	NCRPIS	Jul-94	5
<i>Caragana arborescens</i>	Siberian pea tree (pyramidal form)	PMC	Jul-94	2
<i>Caragana pygmaea</i>	Pygmy caragana	Washburn	Jul-94	5
<i>Elaeagnus angustifolia</i> 'King's Red'	King's Red Russian Olive	Lawyer	Jul-94	5
<i>Juniperus horizontalis</i> 'Bar Harbor'	Creeping juniper	NCSU	Aug-94	1
<i>Juniperus horizontalis</i> 'Slow Blue'	Creeping juniper	NCSU	Aug-94	1
<i>Juniperus horizontalis</i> 'Slow Blue'	Creeping juniper	NCSU	Aug-94	1
<i>Juniperus horizontalis</i> 'Watnong'	Creeping juniper	NCSU	Aug-94	1
<i>Juniperus horizontalis</i> 'Wilms'	Creeping juniper	NCSU	Aug-94	2
<i>Mahonia repens</i>		NCRPIS	Jul-94	3
<i>Malus pallasiana</i> ssp. <i>himalaica</i>		Leningrad, Russia	Jul-94	5
<i>Malus</i> sp. 'Almey'	Almey crab	Lawyer	Jul-94	5
<i>Malus turkmenoma</i>		Leningrad, Russia	Jul-94	5
<i>Pinus Peuce</i>	Macedonian pine	NCRPIS	Jul-94	3
<i>Prunus pennsylvanica</i> o.p.		GBG	Jul-94	5
<i>Prunus</i> sp.	Manchurian apricot	Denver, CO	Jul-94	5
<i>Prunus ussuriensis</i>		Clair's	Aug-94	5
<i>Ribes</i>	Spineless gooseberry	Fred Dorward, Alberta	Jul-94	1
<i>Ribes</i>		NCGR	Jul-94	2
<i>Ribes</i> 'Hinnomaken Keltainen'		NCGR	Jul-94	1
<i>Ribes nigrum</i> 'Ben Lomond'	Black currant	PMC	Jul-94	5
<i>Ribes nigrum</i> 'Ben Moore'	Black currant	PMC	Jul-94	1
<i>Ribes nigrum</i> 'Ben Nevis'	Black currant	PMC	Jul-94	5
<i>Ribes nigrum</i> 'Boskoop Giant'	Black currant	PMC	Jul-94	2
<i>Ribes nigrum</i> 'Erkheikki VII'	Black currant	PMC	Jul-94	5
<i>Ribes nigrum</i> 'Jankis Jarvi'	Black currant	PMC	Jul-94	1
<i>Ribes nigrum</i> 'Kantata 50'	Black currant	NCGR	Jul-94	2
<i>Ribes nigrum</i> 'Melalathi'	Black currant	PMC	Jul-94	5
<i>Ribes nigrum</i> 'Nikkala XI'	Black currant	PMC	Jul-94	5
<i>Ribes nigrum</i> 'Pilot Aleksandr Mamkin'	Black currant	NCGR	Jul-94	1
<i>Ribes nigrum</i> 'Sunderbyn II'	Black currant	PMC	Jul-94	5
<i>Ribes</i> sp.	Black gooseberry	Fred Dorward, Alberta	Jul-94	5
<i>Ribes</i> sp.	Red gooseberry	Fred Dorward, Alberta	Jul-94	4
<i>Ribes</i> sp.	Yakutsk currant	Yakutsk, Russia	Jul-94	2
<i>Ribes</i> sp. 'Nariadnaja'		NCGR	Jul-94	2
<i>Ribes triste</i>	Swamp red currant	John Holm	Jul-94	5

Table 5. Annual flowers evaluated in 1994.

COMMON NAME	CULTIVAR	SOURCE	WEEKLY BLOOM PERIOD				HEIGHT (IN)	RECOMMENDED SPACING (IN)
			JUN	JUL	AUG	SEP		
Acroclinium	Goliath	Park Seed	***	***	***	***	32	8
Ageratum	Blue Horizon	Ball Seed	***	***	***	***	25	10
Ageratum	Capri	Park Seed	***	***	***	***	15	6-7
Ageratum	Hawaii White	Ball Seed	***	***	***	***	7	5
Alyssum	Carpet of Snow	Northrup King	***	***	***	***	9	6
Alyssum	Golf Pastel Mix	Clause Seed	***	***	***	***	6 1/4	6-8
Alyssum	Snow Cloth Select	Stokes	***	***	***	***	6	6
Asperula azurea		GBC	***	***	***	***	16	7
Aster	Comet Mix	Stokes		**	**	**	12	6-8
Aster	Florette Mix	Ball Seed			**	**	25	10
Aster	Milady Mix	Vaughan's			**	**	13 1/2	8
Aster	Milady White	Ball Seed			***	***	10 1/2	8
Aster	Mini-Lady Blue	Stokes			**	**	12	8
Aster	Opus	Stokes			**	**	27 3/4	10
Aster	Seastar Mix	Park Seed			**	**	23	10
Bachelor Button	Florence Pink	Park Seed	***	***	***	***	9	8
Brachycome	Blue Star	Park Seed	**	**	**	**	14 1/2	8
Brachycome	White Splendour	Thompson & Morgan	**	**	**	**	12	8
Calendula	Bon Bon Orange	Vaughan's	*	*	*	*	11	8
Calendula	Bon Bon Yellow	Vaughan's	*	*	*	*	14	8
Calendula	Fiesta Gitana	Stokes		**	**	**	24	10
Calendula	Prince Mix	Park Seed	**	**	**	**	28	10
Calendula	Radio	Thompson & Morgan	**	**	**	**	29 1/2	10
Carnation	Knights Mix	Vaughan's			**	**	13	8
Carnation	Monarch Mix	Vaughan's			**	**	9	7
Carnation	Monarch Orange	Vaughan's			**	**	9	7
Carnation	Monarch Pink	Ball Seed			**	**	9 1/2	7
Carnation	Monarch Purple	Ball Seed			**	**	9	7
Carnation	Scarlette Luminette	Thompson & Morgan			**	**	20	8
Celosia	Apricot Brandy	Park Seed			**	**	11 1/2	6
Celosia	Castle Pink	Ball Seed			**	**	10 1/2	6
Celosia	Century Fire	Vaughan's			**	**	21 1/4	6
Celosia	Century Mixed	Stokes			**	**	19	6
Celosia	Kewpie Red	Stokes			**	**	10 3/4	6
Celosia	Kimono Mix	Ball Seed		*	*	*	5 3/4	6
Celosia	New Look	Burpee			**	**	10 1/2	8
Chrysanthemum	Snowland	Stokes	***	***	***	***	22	10
Chrysanthemum	White Buttons	Ball Seed	***	***	***	***	23	10
Chrysanthemum multicaule	Yellow Buttons	Ball Seed	***	***	***	***	14 1/2	10
Cleome	Cherry Queen	Ball Seed			**	**	56	10

TABLE
5

BLOOM COLOR	BLOOM SIZE (IN)	FROST TOLERANT		FRAGRANT	CUTTING	DRIED	COMMENTS
		FLOWERS	FOLIAGE				
rose pink	2¼	+	+			+	
blue	3½*	—	—		+		excellent, good quality blooms
lavender blue/white centers	½	—	—				very nice, interesting color
white	¼	+	+				good, needs heading
white	1*	+	+	+			excellent
mix - pinks, violet	1¼*	+	+				very good, a little disease
white	¾*	—	—	+			very nice
blue	¼	+	+				nice, airy effect
mix	4	—	—	+			very nice
mix- rose, pink, blue, white	5	+	+		+		spectacular blooms
mix - rose, pink, white	3½	+	+				a few diseased plants, but rest excellent
white	¾	—	+				excellent
violet	¾	—	+				very nice
white/pink tips	¾	+	+		+		late blooming
mix - rose, cream, blue, pink	4½	+	—	+	+		half of the plants succumbed to disease
pink	1¼	—	—				bloom over fairly early
purple	1	+	+				very nice, finely cut foliage
white	1	+					lots of blooms, finely cut foliage
orange	¾	+	+				needs heading, aphid problems
yellow	¾	+	+				good, needs deadheading
mix - yellow, orange, gold	2¼	+	+		+		needs deadheading
mix	1½	+	+		+		nice
orange	2½	+	+		+		nice, needs heading
mix - red, white/pink flecks, peach, white	2½	—	+	+			nice
mix - white, red, magenta, peach	2¼	—	+	+			excellent, nice colors
coral pink	¾	—	+	+			very nice
rose pink	2½	+	+	+			excellent
red violet	2	—	+	+			excellent
scarlet	2½	—	+	+			very good
orange	5¾ x 1*	—	—			+	bronze foliage, not very vigorous this season
pink	¾ x 1*	—	—			+	O.K., not a good year for celosia
orange/red	2½ x 4½*	—	—		+	+	
mix-red, yellow, rose	6½ x 1¼*	—	—		+	+	disease problems, weak plants
red orange	5 x 1¼*	—	—			+	poor early survival
mix - scarlet, gold, pink, orange	3½ x 3½*	—	—				poor survival due to disease, surviving plants small but nice
scarlet	2½ x 1*	—	—			+	deep red foliage, stunted plants
white	1½	+	+				very similar to White Buttons
white	1	+	+				good
yellow	1½	+	+				excellent
rose	10 x 6*	+	—		+		nice

Table 5. (continued)

COMMON NAME	CULTIVAR	SOURCE	WEEKLY BLOOM PERIOD				HEIGHT (IN)	RECOMMENDED SPACING (IN)
			JUN	JUL	AUG	SEP		
Cleome	Helen Campbell	Ball Seed			**	***	57	10
Cleome	Queen Mix	Burpee			**	***	62	10
Coreopsis	Early Sunrise	Park Seed		*	**	***	25	8-10
Cosmos	Ladybird Scarlet	All-America Selections	**	*	**	***	13 1/2	8-10
Cosmos	Seashells Mix	Park Seed		*	**	***	37	10
Cosmos	Sonata Mix	Park Seed	**	*	**	***	26	10
Cosmos	Sonata White	Ball Seed		*	**	***	26	10
Cosmos	Sunny Red	Ball Seed	**	*	**	***	24 3/4	10
Cosmos	Versailles	Johnny's		*	**	***	36	10-12
Cosmos	Versailles Blush Pink	Park Seed		*	**	***	41	10-12
Dahlia	Calico Mix	Clause Seed	**	*	**	***	24	10
Dahlia	Diablo	Ball Seed		*	**	***	27	10
Dahlia	Mignon Mix	Vaughan's	**	*	**	***	30 1/2	10
Dahlia	Rigoletto	Vaughan's	**	*	**	***	28	10
Dahlia	Sunny Yellow	Vaughan's		*	**	***	24	10
Dianthus	Ideal Rose	Vaughan's	**	*	**	***	17 1/2	8
Dianthus	Ideal Violet	Vaughan's	**	*	**	***	18	7
Dianthus	Pink Charm	Vaughan's		*	**	***	13	6-8
Dianthus	Prima Donna	Park Seed		*	**	***	32	8
Dianthus	Princess Mix	Vaughan's	**	*	**	***	18	8
Dianthus	Princess Salmon	Vaughan's		*	**	***	15 1/2	8
Dianthus	Raspberry Parfait	Vaughan's		*	**	***	9	8
Dianthus	Telstar Mix	Vaughan's	**	*	**	***	14	8
Dianthus	Telstar Picotee	Park Seed	**	*	**	***	14 1/2	8
Dianthus	Telstar Pink	Ball Seed	**	*	**	***	13	8
Dimorphotheca	Aurantiaca Hybrids	Stokes	**	*	**	***	18	10
Dusty Miller	Cirrus	Northrup King					11	8
Dusty Miller	New Look	Park Seed					8	8
Dusty Miller	Silver Dust	Vaughan's					10 1/4	8
Dusty Miller	Silver Queen	Park Seed					10 1/4	8
Flowering Kale	Chidori Red	Ball Seed					11	18
Flowering Kale	Coral Prince	Ball Seed					15	18
Flowering Kale	Kamome White	Ball Seed					12	18
Flowering Kale	Red Peacock	Park Seed					25	18
Foxglove	Foxy	Johnny's			**	***	35 1/2	12
Gaillardia	Red Plume	Stokes		*	**	***	21 3/4	8-10
Gazania	Daybreak Bronze	Vaughan's		*	**	***	13	8
Gazania	Dynastar Mix	Clause Seed		*	**	***	17	8
Gazania	Ministar White	Ball Seed		*	**	***	12	8
Geranium	Avanti Lilac Rose	Clause Seed	**	*	**	***	16	12

BLOOM COLOR	BLOOM SIZE (IN)	FROST TOLERANT		FRAGRANT	CUTTING	DRIED	COMMENTS
		FLOWERS	FOLIAGE				
white	10 x 5*	+	+		+		nice
mix-pink, rose, white	7 x 5 1/2*	-	-		+		
bright gold	2	-	+		+		excellent
scarlet/orange	2 1/4	-	-				pretty blooms, diseased late in season
mix-white, pink, red	2	-	-		+		some disease
mix-rose, pink, white	3 1/2	-	-		+		
white	3 1/2	-	-		+		nice, more compact
orange/scarlet	2	-	-		+		
medium rose	2 1/2	-	-		+		
pale pink	3 1/2	-	-		+		very nice, lots of blooms
mix - white, yellow, red	3 1/2	-	-				very nice
mix - red, yellow, orange-red	3	-	-				excellent, dark foliage
mix - red, yellow, peach	4	-	-				single blooms, good colors
mix - red, orange, pink, rose, yellow	3 1/2	-	-				excellent, loaded with flowers
yellow	3	-	-				few blooms
bright rose	1 1/4	+	+				excellent
red violet	1 1/2	+	+				excellent
pink	1 3/4	+	+				very good
lilac	2	+	+		+		lacy flowers, low color impact
mix- red, coral, violet	1 1/4	+	+				excellent
salmon	1 1/4	+	+				excellent
crimson/dark centers	1 1/2	+	+				excellent
mix	1 1/4	+	+				excellent
rose/white	1 1/4	+	+				excellent
medium pink	1 1/4	+	+				excellent
mix- orange, white, salmon	2				+		succumbed to disease early
silver foliage			+				foliage a little more incised than New Look
silver foliage			+				nice, silvery leaves with incised edges
silver foliage			+				excellent, finely dissected leaves
silver foliage			+				similar to Silver Dust
rose/green leaves			+				some disease
white/green leaves			+				good
white/green leaves			+				very nice
red/green leaves			+				good, finely divided leaves
mix	12 x 6*	+	+				slow to bloom
rusty red	2 1/4	+	-		+		excellent
red-orange	2 3/4	+	+				excellent
mix - orange, yellow, cream	3 1/4	+	+				excellent
white	3 1/4	+	+				very nice
rose	3 3/4*	-	-				very good

Table 5. (continued)

COMMON NAME	CULTIVAR	SOURCE	WEEKLY BLOOM PERIOD				HEIGHT (IN)	RECOMMENDED SPACING (IN)
			JUN	JUL	AUG	SEP		
Geranium	Avanti Rose	Clause Seed	☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼	15½	12
Geranium	Avanti Scarlet	Clause Seed	*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼	16	12
Geranium	Freckles	Vaughan's	*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	*☼☼	13	12
Geranium	Neon Rose	Ball Seed	*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼	19	12
Geranium	Orbit Violet	Vaughan's	*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	*☼☼	16	12
Geranium	Rose Diamond	All-America Selections	*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	*☼☼	18	12
Geranium	Signal Orange	Clause Seed	*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼	17½	12
Godetia	Grace Lavender Eye	Vaughan's		*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	*☼☼	17	8
Godetia	Grace Mix	Ball Seed		*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	*☼☼	23½	8
Godetia	Grace Rose Pink	Vaughan's	*☼☼☼☼☼☼☼☼	*☼☼☼☼☼☼☼☼	*☼☼		17	8
Godetia	T&M Improved Dwarf Mix	Thompson & Morgan			*☼☼☼☼☼☼☼☼	☼☼	17½	8
Helichrysum	Bright Bikinis Mix	Vaughan's			*☼☼☼☼☼☼☼☼	☼☼	29	8-10
Helichrysum	Monstrosum Mix	Park Seed			*☼☼☼☼☼☼☼☼	☼☼	48	10
Helichrysum	Salmon	Stokes			*☼☼☼☼☼☼☼☼	☼☼	45½	10
Heliotrope	Blue Wonder	Ball Seed	*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	*☼☼	13	8
Hollyhock	Zebrina	Park Seed		*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼	44	10
Lavatera	Mont Blanc	Park Seed			*☼☼☼☼☼☼☼☼	☼☼	28	10
Lavatera	Mont Rose	Park Seed			*☼☼☼☼☼☼☼☼	*☼☼	21½	10
Lavatera	Silver Cup	Park Seed			*☼☼☼☼☼☼☼☼	*☼☼	28	10
Linaria	Northern Light	Ball Seed	*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	*☼☼	19	7
Lobelia	Blue Crystal	Stokes	*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	*☼☼	7½	6
Lobelia	Blue Moon	Vaughan's	*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	*☼☼	7½	6
Lobelia	Crystal Palace	Vaughan's	*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	*☼☼	7	6
Lobelia	Fountain Crimson	Vaughan's		*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	*☼☼	13½	7
Lobelia	Fountain White	Vaughan's	*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	*☼☼	10½	7
Lobelia	Paper Moon	Vaughan's	*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	*☼☼	7½	6
Lupine	Gallery Mix	Ball Seed	*☼☼☼☼☼☼☼☼	*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	*☼☼	35	12
Lupine	Russell Mixture	Vaughan's			*☼☼☼☼☼☼☼☼	*☼☼	46	12
Marigold	Antigua Mix	Ball Seed		*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼	10½	8
Marigold	Antigua Orange	Ball Seed		*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼	10	8
Marigold	Antigua Yellow	Ball Seed		*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼	8	8
Marigold	Aurora Orange	Ball Seed	*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	*☼☼	8	9
Marigold	Disco Orange	Bodger	*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	*☼☼	13	8
Marigold	Doubloon	Vaughan's		*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼	39½	9
Marigold	Espana Ole	Stokes	*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	*☼☼	13	8
Marigold	Espana Viva	Stokes	*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	*☼☼	12	8
Marigold	Golden Gate	Stokes	*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	*☼☼	20	7
Marigold	Hero Flame	Vaughan's	*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	*☼☼	9½	6-8
Marigold	Hero Yellow	Vaughan's	*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	*☼☼	12½	8
Marigold	Inca Yellow	Park Seed		*☼☼☼☼☼☼☼☼	☼☼☼☼☼☼☼☼	☼☼	14¼	8

BLOOM COLOR	BLOOM SIZE (IN)	FROST TOLERANT		FRAGRANT	CUTTING	DRIED	COMMENTS
		FLOWERS	FOLIAGE				
medium rose	3¾*	+	+				very nice
scarlet	4*	+	+				excellent, could use deadheading
deep pink	3½*	—	+				excellent, needs deadheading
rose	4½*	+	+				vibrant color
rose - violet	4½*	—	—				
bright pink	3¾*	—	+				excellent
hot orange	4*	—	+				excellent
light/deep rose	3	—	—		+		excellent in mid-season
mix-pink & red shades	2	—	—		+		excellent early, disease problems later
light pink/deep rose splotches	3	—	—		+		excellent
mix - pink, rose, lavender	2½	—	—				excellent
mix	2	+	+		+	+	overgrown by surrounding varieties
mix - yellow, orange, red	2½	+	+		+	+	may need staking, attractive to aphids
pink, coral	2½	+	+		+	+	may need staking
blue	4¼ x 5½*	—	—				excellent
pink/wine	1¾	+	+				very nice, like a miniature hollyhock
white	3½	—	—				excellent
rose	3½	+	+				excellent
pink to rose	3½	—	—				excellent early, disease problems later
mix-pink, yellow	4 x 1*	+	+				somewhat unkempt
blue	¾	—	—				excellent, less disease than some of the other lobelias
deep blue	¾	—	—				nice, disease problems late in season
deep blue	¾	—	—				nice, disease problems late in season
red violet	¾	—	—				more foliage than blooms
white	¾	—	—				some blue-flowered plants, more disease than some other lobelias
white	¼	—	—				mounding plants
mix	7 x 1¾*	—	+		+		nice, fairly uniform
mix	12 x 2½*	—	+		+		gone to seed by end of season
mix - yellow, orange, gold	3¾	—	—				variable flower size
orange	3½	—	—				large blooms, uniform, compact
yellow	3½	—	—				large blooms, nice
orange	2	—	—				very nice
orange	2	—	—				very good
yellow	3¾	+	—		+		very nice
gold/orange	2	—	—				single blooms
lemon yellow	2	—	—				very nice, single blooms
gold/red	2½	+	—				excellent
gold/red	2½	—	—				
lemon yellow	2	—	—				crested flowers, very nice
yellow	4½	—	—				excellent

Table 5. (continued)

COMMON NAME	CULTIVAR	SOURCE	WEEKLY BLOOM PERIOD				HEIGHT (IN)	RECOMMENDED SPACING (IN)
			JUN	JUL	AUG	SEP		
Marigold	Janie Gold	Vaughan's	* * * * *	* * * * *	* * * * *	10	6	
Marigold	Jubilee Mix	Ball Seed		* * * * *	* * * * *	42½	9	
Marigold	Orange Boy	Northrup King	* * * * *	* * * * *	* * * * *	12	6	
Marigold	Primrose Lady	Vaughan's			* * * * *	22	8	
Marigold	Red Marietta	Harris Moran	* * * * *	* * * * *	* * * * *	13	8	
Marigold	Safari Scarlet	Vaughan's	* * * * *	* * * * *	* * * * *	12	7-8	
Marigold	Safari Tangerine	Ball Seed	* * * * *	* * * * *	* * * * *	14		
Marigold	Snowdrift	Burpee		* * * * *	* * * * *	22	8-10	
Marigold	Zenith Lemon Yellow	Clause Seed	* * * * *	* * * * *	* * * * *	17	8	
Marigold	Zenith Orange	Clause Seed	* * * * *	* * * * *	* * * * *	18	8	
Marigold	Zenith Orange & Red	Clause Seed	* * * * *	* * * * *	* * * * *	13	8	
Marigold, Signet	Little Giant	Stokes	* * * * *	* * * * *	* * * * *	16	10	
Marigold, Signet	Lulu	Stokes	* * * * *	* * * * *	* * * * *	16½	10	
Matricaria	Gold Pompoms	Thompson & Morgan	* * * * *	* * * * *	* * * * *	34	10	
Matricaria	Santana	Vaughan's		* * * * *	* * * * *	10	8	
Nasturtium	Alaska	Park Seed		* * * * *		14	10-12	
Nemesia	Carnival Mix	Park Seed	* * * * *	* * * * *	* * * * *	14½	8	
Nemesia	Orange Prince	Thompson & Morgan	* * * * *	* * * * *	* * * * *	16	8	
Nicotiana	Domino Purple	Ball Seed		* * * * *	* * * * *	26	10	
Nicotiana	Domino Salmon Pink	Ball Seed		* * * * *	* * * * *	28	10	
Nicotiana	Domino White	Vaughan's		* * * * *	* * * * *	24	10	
Nicotiana	Merlin White	Stokes		* * * * *	* * * * *	18½	10	
Nicotiana	Nickie Pink	Burpee		* * * * *	* * * * *	29	10	
Nicotiana	Nickie Rose	Burpee		* * * * *	* * * * *	34	10	
Nicotiana	Starship Red	Ball Seed		* * * * *	* * * * *	18	10	
Nierembergia	Mont Blanc	Park Seed	* * * * *	* * * * *	* * * * *	7	6	
Nolana	Sky Blue	Stokes	* * * * *	* * * * *	* * * * *	17½	8	
Pansy	Chalon Mix	Clause Seed	* * * * *	* * * * *	* * * * *	20	8	
Pansy	Crown Mix	Vaughan's	* * * * *	* * * * *	* * * * *	14	8	
Pansy	Joker Mahogany/Gold	Vaughan's	* * * * *	* * * * *	* * * * *	18	8	
Pansy	Jolly Joker	Ball Seed	* * * * *	* * * * *	* * * * *	14½	8	
Pansy	Maxim Marina	Burpee	* * * * *	* * * * *	* * * * *	12	8	
Pansy	Medallion Mix	Clause Seed	* * * * *	* * * * *	* * * * *	18	8	
Pansy	Padparadja	Park Seed	* * * * *	* * * * *	* * * * *	13	8	
Pansy	Springtime Black	Harris Moran	* * * * *	* * * * *	* * * * *	17¼	8	
Pansy	Springtime Blue	Clause Seed	* * * * *	* * * * *	* * * * *	22	8	
Pansy	Springtime New Red	Clause Seed	* * * * *	* * * * *	* * * * *	17	8	
Pansy	Springtime Yellow Marble	Clause Seed	* * * * *	* * * * *	* * * * *	14½	8	
Pansy	Springtime Azure Blue	Clause Seed	* * * * *	* * * * *	* * * * *	18	8	
Pansy	Universal Deep Yellow	Ball Seed	* * * * *	* * * * *	* * * * *	12	8	

BLOOM COLOR	BLOOM SIZE (IN)	FROST TOLERANT		FRAGRANT	CUTTING	DRIED	COMMENTS
		FLOWERS	FOLIAGE				
gold - orange	1¾	-	-				very nice
mix - orange, yellow	3¾	+	-		+		nice
orange	1¾	-	-				great color impact
pale yellow	3½	-	-				very nice
red	2	-	-				nice
orange/red/gold	2¾	-	-				excellent, uniform
bright orange	2¾	-	-				excellent
cream	3	-	-		+		excellent, nice flower form
yellow	2¾	-	-				nice
orange	2½	-	-				very nice, somewhat variable
orange	2¾	+	-				variable form
gold/orange centers	¾	-	-				very nice, reliable
yellow	1	-	-				very nice, reliable
gold	¾	+	+			+	somewhat sprawling, invasive
white/ creamy center	¾	-	-				very good
mix - yellow, orange	2	-	-				variegated foliage, flower colors seemed paler than usual
mix - pink, white, yellow	1¼	-	-				very susceptible to disease, outstanding when healthy
medium orange	1	-	-				succumbed to disease early
purple/pale centers	2	-	-				
salmon pink	2	-	-				excellent, striking color
white	2	-	-				good
white	1½	+	+				very compact, some unattractive blossoms
pale pink	1½	-	+				very nice
rose	2½	+	+				very nice
rosy-red	1¾	-	+				very nice, excellent color
white	1	-	-				very nice, although some disease
blue	1½	+	+				creeping habit, some disease problems
mix - lavender, red, yellow, rose	2½	+	+				ruffled blooms, interesting colors, very nice
mix - yellow, orange, red, blue	2½	+	+				no faces, very nice, a little disease
gold, purple	2	+	+				lots of purples and blues
purple/orange blotch	1¾	+	+				
lavender, white/purple face	2¼	+	+				very nice
mix - lavender, blue, yellow, red, orange	2½	+	+				very good
orange	1¾	+	+				excellent
black	2	+	+				a few plants with purple or yellow/purple flowers
blue	2	+	+				
red	2	+	+				nice
yellow/cream	2	-	+	+			very nice
light blue/violet	2½	+	+				very nice
deep yellow	2	+	+	+			lovely

Table 5. (continued)

COMMON NAME	CULTIVAR	SOURCE	WEEKLY BLOOM PERIOD				HEIGHT (IN)	RECOMMENDED SPACING (IN)
			JUN	JUL	AUG	SEP		
Pansy	Universal True Blue	Vaughan's	* *	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	15	8	
Pansy	Watercolor Mix	Clause Seed	* ☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	17½	8	
Petunia	Celebrity Chiffon Morn	All-America Selections	* *	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	* * * * *	15	8-10	
Petunia	Celebrity Pink Morn	Vaughan's		* ☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	* * * * *	17½	8-10	
Petunia	Double Madness Burgundy	Ball Seed		* * * * *	* * * * *	16¼	8-10	
Petunia	Double Madness Rose	Ball Seed		* * * * *	* * * * *	18½	8-10	
Petunia	Double Madness Rose & White	Ball Seed		* * * * *	* * * * *	17	8-10	
Petunia	Double Madness Sheer	Ball Seed		* ☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	* * * * *	12½	8-10	
Petunia	Horizon Flame	Clause Seed	* *	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	* * * * *	12½	8-10	
Petunia	Horizon Light Salmon	Clause Seed		* * ☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	* * * * *	16½	8-10	
Petunia	Horizon Mix	Clause Seed	* *	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	* * * * *	24¼	8-10	
Petunia	Midnight Madness	Ball Seed		* ☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	* * * * *	17	8-10	
Petunia	Orchid Daddy	Ball Seed	* ☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	* * * * *		14½	8-10	
Petunia	Polo Burgundy Star	Ball Seed	* * *	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	* * * * *	15	8-10	
Petunia	Polo Salmon	Stokes	* *	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	* * * * *	16	8-10	
Petunia	Primetime Burgundy	Vaughan's		* ☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	* * * * *	14	8-10	
Petunia	Primetime Light Blue	Vaughan's		* ☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	* * * * *	18½	8-10	
Petunia	Primetime Plum	Vaughan's	* *	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	* * * * *	19	8-10	
Petunia	Primetime Red Frost	Ball Seed		* * ☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	* * * * *	14½	8-10	
Petunia	Prism Coral	Clause Seed	* ☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	* * * * *		15½	8-10	
Petunia	Purple Wave	All-America Selections		* ☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	6	12	
Petunia	Rose Madness	Ball Seed	* * *	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	* * * * *	19	8-10	
Petunia	Ultra Crimson Star	Ball Seed	* * *	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	* * * * *	21	8-10	
Phlox	Dwarf Varieties Finest Mix	Stokes	* * *	* * * * *	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	31	8	
Phlox	Grandiflora Choice Finest Mix	Stokes	* * *	* * * * *	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	27½	9	
Phlox	Palona Deep Rose	Vaughan's	* *	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	12½	8	
Phlox	Palona Deep Salmon	Vaughan's	* * *	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	14	8	
Phlox	Palona Light Blue	Vaughan's	* *	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	11	8	
Portulaca	Sundial Peppermint	Park Seed		* * * * *	* * * * *	9½	8	
Portulaca	Sunnyside Light Rose	Clause Seed		* * * * *	* * * * *	8½	8	
Portulaca	Sunnyside Mix	Clause Seed		* * * * *	* * * * *	11	8	
Purple tansy		Wildseed		* ☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼		31	10	
Rudbeckia	Becky Mix	Stokes		* * * * *	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	21	9	
Rudbeckia	Double Gold Gloriosa Daisy	Burpee		* * * * *	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	42	10	
Rudbeckia	Goldilocks	Vaughan's		* * * * *	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	25	10	
Rudbeckia	Indian Summer	All-America Selections	* * *	* * * * *	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	43	10-12	
Rudbeckia	Marmalade	Vaughan's		* * * * *	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	33½	10	
Rudbeckia	Nutmeg	Thompson & Morgan		* * * * *	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	31	10	
Salpiglossis	Casino	Vaughan's		* * * * *	* * * * *	20½	8	
Salvia	Argent	Clause Seed	* * *	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	☼ ☼ ☼ ☼ ☼ ☼ ☼ ☼	31	8	

BLOOM COLOR	BLOOM SIZE (IN)	FROST TOLERANT		FRAGRANT	CUTTING	DRIED	COMMENTS
		FLOWERS	FOLIAGE				
violet blue	2	+	+				excellent
mix - lavender, purple, blue, yellow	3	+	+				excellent, pastel colors
pastel pink	3½	-	-				very nice early in season, disease problem later
deep rose/light throat	3	-	+				nice
deep red violet	2½	-	-				good, but disease problems
rose	3	+	+				succumbed to disease fairly early
rose/white	2½	+	+				plants somewhat variable, nice
pink, rose veins	2½						
true red	3½	-	-				intense color, except for disease problems in August, excellent
salmon pink	2¾	+	+				
mix-purple, rose, pink, coral	3	+	+				
deep blue	3	-	+				very nice, but disease problems
orchid	4	-	-				floppy flowers, disease problems late in season
magenta/white star	3						
salmon pink	2¾	-	-				
deep red violet	2¾	-	-				excellent early in season
blue	3	-	+				very nice
red violet	2½	-	-				very good, intense color
red/white edges	3¼	+	+				
coral	4	-	-				very nice before hit by disease in August
purple	2½	+	+				excellent, procumbent, spreads to 3 or 4 feet
rose	2¾	-	+				very nice except for some disease problems
magenta/white star	3½	+	+				similar to Polo Burgundy Star, but much larger flowers
mix	1	+	+				excellent
mix	1	+	+	+	+		very nice
rose	1½	+	+				nice
coral	1	+	+				excellent
light lavender	1	+	+				very good, nice color
pink/red flecks	2	-	+				flower color variable, nice
pink	1½						very good
mix	2	+	+				nice colors
purple	¼	-	-				attractive to bees, needs staking, unkempt by end of season
yellow/brown centers	5¾	+	+				large flowers, excellent
gold	7	+	+		+		very nice
gold/brown centers	3½	+	+		+		excellent
golden yellow	6	+	+		+		excellent, beautiful large flowers, seeds were started earlier than other rudbeckias
gold/ brown centers	6	+	+		+		excellent
orange, gold, mahogany	4¼	+	+		+		excellent, unique color
mix	3	+	+		+		beautiful colors, excellent early but diseased by the end of July
white	6¾ x 1*	+	+		+	+	very nice

Table 5. (continued)

COMMON NAME	CULTIVAR	SOURCE	WEEKLY BLOOM PERIOD				HEIGHT (IN)	RECOMMENDED SPACING (IN)
			JUN	JUL	AUG	SEP		
Salvia	Empire Lilac	Ball Seed	**	**	**	**	11½	8
Salvia	Lady in Red	Burpee	**	**	**	**	32	8
Salvia	Maestro	Clause Seed	**	**	**	**	12	7
Salvia	Primco	Clause Seed	**	**	**	**	8	6-8
Salvia	Rhea	Clause Seed	**	**	**	**	20½	8
Salvia	Sizzler Burgundy	Clause Seed	**	**	**	**	13	6-8
Salvia	Sizzler Deep Salmon	Clause Seed	**	**	**	**	11½	6
Salvia	Sizzler Purple	Clause Seed	**	**	**	**	14½	6
Salvia	Sizzler Red	Clause Seed	**	**	**	**	11	6
Salvia	Sizzler White Improved	Clause Seed	**	**	**	**	11½	6
Salvia	Victoria	Northrup King	**	**	**	**	30	8
Salvia	White Swan	Stokes		**	**	**	43	10
Sanvitalia	Mandarin Orange	Park Seed		**	**	**	15	8
Schizanthus	Hit Parade Mix	Stokes	**	**	**	**	24	7
Shasta Daisy	Snow Lady	Park Seed	**	**	**	**	11	6
Shasta Daisy	White Knight	Burpee	**	**	**	**	8-17	9
Shoo fly plant	Black Pod	Big Dipper	**	**	**	**	48	12
Snapdragon	Cinderella Mix	Burpee		**	**	**	24½	10
Snapdragon	Floral Carpet Orchid	Vaughan's	**	**	**	**	14	8
Snapdragon	Floral Carpet Yellow	Vaughan's		**	**	**	14½	8
Snapdragon	Floral Showers Copper	Stokes	**	**	**	**	11	8
Snapdragon	Kim Mixture	Clause Seed		**	**	**	13½	8
Snapdragon	Madame Butterfly	Vaughan's		**	**	**	33	9
Snapdragon	Princess White with Purple Eye	Ball Seed		**	**	**	18	8
Snapdragon	Rocket Bronze	Ball Seed		**	**	**	35¾	10
Snapdragon	Rocket Frosty Rose	Park Seed	**	**	**	**	31½	10
Snapdragon	Rocket Gold	Vaughan's	**	**	**	**	37	10
Snapdragon	Rocket Orchid	Vaughan's		**	**	**	39½	10
Snapdragon	Rocket Red	Vaughan's		**	**	**	34½	10
Snapdragon	Rocket White	Vaughan's		**	**	**	40½	10
Snapdragon	Rocket Yellow	Ball Seed		**	**	**	35	10
Snapdragon	Sonnet Orange	Ball Seed	**	**	**	**	22	8
Snapdragon	Sonnet Rose	Vaughan's	**	**	**	**	21	8
Snapdragon	Tahiti Appleblossom	Vaughan's	**	**	**	**	8	8
Snapdragon	Tahiti Mix	Vaughan's	**	**	**	**	10	8
Statice	Excellent Mix	Ball Seed	**	**	**	**	39	10
Statice	Soiree Improved Mix	Park Seed	**	**	**	**	24	10
Statice	Turbo Mix	Stokes	**	**	**	**	31½	10
Stock	Cheerful White	Park Seed	**	**	**	**	27	8
Stocks	Giant Excelsior White	Johnny's		**	**	**	42½	8

BLOOM COLOR	BLOOM SIZE (IN)	FROST TOLERANT		FRAGRANT	CUTTING	DRIED	COMMENTS
		FLOWERS	FOLIAGE				
deep lilac	3 x 1½*	-	-				very nice overall
scarlet	12 x 1¼*	-	-		+		excellent, delicate flowers
scarlet	9x2*	-	-				
scarlet	4 x 3*	-	-				high losses from disease in August
deep blue	5 x 2*	+	+		+	+	very nice
dark red	2 x 6*	-	-				very good
salmon	5¾ x 1½*						severely diseased
deep burgundy	3¼ x 2¼*						very good through July
scarlet	5½ x 1½*	-	-				disease problems in August
white	4 x 2*	-	-				disease problems started early in season
deep blue	6 x 1*	+	+		+	+	excellent
white/silver bracts	12¾ x 1¾*	+	+		+	+	attractive, subtle coloring
gold	1	+	+				nice
mix	1¼	-	-				very good earlier, disease problems later
white	3	+	+				poor foliage
white/yellow centers	3	+	+				excellent blooms, compact plants
lavender	2½	-	-				interesting Chinese lantern-type pods
mix - white, yellow, orange	6x3*	+	+		+		good, nice colors, a little disease
orchid - rose	6x2*	+	+				very nice early, gone to seed later in season
yellow	6½ x 2½*	+	+				nice - best performance in July
peach/yellow	3¼ x 1¾*	+	+				lovely color, had disease problems by August
mix - pink, white, orange, yellow	4½ x 2*	+	+				very nice early, gone to seed late in season
mix	10 x 2½*	+	+		+		wonderful colors, double azalea flowered
white/purple	6 x 2½*	+	+				nice early, gone to seed later
gold/pink	12x3*	+	+		+		nice tall spikes
light pink/rose	13x2*	+	+		+		very nice
clear yellow	14 x 2½*	+	+		+		very nice
orchid	14¾ x 2½*	+	+		+		very good
deep red	9 x 3*	+	+		+		very nice
white	15 x 2½*	+	+		+		very nice
light yellow		+	+		+		excellent
bronze pink	10½ x 2¼*	+	+				excellent early in season
rose	7x2*	+	+				nice early in season, goes to seed later
white/light rose	4 x 1¼*	+	+				early bloomer, still some blooms late in season
mix - yellow, orange, pink, rose	4 x 3*	+	+				excellent, good color mix, gone to seed late in season
mix - lavender, pink	4 x 4½*	+	+		+	+	may need staking
mix	4½ x 1*	+	+		+	+	best color mix for statice in trials
mix - lavender, blue, white	3¾ x 4*	+	+		+	+	
white	15 x 3¾*	+	+				very nice flowers, disease problems by August
white	24½ x 6½*	+	+		+		edible flowers, mostly double - good

Table 5. (continued)

COMMON NAME	CULTIVAR	SOURCE	WEEKLY BLOOM PERIOD				HEIGHT (IN)	RECOMMENDED SPACING (IN)	
			JUN	JUL	AUG	SEP			
Strawflower	Rose Beauty	Johnny's	**	**	**	**	**	27	8-10
Sunflower	Italian White	Park Seed		**	**	**	**	72	10
Sunflower	Large Flowered Mix	Park Seed	**	**	**	**	**	67	12
Sunflower	Music Box	Park Seed	**	**	**	**	**	29	10
Sunflower	Sunbeam	Park Seed			**	**	**	60	12
Sunflower	Sunbird	Burpee		**	**	**	**	52½	12
Sunflower	Teddy Bear	Stokes		**	**	**	**	29	10
Twinspur	Pink Queen	Park Seed	**	**	**	**	**	23	7
Venidium		Thompson & Morgan			**	**	**	25½	10
Verbena	Amour Mix	Ball Seed		**	**	**	**	10½	8
Verbena	Blue Lagoon	Clause Seed		**	**	**	**	14	8
Verbena	Imagination	Stokes	**	**	**	**	**	22	8
Verbena	Novalis Deep Blue/White Eye	Stokes		**	**	**	**	7	8
Verbena	Peaches & Cream	Stokes		**	**	**	**	12	8
Verbena	Sandy Magenta	Clause Seed		**	**	**	**	9½	8
Verbena	Sandy White	Vaughan's		**	**	**	**	8	8
Verbena	Showtime Blaze	Northrup King		**	**	**	**	9	8
Verbena	Trinidad	Vaughan's		**	**	**	**	13	8
Verbena	Valentine	Ball Seed		**	**	**	**	10½	6-8
Vinca	Parasol	Ball Seed	**	**	**	**	**	8	4
Vinca	Pretty in Rose	Vaughan's		**	**	**	**	7¾	4
Vinca	Pretty in White	Ball Seed		**	**	**	**	5	4
Viola	Purple	Clause Seed	**	**	**	**	**	13	8
Viola	Velour Blue	Clause Seed	**	**	**	**	**	11	8
Wheat celosia	Pink Candle	Stokes			**	**	**	11	6
Xeranthemum		Burpee		**	**	**	**	23	8
Zinnia	Border Beauty Rose	Burpee	**	**	**	**	**	23	10
Zinnia	Border Beauty Scarlet	Burpee	**	**	**	**	**	24	10
Zinnia	Burpeeana Giant Mix	Stokes	**	**	**	**	**	41½	10
Zinnia	Fantastic Light Pink	Park Seed	**	**	**	**	**	16¼	10
Zinnia	King of Hearts	Stokes		**	**	**	**	31	10
Zinnia	Scarlet Splendor	Burpee	**	**	**	**	**	24	10
Zinnia	Small World Cherry	Vaughan's	**	**	**	**	**	14½	8-10
Zinnia	Small World Pink	Bodger	**	**	**	**	**	18	10
Zinnia	Splendor Mix	Burpee	**	**	**	**	**	26½	8-10
Zinnia	Splendor Orange	Burpee	**	**	**	**	**	28½	8-10
Zinnia	Star White	Ball Seed		**	**	**	**	15	8
Zinnia	Yellow Marvel	Stokes	**	**	**	**	**	21	10

TABLE
5

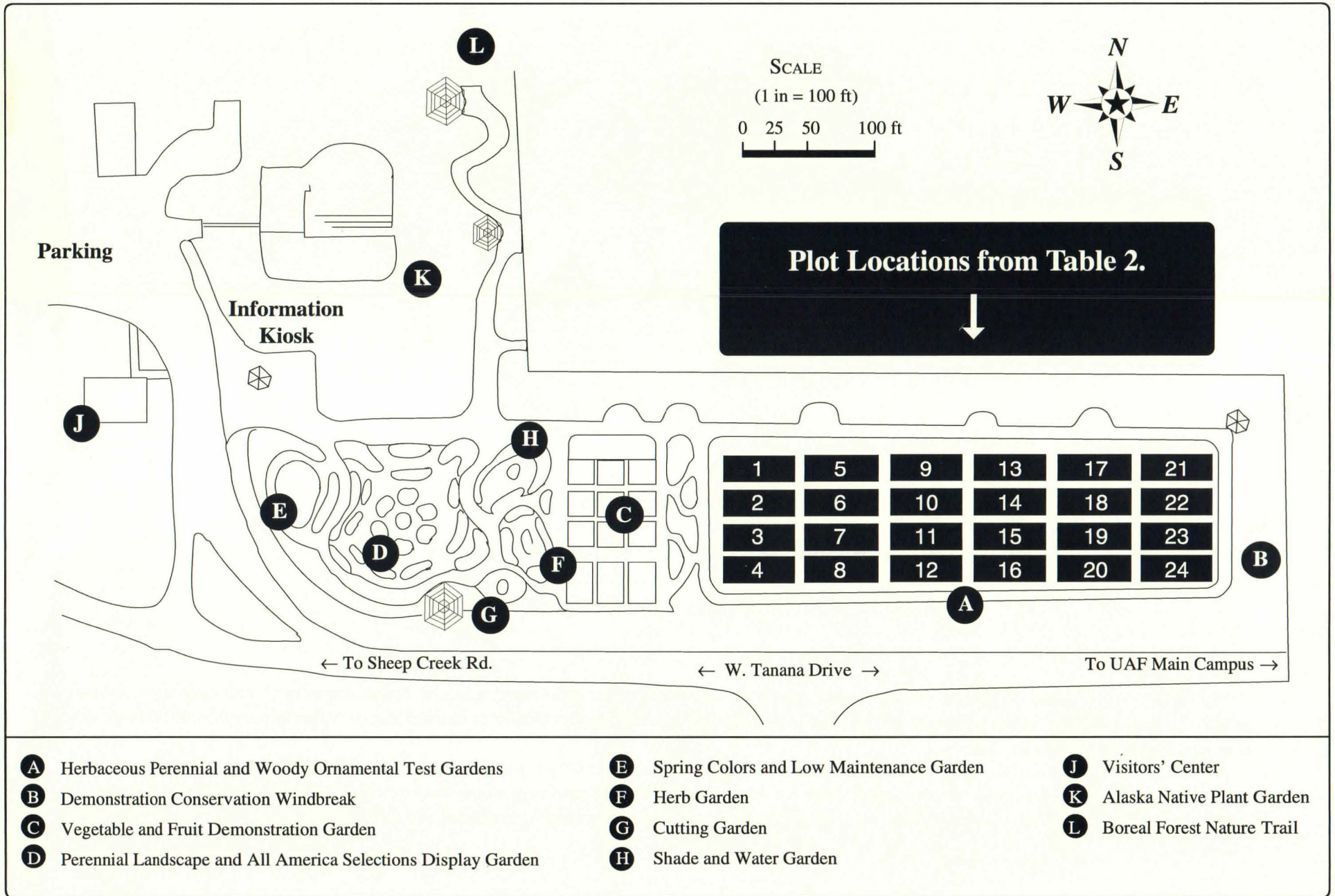
BLOOM COLOR	BLOOM SIZE (IN)	FROST TOLERANT		FRAGRANT	CUTTING	DRIED	COMMENTS
		FLOWERS	FOLIAGE				
light rose pink	1/4	+	+		+	+	delicate, nice early in season
cream/brown centers	4 1/4	+	+		+		good
yellow/brown centers	5 1/4	+	+		+		nice
yellow, red, cream	4	+	+		+		nice for cutting
yellow	6	+	+		+		large flower heads, no laterals
yellow	7	+	+				large, edible seeds
gold	4	+	-		+		good, smaller flower heads than usual
pink	3/4	+	+				very nice
orange	3 1/2	+	+		+		
mix	3/4	+	+				
blue	1	+	+				excellent
violet	1/2	+	+				excellent creeping habit
royal purple/white centers	1/2	+	+				very nice except for a few diseased plants
salmon and apricot	3/4	+	+				weak plants - not typical
magenta	1	+	+				
white	1/2	+	+				very nice blooms
bright red	2*	+	+				lost a few plants to disease early, excellent later
rose pink	3/4	+	+				very good
bright red/white eye	3/4	-	-				some aphid damage, not as showy as usual
white/red center	1 1/4	-	-				
deep raspberry	1 1/2	-	-				best vinca, good foliage
white	1 1/2	-	-				healthy foliage
purple	1 1/4						small faces, lots of blooms - nice
deep/light lavender	1 1/4						nice little flowers
pink	1*	-	-			+	did not do well
mix-pink, white, rose	1 1/4	+	+			+	
light rose	3 1/4	-	-				some die-off later in season
scarlet	3 1/2	-	-				nice
mix - pink, rose, orange	4	-	-		+		
pink	4	-	-		+		excellent
red	4 1/2	-	-		+		excellent
red	4	-	-		+		excellent
cherry red	2 1/2	-	-				very nice
pink to rose	2 1/2	-	-				very nice
mix - orange, yellow, red, pink	4 1/2	-	-		+		very good
orange	4 1/2	-	-		+		excellent
white/gold center	1 1/2	+	+		+		excellent, spreading habit
yellow	3	-	-				very nice

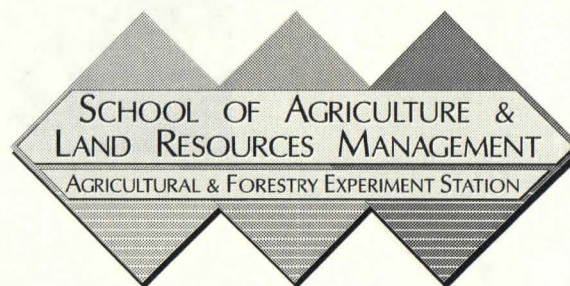
Appendix 1. Commercial sources and organizations

AAS	ALL-AMERICA SELECTIONS	Nauriaq	NAURIAQ GARDENS, PO BOX 82692, FAIRBANKS, AK 99708
Agway	AGWAY, INC SEED PLANT, 1225 ZEAGER RD., ELIZABETHTOWN, PA 17022	NCGR	NATIONAL CLONAL GERMLASM REP., 33447 PENEIA RD, CORVALIS, OR 97333
AHS	THE AMERICAN HORTICULTURAL SOCIETY, PO BOX 6118, 7931 E. BOULEVARD DR, ALEXANDRIA, VA 22308	NCRPIS	NORTH CENTRAL REGIONAL PLANT INTRODUCTION STATION, AMES, IA
ANPS*	ALASKA NATIVE PLANT SOCIETY, PO BOX 141613, ANCHORAGE, AK 99514	NCSU	NORTH CAROLINA STATE UNIVERSITY ARBORETUM, DEPT OF HORTICULTURAL SCIENCE, BOX 7609, RALEIGH, NC 27695-7609
Applewood	APPLEWOOD SEED CO., 5380 VIVIAN ST, ARVADA, CO 80002	NEWFS*	NEW ENGLAND WILD FLOWER SOCIETY, GARDEN IN THE WOODS, HEMENWAY RD, FRAMINGHAM, MA 01701
ARGS*	AMERICAN ROCK GARDEN SOCIETY, PO BOX 67, MILLWOOD, NY 10546	Northern Lights	NORTHERN LIGHTS NURSERY (HOLMTOWN NURSERY) 1301 30TH AVE, FAIRBANKS, AK 99701
Ball Seed	BALL SEED CO., PO BOX 335, WEST CHICAGO, IL 60185-0335	Northrup King	SEE VAUGHAN'S
Barnaul	THE LISAVENKO RESEARCH INSTITUTE OF HORTICULTURE, BARNAUL, ALTAI REGION, RUSSIA	Nourse	NOURSE FARMS INC., BOX 485 RFD, SOUTH DEERFIELD, MA 01373
BCN	BEAR CREEK NURSERY, PO BOX 411, NORTHPORT, WA 99157	Park	PARK SEED CO., COKESBURY RD, GREENWOOD, SC 29647-0001
Beaverlodge	BEAVERLODGE NURSERY, LTD., BOX 127, BEAVERLODGE, AB, T0H 0C0, CANADA	PMC	PLANT MATERIALS CENTER, HC02 BOX 7440, PALMER AK 99645
Big Dipper	BIG DIPPER GARDENS, PO BOX 82234, FAIRBANKS, AK 99708	Richters	RICHTERS, GOODWOOD, ON, L0C 1A0, CANADA
Bluebird	BLUEBIRD NURSERY, INC., PO BOX 460, CLARKSON, NE 68629	SAAS	DENDROLOGICAL GARDEN - SIBERIAN ACADEMY OF AGRICULTURAL SCIENCES, NOVOSIBIRSK REGION, RUSSIA
BTI	BETTER TREES, INC., 7894 W MAPLE RAPIDS RD, ST JOHNS, MI 48879	SBG	SIBERIAN BOTANICAL GARDEN, NOVOSIBIRSK, RUSSIA
Burpee	W. ATLEE BURPEE & CO., 300 PARK AVE, WARMINSTER, PA 18991-0001	Schumacher	F.W. SCHUMACHER CO., INC., 36 SPRING HILL RD, SANDWICH, MA 02563-1023
Chamal	MOUNTAIN EXPERIMENT STATION, GORNO-ALTAISK REGION, RUSSIA	Seeds of AK	SEEDS OF ALASKA, BOX 3127, KENAI, AK 99611
Clair's	CLAIR'S CULTIVARS, 1364 ESRO RD, FAIRBANKS, AK 99712	Seiberling	SEIBERLING NATUREALM, AKRON, OHIO
Clause	CLAUSE SEED CO., NORTH AMERICAN OFFICE, 100 BREEN RD., SAN JUAN BAUTISTA, CA 95045	South Slope	SOUTH SLOPE GREENHOUSES, FAIRBANKS, AK
CSBG	CENTRAL SIBERIAN BOTANICAL GARDEN, NOVOSIBIRSK, RUSSIA	Stokes	STOKES SEEDS INC., PO BOX 548, BUFFALO, NY 14240-0548
Daehnfeltd	DAEHNFELDT, BOX 947, ALBANY, OR 97321	Tack's	TACK'S GENERAL STORE, PO BOX 16004, TWO RIVERS, AK 99716
DBG	DENVER BOTANIC GARDENS, 909 YORK ST, DENVER, CO 80206	T&M	THOMPSON & MORGAN INC., PO BOX 1308, JACKSON, NJ 08527
de Jager	PETER DE JAGER BULB CO., PO BOX 2010, SO HAMILTON, MA 01982	Vaughan's	VAUGHAN'S SEED CO., 5300 KATRINE AVE, DOWNERS GROVE, IL 60515-4095
GBG	GEORGESON BOTANICAL GARDEN, UNIVERSITY OF ALASKA FAIRBANKS, PO BOX 757200, FAIRBANKS, AK 99775-7200	VB&S	K. VAN BOURGONDIEN & SONS, INC., 245 FARMINGDALE RD, BABYLON, NY 11702
Harris Moran	HARRIS MORAN SEED COMPANY, 1155 HARKINS RD, SALINAS, CA 93901	Vermont Bean	VERMONT BEAN SEED CO., GARDEN LANE, FAIR HAVEN, VT 05743
HFF	HARDY FERN FOUNDATION, PO BOX 60034, RICHMOND BEACH, WA 98160	Washburn	WASHBURN FARM NURSERY, PO BOX 823, PALMER, AK 99645
Hudson	J.L. HUDSON, PO BOX 1058H, REDWOOD CITY, CA 94064	Waushara	THE WAUSHARA GARDENS, N 5491 5TH DR, PLAINFIELD, WI 54966
J & P	JACKSON & PERKINS, PO BOX 1028, MEDFORD, OR 97501	Wayside	WAYSIDE GARDENS, 1 GARDEN LN, HODGES, SC 29695-0001
KHN	KNIGHT HOLLOW NURSERY, INC., 236 E SUNSET CT, MADISON, WI 53705	White Flower	WHITE FLOWER FARM, PO BOX 50, LITCHFIELD, CT 06759-0050
Johnny's	JOHNNY'S SELECTED SEEDS, FOSS HILL RD, ALBION, ME 04910	Wildseed	WILDSEED FARMS, INC., PO BOX 308, EAGLE LAKE, TX 77434
Lamb	LAMB NURSERIES, 101 E SHARP AVE, SPOKANE, WA 99202	William Dam	WILLIAM DAM SEEDS, PO BOX 8400, DUNDAS, ON, L9H 6M1, CANADA
Lawyer	LAWYER NURSERY INC., 950 HWY 200 W, PLAINS, MT 59859	WNS	WILDWOOD NORTHERN SEEDS, WHITEHORSE, UT, CANADA

*seeds available to members

Map of the Georgeson Botanical Garden.





University of Alaska Fairbanks

Agricultural and Forestry Experiment Station

School of Agriculture and Land Resources Management

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