



Annual Flower Seed Mixes for Alaskan Gardens

by
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During the summer of 1992, we began an experiment to evaluate several commercial and experimental annual flower seed mixes for Alaskan gardens. Seed mixes were donated by several commercial seed companies and included annual wildflower mixes, garden flower mixes, and a mix that was blended for a specific purpose--fragrance.

In addition to the commercial mixes, we concocted a few of our own with the help of members Jan Bradner and Ginger Gauss. Jan, Ginger, Grant Matheke and Pat Wagner developed what they thought might be interesting combinations of flowers based upon years of experience observing flowering patterns and self-seeding in Fairbanks gardens. In addition, Jan Bradner was interested in developing a mix that emphasized white flower color.

These experimental mixes were, for the most part, combinations of seeds sold commercially as packets. The mixes and sources are listed below. A list of species and cultivars in each mix is listed in Appendix 1.

1. Annuals for Sun •Applewood Seed Company
2. Proven All-Annual Wildflower Mix •Vermont Wildflower Farm
3. Rainbow Blend-wildflower mix for cutting • Johnny's Selected Seeds
4. Golf Course Mix • Applewood Seed Co.
5. Pinto Brand All-Annual Wildflower Mix
6. Firecracker 234 • Wildseed, Inc.
7. California Poppy Experimental Mix
8. Experimental Mix • Pat Wagner
9. Experimental Mix • Ginger Gauss and Grant Matheke
10. Wildflower Carpet Mixture No. 12 • Geo. W. Park Seed Co.
11. Mixed Flowers for Fragrance • W. Atlee Burpee & Co.
12. White Flower Experimental Mixture • Jan Bradner

Planting beds were fumigated with methyl bromide for weed control, tilled, and fertilized with 10-20-20 at approximately 750 lb/acre. Seed mixes were combined with moist sand (1 part seed to 10 parts sand) and sown on June 9, 1992. Seeding rates were one or two times the recommended commercial seeding rate. The mixture was divided into two portions for more even coverage and spread by hand. Plots were irrigated daily until seedlings were well established and then throughout the summer as needed.

Beginning August 1, visitors to the Garden were asked to complete a short survey identifying their preference among the 12 mixes. Surveys were collected weekly. Participants were asked to vote once per week, but could respond more than once during the season. Records were also maintained of bloom dates for individual species within mixes.

Because of the very late spring planting date, we were not certain any of the flower mixes would bloom or continue for a sufficient period to make them worth planting in Alaskan gardens. Many times we heard early-season visitors wonder aloud why we were growing large patches of weeds. All of the plots were bright green masses of foliage until mid July.

All of the mixes began to bloom by July 15 but did not develop full color until the first week of August. The earliest flower to bloom was the California bluebell (*Phacelia campanularia*) on July 8 followed by catchfly (*Silene armeria*), sweet alysum (*Lobularia maritima*), baby's breath (*Gypsophila elegans*), spurred snapdragon (*Linaria maroccana*), Virginia stock (*Malcomia maritima*), and calendula (*Calendula officinalis*). The first mix to bloom profusely was the Wildflower Carpet Mixture No. 12. The most spectacular color appeared when the California poppies (*Eschscholzia californica*) and corn poppies (*Papaver rhoeas*) began to bloom by July 29. Only by the end of July had public comments changed from ugh to aah!

Several of the mixes were subject to lodging where the stems fell over and large matted gaps appeared in the planting.

Lodging was most evident in the Experimental California Poppy Mix, Firecracker 234 and Annuals for Sun. Some lodging was also evident in the Golf Course Mix, Pinto Brand All-Annual Wildflower Mix and the Wildflower Carpet No. 12. Other mixes such as the Proven All-Annual Wildflower Mix, Rainbow Blend, and Pat Wagner's Experimental Mix appeared to have minimal lodging because of the tall upright foliage of cosmos (*Cosmos bipinnatus*). Although cosmos flowered very late (Aug 19 and later), the fine, feathery foliage provided an attractive background for other flowers.

Some of the mixes had variable flower height across the bed including Golf Course Mix and the Mixed Flowers for Fragrance. In striking contrast was the Wildflower Carpet Mixture No. 12 that was developed specifically to be no more than 8 inches in height and have a well-manicured appearance. This mix certainly lived up to its catalog description.

Every mix changed as the season progressed. Pat Wagner's Experimental Mix had mostly blue and white flower colors early in the season, but changed to white and yellow with a touch of pink later on. Every mix containing corn poppies became a multi-colored explosion of pinks, reds and whites by August.

All of the mixes had at least one species that did not bloom. Nonblooming species that occurred in more than one mix included Indian blanket (*Gaillardia pulchella*), dwarf godetia (*Clarkia amoena*), orange cosmos (*Cosmos sulphureus*), black-eyed susan (*Rudbeckia hirta*), and Johnny-jump-up (*Viola tricolor*). It is interesting to note that Johnny-jump-up is a common self-seeding annual grown in the Fairbanks area, yet it failed to bloom in two seed mixes from separate seed sources (Wildflower Carpet Mix No. 12 from Geo. W. Park Seed Co. and Experimental Mix by Ginger Gauss and Grant Matheke from Wildseed and Vauhan's Seed sources).

Sweet alyssum was common to five of the mixes. The cultivar, Carpet of Snow was used in two of the mixes but did not bloom. Sweet alyssum grew well in mixes that had no specified cultivar.

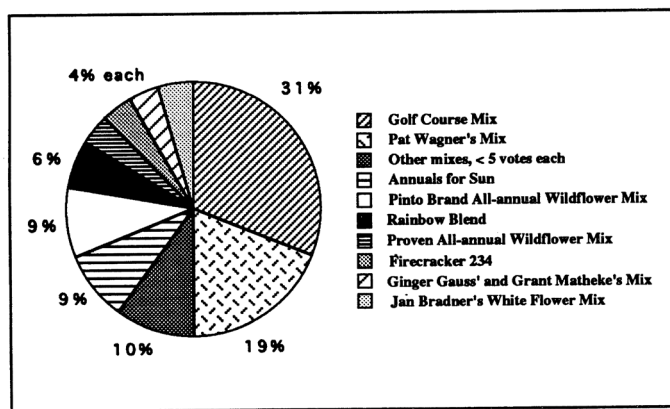
We learned a lot by making our own experimental mixes. One very important factor that we need to address in greater detail is the ratio of each species in the mix. Usually, we used whatever quantity of seeds was found in a commercial packet of seeds, but most of the quantities were guesses. The two grams of camomile (*Matricaria camomila*) we included in Jan Bradner's White Flower Mix grew so abundantly that it may have smothered other species. Six of the 13 species included in Jan's mix did not bloom anytime during the summer (baby's breath, 'White Charm' Dianthus, Hare's tail grass [*Lagarus ovatus*], 'Dwarf Beauty White' Phlox [*Phlox drummondii*], Quaking Grass [*Brizia maxima*], 'Helen Campbell' spiny spider-flower [*Cleome spinosa*], and 'Carpet of Snow' sweet alyssum).

Flower height was also very important in the mixes. The relatively low-growing California bluebell and baby's breath in Pat Wagner's mix were quickly overgrown by the cosmos, bishop's flower (*Ammi majus*) and calendula. The shorter flowers were only visible at the edges of the plot leading to a stratified appearance.

The commercial mixes also offered some surprises. In seven of the eight commercial mixes, flowers appeared that were not listed in the catalog descriptions. In most instances, the flowers were easily identifiable. Some of the unknown plants appeared to be chance weeds rather than ornamentals. This emphasizes the importance of purchasing seeds from reputable companies to alleviate the possibility of importing noxious weeds along with the wildflowers.

The Public's Choice:

One hundred twenty-seven visitors to the Garden took time to complete our survey of the annual flower mixes. We asked



Public preference for annual flower seed mixes by a percentage of total votes counted (total = 127).



*California bluebell,
Phacelia campanularia*

simply that they tell us which mix they preferred, and provide comments on their choice. Participants included individuals from many Alaska cities as far away as Homer and Ketchikan as well as world travelers from Germany, Sweden and France. The most frequent comment was that all of the mixes were beautiful and choosing one was nearly impossible. Despite the indecision, two mixes appeared to be clear favorites. The Golf Course Mix received the most votes beginning the last week of July. People liked the multi-colored mix because it showed a rainbow of colors very early that persisted for several weeks. This mix also had a shorter height than some of the others with less stratification of flower colors due to crowding. People commented that the shorter height permitted children as well as adults to enjoy the entire display, and the "greens" were low enough for flowers to be clearly visible. Interest in this mix began to

wane by August 20, and the public preference shifted to Pat Wagner's Experimental Mix. This mix was popular through the first light frost. People commented that it looked more like a wildflower mix probably because of the Bishop's flower (*Ammi majus*) which is very similar in appearance to the East Coast wildflower, Queen Anne's Lace or wild carrot. People liked the mixture of white and yellow, and we received many requests for Pat's "recipe". Two participants commented that we should package and sell Pat's mix. We won't be getting into the commercial seed business, but our readers can make their own mix by combining one packet each of *Calendula* 'Lemon Beauty', *Cosmos* 'Sensation Mix', *Layia platyglossa* (tidy-tips), *Nemophila maculata* (five-spot) and *Silene armeria* (catchfly). Add to this mixture 19 g (0.6 oz) *Ammi majus* (Bishop's flower), 1 g (0.03 oz) *Chrysanthemum multicaule*, and 14 g (0.4 oz) *Phacelia campanularia* (California bluebell). This mix is sufficient for a bed 144 square feet (13 sq meters) in size.

All of the mixes received their share of comments. One participant liked the very "gentle, soothing" colors in Jan Bradner's white flower mix and commented that it still looked good even after some of the other mixes had begun to fade. Several visitors remarked on the wonderful fragrance of the Flowers for Fragrance Mixture. Others had no preference, but definitely liked the more naturalistic plantings as opposed to the more formal annual flower display beds nearby.

We will refine the experimental mixes based upon what we have learned and try some new ones. We are also interested in learning how well the mixes will perform when planted earlier in the spring. Because of poor weather and the length of time it took us to construct the new beds, the mixtures were not seeded until June 9. We will attempt to sow these mixtures in early May next season just as soon as the ground can be tilled.

Appendix 1

Direct-Seeded Annual Flower Mixes

Plot No. 1 - Annuals for Sun

Seeds from Applewood Seed. Co.

African daisy
 Baby blue-eyes
 Bird's eyes
 California poppy
 Candytuft
 Clarkia
 Corn poppy
 Dwarf cornflower
 Dwarf Catchfly
 Dwarf Godetia
 Dwarf plains coreopsis
 Five-spot
 Pimpernel
 Rocket larkspur
 Spurred snapdragon
 Sweet alyssum
 Texas bluebonnet

Plot No. 2 - Proven All-annual Wildflower Mix

Seeds from The Vermont Wild-Flower Farm

Baby blue-eyes
 Baby's breath
 California poppy
 Catchfly
 Crn poppy
 Cornflower
 Cosmos
 Farewell-to-spring
 Indian blanket
 Orange cosmos
 Plains coreopsis
 Red flax
 Rose mallow
 Succulent lupine
 Thimble flower

Plot No. 3 - Rainbow Blend (Wildflower mix for cutting)

Seeds from Johnny's Selected Seeds

Baby's breath
 Black-eyed Susan
 Cornflower
 Cosmos
 Indian Blanket
 Larkspur
 Purple coneflower
 Shasta daisy

Plot No. 4 - Golf Course Mix

Seeds from Applewood Seed Co.

African daisy
 Baby blue-eyes
 Baby's breath
 Black-eyed Susan
 California Poppy
 Candytuft
 Catchfly
 Clarkia
 Corn poppy
 Dwarf cornflower
 Dwarf Godetia
 Dwarf Plains coreopsis
 Rocket Larkspur
 Spurred snapdragon
 Virginia stock

Plot No. 5 - Pinto Brand All-annual Wild Flower Mix

Seeds from Loft's Seed Inc.

Baby snapdragon
 Baby's breath
 Calendula
 California poppy
 Catchfly
 Corn poppy
 Cornflower
 Cosmos
 Indian Blanket
 Plains coreopsis
 Red Flax
 Yellow cosmos

Plot No. 6 - Firecracker 234

Seeds from Wildseed, Inc.

African daisy
 Baby blue-eyes
 Cushion baby's breath
 Black-eyed Susan
 California poppy
 Claspig coneflower
 Corn poppy
 Cornflower
 Five-spot
 Lemon mint
 Plains coreopsis
 Rocket larkspur
 Scarlet flax
 Sweet alyssum
 Toadflax
 Yellow Cosmos

Plot No. 7 - California Poppy Mix

Experimental mix. Seeds from Stokes Seeds Inc. and Wildseed, Inc.

California poppy
 'Mision Bells' California poppy

Plot No. 8 - Experimental Mix by Pat Wagner

Seeds from Johnny's Selected Seeds, Stokes Seeds Inc., Wildseed, Inc. and Vaughan's Seed Co.

Bishop's flower
 Calendula 'Lemon Beauty'
 Catchfly
 Chrysanthemum multicaule
 Cosmos 'Sensation Mix'
 Five-spot
Polemonium 'Blue Pearl'
 Tidy-tips

Plot No. 9 - Experimental Mix by Ginger Gauss and Grant Matheke

Seeds from Johnny's Selected Seeds, Stokes Seeds Inc., Wildseed, Inc., W. Atlee Burpee & Co., Thompson & Morgan, The Vermont Wildflower Farm and Vaughan's Seed Co.

African daisy
 Baby Blue-eyes
 Calendula 'Family Circle Mixed'
 California poppy
 Corn Poppy
 Cornflower
 Cornflower 'Florist's Blue Boy'
 Harebell phacelia
 Johnny jump-up
 Johnny jump-up 'Helen Mount'
 Nasturtium
 Sweet alyssum 'Carpet-of-Snow'
 Sweet William
 Tahoka daisy
 Viper's bugloss 'T & M Dwarf Mixed'

Plot No. 10 - Firecracker 234

Repeat of bed 6

Plot No. 11 - Wildflower Carpet Mixture No. 12

Seeds from George W. Park Seed Co.

African daisy
 Baby blue eyes
 Blue flax
 Calendula
 Candytuft
 Dwarf California poppy
 Evening primrose
 Evergreen plantain
 Five-spot
 Johnny jump-up
 Matricaria
 Nodding catchfly
 Plains coreopsis
 Poor man's weather glass
 Red Ribbons
 Sanvitalia
 Tidy tips
 Virginia stock

Plot No. 12 - Mixed Flowers Fragrance Mixture

Seeds from W. Atlee Burpee & Co.

Heliotrope
 Mignonette
 Pinks
 Stock
 Sweet alyssum
 Viola
 Virginia Stock
 Wallflower

Plot No. 13 - White Flower Mixture Experimental Mix by Janet Bradner

Seeds from W. Atlee Burpee & Co., Johnny's Selected Seeds, Ball Seed Co., Applewood Seed Co., Stokes Seeds, Inc. and George W. Park Seed Co.

Baby's Breath 'Covent Garden White'
 Bishop's flower
 Camomile 'German'
 Chinese houses
 Dianthus 'White Charm'
 Flowering tobacco
 Hare's tail grass
 Phlox 'Dwarf Beauty White'
 Quaking grass
 Rose Sunray 'White'
 Spiny spiderflower 'Helen Campbell'
 Sunflower 'Italian White'
 Sweet alyssum 'Carpet of Snow'
 Virginia stock
 Zinnia 'Big Snowman'

Scientific Names (if known) of flowers in the various mixes

African daisy *Dimorphotheca aurantiaca*
Baby blue-eyes *Nemophila menziesii*
Baby snapdragon *Antirrhinum majus*
Baby's breath *Gypsophila elegans*
Bird's eyes *Gilia tricolor*
Bishop's flower *Ammi majus*
Black-eyed Susan *Rudbeckia hirta*
Blue flax *Linum perenne* ssp. *lewisii*
Calendula *Calendula officinalis*
California poppy *Eschscholzia californica*
Camomile, German *Matricaria camornila*
Candytuft *Iberis umbellata*
Catchfly *Silene armeria*
Chinese houses *Collinsia heterophila*
Clarkia *Clarkia unguiculata*
Clasping coneflower *Rudbeckia amplexicaulis*
Corn poppy *Papaver rhoeas*
Cornflower *Centaurea cyaneus*
Cosmos *Cosmos bipinnatus*
Cushion baby's breath *Gypsophila muralis*
Dwarf cornflower *Centaurea cyaneus*
Dwarf Godetia *Clarkia (Godetia) amoena*
Dwarf Plains coreopsis *Coreopsis tinctoria*
Evening primrose *Oenothera lamarckiana*
Farewell-to-spring *Clarkia (Godetia) amoena*
Fivespot *Nemophila maculata*
Flowering tobacco *Nicotiana glauca*
Hare's tail grass *Lagurus ovatus*
Harebell phacelia *Phacelia campanularia*
Heliotrope *Heliotropium sp.*
Indian blanket *Gaillardia pulchella*
Johnny jump-up *Viola tricolor*
Larkspur *Consolida ambigua*
Lemon mint *Monarda citriodora*
Matricaria *Matricaria sp.*
Mignonette *Reseda odorata*

Nasturtium *Tropaeolum majus*
Nodding catchfly *Silene pendula*
Orange cosmos *Cosmos sulphureus*
Phlox *Phlox drummondii*
Pimpernel *Anagalis arvensis*
Pinks *Dianthus sp.*
Plains coreopsis *Coreopsis tinctoria*
Poor man's weather glass *Anagalis arvensis*
Purple coneflower *Echinacea purpurea*
Quaking grass *Brizia maxima*
Red flax *Linum grandiflorum* "Rubrum"
Red ribbons *Clarkia concinna*
Rocket larkspur *Delphinium ajacis*
Rose mallow *Lavatera trimestris*
Rose sunray *Helipterum roseum*
Sanvitalia *Sanvitalia procumbens*
Shasta daisy *Chrysanthemum rriaximum*
Spiny Spiderflower *Cleome spinosa*
Spurred snapdragon *Linaria maroccana*
Stock *Matthiola incana*
Succulent lupine *Lupinus succulentus*
Sunflower *Helianthus annuus*
Sweet alyssum *Lobularia maritima*
Sweet William *Dianthus barbatus*
Tahoka Daisy *Machaeranthera tanacetifolia*
Texas bluebonnet *Lupinus texensis*
Thimble flower *Gilia capitata*
Tidy-tips *Layia platyglossa*
Toadflax *Linaria maroccana*
Viola *Viola cornuta*
Viper's Bugloss *Echium vulgare*
Virginia stock *Malcomia maritima*
Wallflower *Cheiranthus allionii*
Yellow cosmos *Cosmos sulphureus*
Zinnia *Zinnia elegans*

We thank the following companies for donating seeds for this project.

Applewood Seed Co.
W. Atlee Burpee & Co.
Loft's Seed, Inc.
Stokes Seeds
The Vermont Wildflower Farm

Ball Seed Co.
Johnny's Selected Seeds
George W. Park Seed Co.
Vaughan's Seeds Co.
Wildseed, Inc.

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