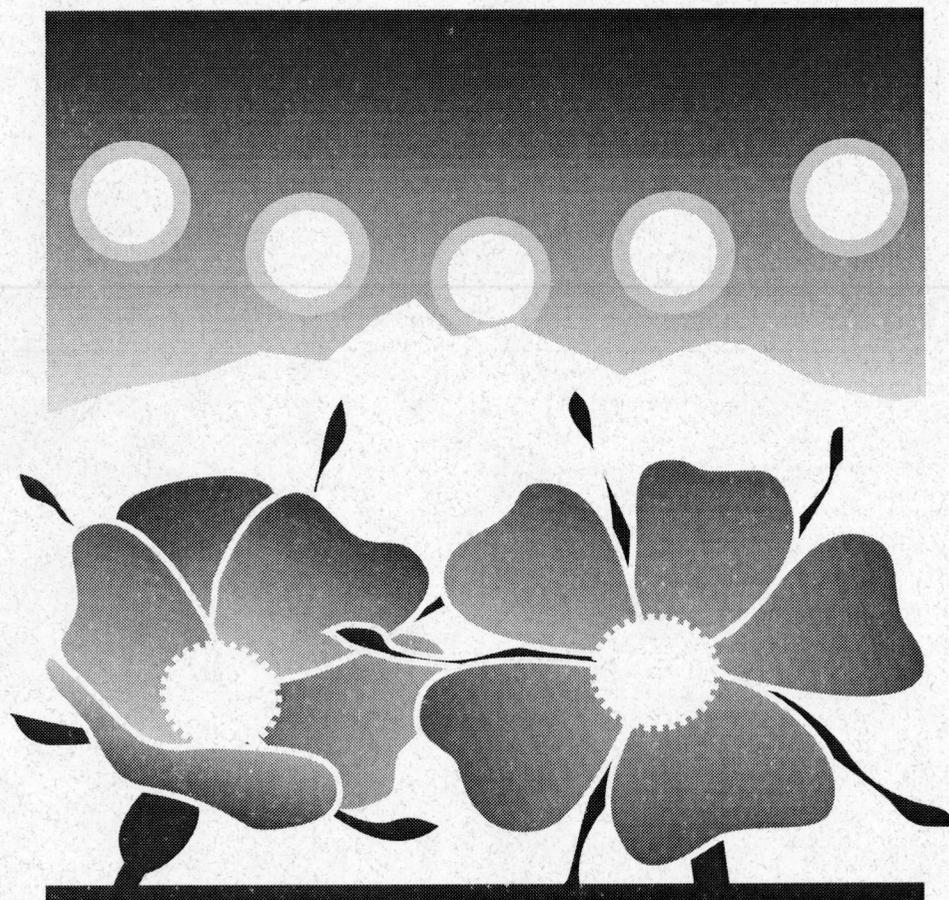




Annual Flower and Perennial Landscape Plant Evaluations 1993



GEORGESON BOTANICAL GARDEN

by

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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. 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 49). 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 were fertilized with 300 lb per acre 10-20-20S fertilizer on July 15, 1993. 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 1000 lb per acre 10-20-20 prior to tilling. Planting occurred on June 2-4, 1993.

Weather data is 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 1989 through 1993 is shown in Table 1.

The 1993 season

Coping with severe winter injury. A significant number of perennials showed severe winter injury from the 1992-93 winter. This injury was the result of an unseasonably-late spring combined with a very early onset of winter. Plants began growth later than normal and did not have time to acclimate to the early onset of winter. Leaf color on the native birch (*Betula papyrifera*) and aspen (*Populus tremuloides*) trees had just begun to change from green to yellow, and the non-native trees such as the European birdcherries (*Prunus padus*) and non-native poplars (i.e. *Populus tremula* 'Erecta') still were cloaked in bright green leaves when winter arrived.

The first permanent snowfall was recorded on September 12, 1993. The 13 inches of snow that accumulated in September were very wet and heavy. This snowfall caused extensive limb and trunk breakage and bark splitting primarily because leaves remained on the trees and held the wet snow. Because temperatures did not moderate after the first snowfall, green leaves froze on the trees. In less windy areas around the Tanana Valley, many trees held their leaves until the following spring.

The most visible damage in the botanical garden occurred to the large European birdcherry trees that had been planted in the 1930's. Besides severe trunk damage, significantly fewer leaves, flowers and fruit were produced the following season. Other plants considered very hardy in the Fairbanks area such as Tatarian honeysuckle (*Lonicera tatarica*) and the villosa lilac (*Syringa villosa*) were killed. Containerized plants that had received an early start in the greenhouse showed little winter injury. These plants apparently had enough time to fully acclimate following field transplanting, whereas many plants already in the field did not.

In contrast, the English Primrose, (*Primula vulgaris*), survived for the first time in the botanical garden. Apparently, the early snowfall provided a protective mulch for the primroses, possibly giving them a more protected, warm microenvironment to fully acclimate. They were blooming on April 22, the earliest non-native plant to bloom in the botanical garden.

Stem rot disease on annual flowers. Stem rot (*Sclerotinia sclerotiorum*) caused serious damage in the botanical garden during 1993. This disease is common in Alaskan soils and caused severe dieback on many cultivars of annual flowers including petunias, sunflowers, lavatera, schizanthus and marigolds. Normally, damage is minimized by application of the fungicide, Topsin M®. However, during the 1993 growing season we tested a possible biocontrol agent, a cold-tolerant strain of the fungus, *Trichoderma sp.*, selected by Dr. Jenifer McBeath. This fungus is a soil antagonist and competes against other microorganisms in the soil. A single application of *Trichoderma* on July 7 did not control the disease. The application probably was too late to be effective.

Fern testing. In 1992, The Georgeson Botanical Garden was selected as one of six national satellite test gardens by the national Hardy Fern Foundation. These gardens evaluate native and non-native ferns for hardiness, site adaptability, cultivation requirements and plant growth and development. Information from all test sites is compiled by the Foundation for public distribution. Beginning with the 1993 season, the evaluations from the Georgeson Botanical Garden site will be included as a special section in the perennial landscape plant evaluations. Ferns were planted in the newly-completed shade house during the 1993 growing season, and formal evaluations will begin in 1994. In the future, ferns will also be located in the shade and wildflower gardens as these landscapes are developed.

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 1993.

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 an over night low of +28.5°F on Sept. 18, 1993. A negative sign indicates 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: Data on plant height were recorded in late August 1993.

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 9, 1993. The * symbol indicates first bloom, whereas the ☼ symbol indicates full bloom.

BLOOM SIZE: The maximum diameter of individual blossoms was recorded. When followed by an *, bloom size refers to maximum diameter of a flower cluster or spike.

FROST TOLERANT: Frost tolerance was evaluated on foliage and flowers after an overnight low of +28.5°F on Sept. 18, 1993.

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 stem rot) 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 and small, hard, black fungal fruiting bodies appear inside the vascular tissue. 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 1993 are not necessarily resistant.

Table 1. Weather records for the test years.

	Season				
	1989	1990	1991	1992	1993
Average temperature °F					
May	46.7	52.2	48.9	40.6	51.9
June	57.8	59.6	60.8	59.1	60.5
July	62.9	64.1	59.7	63.0	64.5
August	58.8	58.4	53.0	55.9	55.5
September	47.6	44.3	47.9	31.4	42.5
Maximum temperature °F					
	86	90	93	90	91
Growing season					
Last spring frost	May 24	May 23	May 16	June 7	May 1
First fall frost	Sept 15	Sept 8	Aug 27	Sept 5	Sept 1
Frost-free days	114	108	103	90	123
Thaw degree days ¹	—	—	3069.0	2568.0	3547.5
Rainfall (inches) ²	6.70	13.20	6.28	8.78	6.67
Previous winter season					
Minimum temperature °F	-55	-45	-49	-35	-52
snowfall (inches)	58.9	71.4	131.6	103.8	131.7
¹ May through September 32°F base temperature					
² May through September					

Table 2. All plant materials evaluated in 1993

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	0.5	17 (26)	30
<i>Achillea millifolium</i> 'Summer Pastels'	Common Yarrow	AAS	Aug-90	10	1.0	21	28
<i>Achillea Ptarmica</i>	Sneezewort	Fairbanks, AK	Oct-91	3	0.1	33	23
<i>Achillea taygetea</i> 'Debutante'		Park	Jul-92	10	2.5	36	28
<i>Adenophora Bulleyana</i>	Ladybells	T&M	Jul-92	10	3.8	28	13
<i>Allium cernuum</i>	Nodding onion	NEWFS	Aug-91	10	2.2	9 (12)	6
<i>Allium Schoenoprasum</i> (?)	Chive	Novosibirsk, Russia	Aug-91	10	0.2	22	26
<i>Anemone alpina</i> subsp. <i>sulfurea</i>	Sulfur alpine anemone	ANPS	Jun-91	3	3.2	4	5
<i>Anemone Halleri</i>	Haller anemone	ANPS	Jun-91	7	3.5	7 (11)	10
<i>Anemone multifida</i>	Argentine anemone	ANPS	Aug-89	8	1.4	12 (27)	15
<i>Anemone virginiana</i>	Thimbleweed	NEWFS	Jun-91	10	0.9	19 (29)	14
<i>Aquilegia atrata</i>		ARGS	Aug-91	7	2.2	14 (36)	19
<i>Aquilegia brevistyla</i>	Yukon columbine	ANPS	Jun-91	10	3.2	14 (15)	19
<i>Aquilegia Buergerana</i>		ARGS	Aug-91	10	3.4	10 (12)	17
<i>Aquilegia formosa</i>	Sitka columbine	ANPS	Aug-91	10	1.6	16 (31)	24
<i>Aquilegia pyrenaica</i>	Pyrenees columbine	ARGS	Aug-91	7	0.9	15 (30)	21
<i>Aquilegia sibirica</i>	Siberian columbine	ARGS	Aug-91	10	0.8	14 (32)	21
<i>Aquilegia vulgaris</i>	Garden columbine	T&M	Aug-91	2	0.0	14 (35)	21
<i>Aquilegia</i> sp.	Columbine	Novosibirsk, Russia	Aug-92	10	1.7	12 (21)	12

*Winter Injury Rating: 0=no visible injury; 2=moderate wither 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	+	+	some mildew resistance	4	<i>Achillea borealis</i>
		***	***	***	***	mix/pastels	+	+	very nice	12	<i>A. 'Summer Pastels'</i>
			***	***	***	white			suceptible to mildew	4	<i>A. Ptarmica</i>
		***	***	***	***	mix/pink, white	+	+		15	<i>Achillea 'Debutante'</i>
				***	***	pale lavender	+	+	one plant survived	16	<i>Adenophora Bulleyana</i>
			***	***	***	lavender	+	+	nodding flower head	13	<i>Allium cernuum</i>
		***	***		***	lavender	+	+		13	<i>A. Schoenoprasum (?)</i>
										15	<i>Anemone alpina</i>
		***	***			wine red				15	<i>A. Halleri</i>
		***	***	***	***	red violet		+	winter damage by voles, flowers short-lived	4	<i>A. multifida</i>
		***	***			white		+	flowers seem short-lived, seed heads are showy, last through the winter	15	<i>A. virginiana</i>
		***	***	***	***	deep purple		+		13	<i>Aquilegia atrata</i>
			***	***	***	lavender/ white		+		15	<i>A. brevistyla</i>
		***	***	***	***	mix/pink, purple		+		13	<i>A. Buergerana</i>
		***	***	***	***	red/yellow		+		13	<i>A. formosa</i>
			***	***	***	deep purple	+	+	similar to <i>A. atrata</i>	13	<i>A. pyrenaica</i>
	***	***	***	***	***	deep blue		+	nodding heads, short spurs	13	<i>A. sibirica</i>
		***	***	***	***	deep blue		+	nodding heads, large flowers	13	<i>A. vulgaris</i>
		***	***	***	***	purple/white		+		13	<i>Aquilegia sp.</i>

Table 2. (continued)

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	No. OF PLANTS	WINTER INJURY*	HEIGHT (IN)	SPREAD (IN)
<i>Aquilegia</i> sp.	Columbine	Berdsk, Russia	Aug-92	10	1.4	12 (24)	16
<i>Aquilegia</i> sp. 'Dynasty'		South Slope	Jun-91	10	2.7	13 (27)	18
<i>Aquilegia</i> sp. 'McKana Giant Hybrids'		T&M	Aug-91	10	2.9	12 (19)	15
<i>Aquilegia</i> sp. 'Nora Barlow'		Park	Aug-91	10	3.0	12 (14)	16
<i>Aquilegia</i> sp. 'Star McKana Mix'		Park	Aug-91	6	3.2	11	14
<i>Arnica alpina</i>		ARGS	Jul-92	10	2.9	15 (22)	16
<i>Arnica alpina</i>		Nauriaq	Jul-92	8	3.4	9 (22)	13
<i>Arnica cordifolia</i>		ARGS	Jul-92	3	1.0	8 (22)	12
<i>Arnica Lessingii</i>		ARGS	Jun-90	10	0.1	30	36 (see comments)
<i>Artemisia campestris</i> subsp. <i>borealis</i>		ARGS	Oct-90	10	2.5	6 (18)	12
<i>Artemisia Tilesii</i> 'Caiggluk'	Tilesy Sage	PMC	Jul-92	10	1.0	44	51
<i>Aster sibiricus</i>	Siberian aster	Big Dipper	Jul-92	10	0.9	15	21
<i>Bergenia cordifolia</i> 'Redstart'	Heartleaf bergenia	Park	Sep-89	10	2.6	12	18
<i>Bergenia cordifolia</i> 'Rose'	Heartleaf bergenia	Park	Sep-89	10	2.6	8	20
<i>Campanula glomerata</i> var. <i>dahurica</i>	Clustered bellflower	ARGS	Aug-92	1	2.0	4	10
<i>Campanula glomerata</i> <i>superba</i>		T&M	Aug-92	10	2.4	14	10
<i>Cerastium Beeringianum</i>		C.Parker	Aug-89	10	1.0	4	15
<i>Cerastium tomentosum</i>	Snow-in-Summer	T&M	Jun-90	10	1.4	6 (10)	26
<i>Chrysanthemum arcticum</i> 'Roseum'	Arctic chrysanthemum	NCRPIS	Aug-90	10	3.2	10	12

*Winter Injury Rating: 0=no visible injury; 2=moderate wither 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								
	*	*	*	*	*			+		15	<i>Aquilegia</i> sp.				
		*	*	*	*	*	*		+	+	16	<i>Aquilegia</i> 'Dynasty'			
		*	*	*	*	*	*			+	13	<i>Aquilegia</i> 'McKana Giant Hybrids'			
		*	*						+	+	13	<i>Aquilegia</i> 'Nora Barlow'			
										+	13	<i>Aquilegia</i> 'Star McKana Mix'			
		*	*	*	*	*	*	*	*	*		+	+	11	<i>Arnica alpina</i>
		*	*	*	*	*	*			+	4	<i>A. alpina</i>			
	*	*	*	*	*	*	*	*	*	*		+	+	11	<i>A. cordifolia</i>
		*	*	*	*	*	*		+	+	11	<i>A. Lessingii</i>			
		*	*						+	+	15	<i>Artemesia campestris</i>			
			*	*	*				+	+	16	<i>A. Tilesii</i> 'Caiggluk'			
		*	*	*	*	*	*	*	*			+	4	<i>Aster sibiricus</i>	
	*	*	*							+	1	<i>Bergenia</i> 'Redstart'			
										+	1	<i>Bergenia</i> 'Rose'			
										+	7	<i>Campanula glomerata</i> var. <i>dahurica</i>			
		*			*	*	*	*	*		+	+	6	<i>C. glomerata superba</i>	
			*	*	*	*	*	*	*		+	+	4	<i>Cerastium</i> <i>Beeringianum</i>	
		*	*	*	*	*				+	7	<i>C. tomentosum</i>			
										+	12	<i>Chrysanthemum</i> 'Roseum'			

Table 2. (continued)

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	No. OF PLANTS	WINTER INJURY*	HEIGHT (IN)	SPREAD (IN)
<i>Chrysanthemum coccineum</i> 'Robinson's Dark Crimson'	Vaughan's		Jul-92	10	2.9	17 (29)	19
<i>Chrysanthemum Leucanthemum</i>	Oxeye daisy	WNS	Jun-91	10	1.8	14 (30)	24
<i>Clematis integrifolia</i>	Solitary clematis	Northern Lights	Oct-91	1	1.5	17	15
<i>Clematis</i> sp.	Clematis	Montana	Jul-92	3	3.3	17	20
<i>Delphinium glaucum</i>	Sierra larkspur	C. Parker	Oct-91	2	2.8	36	20
<i>Delphinium grandiflorum</i>	Siberian larkspur	NCRPIS	Jul-91	10	1.2	87	28
<i>Delphinium laxiflorum</i>		NCRPIS	Jul-91	10	2.3	67	18
<i>Dianthus arenarius</i>	Sand pink	ARGS	Jun-90	10	1.9	8 (10)	19
<i>Dianthus arenarius</i> (pink)	Sand pink	ARGS	Jun-90	10	1.7	8 (11)	24
<i>Dianthus arenarius</i> subsp. <i>borussicus</i>	Sand pink	ARGS	Jun-90	10	1.1	7 (16)	24
<i>Dianthus callizonus</i>	Zoned pink	ARGS	Jun-90	6	3.2	4 (12)	7
<i>Dianthus carthusianorum</i>	Carthusian pink	T&M	Jun-90	10	1.2	8 (19)	15
<i>Dianthus chinensis</i>	Chinese pink	NCRPIS	Jun-90	10	1.6	16	34
<i>Dianthus deltoides</i>	Maiden pink	South Slope	Jun-91	10	2	5 (13)	24
<i>Dianthus pavonius</i>		ARGS	Jun-90	10	2.6	3	11
<i>Dianthus plumarius</i> 'Smokey'	Cottage pink	NCRPIS	Jun-90	9	1.6	8 (18)	18
<i>Dianthus plumarius</i>	Cottage pink	Novosibirsk, Russia	Aug-91	19	3.0	9 (19)	16
<i>Dianthus</i> 'Orchid Lace'	Cottage pink	T&M	Jun-90	10	2.4	16	11
<i>Dianthus repens</i>	Bering pink	ARGS	Jun-90	4	1.8	13	28

*Winter Injury Rating: 0=no visible injury; 2=moderate wither 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 rose	+	+			<i>C. coccineum</i> 'Robinson's Dark Chrimson'
	***	***	***	***	***	white	+	+		15	<i>C. Leucanthemum</i>
		***	***	***	***	violet blue	+	+	nodding flower heads, twisted petals	16	<i>Clematis integrifolia</i>
				***	***	white	+	+		11	<i>Clematis</i> sp.
	***	***		***		purple		+		4	<i>Delphinium glaucum</i>
	***	***	***		*	blue		+		4	<i>D. grandiflorum</i>
	***	***	***	***		blue		+		4	<i>D. laxiflorum</i>
	***	***	***	***	***	white	+	+	fragrant flowers	7	<i>Dianthus arenarius</i>
	***	***	***	***	***	light pink	+	+		7	<i>D. arenarius</i> (pink)
	***	***	***	***	***	white	+	+	lacey flowers	7	<i>D. arenarius</i> subsp. <i>borussicus</i>
		***	***	***	***	pale purple	+	+		7	<i>D. callizonus</i>
	***	***	***	***	***	bright rose	+	+		7	<i>D. carthusianorum</i>
		***	***	***	***	bright pink	+	+		11	<i>D. chinensis</i>
		***	***	***		magenta		+		16	<i>D. deltoides</i>
	***	***	***	***	***	rose	+	+		7	<i>D. pavonius</i>
	***	***	***	***	***	light pink	+	+		11	<i>Dianthus</i> 'Smokey'
		***	***	***	***	lavender	+	+		7	<i>D. plumarius</i>
	***	***	***	***	***	bright orchid	+	+	very attractive in bloom	7	<i>Dianthus</i> 'Orchid Lace'
	***	***	***	***	***	bright pink	+	+		7	<i>D. repens</i>

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	33	36
<i>Dodecatheon Cusickii</i>		ARGS	Jul-92	1	2.0		
<i>Dodecatheon Jeffreyi</i>		ARGS	Jul-92	5	2.4	5	3
<i>Dodecatheon Meadia</i>	Shooting-star	ARGS	Jul-92	8	1.2	8	5
<i>Draba densifolia</i>		ARGS	Aug-91	3	0.0	1	2.5
<i>Erigeron glabellus</i>	Smooth fleabane	ANPS	Jun-90	10	1.4	10 (27)	18
<i>Erigeron humilis</i>	Fleabane	ANPS	Aug-91	5	0.9	9	5
<i>Erigeron</i> sp. 'Pink Jewel' (?)		South Slope	Jun-91	10	3.2	28	20
<i>Filipendula vulgaris</i>	Dropwort	Park	Aug-89	7	2.2	15 (35)	28
<i>Galium boreale</i>	Northern bedstraw	Big Dipper	Jul-92	10	1.2	16	20
<i>Gentiana Freyniana</i>		ARGS	Aug-91	10	1.8	8	12
<i>Gentiana septemfida</i>		ARGS	Aug-91	15	2.2	12	14
<i>Geranium Regelii</i>		VB&S	Jun-90	10	1.5	18 (22)	26
<i>Geranium sanguineum</i>	Blood-red geranium	ARGS	Jun-90	10	3.2	16 (20)	21
<i>Hemerocallis minor</i>	Grass-leaf daylily	NCRPIS	Aug-90	9	2.1	17	18
<i>Hemerocallis</i> sp.		CSBG	Aug-91	10	1.2	25	18
<i>Heracleum Sphondylium</i> subsp. <i>montanum</i>		NEWFS	Oct-90	5	1.5	20 (37)	36
<i>Hieracium umbellatum</i>	Yellow hawkweed	ANPS	Aug-89	10	0.3	38	32
<i>Iris Kaempferi</i> (?)	Japanese iris	ANPS	Jun-91	10	0.8	32	28

*Winter Injury Rating: 0=no visible injury; 2=moderate wither 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			
		***	***	***	***	mix/white, purple	+	+		7	<i>Dianthus</i> 'Fantasy Mix'
									died back by the time measurements were taken	16	<i>Dodecatheon Cusickii</i>
	**					magenta				16	<i>D. Jeffreyi</i>
	**	**				white				16	<i>D. Meadia</i>
**	**	**	**	*	*	yellow	+	+	evergreen foliage	11	<i>Draba densifolia</i>
		**	**	**	**	pale lavender	+	+	blooms fade to white, reseeds readily	11	<i>Erigeron glabellus</i>
	**					white			died back by fall	13	<i>E. humilis</i>
		**	**	**	**	pink		+		16	<i>Erigeron</i> 'Pink Jewel' (?)
		**	**		*	white	+	+		4	<i>Filipendula vulgaris</i>
		**	**	**	*	white	+	+		4	<i>Galium boreale</i>
			**	**	**	deep blue	+	+		13	<i>Gentiana Freyniana</i>
			**	**	**	deep blue	+	+		13	<i>G. septemfida</i>
		**	**	*	*	lavender blue	+	+	foliage unattractive late in season, possibly diseased	11	<i>Geranium Regelii</i>
		**	**	*	*	red violet	+	+	remaining plants may be self-seeded	11	<i>G. sanguineum</i>
**		**	**	*		gold		+		12	<i>Hemerocallis minor</i>
		**	**			bright yellow		+		12	<i>Hemerocallis</i> sp.
		**	**			white		+	some chlorosis on leaves	15	<i>Heracleum</i>
		**	**	**	**	yellow	+	+	reseeds readily, may be invasive	4	<i>Hieracium umbellatum</i>
	**	**				deep purple		+		15	<i>Iris Kaempferi</i> (?)

Table 2. (continued)

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	NO. OF PLANTS	WINTER INJURY*	HEIGHT (IN)	SPREAD (IN)
<i>Iris missouriensis</i> (?)	Western blue flag	Estes Park, CO	Jul-92	10	0.9	17	10
<i>Iris palustris</i>		SAAS	Aug-92	6	1.8	26	8
<i>Iris setosa arctica</i>		ARGS	Jul-92	2	2.0	8	5
<i>Iris setosa</i> var. <i>canadensis</i>	Beachhead iris	ARGS	Jul-92	2	1.0	13	16
<i>Iris setosa nana</i>		ARGS	Jul-92	10	1.8	16	10
<i>Iris setosa</i>	Wild iris	Kodiak, AK	Aug-92	2	1.0	12	12
<i>Iris setosa</i>		ARGS (Germany)	Jul-92	6	2.7	10	8
<i>Iris sibirica</i>	Siberian iris	AHS	Aug-91	10	3.1	11	6
<i>Lilium canadense</i>	Canada lily	AHS	Jul-92	3	2.7		
<i>Lilium canadense</i>	Canada lily	NEWFS	Jul-92	3	3.7		
<i>Lilium Martagon</i> 'Mix'	Martagon lily	T&M	Jul-92	6	2.7	1	2
<i>Lilium superbum</i>	Turk's-cap lily	NEWFS	Jul-92	10	3.7		
<i>Lilium</i> 'Corsica'	Asiatic hybrid lily	South Slope	Jun-91	10	0.7	32	14
<i>Lilium</i> 'Corina'	Asiatic hybrid lily	VB&S	Aug-90	10	0.5	40	29
<i>Lilium</i> 'Dreamland'	Asiatic hybrid lily	South Slope	Jun-91	10	0.4	25	20
<i>Lilium</i> 'Fireball'	Asiatic hybrid lily	VB&S	Aug-90	10	0.9	28	17
<i>Lilium</i> 'Freckles'	Asiatic hybrid lily	VB&S	Aug-90	10	1.0	28	13
<i>Lilium</i> 'French Vanilla'	Asiatic hybrid lily	VB&S	Aug-90	10	0.9	23	25
<i>Lilium</i> 'Jolanda'	Asiatic hybrid lily	South Slope	Jun-91	10	0.4	45	26

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

MAY	WEEKLY BLOOM PERIOD				SEP	BLOOM COLOR	FROST TOLERANT		COMMENTS	PLOT LOCATION	SCIENTIFIC NAME
	JUN	JUL	AUG	flowers			foliage				
	✿✿					blue		+		15	<i>I. missouriensis</i> (?)
								+		13	<i>I. palustris</i>
								+		15	<i>I. setosa arctica</i>
								+		15	<i>I. setosa</i> var. <i>canadensis</i>
✿								+		15	<i>I. setosa nana</i>
								+		13	<i>I. setosa</i>
								+		15	<i>I. setosa</i>
								+		13	<i>I. sibirica</i>
									plants died back early in the season	11	<i>Lilium canadense</i>
									plants died back early in the season	11	<i>L. canadense</i>
										11	<i>L. Martagon</i> 'Mix'
									one remaining plant died back early in the season	12	<i>L. superbum</i>
				✿✿✿✿		pink		+	some vole damage during the summer	16	<i>Lilium</i> 'Corsica'
				✿✿✿✿		bright orange		+		12	<i>Lilium</i> 'Corina'
✿				✿✿✿✿		bright yellow/ gold throat		+		16	<i>Lilium</i> 'Dreamland'
				✿✿✿		burgundy		+		12	<i>Lilium</i> 'Fireball'
				✿✿✿✿		scarlet red		+		12	<i>Lilium</i> 'Freckles'
				✿✿✿✿		light yellow		+		12	<i>Lilium</i> 'French Vanilla'
				✿✿✿✿✿		bright orange		+		16	<i>Lilium</i> 'Jolanda'

Table 2. (continued)

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	NO. OF PLANTS	WINTER INJURY*	HEIGHT (IN)	SPREAD (IN)
<i>Lilium</i> 'Juliana'	Asiatic hybrid lily	VB&S	Aug-90	10	0.3	23	24
<i>Lilium</i> 'Pink Chiffon'	Asiatic hybrid lily	VB&S	Aug-90	10	1.5	25	23
<i>Lilium</i> 'Poet's Dream'	Asiatic hybrid lily	VB&S	Aug-90	10	0.7	25	20
<i>Lilium</i> 'Prince Carnival'	Asiatic hybrid lily	VB&S	Aug-90	10	1.0	25	16
<i>Lilium</i> 'Rainbow'	Asiatic hybrid lily	VB&S	Aug-90	10	1.4	28	18
<i>Lilium</i> 'Rose Fire'	Asiatic hybrid lily	VB&S	Aug-90	10	0.8	21	17
<i>Lilium</i> 'Sterling Star'	Asiatic hybrid lily	South Slope	Jun-91	10	0.4	34	20
<i>Lilium</i> 'Tribute'	Asiatic hybrid lily	VB&S	Aug-90	10	0.6	22	20
<i>Lilium</i> 'Vanessa'	Asiatic hybrid lily	VB&S	Aug-90	10	0.7	30	24
<i>Lupinus nootkatensis</i>		Valdez, AK	Aug-89	7	1.1	20 (31)	72+
<i>Lychnis viscaria</i>	German catchfly	Tack's	Aug-92	10	1.0	8 (14)	11
<i>Lysimachia punctata</i>	Garden loosestrife	T&M	Aug-90	10	3.6	10	12
<i>Mentha</i> sp.	Mint	South Slope	Jun-91	1	0.0	19	48+
<i>Muscari armeniacum</i>	Grape hyacinth	J&P	Aug-92	10	1.2	6	4
<i>Paeonia</i> sp.	Peony	J. Gordon	Jul-92	10	0.9	13	14
<i>Physalis Alkekengi</i>	Chinese-lantern plant	Burpee	Jul-92	10	2.7	18	18
<i>Polemonium caeruleum</i> var. <i>lacteum</i>		T&M	Jul-92	10	2.9	18	10
<i>Polemonium caeruleum</i> 'Cashmerianum'		T&M	Jul-92	10	3.0	27	15
<i>Polemonium reptans</i>	Creeping polemonium	NEWFS	Oct-91	4	2.9	13	15

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MAY	WEEKLY BLOOM PERIOD					BLOOM COLOR	FROST TOLERANT		COMMENTS	PLOT LOCATION	SCIENTIFIC NAME
	JUN	JUL	AUG	SEP	flowers		foliage				
			* * * *			cream		+		12	<i>Lilium 'Juliana'</i>
			* *			pink		+		12	<i>Lilium 'Pink Chiffon'</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>
			* * *			orange/gold		+		12	<i>Lilium 'Rose Fire'</i>
			* * * *			white/spotted throat		+		16	<i>Lilium 'Sterling Star'</i>
			* * *			coral		+		12	<i>Lilium 'Tribute'</i>
			* * * *			bright yellow		+		12	<i>Lilium 'Vanessa'</i>
	* * * *		*		* *	blue/white	+	+		4	<i>Lupinus nootkatensis</i>
	* * * * *					rose		+		10	<i>Lychnis Viscaria</i>
					* * * *	yellow	+	+	remaining plant grew back after being weeded out by mistake	12	<i>Lysimachia punctata</i>
					* * * * * *	blue	+	+	invasive	16	<i>Mentha sp.</i>
	* * * * *					blue		+		12	<i>Muscari armeniacum</i>
								+		11	<i>Paeonia sp.</i>
					* * * * * *	creamy white	+	+	bright orange lanterns(seed pods) in fall	15	<i>Physalis Alkekengi</i>
					* * * * * *	white		+	one plant with blue flowers	15	<i>Polemonium caeruleum</i> var. <i>lacteum</i>
					* * * * * *	deep blue	+	+		15	<i>Polemonium</i> 'Cashmerianum'
								+		7	<i>P. reptans</i>

Table 2. (continued)

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	No. OF PLANTS	WINTER INJURY*	HEIGHT (IN)	SPREAD (IN)
<i>Polemonium reptans</i> 'Blue Pearl'		Vaughan's	Jul-92	10	3.3	28	12
<i>Polemonium reptans</i> var. <i>villosum</i>		NEWFS	Jul-92	1	0.0	10	12
<i>Potentilla tridentata</i>	Three-toothed cinquefoil	Northern Lights	Jun-91	10	1.9	9	18
<i>Rubus parvifolius</i>	Japanese raspberry	NCRPIS	Sep-89	5	1.8	28	42
<i>Salvia officinalis</i>	Common salvia	Gorno-Altai, Russia	Jun-91	10	0.0	53	26
<i>Silene</i> sp.		Novosibirsk, Russia	Sep-91	10	0.1	43	54
<i>Silphium perfoliatum</i>	Cup plant	NEWFS	Aug-92	8	0.4	40	28
<i>Solidago decumbens</i>	Decumbent goldenrod	ANPS	Aug-89	10	2.1	12 (22)	22
<i>Stellaria monantha</i>		D.Dinkel	Aug-89	10	2.0	4	10
<i>Tanacetum vulgare</i>	Common tansy	South Slope	Jun-91	10	0.0	48	48 +
<i>Thalictrum dioicum</i>	Early meadow rue	NEWFS	Aug-92	3	3.3	6	2
<i>Thalictrum sparsiflorum</i>		ANPS	Sep-91	4	0.6	8	12
<i>Trollius europaeus</i>	Globeflower	PSH	Jul-92	4	1.3	13	15
<i>Trollius laxus</i>	Spreading globeflower	NEWFS	Jul-92	10	2.0	6 (15)	8
<i>Veronica incana</i>	Wooly speedwell	T&M	Jun-91	10	1.4	10 (21)	24
ORNAMENTAL GRASSES							
<i>Arctagrostis latifolia</i> 'Kenai'	Polar grass	PMC	Jul-92	10	0.6	30 (50)	28
<i>Beckmannia syzigachne</i> 'Egan'	American sloughgrass	PMC	Jul-92	10	0.4	35	18

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MAY	WEEKLY BLOOM PERIOD					BLOOM COLOR	FROST TOLERANT		COMMENTS	PLOT LOCATION	SCIENTIFIC NAME
	JUN	JUL	AUG	SEP	flowers		foliage				
		✿✿✿✿✿✿✿✿✿✿				blue	+	+	some mildew late in season	15	<i>Polemonium</i> 'Blue Pearl'
			✿✿✿✿			cream		+		15	<i>P. reptans</i> var. <i>villosum</i>
				✿✿✿✿		white	+	+	mounding habit	15	<i>Potentilla tridentata</i>
								+	groundcover, may be invasive flowers are unobtrusive, has thorns	7	<i>Rubus parvifolius</i>
✿		✿✿✿✿✿✿✿✿				lavender pink		+	attractive to bees	16	<i>Salvia officinalis</i>
	✿✿✿✿✿✿✿✿✿✿✿✿✿✿					white	+	+	self seeds readily	6	<i>Silene</i> sp.
				✿✿✿✿✿✿✿✿		bright yellow	+	+		6	<i>Silphium perfoliatum</i>
			✿✿✿✿✿✿			yellow		+	leaves infected with rust	4	<i>Solidago decumbens</i>
	✿✿✿✿✿✿✿✿✿✿✿✿✿✿					white	+	+	mounds of grey-green foliage, losing vigor	4	<i>Stellaria monantha</i>
		✿✿✿✿✿✿✿✿✿✿✿✿				yellow	+	+	aromatic, invasive	16	<i>Tanacetum vulgare</i>
								+		11	<i>Thalictrum dioicum</i>
		✿✿✿✿✿				lavender		+	very small flowers	11	<i>T. sparsiflorum</i>
	✿✿			✿✿✿✿		yellow	+	+		11	<i>Trollius europaeus</i>
	✿✿✿✿✿✿✿✿✿				✿	light yellow	+	+		15	<i>T. laxus</i>
✿			✿✿✿✿✿✿✿✿✿✿✿✿			blue	+	+	silver foliage	15	<i>Veronica incana</i>
		✿						+		8	<i>Arctagrostis</i> 'Kenai'
		✿						+	powdery mildew late in season	8	<i>Beckmannia</i> 'Egan'

Table 2. (continued)

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	No. OF PLANTS	WINTER INJURY*	HEIGHT (IN)	SPREAD (IN)
<i>Calamagrostis acutiflora</i> var. <i>stricta</i>	Feather reed grass	Bluebird	Aug-90	1	1.3	32 (62)	42
<i>Calamagrostis arundinacea</i> 'Karl Foerster'		Bluebird	Aug-90	2	0.8	36 (73)	40
<i>Deschampsia beringensis</i> 'Norcoast'	Bering hairgrass	PMC	Jul-92	10	0.1	20 (56)	40
<i>Deschampsia caespitosa</i> 'Goldgehaenge'	Tufted hair grass	Bluebird	Aug-90	4	2.0	18 (47)	30
<i>Deschampsia flexuosa</i>	Crinkled hair grass	Bluebird	Aug-89	12	3.1	10 (30)	10
<i>Festuca amethystina</i>	Large blue fescue	Bluebird	Aug-89	10	2.5	10	14
<i>Festuca valesiaca</i> 'Glauca'	Swiss fescue	Bluebird	Aug-90	3	2.4	3	4
<i>Koeleria glauca</i>	Blue hair grass	Bluebird	Aug-89	10	2.4	7 (21)	10
<i>Koeleria glauca</i>	Blue hair grass	T&M	Jul-90	10	3.3	8 (18)	8
<i>Phalaris arundinacea</i> var. <i>picta</i>	Ribbon grass	Bluebird	Aug-89	11	0.5	40 (71)	86
<i>Poa alpina</i> 'Gruening'	Alpine bluegrass	PMC	Jul-92	10	0.4	12 (18)	18
<i>Poa ampla</i> 'Service'	Big bluegrass	PMC	Jul-92	10	1.6	10 (32)	12
<i>Poa glauca</i> 'Tundra'	Greenland bluegrass	PMC	Jul-92	10	3.1	10 (22)	13
WOODY PERENNIALS							
<i>Acer saccharum</i>	Sugar maple	NCRPIS	Jul-92	3	3.7	9	5
<i>Amelanchier alnifolia</i>		NCRPIS	Jul-92	2	2.0	20	21
<i>Aronia arbutifolia</i>	Chokeberry	NCRPIS	Jul-92	3	1.7	18	15
<i>Aronia melanocarpa</i>		NCRPIS	Jul-92	2	1.0	28	32

*Winter Injury Rating: 0=no visible injury; 2=moderate wither 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			
		*					+		8	<i>Calamagrostis acutiflora</i>
		*					+		8	<i>Calamagrostis</i> <i>'Karl Foerster'</i>
		*					+		8	<i>Deschampsia</i> <i>'Norcoast'</i>
		*					+		8	<i>Deschampsia</i> <i>'Goldgehaenge'</i>
		*					+		8	<i>D. flexuosa</i>
							+		8	<i>Festuca amethystina</i>
							+		8	<i>F. valesiaca</i>
		*					+		8	<i>Koeleria glauca</i>
		*					+		8	<i>K. glauca</i>
		*					+	striking variegated foliage, spreads by rhizomes, may be invasive	8	<i>Phalaris arundinacea</i>
		*					+		8	<i>Poa alpina</i> <i>'Gruening'</i>
		*					+		8	<i>P. ampla</i> <i>'Service'</i>
		*					+	powdery mildew late in season	8	<i>P. glauca</i> <i>'Tundra'</i>
							+		14	<i>Acer saccharum</i>
							+		2	<i>Amelanchier alnifolia</i>
					red fruits		+		5	<i>Aronia arbutifolia</i>
							+		5	<i>Aronia melanocarpa</i>

Table 2. (continued)

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	NO. OF PLANTS	WINTER INJURY*	HEIGHT (IN)	SPREAD (IN)
<i>Betula occidentalis</i>	Water birch	NCRPIS	Jun-90	3	1.3	51	61
<i>Betula michauxii</i>		ARGS	Sep-90	5	1.1	16	54
<i>Betula</i> sp.		NCRPIS	Jun-90	3	2.1	42	64
<i>Caragana</i> sp.		PMC	Sep-91	3	0.5	59	21
<i>Forsythia ovata</i> 'Nakai'	Early forsythia	NCRPIS	Sep-90	5	2.7	38	54
<i>Jamesia americana</i>		NCRPIS	Jul-92	1	2.0	13	9
<i>Larix sibirica</i>	Siberian larch	CSBG	Aug-91	5	3.4	4	11
<i>Lonicera tatarica</i> 'Beavermor'	Tatarian honeysuckle	Beaverlodge	Sep-89	5	0.8	48	70
<i>Malus baccata</i> var. <i>mandsurica</i>	Siberian crab	PMC	Sep-91	5	1.2	42	38
<i>Malus Sargentii</i>		Hudson	Jul-92	5	1.8	11	5
<i>Parthenocissus inserta</i>		NCRPIS	Jul-92	3	3.7	5	8
<i>Physocarpus</i> sp.	Ninebark	NCRPIS?	Sep-89	5	0.9	56	80
<i>Picea Engelmannii</i>	Engelmann spruce	Schumacher	Sep-89	5	1.3	8	9
<i>Picea glauca</i> var. <i>albertiana</i>	Alberta spruce	GBG	Sep-89	5	0.1	24	19
<i>Picea pungens</i> X <i>P. glauca</i>	Spartan Spruce (TM)	BTI	Aug-91	5	2.7	12	8
<i>Pinus cembra</i>	Swiss stone pine	Schumacher	Sep-89	5	1.3	8	9
<i>Populus tremula</i> 'Erecta'	Upright European ash	KHN	Jun-90	5	1.5	46	21
<i>Prunus fruticosa</i>	European dwarf cherry	BCN	Sep-89	5	2.6	21	25
<i>Prunus fruticosa</i> 'Scarlet'	European dwarf cherry	NCRPIS	Sep-89	5	1.9	25	34

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

MAY	WEEKLY BLOOM PERIOD				SEP	BLOOM COLOR	FROST TOLERANT		COMMENTS	PLOT LOCATION	SCIENTIFIC NAME
	JUN	JUL	AUG	flowers			foliage				
								+		3	<i>Betula occidentalis</i>
								+		14	<i>B. michauxii</i>
								+	remaining plant came back from the roots	3	<i>Betula</i> sp.
								+		5	<i>Caragana</i> sp.
								+	one plant leafed out, then died	14	<i>Forsythia</i> 'Nakai'
								+		5	<i>Jamesia americana</i>
								+		9	<i>Larix sibirica</i>
		***				white red fruits		+		2	<i>Lonicera</i> 'Beavermor'
								+		5	<i>Malus baccata</i>
								+		14	<i>M. Sargentii</i>
								+		3	<i>Parthenocissus inserta</i>
						white		+	a few blooms into September	2	<i>Physocarpus</i> sp.
									one tree remaining	9	<i>Picea Engelmanni</i>
										9	<i>P. glauca</i> var. <i>albertiana</i>
									one tree remaining	9	<i>P. pungens</i> X <i>P. glauca</i>
									one tree remaining	9	<i>Pinus cembra</i>
								+		3	<i>Populus</i> 'Erecta'
								+		2	<i>Prunus fruticosa</i>
								+		2	<i>Prunus</i> 'Scarlet'

Table 2. (continued)

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	No. OF PLANTS	WINTER INJURY*	HEIGHT (IN)	SPREAD (IN)
<i>Prunus salicina</i> var. <i>mandshurica</i>	Manchurian plum	BCN	Sep-89	5	2.8	33	28
<i>Rosa rugosa</i> PI 277 432	Turkestan rose	PMC	Aug-91	5	2.9	10	19
<i>Rosa Woodsii</i>	Wood's rose	NCRPIS	Aug-91	5	1.8	22	41
<i>Rosa</i> sp. 'Lac Majeau'		PMC	Aug-91	5	1.1	24	33
<i>Rosa</i> sp. 'Prairie Wren'		PMC	Aug-91	2	2.0	22	30
<i>Salix</i> sp.		GBG	Aug-91	5	2.5	38	45
<i>Sorbaria sorbifolia</i>	False spiraea	NCRPIS	Jun-90	3	1.1	41	57
<i>Spiraea chamaedryfolia</i>		NCRPIS	Jul-92	5	1.0	18	19
<i>Syringa pekinensis</i>	Pekin lilac	NCRPIS	Sep-91	3	3.0	18	5
<i>Viburnum Lentago</i>	Sheepberry	NCRPIS	Jun-90	5	2.1	10	9
<i>Viburnum trilobum</i>	Cranberry bush	Schumacher	Sep-91	5	2.6	11	7
<i>Viburnum</i> sp. 'Emerald Triumph'		NCRPIS	Jul-92	3	2.7	17	19

*Winter Injury Rating: 0=no visible injury; 2=moderate wither 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>P. salicina</i> var. <i>mandshurica</i>
			* * * * *			deep rose	+	+	single flowers, large rose hips one plant remaining	14	<i>Rosa rugosa</i>
								+		14	<i>R. Woodsii</i>
			* * * * *			white/pink center	+	+	fragrant, double flowers dark red, ornamental hips one plant remaining	14	<i>Rosa 'Lac Majeau'</i>
								+		14	<i>Rosa 'Prairie Wren'</i>
								+		2	<i>Salix sp.</i>
	* * * * *	* * * * *	* * * * *	* * * * *		white	+	+	came back from roots	2	<i>Sorbaria sorbifolia</i>
								+		5	<i>Spiraea chamaedryfolia</i>
								+	one plant remaining	5	<i>Syringa pekinensis</i>
								+		3	<i>Viburnum lentago</i>
								+	one plant remaining	2	<i>V. trilobum</i>
								+		2	<i>Viburnum 'Emerald Triumph'</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>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>Calamintha Nepeta</i>		T&M	Jul-92	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 columbiana</i>	Columbian rock clematis	ANPS	Oct-91	1	0	A
<i>Cornus X unalaschkensis</i>		ARGS	Oct-91	2	0	B
<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 plumarius</i>	Cottage pink	Novosibirsk, Russia	Aug-91	31	1	
<i>Dianthus plumarius</i>	Cottage pink	Novosibirsk, Russia	Aug-91	19	1	
<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 Album</i>	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>Erigeron compositus</i>	Fernleaf fleabane	ANPS	Jun-90	10	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>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>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>Linum perenne</i> subsp. <i>Lewisii</i>	Blue flax	Nauriaq	Jul-92	10	0	A
<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>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

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Table 3. (continued)

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	NUMBER OF PLANTS	NUMBER YEARS SURVIVED	COMMENTS
<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	
<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

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SCIENTIFIC NAME	COMMON NAME	SOURCE	YEAR PLANTED	NUMBER OF PLANTS	NUMBER YEARS SURVIVED	COMMENTS
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'	Japnaese 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
<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>Cerocarpus 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	

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Table 3. (continued)

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	NUMBER OF PLANTS	NUMBER YEARS SURVIVED	COMMENTS
<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>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	
<i>Prunus sargentii</i>	Sargent cherry	PMC	Jun-90	5	1	
<i>Prunus tenella</i>	Dwarf Russian almond	Lawyer	Sep-91	1	1	I
<i>Pyrus pashia</i>		Hudson	Jul-92	2	0	A
<i>Ribes nidigrolaria</i>	Jostaberry	BCN	Sep-89	4	2	I
<i>Rhododendron canadense</i>	Rhodora	NEWFS	Aug-91	5	0	A
<i>Rosa Eglanteria</i>	Eglantine rose	NCRPIS	Aug-91	5	0	A
<i>Rosa multiflora</i>	Baby rose	Seiberling	Aug-91	5	0	A
<i>Rosa multiflora</i>	Baby rose	Hermitage, PA	Aug-91	5	0	A
<i>Rosa</i> sp. 'à Parfum de l' Haÿ'		PMC	Aug-91	4	1	I
<i>Rosa</i> sp. 12B		PMC	Aug-91	1	1	I
<i>Salix alba</i> 'Vitellina'	Golden willow	BCN	Sep-89	5	3	I
<i>Spiraea</i> sp.		J. Rockney	Jul-92	5	0	A,I

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 4. Plantings from 1993 that have not yet been evaluated for winter survival.

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	NUMBER OF PLANTS
HERBACEOUS PERENNIALS				
<i>Achillea Ptarmica</i> 'The Pearl'	Sneezewort	Vaughan's	Jul-93	10
<i>Amsonia Tabernaemontana</i>		NEWFS	Aug-93	2
<i>Amsonia Tabernaemontana</i> var. <i>salicifolia</i>		NEWFS	Jul-93	10
<i>Aquilegia canadensis</i>	Wild columbine	NEWFS	Aug-93	10
<i>Aquilegia vulgaris</i> 'Michael Stromminger'	Garden columbine	T&M	Aug-93	10
<i>Arabis caucasica</i>	Wall rock cress	I. Berger	Aug-93	10
<i>Arnica montana</i>		I. Berger	Aug-93	10
<i>Artemesia Dracunculus</i> var. <i>sativa</i>	French tarragon	Richters	Jul-93	3
<i>Asparagus officinalis</i> var. <i>pseudoscaber</i>	Lace-veil asparagus fern	Ball Seed	Jul-93	10
<i>Aster alpinus</i>		I. Berger	Aug-93	1
<i>Babiana nana</i>	Hardy gladiolus	T&M	Aug-93	10
<i>Campanula carpatica</i>	Tussock bellflower	I. Berger	Jul-93	10
<i>Campanula takesimana</i>		T&M	Jul-93	10
<i>Centaurea montana</i>	Mountain bluet	I. Berger	Aug-93	5
<i>Crocus chrysanthus</i> 'Princess Beatrix'		de Jager	Aug-93	10
<i>Crocus chrysanthus</i> 'Snow Bunting'		de Jager	Aug-93	10
<i>Crocus Tomasinianus</i> 'Ruby Giant'		de Jager	Aug-93	4
<i>Crocus versicolor</i> 'Picturatus'		de Jager	Aug-93	10
<i>Delphinium X Belladonna</i> 'Improved'		Park	Aug-93	10
<i>Delphinium cardinale</i>		Park	Aug-93	10
<i>Dianthus deltoides</i>	Maiden pink	ARGS	Aug-93	10
<i>Dianthus</i> sp. 'Ipswich Pinks Mixed'		T&M	Aug-93	10
<i>Dodecatheon dentatum</i>		ARGS	Sep-93	1
<i>Echinacea purpurea</i>	Purple coneflower	Johnny's	Jul-93	10
<i>Echinacea purpurea</i> 'Bravado'		Park	Jul-93	10
<i>Echinacea</i> sp. 'White Swan'		Park	Jul-93	10
<i>Filipendula vulgaris</i>	Dropwort	I. Berger	Aug-93	10
<i>Galium oderatum</i>	Sweet Woodruff	Richters	Jul-93	4
<i>Gypsophila paniculata</i> 'Snow White'	Baby's-breath	Johnny's	Jul-93	10
<i>Helenium autumnale</i> 'Red and Gold Hybrids'	Autumn sunspray	Ball Seed	Jul-93	10
<i>Helianthemum nummularium</i>		I. Berger	Aug-93	10
<i>Hemerocallis</i> 'Stella d'Oro'		Park	Sep-93	6
<i>Inula hirta</i>		I. Berger	Aug-93	10
<i>Iris Pseudacorus</i>		White Flower	Aug-93	10
<i>Jasione laevis</i>		I. Berger	Aug-93	10
<i>Lavandula angustifolia</i> 'Munstead'	English lavender	Johnny's	Jul-93	10
<i>Lavandula angustifolia</i> 'Lady'	English lavender	AAS	Jul-93	10
<i>Leontopodium stellatum</i>		Magadan, Russia	Aug-93	10

SCIENTIFIC NAME	COMMON NAME	SOURCE	YEAR PLANTED	NUMBER OF PLANTS
<i>Levisticum officinale</i>	Lovage	Vermont Bean	Jul-93	10
<i>Liatrix aspera</i>		NEWFS	Aug-93	5
<i>Liatrix novae-angliae</i>		NEWFS	Aug-93	7
<i>Liatrix punctata</i>		NEWFS	Aug-93	7
<i>Liatrix pycnostachya</i>		NEWFS	Aug-93	10
<i>Linaria alpina</i>		T&M	Aug-93	10
<i>Lilium</i> 'America'	Asiatic hybrid lily	Waushara	Jul-93	10
<i>Lilium</i> 'Antarctica'	Asiatic hybrid lily	Wayside	Jul-93	10
<i>Lilium</i> 'Chinook'	Asiatic hybrid lily	Wayside	Jul-93	10
<i>Lilium</i> 'Coho'	Asiatic hybrid lily	Waushara	Jul-93	10
<i>Lilium</i> 'Crete'	Asiatic hybrid lily	Waushara	Aug-93	6
<i>Lilium</i> 'Crimson Beauty'	Asiatic hybrid lily	Waushara	Jul-93	10
<i>Lilium</i> 'Geneve'	Asiatic hybrid lily	Waushara	Jul-93	8
<i>Lilium</i> 'Graceland'	Asiatic hybrid lily	Waushara	Jul-93	10
<i>Lilium</i> 'Pink Perfection'	Hybrid lily	de Jager	Aug-93	3
<i>Lilium</i> 'Red Night'	Asiatic hybrid lily	Waushara	Jul-93	10
<i>Lilium</i> 'Roma'	Asiatic hybrid lily	Waushara	Jul-93	10
<i>Lilium Henryi</i>		de Jager	Aug-93	1
<i>Lilium lancifolium</i>	Tiger lily	U. Park	Aug-93	10
<i>Lilium regale</i>		de Jager	Aug-93	3
<i>Lilium speciosum</i> 'Rubrum'	Showy Japanese Lily	de Jager	Aug-93	2
<i>Monarda didyma</i> 'Marshall's Delight'	Bee balm	Richters	Aug-93	2
<i>Muscari botryoides</i> 'Album'	Common grape hyacinth	de Jager	Aug-93	10
<i>Muscari Tubergenianum</i>		de Jager	Aug-93	10
<i>Muscari</i> sp. 'Early Giant'		de Jager	Aug-93	10
<i>Myrrhis odorata</i>	Sweet cicely	Richters	Jul-93	3
<i>Phuopsis stylosa</i>		I. Berger	Aug-93	10
<i>Physostegia virginiana</i>	Obedience	NEWFS	Jul-93	10
<i>Platycodon grandiflorus</i> 'Hakone Double Blue'	Balloon flower	T&M	Aug-93	10
<i>Polygonatum</i> sp.	Solomon's Seal	K. Collette	Sep-93	10
<i>Potentilla argyrophylla</i>		T&M	Aug-93	10
<i>Potentilla megalantha</i>		T&M	Aug-93	10
<i>Potentilla</i> x 'Melton Fire'		T&M	Aug-93	10
<i>Pycnanthemum virginianum</i>		NEWFS	Aug-93	10
<i>Sedum acre</i>	Golden-carpet	I. Berger	Aug-93	10
<i>Silene Schafta</i>		I. Berger	Aug-93	10
<i>Tiarella cordifolia</i>	Foamflower	NEWFS	Jul-93	10
<i>Tulipa Batalinii</i>		de Jager	Aug-93	6

Table 4. (continued)

SCIENTIFIC NAME	COMMON NAME	SOURCE	DATE PLANTED	NUMBER OF PLANTS
<i>Tulipa Batalinii</i> 'Bright Gem'	Lady tulip	de Jager	Aug-93	10
<i>Tulipa Clusiana</i>		de Jager	Aug-93	10
<i>Tulipa pulchella</i> 'Persian Pearl'		de Jager	Aug-93	10
<i>Tulipa tarda</i>		de Jager	Aug-93	9
<i>Verbena hastata</i>	Blue vervain	NEWFS	Aug-93	10
FERNS				
<i>Athyrium Filix-femina</i>	Lady fern	NEWFS	Jul-93	10
<i>Cystopteris bulbifera</i>	Berry bladder fern	NEWFS	Jul-93	10
<i>Cystopteris protusa</i>	Lowland brittle fern	NEWFS	Jul-93	10
<i>Dennstaedtia punctilobula</i>	Hay-scented fern	NEWFS	Jul-93	2
<i>Dryopteris austriaca</i>		NEWFS	Jul-93	10
<i>Dryopteris Filix-mas</i>	Male fern	NEWFS	Jul-93	10
<i>Dryopteris fragrans</i>	Fragrant fern	Fish Creek, AK	Jul-93	10
<i>Dryopteris marginalis</i>	Marginal shield fern	NEWFS	Jul-93	10
<i>Matteuccia struthiopteris</i>	Ostrich fern	Manley Hot Springs, AK	Jul-93	9
<i>Polypodium virginianum</i>	American wall fern	NEWFS	Jul-93	10
<i>Polystichum acrostichoides</i>	Christmas fern	NEWFS	Jul-93	6
<i>Polystichum aleuticum</i>	Aleutian shield fern	Adak, AK	Aug-93	2
<i>Polystichum lachenense</i>		Nautou Co., Taiwan, China	Aug-93	2
<i>Polystichum lonchitis</i>	Northern holly fern	Adak, AK	Jul-93	2
<i>Thelypteris Phegopteris</i>	Long beech fern	NEWFS	Jul-93	3

SCIENTIFIC NAME	COMMON NAME	SOURCE	YEAR PLANTED	NUMBER OF PLANTS
ORNAMENTAL GRASSES				
WOODY PERENNIALS				
<i>Acer Ginnala 'Bergiana Flame'</i>	Amur maple superior red	Lawyer	Jul-93	5
<i>Ampelopsis glandulosa var. brevipedunculata</i>	Porcelain vine	NCRPIS	Jul-93	5
<i>Berberis koreana x Thunbergierii 'Emerald Carousel'</i>	Hybrid barberry	NCRPIS	Jul-93	5
<i>Buddleia sp.</i>	Butterfly bush	Fairbanks, AK	Aug-93	1
<i>Caragana frutex</i>	Russian pea shrub	NCRPIS	Aug-93	3
<i>Crataegus columbiana</i>	Columbia hawthorn	Lawyer	Jul-93	5
<i>Lonicera hybrida 'Honey Rose'</i>		NCRPIS	Aug-93	4
<i>Malus prunifolia 'Kerr'</i>	Kerr crabapple	Lawyer	Aug-93	5
<i>Pinus resinosa</i>	Red pine	Lawyer	Aug-93	3
<i>Prunus X cistena</i>	Purple-leaf sand cherry	Lawyer	Jul-93	5
<i>Prunus tenella</i>	Dwarf Russian almond	Lawyer	Aug-93	1
<i>Rhododendron dahuricum</i>		Chamal, Russia	Jul-93	5
<i>Rhus trilobata 'Bighorn'</i>	Skunkbush	NCRPIS	Jul-93	5
<i>Staphylea Bumalda</i>	Bladdernut	NCRPIS	Aug-93	4

Table 5. Annual flowers evaluated in 1993.

COMMON NAME	CULTIVAR	SOURCE	WEEKLY BLOOM PERIOD				HEIGHT (IN)	RECOMMENDED SPACING(IN)
			JUN	JUL	AUG	SEP		
Acroclinium	Goliath	Park Seed	**	**	**	**	23	8
Ageratum	Blue Horizon	Ball Seed	**	**	**	**	22	10
Ageratum	Capri	Park Seed	**	**	**	**	12	6-7
Ageratum	Hawaii Royal	Ball Seed	**	**	**	**	3-5	5
Ageratum	Hawaii White	Ball Seed	**	**	**	**	5-8	5
Alyssum	Apricot Shades	Thompson & Morgan	**	**	**	**	4-5	6
Alyssum	Carpet of Snow	Northrup King	**	**	**	**	9-10	6
Alyssum	Golf Pastel Mix	Clause Seed	**	**	**	**	7	6-8
Alyssum	Snow Cloth Select	Stokes	**	**	**	**	6	6
Alyssum	Snow Crystals	Stokes	**	**	**	**	7-9	6
Ammobium		William Dam	**	**	**	**	32	10
Aster	Burpee's Totem Pole Mix	Burpee		**	**	**	30	10
Aster	Comet Mix	Stokes		**	**	**	10	6-8
Aster	Florette Mix	Ball Seed		**	**	**	18-24	10
Aster	Milady Mix	Thompson & Morgan		**	**	**	17	8
Aster	Milady White	Ball Seed		**	**	**	12	8
Aster	Mini-Lady Blue	Stokes		**	**	**	13	8
Aster	Seastar Mix	Park Seed		**	**	**	21	10
Brachycome	Blue Star	Park Seed	**	**	**	**	13	8
Brachycome	White Splendour	Thompson & Morgan	**	**	**	**	16	8
Bupleurum	Green Gold	Park Seed	**	**	**	**	16-18	8
Calendula	Anagoor	Agway	**	**	**	**	22	8-10
Calendula	Bon Bon Orange	Vaughan's	**	**	**	**	10-12	8
Calendula	Bon Bon Yellow	Vaughan's	**	**	**	**	16-18	8
Calendula	Fiesta Gitana	Stokes	**	**	**	**	16	8-10
Calendula	Prince Mix	Park Seed	**	**	**	**	28	10
Calendula	Radio	Thompson & Morgan	**	**	**	**	26	10
Candytuft	Brilliant Mix	Park Seed	**	**	**	**	13	6-8
Candytuft	Giant White Hyacinth Flowered	Stokes	**	**	**	**	12-18	6-8
Carnation	Knight Mix	Vaughan's	**	**	**	**	14	8
Carnation	Scarlette Luminette	Thompson & Morgan	**	**	**	**	16-22	8
Celosia	Apricot Brandy	Park Seed	**	**	**	**	15	6
Celosia	Century Mixed	Stokes	**	**	**	**	12-22	6
Celosia	Kewpie Mix	Northrup King	**	**	**	**	9	6
Celosia	Kimono Mix	Ball Seed	**	**	**	**	6-9	6
Celosia	New Look	Burpee	**	**	**	**	10-22	8
Celosia	Pink Castle	Ball Seed	**	**	**	**	10	6
Chrysanthemum	Single Annual Mix	Stokes	**	**	**	**	14-16	12

BLOOM COLOR	BLOOM SIZE (IN)	FROST TOLERANT		FRAGRANT	CUTTING	DRIED	COMMENTS
		FLOWERS	FOLIAGE				
rose	1½	-	-			+	
lavender	3*	-	-		+		nice quality blooms, no browning in heads
lavender blue/white centers	3*	-	-				slightly different color, nice
blue	1-1½*	-	-				very compact, needs deadheading
white	1½*	-	-				nice, some browning of blooms
apricot	1*	+	+				unusual color, somewhat washed out
white	1¼*	+	+	+			very good
mix-pinks, violet	1¼*	+	+				excellent, nice colors
white	1*	-	-	+			good
white	1*	+	+	+			died out late in season
white	1	+	+			+	ok, somewhat sprawling habit
mix	5¼	-	+		+		huge flowers
mix	4	-	-	+			nice short aster, covered with blooms, needs deadheading
mix	5½	-	+		+		nice, spider-type flowers, needs staking
mix	4½	-	+				very nice, large flowers
white	3½	-	+				very nice, blooms discolor in rain
blue violet	3½	-	+				excellent, not as nice after rain
mix	4	-	-	+		+	very nice, petals swirl, needs staking
purple	1¼	+	+				good, somewhat stiff habit
white	1¼	+	?				good
yellow/green	1½*	-	-				weak plants, possibly diseased
orange	2¼-2¾	+	+				large flowers, needs deadheading
orange	2¼	+	+				nice flowers, color, some disease problems
yellow	2	+	+				good, needs deadheading
mix	2	+	+				very nice, needs deadheading
mix	2	+	+		+		nice colors, bloom could be prolonged by deadheading
orange	2	+	+				nice, needs deadheading
mix-pink, purple, violet	1½*	-	-				best early in season
white	7 x 2¼*	+	+				interesting form
mix	2½	-	+				nice, needs deadheading
scarlet	2-2½	-	+				excellent
orange	6*	-	-				orange tinge to foliage, very nice
mix-red, yellow, rose	5-10*	-	-		+	+	nice
mix-red, yellow, orange	5*	-	-				some loss from disease early, very nice later
mix	4*	-	-				some loss from disease early, excellent later on, nice colors
scarlet	6*	-	-		+	+	dark foliage, very nice after early disease problems
pink	4*	-	-				very nice
mix	2½	-	-				died out due to disease problems

Table 5. (continued)

COMMON NAME	CULTIVAR	SOURCE	WEEKLY BLOOM PERIOD				HEIGHT (IN)	RECOMMENDED SPACING(IN)
			JUN	JUL	AUG	SEP		
Chrysanthemum	White Buttons	Ball Seed	☼☼☼☼	☼☼☼☼	☼☼☼☼	☼☼☼☼	15-18	10
Chrysanthemum	Yellow Buttons	Ball Seed	☼☼☼☼	☼☼☼☼	☼☼☼☼	☼☼☼☼	14	10
Cleome	Helen Campbell	Ball Seed		* * * ☼	☼☼☼☼	☼☼☼☼	44-48	10
Cleome	Queen Mix	Burpee		* * * ☼	☼☼☼☼	☼☼☼☼	54	10
Coreopsis	Early Sunrise	Park Seed		* * * ☼	☼☼☼☼	☼☼☼☼	22	8-10
Cosmos	Imperial Pink	Ball Seed		* * * ☼	☼☼☼☼	☼☼☼☼	48	10-12
Cosmos	Ladybird Scarlet	All-America Selections	* * *	☼☼☼☼	☼☼☼☼	☼☼☼☼	21	8-10
Cosmos	Picotee	Stokes	* * *	☼☼☼☼	☼☼☼☼	☼☼☼☼	48	10-12
Cosmos	Sonata Mix	Stokes	* * *	☼☼☼☼	☼☼☼☼	☼☼☼☼	31	10
Cosmos	Sonata White	Ball Seed	* * *	☼☼☼☼	☼☼☼☼	☼☼☼☼	25-30	10
Cosmos	Sunny Red	Ball Seed		* * * * *	☼☼☼☼	☼☼☼☼	28-35	10
Cosmos	Versailles	Johnny's		* * * * *	☼☼☼☼	☼☼☼☼	42	10-12
Dahlia	Calico Mix	Clause Seed		* * * * *	☼☼☼☼	☼☼☼☼	24	10
Dahlia	Diablo	Ball Seed		* * * * *	☼☼☼☼	☼☼☼☼	26	10
Dahlia	Mignon Mix	Vaughan's		* * * * *	☼☼☼☼	☼☼☼☼	23-27	10
Dahlia	Rigoletto	Vaughan's		* * * ☼	☼☼☼☼	☼☼☼☼	24	10
Dianthus	Ideal Rose	Vaughan's	* ☼☼☼☼	☼☼☼☼	☼☼☼☼	☼☼☼☼	15	8
Dianthus	Ideal Violet	Vaughan's	☼☼☼☼	☼☼☼☼	☼☼☼☼	☼☼☼☼	14-20	7
Dianthus	Pink Charm	Vaughan's	* * *	☼☼☼☼	☼☼☼☼	☼☼☼☼	10-13	6-8
Dianthus	Princess Mix	Vaughan's	* * *	☼☼☼☼	☼☼☼☼	☼☼☼☼	9-14	8
Dianthus	Raspberry Parfait	Ball Seed	* * *	☼☼☼☼	☼☼☼☼	☼☼☼☼	8	8
Dianthus	Telstar Mix	Vaughan's	* ☼☼☼☼	☼☼☼☼	☼☼☼☼	☼☼☼☼	14-16	8
Dianthus	Telstar Picotee	Ball Seed	* ☼☼☼☼	☼☼☼☼	☼☼☼☼	☼☼☼☼	12	8
Dianthus	Telstar Pink	Ball Seed	* ☼☼☼☼	☼☼☼☼	☼☼☼☼	☼☼☼☼	14	8
Dianthus	White Charm	Vaughan's		* * * ☼	☼☼☼☼	☼☼☼☼	11	6
Dimorphotheca	Aurantiaca Hybrids	Stokes	* * *	☼☼☼☼	☼☼☼☼	☼☼☼☼	24	10
Dimorphotheca	Salmon Queen	Thompson & Morgan	* * *	☼☼☼☼	☼☼☼☼	☼☼☼☼	22	10
Dusty Miller	Cirrus	Northrup King					12-15	8
Dusty Miller	New Look	Park Seed					8	8
Dusty Miller	Silver Dust	Vaughan's					11-13	8
Dusty Miller	Silver Lace	Stokes					18-20	8-10
Flowering Kale	Chidori Red	Ball Seed					11	18
Flowering Kale	Coral Prince	Ball Seed					18	18
Flowering Kale	Coral Queen	Ball Seed					25	18
Flowering Kale	Frizzy White	Park Seed					15-18	18
Flowering Kale	Kamome White	Ball Seed					10	18
Forget-Me-Not	Blue Bird	Burpee					10	10
Gaillardia	Red Plume	Stokes		* * * ☼	☼☼☼☼	☼☼☼☼	22	8-10

BLOOM COLOR	BLOOM SIZE (IN)	FROST TOLERANT		FRAGRANT	CUTTING	DRIED	COMMENTS
		FLOWERS	FOLIAGE				
white	1-1¼	+	+				very nice, forms mounds
yellow	1	+	+				very nice, blooms closed in cloudy weather
white	7*	-	+		+		nice, leaves stay green, be careful of thorns
mix-pink, rose, white	8*	-	-		+		nice, some yellowing of leaves, be careful of thorns
bright gold	2	-	+				excellent, needs deadheading
pink to rose	4¼	-	-		+		good blooms
scarlet/gold	1¾	-	-				very nice early, disease problems later
white/rose	3½	+	+		+		tall, smallish flowers, nice
mix-rose, pink, white	4-5	-	-				very good, large flower size
white	3	-	-				nice
red orange	2	-	-				nice finely cut foliage
deep pink	4	-	-		+		lots of blooms, very nice
mix	3-4	-	-				many flowers, single and double
mix	3-3½	-	-				good, dark foliage
mix	3¼-4	-	-				single flowers, nice colors, needs staking
mix	3¼-4	-	-				excellent, lovely blooms
bright rose	1¼	+	+				excellent
red violet	1½	+	+				some variation in color, good blooms
pink	1¾	+	+				excellent
mix-red, coral, violet	1¼	+	+				very nice
crimson/dark centers	1¾	+	+				excellent, nice mix of colors
mix	1¼-1½	+	+				excellent, covered with blooms
rose/white	1½	+	+				good
pink	1¼	+	+				good, but dead flowers unattractive
white	2	?	+				except for disease problem, very nice
mix-orange, white, salmon	2¾	+	+		+		good early, disease problems later
apricot	4½	+	+		+		nice leaf shape
silver foliage			+				excellent, cut foliage
silver foliage			+				finely dissected foliage, slightly uneven heights
silver foliage			+				more like a cabbage in form, nice color, size
rose/green leaves			+				nice fringed foliage
white/green leaves			+				
rose/green leaves			+				
green leaves			+				started to bolt late August
white/green leaves			+				nice early, but severe disease later in season
blue							severe disease problems, did not bloom
rusty red	2½	-	+				very nice, unusual color

Table 5. (continued)

COMMON NAME	CULTIVAR	SOURCE	WEEKLY BLOOM PERIOD				HEIGHT (IN)	RECOMMENDED SPACING(IN)
			JUN	JUL	AUG	SEP		
Gazania	Daybreak Bronze	Vaughan's		**	**	**	13	8
Gazania	Dynastar Mix	Clause Seed	**	**	**	**	13	8
Gazania	Mini-Star Tangerine	Ball Seed		**	**	**	12	8
Geranium	Avanti Lilac Rose	Clause Seed	**	**	**	**	14-16	12
Geranium	Avanti Red	Clause Seed	**	**	**	**	13	10
Geranium	Avanti Rose	Clause Seed	**	**	**	**	16	12
Geranium	Border Scarlet Orange	Burpee	**	**	**	**	16-17	12
Geranium	Elite Salmon	Stokes	**	**	**	**	13-15	12
Geranium	Freckles	Vaughan's	**	**	**	**	15	12
Geranium	Rose Diamond	All-America Selections	**	**	**	**	15	12
Geranium	Signal Orange	Clause Seed	**	**	**	**	18	12
Godetia	Grace Mix	Ball Seed	**	**	**	**	13-20	8
Godetia	T&M Improved Dwarf Mix	Thompson & Morgan	**	**	**	**	15	8
Helichrysum	Bright Bikinis Mix	Vaughan's		**	**	**	24	8-10
Helichrysum	Monstrosum Mix	Park Seed		**	**	**	41-49	10
Helichrysum	Salmon	Stokes		**	**	**	39	10
Helichrysum	Swiss Giant Mix	Harris Moran		**	**	**	48	10
Helipterum	Bright Stars	Johnny's	**	**	**	**	15	7
Hollyhock	Zebrina	Park Seed	**	**	**	**	40	10
Larkspur	Earlibird Mix	Stokes	**	**	**	**	14-19	6
Lavatera	Mont Blanc	Park Seed		**	**	**	21-25	10
Lavatera	Mont Rose	Park Seed		**	**	**	16-24	10
Lavatera	Silver Cup	Park Seed		**	**	**	24	10
Linaria	Fairy Bouquet	Park Seed	**	**	**	**	16-20	8
Lobelia	Blue Crystal	Stokes	**	**	**	**	7	6
Lobelia	Crystal Palace	Vaughan's	**	**	**	**	10	6
Lobelia	Fountain Crimson	Vaughan's		**	**	**	12	7
Lobelia	Fountain Lilac	Vaughan's	**	**	**	**	16	7
Lobelia	Paper Moon	Vaughan's	**	**	**	**	7-8	6
Lobelia	Blue Moon	Vaughan's	**	**	**	**	6-7	6
Lupine	Gallery Mix	Vaughan's	**	**	**	**	21-32	12
Lupine	Russell Mixture	Vaughan's	**	**	**	**	20-40	12
Marigold	Bonanza Yellow	Northrup King	**	**	**	**	12-14	7-8
Marigold	Disco Orange	Park Seed	**	**	**	**	12	8
Marigold	Doubloon	Vaughan's		**	**	**	38	9
Marigold	Espana Viva	Stokes	**	**	**	**	10	8
Marigold	Fireworks Golden	Ball Seed	**	**	**	**	14-16	8
Marigold	Gold Coin Mix	Vaughan's		**	**	**	26-31	9

BLOOM COLOR	BLOOM SIZE (IN)	FROST TOLERANT		FRAGRANT	CUTTING	DRIED	COMMENTS
		FLOWERS	FOLIAGE				
red-orange	3	+	+				excellent, nice color, uniform
mix	2 ³ / ₄	+	+				nice color mix, stays open better than most
orange	2 ¹ / ₂	+	+				excellent, stays open better than most
medium pink	4*	-	+				good
coral red	4 ¹ / ₂ *	-	-				nice color, needs deadheading
rose pink	3 ¹ / ₂ *	-	+				good, nice flower size, needs deadheading
scarlet	4 ¹ / ₂ *	-	+				very good, some with pale eyes
salmon	3 ¹ / ₄ -4*	-	-				nice, nice foliage
deep pink	3 ¹ / ₂ *	-	+				very nice, splotches on face
bright pink	4 ¹ / ₂ *	-					
hot orange	5*	-	+				excellent, flashy color
mix, pink and red shades	2	-	-		+		very nice
mix, pink and red shades	2 ¹ / ₂	-	-				very nice
mix	2	-	+		+	+	excellent
mix	2	?	+		+	+	good colors
salmon	2	?	+		+	+	very nice, variable shades
mix	2 ¹ / ₂	?	+		+	+	good color mix
yellow	1 ¹ / ₂ *	-	-			+	grey foliage, good early, somewhat sprawling habit
pink/wine	1 ³ / ₄	+	+				excellent, nice blooms
mix	1	-	-				poor, died back early
white	2	-	-				excellent when healthy, some disease problems
rose	3 ¹ / ₂	-	-				nice
pink to rose	4	-	-				nice, some disease problems
mix	1/2 x 5*	+	+				good, some disease problems
blue	3/4	-	-				very nice early, diseased later
deep blue	3/4	-	-				good
red violet	3/4	-	-				nice flowers
pale lilac	3/4	-	-				
white	3/4	-	-				mounding habit, a few blue-flowered plants
deep blue	3/4	-	-				excellent, except for disease problem late in season
mix	15 x 2 ¹ / ₂ *	-	+		+		good, some plants gone to seed
mix	9-22 x 2-3*	-	+		+		some plants gone to seed early
yellow	1 ³ / ₄ -2 ¹ / ₄	-	-				excellent
orange	2 ¹ / ₂	-	-				excellent, needs deadheading
yellow	3-4	-	-		+		very nice, needs staking
lemon yellow	1 ³ / ₄ -2	-	-				excellent, single flowers
gold	3	-	-				
mix-yellow, gold, orange	3 ¹ / ₄ -3 ³ / ₄	-	-		+		nice

Table 5. (continued)

COMMON NAME	CULTIVAR	SOURCE	WEEKLY BLOOM PERIOD				HEIGHT (IN)	RECOMMENDED SPACING(IN)
			JUN	JUL	AUG	SEP		
Marigold	Golden Gate	Stokes	* * *	* * *	* * *	* * *	9-12	7
Marigold	Hero Flame	Vaughan's	* * *	* * *	* * *	* * *	10	6-8
Marigold	Hero Yellow	Vaughan's	* * *	* * *	* * *	* * *	9-13	8
Marigold	Hero Yellow Improved	Bodger	* * *	* * *	* * *	* * *	9	6-8
Marigold	Inca Mix	Park Seed		* * *	* * *	* * *	14-18	8
Marigold	Janie Gold	Vaughan's	* * *	* * *	* * *	* * *	9	6
Marigold	Jubilee Mix	Ball Seed		* * *	* * *	* * *	21-26	9
Marigold	Orange Boy	Northrup King	* * *	* * *	* * *	* * *	10	6
Marigold	Primrose Lady	Park Seed		* * *	* * *	* * *	19	8
Marigold	Red Marietta	Harris Moran	* * *	* * *	* * *	* * *	14	8
Marigold	Safari Scarlet	Vaughan's	* * *	* * *	* * *	* * *	12	7-8
Marigold	Snowdrift	Burpee		* * *	* * *	* * *	18-24	8-10
Marigold	Zenith Golden Yellow	Clause Seed	* * *	* * *	* * *	* * *	15-22	8
Marigold	Zenith Lemon Yellow	Clause Seed	* * *	* * *	* * *	* * *	15-21	8
Marigold, Signet	Little Giant	Stokes		* * *	* * *	* * *	16	10
Marigold, Signet	Lulu	Stokes		* * *	* * *	* * *	15	10
Matricaria	Santana	Ball Seed		* * *	* * *	* * *	8	8
Nasturtium	Peach Melba	Thompson & Morgan	* * *	* * *	* * *	* * *	12-18	10
Nemesia	Carnival Mix	Park Seed	* * *					
Nicotiana	Domino Picotee	Ball Seed		* * *	* * *	* * *	25	10
Nicotiana	Domino Purple	Ball Seed		* * *	* * *	* * *	24	10
Nicotiana	Domino White	Vaughan's		* * *	* * *	* * *	23	10
Nicotiana	Nickie Pink	Burpee		* * *	* * *	* * *	24	10
Nicotiana	Nickie Rose	Burpee		* * *	* * *	* * *	25-33	10
Nicotiana	Starship Red	Ball Seed		* * *	* * *	* * *	16-20	10
Nierembergia	Mont Blanc	Park Seed	* * *	* * *	* * *		7-8	6
Ornamental Cabbage	Pink Beauty	Thompson & Morgan					14	18
Pansy	Chalon Mix	Clause Seed	* * *	* * *	* * *	* * *	12	8
Pansy	Crown Mix	Vaughan's	* * *	* * *	* * *	* * *	10	8
Pansy	Delft	Ball Seed	* * *	* * *	* * *	* * *	9-11	8
Pansy	Jolly Joker	Ball Seed	* * *	* * *	* * *	* * *	10-14	8
Pansy	Maxim Marina	Burpee	* * *	* * *	* * *	* * *	10-14	8
Pansy	Medallion Mix	Clause Seed	* * *	* * *	* * *	* * *	12	8
Pansy	Padparadja	Park Seed	* * *	* * *	* * *	* * *	13	8
Pansy	Springtime Azure Blue	Clause Seed	* * *	* * *	* * *		14	8
Pansy	Springtime Lemon Splash	Clause Seed	* * *	* * *	* * *		14	8
Pansy	Springtime Violet	Clause Seed	* * *	* * *	* * *	* * *	13	8
Pansy	Springtime Yellow Marble	Harris Moran	* * *	* * *	* * *	* * *	12	8

BLOOM COLOR	BLOOM SIZE (IN)	FROST TOLERANT		FRAGRANT	CUTTING	DRIED	COMMENTS
		FLOWERS	FOLIAGE				
gold/red	2½	-	-				nice, could use deadheading
gold/red	1½-2	-	-				nice
yellow	2¾	-	-				very nice, needs deadheading
yellow	2	-	-				nice, uniform plants, crested blooms
mix	3½-4	-	-				excellent, huge flowers
gold	1¼-2	-	-				nice
mix-orange, gold	2½-3½	-	-		+		very nice
orange	1¼	-	-				nice, could use deadheading
pale yellow	3½	-	-				excellent
red	2¼	-	-				very nice
red/gold	2½	-	-				nice, could use deadheading
cream	3	-	-		+		excellent, dahlia flowered
yellow	2-2½	-	-				nice, variable height and color
yellow	2¾	-	-				very nice, many blooms
gold/orange centers	1	-	-				excellent
yellow	1	-	-				excellent
white/creamy centers	¾-1	-	-				excellent
peach, orange, gold	2	-	-				considerable color variation
mix							succumbed to disease early in season
white/rose edges	2	-	+				color may look washed out
purple/pale centers	2	-	+				excellent
white	2	-	+				excellent
pale pink	1¾-2	-	+				nice
rose	1¾-2¼	-	+				excellent, covered with blooms
red	2	?	+				good
white	1	-	-				except for disease problems late, excellent
pale pink/green leaves			+				nice form
mix	2	+	+				excellent, interesting colors in mix, ruffled petals
mix, clear faces	3	+	+				nice
blue/white or yellow	2¼	+	+				nice faces, variable flower size
purple/orange	2	+	+				very good, unusual color combination
lavender, white/purple faces	2	+	+				excellent
mix	2½	+	+				very good, large flowers
orange	1½	+	+				very nice, excellent color
light blue/violet	2½	-	-				very good
yellow/purple face	2	-	+				leggy, some disease problems
violet	2	+	+				medium flower size, uniform
yellow, cream	2¼-3	+	+				very nice, large blooms

BLOOM COLOR	BLOOM SIZE (IN)	FROST TOLERANT		FRAGRANT	CUTTING	DRIED	COMMENTS
		FLOWERS	FOLIAGE				
yellow	2	+	+				very nice
violet blue	2	+	+				
mix	1 3/4-2 1/2	+	+				excellent, pastel colors
rose/white throat	3	-	+				nice
mix	3 1/2	-	+				
deep rose	2 1/2-3	-	-				excellent color
rose/yellow centers	3	-	-				nice
red violet	3	-	-				nice
deep purple	2 3/4	-	+				seems to have some disease resistance
orchid	4	-	-				
burgundy/white	2 1/2	-	-				
salmon pink	2 1/2	-	+				nice clear salmon blooms
deep red violet	3	-	-				excellent early in season
red violet	3	-	-				very nice, rich color
coral	4 1/4	-	-				nice clear coral color
coral red/yellow throat	4						
orchid	4	-	-				possibly mislabeled, appears to be Orchid Daddy
rose	3	-	+				very nice, seems to have some disease resistance
magenta/white	3						wiped out by disease, very susceptible
mix	3/4-1	+	+				excellent
mix	1	+	+				excellent, good mix
mix	1	+	+		+		great impact from flowers, slightly unkempt appearance
salmon pink	1	+	+				excellent
rose	1	+	+				very nice, good color, covered with blooms
rose pink	7/8	-	+				
scarlet	2	-	-				ok
pale yellow	2	-	-				blooms closed in cloudy weather
red	2	-	-				
gold/brown centers	4	+	+		+		excellent, mostly doubles
gold/brown centers	3 1/2-4 1/2	+	+		+		excellent
orange, gold, brown	4 1/4	+	+		+		excellent, blooms double and single
white	6-7*	+	+		+	+	very good, uniform
coral /white	3-6*	-	-				lots of foliage, not very showy
scarlet	8 x 2 1/2*	-	-				nice foliage, delicate flowers
scarlet	5 x 2*	-	-				very nice, new blooms late in season
red	4 x 2 1/2*	-	-				new blooms late in season, some disease early
deep blue	6*	+	+		+	+	excellent
white	5*	+	+		+	+	good, but Argent was better

Table 5. (continued)

COMMON NAME	CULTIVAR	SOURCE	WEEKLY BLOOM PERIOD				HEIGHT (IN)	RECOMMENDED SPACING(IN)
			JUN	JUL	AUG	SEP		
Salvia	Sizzler Burgundy	Clause Seed	* * *	* * *	* * *	* * *	12	6-8
Salvia	Sizzler Red	Clause Seed	* * *	* * *	* * *	* * *	10-13	6
Salvia	Victoria	Northrup King	* * *	* * *	* * *	* * *	18-26	8
Salvia	White Swan	Stokes		* * *	* * *	* * *	32-40	10
Sanvitalia	Mandarin Orange	Park Seed	* * *	* * *	* * *	* * *	12	8
Scabiosa	Imperial Mix	Ball Seed		* * *	* * *	* * *	35	8
Schizanthus	Hit Parade	Park Seed	* * *	* * *	* * *		18-24	7
Shasta Daisy	Alaska	Northrup King		* * *	* * *	* * *	26-29	10
Shasta Daisy	Snow Lady	Park Seed	* * *	* * *	* * *		9-12	6
Shasta Daisy	White Knight	Burpee	* * *	* * *	* * *	* * *	14-18	8-10
Silene	Peach Blossom	Thompson & Morgan	* * *	* * *	* * *		7	8
Snapdragon	Cinderella Mix	Burpee		* * *	* * *	* * *	21	10
Snapdragon	Kim Mixture	Clause Seed	* * *	* * *	* * *	* * *	11	10
Snapdragon	Madame Butterfly	Vaughan's		* * *	* * *	* * *	30-40	9
Snapdragon	Princess White with Purple Eye	Ball Seed	* * *	* * *	* * *	* * *	14-16	8
Snapdragon	Rocket Cherry	Vaughan's		* * *	* * *	* * *	28-38	10
Snapdragon	Rocket Frosty Rose	Park Seed		* * *	* * *	* * *	26-30	10
Snapdragon	Rocket Gold	Vaughan's		* * *	* * *	* * *	32	10
Snapdragon	Rocket Lemon	Ball Seed		* * *	* * *	* * *	33-39	10
Snapdragon	Rocket Orchid	Vaughan's		* * *	* * *	* * *	36-42	10
Snapdragon	Rocket Red	Vaughan's		* * *	* * *	* * *	33	10
Snapdragon	Rocket Redstone	Stokes	* * *	* * *	* * *	* * *	21-36	10
Snapdragon	Rocket Torch	Park Seed		* * *	* * *	* * *	32	10
Snapdragon	Rocket White	Vaughan's		* * *	* * *	* * *	40	10
Snapdragon	Sonnet Burgundy	Vaughan's	* * *	* * *	* * *	* * *	17	8
Snapdragon	Sonnet Orange	Ball Seed	* * *	* * *	* * *	* * *	23	8
Snapdragon	Sonnet Rose	Vaughan's	* * *	* * *	* * *	* * *	19	8
Snapdragon	Tahiti Appleblossom	Vaughan's	* * *	* * *	* * *	* * *	7	8
Snapdragon	Tahiti Mix	Vaughan's	* * *	* * *	* * *	* * *	9	8
Statice	Pacific Strain Mix	Johnny's		* * *	* * *	* * *	15-35	10
Statice	Soiree Mix	Park Seed		* * *	* * *	* * *	29-37	10
Statice	Sunset Mix	Park Seed	* * *	* * *	* * *	* * *	28-34	10
Steirodiscus	Gold Rush	Ball Seed	* * *	* * *			6	5
Stocks	Giant Excelsior White	Johnny's		* * *	* * *	* * *	26-32	8
Strawflower	Rose Beauty	Johnny's	* * *	* * *	* * *	* * *	18	8-10
Sunflower	Big Smile	Ball Seed		* * *	* * *	* * *	21	10
Sunflower	Italian White	Park Seed		* * *	* * *	* * *	60	10
Sunflower	Teddy Bear	Stokes		* * *	* * *	* * *	26	10

BLOOM COLOR	BLOOM SIZE (IN)	FROST TOLERANT		FRAGRANT	CUTTING	DRIED	COMMENTS
		FLOWERS	FOLIAGE				
burgundy	6 x 3*	-	-				best performance through July
red	4 1/2 x 2*	-	-				good, new blooms late in season
deep blue	5-8*	+	+		+	+	excellent, upright
white/silver bracts	12 x 1 1/2*	+	+		+	+	small flowers, nice airy effect
gold	1	-	-				nice
mix	3	+	+		+		nice flowers, needs staking
mix	1 1/4	-	-				excellent early, succumbed to disease late
white	4	+	+		+		nice, good foliage
white	2 1/2	+	+				seemed unhealthy, small plants
white	3-3 1/2	+	+		+		compact, nice blooms and foliage
light pink	1	+?	+				many seed heads
mix	10 x 2 1/2*	+	+		+		
mix	4 x 2 1/2*	+	+				nice colors
mix	14 x 3*	+	+		+		very nice, double azalea flowered
white/purple	5 x 2 1/2*	+	+				best earlier in season
cherry red	9-14 x 4*	+	+		+		very nice
pink/white	11-14 x 3 1/2*	+	+		+		nice color, needs staking
clear yellow	14 x 3*	+	+		+		very good
light yellow	15 x 3 1/2*	+	+		+		good
orchid	11-16 x 3 1/2*	?	+		+		excellent, fairly upright
burgundy	11 x 3*	+	+		+		excellent color, upright
cherry red	9-20 x 3*	+	+		+		
red	not recorded	+	+		+		
white	20 x 3*	+	+		+		excellent
deep rose	7 x 2 1/2*	+	+				
bronzy pink	11 x 2 3/4*	-	-				excellent early, gone to seed by end of season
deep pink	8 x 3*	-	-				
pink/white	4 x 2*	+	+				excellent, blooming again late in season
mix	5 x 2*	+	+				very good, nice color mix, bloomed again late
mix-violet, blue, yellow, rose	2-4*	?	+		+	+	good
mix	2 1/2-3 1/2*	?	+		+	+	good color mix
apricot, orange, pink, gold	3-3 1/2*	-	+		+	+	interesting colors
yellow							poor, died out by mid-July
white	12x1 1/2-2*	+	+		+		nice, edible flowers, mostly double
light rose pink	1/2	+	+		+	+	nice-airy sprays
gold	4-7	-	-				large seeds, susceptible to disease
cream/brown centers	3-4	-	+		+		very nice
gold	4	-	-				smaller heads than usual

Table 5. (continued)

COMMON NAME	CULTIVAR	SOURCE	WEEKLY BLOOM PERIOD				HEIGHT (IN)	RECOMMENDED SPACING(IN)
			JUN	JUL	AUG	SEP		
Twinspur	Pink Queen	Park Seed	* * * * *	* * * * *	* * * * *	* * * * *	17	7
Verbena	Amour Mix	Ball Seed	* * * * *	* * * * *	* * * * *	* * * * *	12	8
Verbena	Blue Lagoon	Clause Seed		* * * * *	* * * * *	* * * * *	14	8
Verbena	Imagination	Stokes	* * * * *	* * * * *	* * * * *	* * * * *	18	8
Verbena	Novalis Deep Blue/White Eye	Stokes	* * * * *	* * * * *	* * * * *	* * * * *	10-11	8
Verbena	Peaches & Cream	Stokes	* * * * *	* * * * *	* * * * *	* * * * *	12-17	8
Verbena	Polaris	Ball Seed		* * * * *	* * * * *	* * * * *	14	8
Verbena	Sandy Magenta	Clause Seed		* * * * *	* * * * *	* * * * *	11-13	8
Verbena	Sandy White	Vaughan's		* * * * *	* * * * *	* * * * *	12-14	8
Verbena	Showtime Blaze	Northrup King	* * * * *	* * * * *	* * * * *	* * * * *	12	8
Verbena	Trinidad	Vaughan's	* * * * *	* * * * *	* * * * *	* * * * *	10	8
Verbena	Valentine	Ball Seed	* * * * *	* * * * *	* * * * *	* * * * *	11	6-8
Vinca	Parasol	Ball Seed	* * * * *	* * * * *	* * * * *	* * * * *	9	4
Vinca	Pretty in Pink	Park Seed	* * * * *	* * * * *	* * * * *	* * * * *	8	4
Vinca	Pretty in Rose	Vaughan's		* * * * *	* * * * *	* * * * *	6	4
Vinca	Pretty in White	Ball Seed	* * * * *	* * * * *	* * * * *		6-7	4
Viola	Princess Blue	Ball Seed	* * * * *	* * * * *	* * * * *	* * * * *	15	8
Viola	Princess Creamy White	Burpee	* * * * *	* * * * *	* * * * *	* * * * *	11-14	8
Zinnia	Border Beauty Rose	Burpee	* * * * *	* * * * *	* * * * *	* * * * *	20-25	10
Zinnia	Border Beauty Scarlet	Burpee	* * * * *	* * * * *	* * * * *	* * * * *	19-22	10
Zinnia	Fantastic Light Pink	Park Seed		* * * * *	* * * * *	* * * * *	20-24	10
Zinnia	King of Hearts	Stokes		* * * * *	* * * * *	* * * * *	26	10
Zinnia	Scarlet Splendor	Burpee	* * * * *	* * * * *	* * * * *	* * * * *	23-25	10
Zinnia	Small World Pink	Park Seed	* * * * *	* * * * *	* * * * *	* * * * *	18	10
Zinnia	Snowman	Burpee	* * * * *	* * * * *	* * * * *	* * * * *	24-29	10
Zinnia	Splendor Mix	Burpee	* * * * *	* * * * *	* * * * *	* * * * *	23-28	8-10
Zinnia	Splendor Orange	Burpee	* * * * *	* * * * *	* * * * *	* * * * *	28	8-10
Zinnia	Star White	Ball Seed		* * * * *	* * * * *	* * * * *	14-16	8
Zinnia	Yellow Marvel	Stokes	* * * * *	* * * * *	* * * * *	* * * * *	24	10

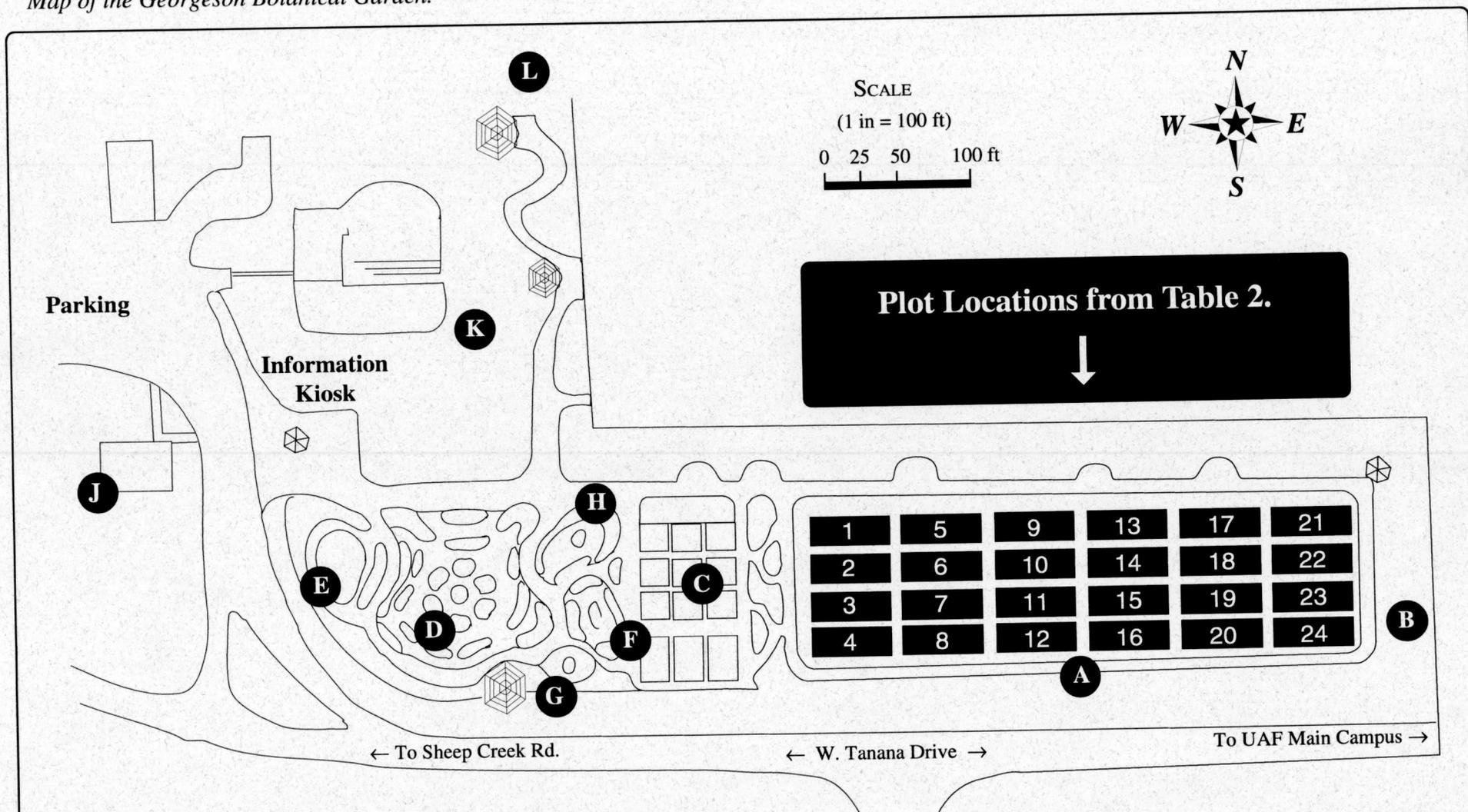
BLOOM COLOR	BLOOM SIZE (IN)	FROST TOLERANT		FRAGRANT	CUTTING	DRIED	COMMENTS
		FLOWERS	FOLIAGE				
pink	3/4	-	+				very nice
mix	2 3/4	+	+				nice
blue	3*	+	+				very nice
violet	1 1/2*	+	+				very good, fern-like foliage, some plants gone to seed early
blue/white eye	2*	+	+				very nice, some gone to seed by September
peach	2 1/4*	+	+				very good
pale lavender	1 1/8*	-	+				slow starter, but quite striking later on
red violet	2 1/2*	+	+				very good, nice size bloom
white	2 1/2*	+	+				excellent
bright red	2 1/4*	+	+				excellent
rose pink	2 1/2*	+	+				
red/white eye	2 1/2*	-	-				very nice, recovered from early disease problems
white/red center	2	-	-				most robust vinca
pink	1 1/2	-	-				
rose	2	-	-				very poor early in season, better later
white	1 1/4	-	-				
blue	1 1/4	+	+				very good, lots of blooms
cream	1 1/4	-	-				nice, small flowered
coral pink	3	-	+				excellent
scarlet	3 1/2-4	-	-				very good
pink	3 1/2-4 1/2	-	-		+		excellent
red	4-5	-	-		+		excellent
red	3 1/2-4	-	-		+		very good
pink to rose	3	-	-				nice and neat
white	4-4 1/2	-	-		+		good, needs deadheading
mix	4-5	-	-		+		excellent
orange	4 1/2	-	-		+		excellent, great color
white	1 3/4	-	+				excellent
yellow	2 3/4	-	-				good, needs deadheading

Appendix 1. Commercial sources and organizations

- AAS All-America Selections
- Agway Agway, Inc Seed Plant, 1225 Zeager Rd., Elizabethtown, PA 17022
- AHS The American Horticultural Society, P.O. Box 6118, 7931 E. Boulevard Dr., Alexandria, VA 22308
- ANPS* Alaska Native Plant Society, P.O. Box 141613, Anchorage, AK 99514
- ARGS* American Rock Garden Society, P.O. Box 67, Millwood, NY 10546
- Ball Seed Ball Seed Co., P.O. Box 335, West Chicago, IL 60185-0335
- Barnaul The Lisavenko Research Institute of Horticulture, Barnaul, Altai Region, Russia
- BCN Bear Creek Nursery, P.O. Box 411, Northport, WA 99157
- Beaverlodge Beaverlodge Nursery, Ltd., Box 127, Beaverlodge, Alberta T0H 0C0, Canada
- Big Dipper Big Dipper Gardens, P.O. Box 82234, Fairbanks, AK 99708
- Bluebird Bluebird Nursery, Inc., P.O. Box 460, Clarkson, NE 68629
- BTI Better Trees, Inc., 7894 W. Maple Rapids Rd., St. Johns, MI 48879
- Burpee W. Atlee Burpee & Co., 300 Park Ave., Warminster, PA 18991-0001
- Chamal Mountain Experiment Station, Gorno-Altai Region, Russia
- Clause Clause Seed Co., North American Office, 100 Breen Rd., San Juan Bautista, CA 95045
- CSBG Central Siberian Botanical Garden, Novosibirsk, Russia
- Daehnfeltd Daehnfeltd, Box 947, Albany, OR 97321
- DBG Denver Botanic Gardens, 909 York St., Denver, CO 80206
- de Jager Peter de Jager Bulb Co., P.O. Box 2010, So. Hamilton, MA 01982
- GBG Georgeson Botanical Garden, 309 O'Neill Building, University of Alaska Fairbanks, Fairbanks, AK 99775
- Harris Moran Harris Moran Seed Company, 1155 Harkins Rd. Salinas, CA 93901
- Hudson J.L. Hudson, P.O. Box 1058H, Redwood City, CA 94064
- J & P Jackson & Perkins, P.O. Box 1028, Medford, OR 97501
- KHN Knight Hollow Nursery, Inc., 236 E. Sunset Ct., Madison, WI 53705
- Johnny's Johnny's Selected Seeds, Foss Hill Rd., Albion, ME 04910
- Lamb Lamb Nurseries, 101 E. Sharp Ave., Spokane, WA 99202
- Lawyer Lawyer Nursery Inc., 950 Highway 200 West, Plains, MT 59859
- Nauriaq Nauriaq Gardens, P.O. Box 82692, Fairbanks, AK 99708
- NCRPIS North Central Regional Plant Introduction Station, Ames, IA
- NEWFS* New England Wild Flower Society, Garden in the Woods, Hemenway Rd., Framingham, MA 01701
- Northern Lights Northern Lights Nursery (Holmtown Nursery) 1301 30th Ave., Fairbanks, AK 99701
- Northrup King see Vaughan's
- Park Park Seed Co., Cokesbury Rd., Greenwood, SC 29647-0001
- PMC Plant Materials Center, HC02 Box 7440, Palmer AK 99645
- Richters Richters, Goodwood, Ontario L0C 1A0, Canada
- SAAS Dendrological Garden - Siberian Academy of Agricultural Sciences, Novosibirsk Region, Russia
- SBG Siberian Botanical Garden, Novosibirsk, Russia
- Schumacher F.W. Schumacher Co., Inc., 36 Spring Hill Rd., Sandwich MA 02563-1023
- Seiberling Seiberling Naturealm, Akron, Ohio
- South Slope South Slope Greenhouses, Fairbanks, AK
- Stokes Stokes Seeds Inc., P.O. Box 548, Buffalo, NY 14240-0548
- Tack's Tack's General Store, P.O. Box 16004, Two Rivers, AK 99716
- T&M Thompson & Morgan Inc., P.O. Box 1308, Jackson, NJ 08527
- Vaughan's Vaughan's Seed Co., 5300 Katrine Ave., Downers Grove, IL 60515-4095
- VB&S K. Van Bourgondien & Sons, Inc., 245 Farmingdale Rd., Babylon NY 11702
- Vermont Bean Vermont Bean Seed Co., Garden Lane, Fair Haven, VT 05743
- Waushara The Waushara Gardens, N 5491 5th Drive, Plainfield, WI 54966
- Wayside Wayside Gardens, 1 Garden Lane, Hodges, SC 29695-0001
- White Flower White Flower Farm, P.O. Box 50, Litchfield, CT 06759-0050
- William Dam William Dam Seeds, P.O. Box 8400, Dundas, Ontario L9H 6M1, Canada
- WNS Wildwood Northern Seeds, Whitehorse, Yukon Territory, Canada

*seeds available to members

Map of the Georgeson Botanical Garden.



- A** Herbaceous Perennial and Woody Ornamental Test Gardens
- B** Demonstration Conservation Windbreak
- C** Vegetable and Fruit Demonstration Garden
- D** Perennial Landscape and All America Selections Display Garden
- E** Spring Colors and Low Maintenance Garden
- F** Herb Garden
- G** Cutting Garden
- H** Shade and Water Garden
- J** Visitors' Center
- K** Alaska Native Plant Garden
- L** Boreal Forest Nature Trail

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School of Agriculture and Land Resources Management

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