

1998 ASCFG National Seed Trials

John Dole
Oklahoma State University

One of the most novel flowers in the 1998 trial was *Centaurea americana* '**Jolly Joker**' (Benary Seed) with its large, thistle-like lavender flowers. The buds had a net-like covering, from which the common name of basket flower is derived. While the long-lasting flowers were most popular, the intricate buds can also be dried. *Centaurea americana* is native to south-central and southwest United States.

The popularity of sunflowers does not seem to be waning, either from the growers perspective or the breeder's perspective. Both Benary's *Helianthus* '**Soraya**' and Pan American's *Helianthus* '**Prado Red**' did well in the trial. 'Soraya' was noted for its orange color, intermediate-size flower, sturdy stems and upward facing flowers. The deep crimson color of 'Prado Red' attracted much attention. Prado Red was also noted for its long vase life and apparently pollen-less flowers.

Cramer's Spray Millet (Cramer's Posie Patch) is the first time a grass has done so well in the trial. This beautiful grass was used both fresh and dried and grew vigorously in the field. On a personal note, considering that local growers in Oklahoma are having success marketing grasses (which is like selling snow to a Minnesotan), everyone should at least try a few grasses.

Capsicum annuum '**Chili Pepper**' (Cramer's Posie Patch) is the reason why we may want to leave the word 'flowers' out of the phrase 'specialty cut flowers'. The bright red fruit garnered a lot of attention in the trials and could be used both fresh and dried. Other respondents liked the vigorous growth and upright fruit habit.

Delphinium 'Clear Springs Midblue' and '**Clear Springs White**' from Pan American has continued the tradition of high performance for this series as the other colors have also done well in the trial. The series is noted for its colors, strong stems, uniformity, and vigor.

The magenta color of **Snapdragon 'Apollo Purple'** (Pan American) was commented on by most of the respondents. The long straight stems, early flowering, good seed germination and unusual flower form were also noted by trialers.

Many annual aster cultivars do well for some growers yet perform poorly for others and, consequently, often receive only average scores in the trials. However, both series of asters did well in the trials this year: Pan American's **Aster 'Meteor Carmine Red'** and '**Meteor Violet Blue**' and Sakata's **Aster 'Serenade Blue'** and '**Serenade Red**'. The 'Meteors' were noted for their large flowers, clear colors, and sturdy upright stems. The excellent vase life of the 'Serenades' was mentioned by several respondents, as well as its colors and productivity. Look for more colors in the Serenade series

to be released in 1999.

Disclaimer: The numbers reported are averages of all the respondents and many factors will affect the success of any plant species. Our participants are growing and harvesting the trial plants in a wide variety of ways. For example, with annual asters some people harvest the entire plant as one bunch while others harvest each individual flowering branch, giving very different lengths and yield data. If a plant does well for most of the respondents, it is likely to do well for you. On the other hand, if a cultivar didn't appear to do well in the trial, it may still be a great cultivar for you. Thus, we have included summaries of the respondents comments to help interpret the data. In summary, review the trial results carefully. If a species sounds interesting but did not appear to do well, try it anyway. The cultivar may work well for you.

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Participating Seed Companies

Cramer's Posie Patch
116 Trail Road North
Elizabethtown, PA 17022

Pan American
P.O. Box 438
West Chicago, IL 60186

Benary Seed
1444 Larson St.
Sycamore, IL 60178

Sakata Seed America, Inc.
18095 Serene Dr.
Morgan Hill, CA 95037

Participating Growers

Frank and Pamela Arnosky
Texas Specialty Cut Flowers
Wimberley, TX

Stillwater, OK

Douglas and Gloria Austin
Austin Gardens
Flushing, MI

Phil and Dorothy Bartlett
Bartlett's Ocean View Farm & Greenhouses
Nantucket, MA

Clydette Alsup, Leah Afill
Oklahoma State University

Paula Bounds
Bee Tree Florals
Henderson, MD

Clydette Borthick/Randall Smith/John Dole
Oklahoma State University
Stillwater, OK

Phillip Katz and Sharon Hampton
Pan American Seed
Santa Paula, CA

Leon Carrier
Plant Masters
Gaithersburg, MD

Susie Lawrence
Sand Creek Farm
Braggs, OK

Barbara Cospers
Cospers Flowers
Highlands, NC

Judy Low
Molino Creek Farm
Davenport, CA

Priscilla Emerson
Blue Castle Farm
Warren, ME

David and Jan McHughes
A & L Greenhouses
Owasso, OK

Tammy Ford
Perennial Favorites
Mount Pleasant, IN

Anna Miller
Quarry Farm
North Baltimore, OH

Janet and Morgan Friedman
Flinthill Flower Farm
Buckeystown, MD

David and Judy Neave
Chelsea Farms
Onancock, VA

Sue Frey
Future View Flowers
Willow Street, PA

Karen Pendleton
Pendleton's Country Market
Lawrence, KS

Lane Greer
Fayetteville, AR

Carolyn Ramsbotham
Ramsbotham's Riverview Farm
Madbury, NH

Jeff Hartenfeld
Hart Farm
Solsberry, IN

Mary Ellen Schultz
Northbloom Farm
Belgrade, MT

Betsy Hitt
Peregrine Farms
Graham, NC

Vicki Stamback
Bear Creek Farms
Stillwater, OK

Cathy Jones
Perry-Winkle Farm
Chapel Hill, NC 27516

Ann Trimble

Trimble Field Flowers
Princeton, KY

Cheryl Wagner
Wagner's Homestead Farms
Belleville, MI

John Waymire
Little Miami Flower Co.
Yellow Springs, OH

Kim Wickwire and Blue Barn Floral Farm
Olds College
Olds, Alberta

Bob Wollam
Wollam Gardens
Jeffersonton, VA

Lulu Wooten
Cape Farm
Marlboro, VT

Trial Results

Cultivar	Yield (stems/plant)	Stem length inches (cm)	Market appreciation rating ^Ø	Repeat again rating ^Ø	Ease of cultivation rating ^Ø
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Benary Seed

Aconitum carmichaelii Late Crop - did not flower this year

<i>Anaphalis margaritacea</i> New Snow	6.4	9.6	2.4	2.4	2.8
<i>Astilbe x arendsii</i> Grande	1.0	17.8	3.5	2.7	2.8
<i>Calendula officinalis</i> Black Centered					
Golden Princess	10.5	14.7	3.6	3.4	4.9
<i>Calendula officinalis</i> Black Centered					
Orange Princess	16.8	15.2	3.4	3.7	4.9
<i>Calendula officinalis</i> Golden Princess	13.1	15.8	3.4	3.3	5.0
<i>Centauria americana</i> Jolly Joker	6.5	24.9	3.7	4.0	4.5
<i>Dianthus caryophyllus</i> Floristan	4.0	17.8	2.2	2.9	3.9
<i>Gomphrena globosa</i> Buddy Rose	10.3	8.7	2.2	1.8	3.8
<i>Helianthus</i> Soraya	3.8	37.9	3.8	3.8	4.6
<i>Kniphofia uvaria</i> Flamenco	1.0	16.7	3.0	3.3	4.5
Ü <i>Liatris spicata</i> Floristan Violet	1.8	18.1	3.7	3.3	3.3
Ü <i>Lobelia</i> Compliment Green Leaf Pink with Eye	1.5	19.9	3.5	4.0	3.5
<i>Lobelia</i> Fan Bronze Leaf Deep Rose	1.6	14.2	3.1	2.7	2.9
<i>Melica transsilvanica</i> Red Spire	11.4	19.5	2.3	2.9	3.9
<i>Monarda didyma</i> Red Shade	1.8	14.7	2.2	3.6	3.6
Ü <i>Silene orientalis</i>	3.5	16.9	3.0	3.7	3.8

Cramer's Posie Patch

<i>Amaranthus cruentus</i> Giant Copperhead	6.0	35.5	3.3	2.8	4.4
<i>Capsicum annuum</i> Chili Pepper	7.7	15.7	4.0	3.7	4.6
<i>Carthamus tinctorius</i> Superior Orange	3.2	22.8	3.3	2.7	4.5
Millet Cramer's Spray	1.4	34.7	4.0	4.1	4.1

Pan American

Aster Meteor Carmine Red	6.4	21.3	3.7	4.0	4.7
Aster Meteor Violet Blue	5.5	21.5	4.2	4.6	3.8
Delphinium Clear Springs Midblue	1.4	25.8	4.5	4.6	4.3
Delphinium Clear Springs White	1.7	25.5	4.5	4.8	4.3
ÛEustoma Malibu Blue Blush	5.0	12.8	4.0	3.5	4.0
ÛEustoma Malibu Blue Rim	5.5	13.8	4.5	3.0	3.0
ÛEustoma Malibu Deep Blue	9.0	13.0	4.5	3.0	4.5
ÛEustoma Malibu Lilac	6.0	16.5	4.5	3.0	3.0
ÛEustoma Malibu White	5.5	16.0	4.0	2.5	4.5
Helianthus Prado Gold	3.9	31.7	3.5	3.5	4.5
Helianthus Prado Red	3.5	31.9	3.9	3.6	4.6
Snapdragon Apollo Ivory	7.0	17.4	3.0	2.5	4.5
Snapdragon Apollo Purple	6.5	18.0	4.0	3.9	4.5
Statice Fortress Apricot	11.3	18.5	2.3	1.4	4.1
Statice Fortress Dark Blue	10.8	18.3	3.3	3.9	4.7
Statice Fortress Heavenly Blue	11.8	18.8	3.3	3.2	4.0
Statice Fortress Purple	11.5	17.3	4.0	3.1	4.7
Statice Fortress Rose	10.9	19.4	3.6	2.8	4.0
Statice Fortress White	11.9	21.1	3.6	3.1	4.6
Statice Fortress Yellow	15.0	20.6	3.3	3.6	4.1

Sakata

Aster Serenade Blue	7.8	20.9	4.2	3.9	4.4
Aster Serenade Red	5.2	18.2	4.1	3.8	4.3
Aster Serenade White	4.5	17.5	4.0	2.6	4.6
ÛLisianthus Mirage Blue Rim	6.0	20.3	4.5	4.5	4.0
ÛLisianthus Mirage Light Pink Rim	4.5	21.7	3.0	2.5	3.5
ÛLisianthus Mirage Pure White Rim	4.7	20.7	4.7	4.7	4.7

Ø1 to 5 scale, with 5 being the best.

ÛData are the average of five or fewer respondents.

Summary of comments

For each species '+' refers to the good qualities of the cultivar and '-' refers to problems that the respondents had with the cultivar. The number in the parenthesis refers to the number of respondents who made the comment. If no number is present, then only one person made the comment. Comments by each individual respondent are separated with a ';'. Note: many people did not make specific comments on each cultivar and comments in some cases have been shortened and/or combined because of limited space or similarity to the comments of other participants.

Benary Seed

***Aconitum carmichaelii* 'Late Crop'**

+None

-No germination (4)

Additional Comments: Plants that germinated did not flower in the first year. Divisions or plugs may be easier and more practical than seed.

***Anaphalis margaritacea* 'New Snow'**

+Excellent germination (2); Low, compact plant (2); Last long in vase; Nice filler; Nice white flowers; Drought tolerant; Flower dries well.

-Susceptible to root/crown rot (3); Rosetted; Short stems; Did not flower until very late.

Additional Comments: Flowered real late in the season so frost got before I did. What I was able to cut were great. Hope they do better next year. I'd like to use more as a filler, Bugs got most of my plants; I would try them again in a raised bed, as it is a great dried flower, whiter than the wild type; We have grown this crop here for a number of years. It is one of medium interest in the industry.

***Astilbe x arendsii* 'Grande'**

+Excellent germination of seed (2); Plants good and healthy.

-Slow grower (2); Difficult to germinate (2); Too small this year to transplant out; Minimal first year production; Flower not especially showy under our conditions.

Additional Comments: We will have to wait until next year to see what we can cut off it (2); Flowered late for us (September), and was short, will over-winter to evaluate second year performance; I had trouble with tip of flower spike drooping; The only way I would try again would be to buy in plugs & probably plant in the fall; We will be very optimistic and hope this over-winters here and will report next year.

***Calendula officinalis* 'Black Centered Golden Princess'**

+Good color (4); Stems length (3); Stems strong (3); This is one of the nicest calendulas I've grown; Flowers are smaller than others; Black center is nice; Showy, floriferous; Some double flowers; Larger heads than the orange; Nice in bouquets; Size of flower; Bright, multi-petalled flowers ~6-8cm.

-While calendulas are nice, they are small and selling them is always difficult; Hot summer made blooms shrink by mid-July; Didn't last well in field – even with plenty of water; Leafhoppers; Can't get customers to buy calendula – too common a garden plant around here; Does not last as cut flower; 42% germination

Additional Comments: Tolerates light frost 1°-2° C.

***Calendula officinalis* 'Black Centered Orange Princess'**

+Good color (5); Large flowers (3); Good stem length (3); Very productive (2); Strong stems – no staking required (2); Showy (2); Very nice, floriferous; Nice splash of color in bouquets; Quilled flowers; Bright orange, multi-petalled flower with black centers; Excellent germination.

-Stem brittle, snap very easily; Had aphid problems with this, finally pulled them out because couldn't keep them off the plants; Need preservatives added to water; Poor germination; Hard to keep up with the production, had to dead head often to keep plants producing – sounds contradictory, but couldn't use all the flowers the plant produced so lots went unharvested; Does not last as cut flowers; Orange!

Additional Comments: Always seem to have lots of problems with Calendula's, so I'm not real crazy about them; I personally don't like the sticky stems – can we breed those out?; Orange does not sell early summer in N.H. – Calendula are in poor demand; Thought it would have a black center because of its name, but just the usual run-of-the-mill calendula emerged!; Grew like crazy until they got tired at the end of August.; Tolerates light frost 1°-2° C; Need special market to sell these – not a great color generally.

***Calendula officinalis* 'Golden Princess'**

+Great color (3); Large blooms (3); Strong stem – no staking required (2); Excellent germination (2); Excellent field production; Quilled flowers; Great form; Healthy, vigorous; Very showy, floriferous; Good stem length; Bright, Double flowers ~7-8cm.

-Does not keep well in just water – blooms need preservatives; Failure of blooms to open all the way; Leafhoppers; Does not last as cut flower

Additional Comments: I really liked this one!; Needs to be seeded indoors; Yellow flowers are a hard sell early in then summer – Calendula are in poor demand; We grow calendula for an edible flower, and the petals are too small to mess with; Looks like a gerbera daisy. Good for summer bouquet work; Used petals for making calendula soap. Tolerates light frost 1°-2° C.

***Centaurea americana* 'Jolly Joker'**

+Color (5); Interesting, different flower shape (5); Long lasting – 5-7 days (3); Long stems (2); Dried well (2); Customers love – sold bouquets for us; No pests bothered it; Big heads; Buds are thistle-like – very interesting; Beautiful flower –especially the “netting” around the base of the flower head; Productive; Attractive flowers when fresh; Easy; Novelty cut flower; Performed well under drought conditions; Large, fluffy, thistle-like mauve flower; 73% Germination; Great texture flower; Wonderful dry buds.

-Germination slow and poor (2); Needs to be supported; 5 days refrigeration in flats did not help; Lygus bugs deformed some of the flowers – needs to be sprayed; A lot of the blooms were disfigured.

Petals reflexed backwards a few days after cutting and was unattractive; Didn't get it supported in time – looked like a drown rat if it got wet; Water spots on flowers cause damage quickly

Additional Comments: My customers either loved or didn't, most liked it better before the flower opened. They thought the flower bud was more interesting; Need to evaluate vase life; Similar to *Centaurea americana* from Germania and to 'Aloha'; 2 plants produced white flowers; I liked it, but my customers didn't care for it. Had lots of comments it looked like the weed on the side of the road; Does not dry well – loses flower color; Novelty, great in field, attracts attention - best dried in bud stage - was direct seeded in Northern Alberta & still flowered.

***Dianthus caryophyllus* 'Floristan'**

+Germination easy and quick; Fast growing; Great vase life; 96% germination; Plants look great going into the winter; Strong, healthy plant

-Never bloomed (3); Five to six inches tall; Stayed green and lush all summer- got five blooms total by October 1st; In two months grew only three inches; Lost 20% to crown rot during growing season; Rosetted; Small flowers; Very few flowers

Additional Comments: Hopefully this plant will prove its worth next year as a second year perennial; Cold weather crops are hard to grow in our area; We finally worked them under down because we couldn't justify keeping the weeds out any longer. They had to cope with entirely too much rain and too little sunshine; Has far more promise than 'Miss Biwako' and 'Miss Kobe' from two years ago; We had hoped for blooms when the weather cooled off this fall but to no avail; First year perennial, shows good potential for next year.

***Gomphrena globosa* 'Buddy Rose'**

+Good color (3); Great bedding plant (3); Very dense with flowers (2); Grew well in field; Easy to grow; Good if just picking heads for drying; Lots of heads, good for selling by the pound; Good sturdy blooms, large in size; Holds well for dried use, if cut a bit early and allowed to open as it dries; Wonderful dry

-Too short (10); Dull color (2); Some stunting of growth- kept too long in plugs; Damping off in transplants; Not good for drying; Plants so compact you had to cut really hard to get a harvestable stem and then it was a clump all at once

Additional Comments: Okay for nosegay type bouquets, dried nosegays, in garden borders, but not for me as a cut flower; Grew side by side with 'Woodcreek Rose' – 'Woodcreek' had much longer stems and better color; 'Buddy Rose' formed plants that looked like a pink ball 12" tall and 12-15" in diameter. Excellent landscape plant, but no cut flower use; Superior short bedding *Gomphrena*; In our experience this rose color does not sell well. We stopped growing this color a couple of years ago because we couldn't move it; I would have liked to have seen longer stems; Market mostly for dried instead of fresh. Good value for dried markets, potpourri, dried arrangements – little interest as a fresh cut. Great use in landscaping.

***Helianthus* 'Soraya' (formerly 'Large Flower Orange')**

+Great orange color (6); Nice size (6); Very sturdy stems (4); Upward facing blooms (2); Incredible black face; Beautiful flower; Clean and perfectly shaped; Stems a lot stronger than other multi-

branching types; Worked well in bouquets; Easy to use in flower arranging; Continuous blossoms; Good keeping quality; Early blooming.

-Flower too big (3); Pollen drops after cutting (2); Stunted growth; Flowers small & rough shaped; Poor germination

Additional Comments: Similar to 'Sonja' but larger; Would love to have more seed; If these were pinched, would they produce multiple branches?; This sunflower always sold first, by itself & when put in bouquets. Lots of comments on the great orange color; I'll definitely try this one again next season; First of all Helianthus to bloom. Pick before fully open for longer vase life.

***Kniphofia uvaria* 'Flamenco' (formerly 'Experimental')**

+Attractive orange & yellow flower (2); High germination rate; Very tough seedlings (were left out in heavy rains for days as plugs & survived); Single stem; Good stem length; Easy; Lived through the hot summer; Unique, interesting; Strong stem.

-Poor germination (2); Didn't bloom enough & stems weren't big enough this 1st year to be able to market; Did not mature enough to bloom in its 1st year; Probably will not survive a Vermont winter; Ugly (well, maybe that's a little harsh); A bit fussy in greenhouse, but took off well in field.

Additional Comments: Similar to other Red Hot Pokers (2); Need to wait until next year to evaluate; Plants look great, next year it will be wonderful. The colors will make this very popular; Complete surprise that we got any flowers at all. As close to "exotic" as we can get here in Central Alberta. Should be able to sell all that we grow, if they over-winter!

***Liatris spicata* 'Floristan Violet'**

+Color (2); Stem strength (2); Upright stems; Thick stems; Great plants; Vigorous; Stood up to the extreme heat/drought.

-Not uniform flowering time; Bloomed out too fast (could have been heat this summer); Had some trouble with damping off, but they leaped ahead once planted in field.

Additional Comments: Late to flower, single stem, some plants did not flower. Three daughter corms on a plant; For some reason, my customers are never interested in liatris, maybe the way I do bouquets; A definite do-again! These were amazing, given our growing season – hot too early, average temps up 10-20° from "normal" as well as drought conditions.

***Lobelia* 'Compliment Green Leaf Pink with Eye'**

+Attractive clear color (2); Late season; Good stems (strength)

-Needs support; Not floriferous in 1st year

Additional Comments: We will grow over winter to see growth next year.

***Lobelia* 'Fan Bronze Leaf Deep Rose'**

+Great color (3); Very sturdy stems (2); No pests; Nice in pots for late summer color; Easy germination; Great, interesting flower; Beautiful; Attractive bronze leaf; 72% germination; Nice fine line material

-Too short (4); It did so poorly we cannot comment on 'good qualities'; Plants took a long time to take off (where too small to plant out early; it was too hot later so kept them in greenhouse.); Not floriferous

in 1st year; Stems unnaturally thick and unattractive; Spider mites in greenhouse; Doesn't branch much, if at all.

Additional Comments: We will grow over winter to see growth next year; Since we grow our flowers in Zone 5, I do not expect Zone 6 *Lobelia* to survive the winter (2); I'm not wild about color; In our experience *Lobelia* is not well appreciated in our market; Similar to *Lobelia* 'Compliment'; I have about 80 feet of *Lobelia* *verdenalis*, *candinalis*, fan, etc. I think they're beautiful & I have a perfect growing environment for them, but I can't sell them. They are beautiful to some florists, but even they say their designers don't like them and most believe their customers won't like them.

***Melica transsilvanica* 'Red Spire'**

+Easy germination (3); Nice color (2); Easy (2); Looks like a promising, unusual grass; Easy transplant; Attractive as ornamental grass, not for cut flower; I loved it. (I'm partial to grasses anyway.); Pretty in bouquets; 67% germination; Great marketability

-Heads shattered (2); Not showy enough (2); Never flowered (2); Thrips; Way too short for bouquets use; Color changed from reddish to brown very fast; All the plugs developed a bad rust problem of some sort & died at about 4 weeks old.

Additional Comments: The height problem on this may straighten out next year (become taller) as it is listed as a perennial; Due to a very wet spring we held this one back in 48's for too long apparently. Once we set it out, it never grew at all!; Plants look good, bloom next year!; I don't have a place for a perennial grass in my field; I did not realize this perennial will produce blooms the first year until an article I read in mid-summer; We treated this as a transplant and felt the yield was not high enough to warrant the extra work. Would like to try it as a direct seed crop next year. We have let it stand to over-winter – you know Albertans, the true optimists in zone 2!

***Monarda didyma* 'Red Shade'**

+Bright color (2); Germination easy & quick; Appears mildew resistant; Good stem; Plants have grown well in spite of record drought; Good seed viability & seedling vigor; Good fragrance; Unique shape of blossoms; Good line flower for florists; Fairly good vase life; Leaves very aromatic – Lemon; Hardy, vigorous plant; Shows promise if we can control powdery mildew.

-Many did not bloom or limited quantity of bloom (2); Needs support; Many plants grew to only 12-14" tall; Late to flower; Too small to transplant this year – will next year; Some damping off in greenhouse – needed higher germination temps; A little slow on the start, but caught up fairly quick in the field. Could probably benefit from cooler temps for growing season; Tended to drop blossoms after harvest; Poor germination; Powdery mildew; Our heat & alkaline soil conspired against this plant. It eventually dried up and blew away.

Additional Comments: Couldn't figure out when to cut, never seemed to look good enough to cut. Don't think the fertility was what it needed to be where it was planted; Being a hardy perennial, I'm hoping next year will be more promising for this plant. I've grown 'Bee Balm' in the past & hope this perennial will produce many useable stems for mixed bouquets next year; Will leave in ground for next year's flower; I will definitely attempt to buy seed for this to see if it measured up to the *Monarda* 'Lambada' that has many cuts, is scented, & holds up very well in bouquets.; Hope this will winter; Was just starting to flower in mid-October; Similar to *Monarda* 'Jacob Cline' – an excellent red from cuttings.

Silene orientalis

+Good healthy plant (2); Grows fast; The color!; Stem length; Shape of the flower; No one knew what it was; Majority of plants lived through the summer; High germination; Low maintenance in the greenhouse.

-Flower stem short (2); Biennial (2); One plant flowered in early September; Terrible germination; Weak little plants – hope they survive the winter

Additional Comments: Will continue to grow this next year to see flower; I am using this as a biennial; Plants look good, bloom next spring?; If indeed this is an annual it is doomed here in Vermont! Germination was good. I gave plants to 2 others – we all had the same experience of extremely slow growth. By end of September, all the plants consisted of a small rosette about 5” across and a 1 ½” high. All three of us wonder if this is not a biennial rather than an annual; Will leave in ground for next year’s flowering; This looks like it will be a good perennial for Oklahoma & able to handle the adverse weather conditions; Started plants 4 weeks earlier than needed, but they went out to the field in good shape. Will comment next year.

Cramer's Posie Patch

Amaranthus cruentus ‘Giant Copperhead’

+Color (3); Extremely long lasting (2); Long stems (2); Dries well; The copper-color was better than the yellow color since it dropped few seeds; Great for fall arrangements; Side stems nice as filler in bouquets; Ease of cultivation – did very well in heat and drought situations, relatively pest & disease free; High germination; Holds color well; Bronze flower and stem, very eye-catching, received a lot of attention from viewers of trial; Thick stems; Impressive.

-Too big (2); The yellow-gold ones dropped too many seeds; We couldn’t give this stuff away – neither to floral customers or at our farmer’s markets; Plant looks like a weed.

Additional Comments: Pinch to encourage large side shoots and remove excessively large center head (3); Similar to red root (pig weed) (2); Size of heads too large for small bouquets – Customers liked them for dried more than fresh; Good unusual specimen; We had a lot of variability. We had three different phenotypes from our seed packet!; Similar to amaranth!; Would sell better combined with red types; Different from *A. caudatus* in that it didn’t branch as freely.

Capsicum annuum ‘Chili Pepper’

+Yield - bears like crazy! (2); Great color on peppers – Bright Red (2); Strong grower; Trouble free; Use fresh or dried; All peppers sticking up; Excellent; Plants grew well & fast as transplants; If pinched, nice long side stems appear; Vigorous; Good colorful plants; Possibly use as dried arrangement; Sturdy stems & foliage; Good for drying – for work on wreaths, etc.; After 2 weeks on rain – plugs were still okay in trays.

-Very long season; Not enough height or length between nodes for cut flower production; Took a long time for them to really start growing & I thought a long time to get ‘red’, but it might have been our weather this year.

Additional Comments: This was my winner for this season. As a fresh cut it was really a hit in bouquets with sunflowers & red /orange zinnias, picked it to use fresh with just 1 or 2 red & rest green. Made wreaths with it dried & sold lots of just bunches dried; We grew the Cramer's side by side with our own cultivar. Both grew well & vigorously. – We preferred the size and shape of Cramer's (pods were slightly smaller & more pointed & yielded a little better.); I planted Burpee's 'Poinsettia' peppers at the same time, & they were turning red when most of these were still setting peppers! When it frosted (10/22), almost all were far too immature to harvest. For decorative peppers, I recommend 'Poinsettia'; Similar to Nippon Taka-Johnny's (looks identical); Similar to Red Rooster Spur – not especially different from many of the other Chile's on the market; Would make a great pot plant – compact, even form, pleasant to the eye; Have taken them to Craft Shows, where I sell dried flower bunches along with finished dried arrangements and have sold out all the pepper bunches I bring with me.

***Carthamus tinctorius* 'Superior Orange'**

+Color (4); Good production; Used as fresh & dried; Unusual flower for our market which increased demand; Good for fall market; High germination; Good branching.

- Thorny compared to variety that we normally grow (2); Had a bad problem with thrips (1st time ever); Some disease problems due to wet weather early on; Thorns & sharp leaves on some plants – still segregating for thornless/thorned types makes it unsuitable for commercial release.

Additional Comments: Since we had never grown safflower before, we weren't sure when to harvest it. It was bloomed out in a matter of days in our 90+ degree heat; Similar to Carthamus 'Lasting Orange'; We grew the 'Superior Orange' side by side with 'Orange Ball' from Grimes. 'Superior' withered up & turned brown just when starting to bloom. 'Orange Ball' bloomed, but yield wasn't great. Plants were mulched with compost & irrigated with drip tape. Last year we got a better yield from the 'Orange Ball' than this year; Sharp leaves, segregating yellow with thorns.

Millet 'Cramers Spray'

+ Dried well (2); Different & beautiful (2); The heads look woven or braided in appearance; Much customer approval; An excellent grass; Grew vigorously from seed in the field with no irrigation; Seed head was great – either picked young & green or older & more developed; Nice accent in bouquets; Nice green color (even when dried); Great with late summer bouquets; Excellent germination; Good strong growth

-Some of the stems fell over; Does not like dry conditions, no germination whatsoever. High temps this season, or late sowing could be part of the problem – I was amazed we go nothing.

Additional Comments: We also grew the smaller wild foxtail millet. Cramer's came in a little earlier; Not impressive flower spike, stayed short ~2 ½ feet, heavy seed set, could be a one time sales item; Cramer's products are generally very good germination rate & great production – this was way disappointing!; I loved this guy. Great with sunflowers & Helenium. I tried planting both direct & as transplants & had good luck both ways. Birds love them when they have gone by; Surprised that it headed out here at Olds AB; Grew like a weed, but I couldn't give them away.

Pan American

***Aster* ‘Meteor Violet Blue’**

+Wonderful, large heads (2); Beautiful steel blue color (2); Strong upright habit, sturdy stems (2); Good vase life; 10 cm flower & yellow center -Great cut flower; Excellent branching; Nice show; Nice leaves & stems too; Easy to deal with

-Stems a little weak (2) – not as sturdy as Matsamoto Aster; Poor germination; Some of the blossom did not fully open, may have been because of hot, dry weather; Some Aster yellows.

Additional Comments: Cool weather this summer, grew very nicely.

***Aster* ‘ Meteor Carmine Red’**

+Nice large heads (2); Interesting hot pink color (2); Upright habit, strong stems (2); Good vase life; Nice strong plant; Cold resistant; Vigorous; 10 cm flower, yellow center – great cut flower; Tolerant to heat; Nice show; Nice leaves & stems too; Easy to deal with

-Stems a little weak (2) – not as sturdy as Matsamoto Aster; Poor germination; Some of the blossom did not fully open, may have been because of hot, dry weather; Some Aster yellows; Blooms too late (too close to frost time) when direct seeded (comment from Zone 3/4); Bugs & Aster yellows got them first.

Additional Comments: Similar to Matsumoto Aster (2); I direct seeded the asters because I have had problems with Aster yellows on plugs/transplants in the past. May try plugs again though so I can get the flowers sooner. Did better on a south slope plot than in a flat field; Cool weather this summer, grew very nicely.

***Delphinium* ‘Clear Springs Midblue’**

+Nice color (3); Strong stems – did not need staking (2); Nice form; Uniform; Performed well despite late start and very high temperatures; Excellent germination in quantity of seedlings for delphiniums; Stems straight; Good quality and quantity for first year; Hardy plant; Wind tolerant.

-Didn't germinate well (3); Needed support netting-a lot of them blew over; 58% germination.

Additional Comments: I will certainly try this again just from our experience with other Clear Springs cultivars- Our lavender trial from last year overwintered and has blossomed all summer. It has nice tall cuts up to 24" and sets one set of blooms after another even in our heat and drought. Probably made 10 to 12 cuts per plant; We planted in crates in an open sided, covered hoop house; We never thought we could grow Delphinium in our hot summers, but this proved us wrong. We had a very hot early start to summer and it hung in there. We will try to get it in earlier next year. – I don't know if the positive market appreciation was because we were able to grow them at all, or the sheer beauty of a long full stem; Next year expect longer and more stems than this year since these are hardy perennials; Should be a great one, we will watch as it matures next season; Similar to ‘Magic Fountain’; My

customers prefer the 'Pacific Giants', as they are taller and not as compact. I found these hard to work into bouquets, as they were short and fat.

***Delphinium* 'Clear Springs White'**

+Sturdy (4); Nice color (2); Nice form; Florets – large and evenly spaced along stem; Did well despite late start and hot temps; Excellent germination and quantity of seedlings for delphiniums; Straight stems; Good quality for first year blooms; Vigorous plant; Transplanted well

-Didn't germinate well (4); Some disease susceptibility; Not quite as vigorous as Clear Springs Blue; Did not flower

Additional Comments: Can't wait to try this again because of great results on our other Clear Springs cultivars; Ten day cold period resulted in good germination. Next year expect longer stems and more stems; Always a good market for clear white line material; Similar to 'Magic Fountain'; My customers prefer the 'Pacific Giants', as they are taller and not as compact. I found these hard to work into bouquets, as they were short and fat.

***Eustoma* 'Malibu Blue Blush'**

+High germination; Better than other Eustoma varieties I have tried- grew bigger & stronger; Deep color throughout flower – nice contrast with solid blue or lavender; Mixed great with 'Silky Gold' *Asclepias*.

-Grows too slowly to be a good Vermont field crop. Can't expect plants before 1st frost even if begun in February, which I don't have resources for; Takes forever to get growing. Can't put out in field very early (I don't think); Too short in direct sun & heat; Needs support; Didn't germinate

Additional Comments: I didn't really like the color – too washed out looking; Because of our long summer, I was still cutting stems until Oct. 30. Stem length short (8-10") but still acceptable.

***Eustoma* 'Malibu Blue Rim'**

+Nice color – edges were dark, not washed out; Long vasselife; Blue-green leaves & stems.

-Do not produce enough stems to be practical for \$4 bouquets – sold at farmer's market; Very slow germinating & growing as starter plants; Didn't germinate

Additional Comments: It is Oct. 15, I am still cutting field crops – Stem length is short (10"), but we haven't had a frost; Need staking for straight stems – added cost for only a few stems per plant.

***Eustoma* 'Malibu Deep Blue'**

+Color; Good production; Good stem length; All 'Malibu's' had good keeping quality.

-Didn't germinate.

Additional Comments: Similar to 'Echo Blue' color wise but not as full – flower of 'Malibu' seemed smaller, but still nice.

***Eustoma* 'Malibu Lilac'**

+Long vasselife – up to 2 weeks (plain water); Blue-green leaves; Uncommon flower in this area; Loved the color – depends on combination of bouquet, what shade of lilac or pink this flower took on

-Don't produce enough stems to be practical for bouquets sold at farmer's markets; Very slow germinating and growing as starter plants; Didn't germinate

Additional Comments: Needs staking for straight stems; Oct. 30 – still cutting in greenhouse & field. Field length of stem is shorter & production has slowed, but cool nights have not affected blooms. Greenhouse stem length still 15”.

***Eustoma* ‘Malibu White’**

+Strong grower; Good branching; Very Clean; OK in growth

-Single whites are not as popular as doubles (2); Didn’t germinate.

Additional Comments: We grew ‘Malibu’ & ‘Mirage’ side by side. We cut ‘Malibu’ about 15 days earlier, but ‘Mirage’ kept growing taller (better) for over 2 more weeks before it bloomed; Oct. 30 – still producing flowers in field, but stem length 8-10”

***Helianthus* ‘Prado Gold’**

+Good color – Yellow-orange, bright (5); Nice size heads (3); Good upright formation – not droopy after harvest (2); Sturdy stems (2); Multi-branching; Customers like “traditional yellow/gold with brown center; Retains radial petals well; Tolerates excess heat & drought very well; Nice small flowers excellent for bouquets; Overlapping petals give a pleasing appearance (texture); Durable (strong) flowers; Long lasting; Nice sunflower look, but not too big for our market; Early; Nice tight flower; Long stems; Continue flowering; Germinated well.

-Side shoots were too short to be useful (3); Drought effected plants (2); Petals shorter than average sunflower, not quite as graceful looking, but acceptable; Not extremely productive; Pollen; Early in the season stems were very short, so I did not cut. Perhaps disbudding early dubs is necessary; Wimpy plant (blew over easily); Lightning bugs; Petals shed almost instantly on being harvested; A weak yellow; Poor uniformity & erratic branching.

Additional Comments: Similar to ‘Prado Red’; Similar to ‘Sonya’ types, but better looking and taller; Shares a lot of characteristics with numerous other small sunflowers; Great mixed with ‘Valentine’ & ‘Autumn Beauty’ sunflowers. Also, just the right size for mix bouquets or mixed with statice; Lots of branching yellow sunflowers out there. Most are better; I like ‘Prado Gold’ better than ‘Valentine” and it is just about as fast to crop.

***Helianthus* ‘Prado Red’**

+Beautiful, deep, rich color (11); Long vase life (3); Holds color well after harvest (2); Pollenless (2); Bronze/red coloring on stems & leaves very attractive; Easy stems to cut; Leaves dark & very graceful; Backs of petals are beautifully stripped; 2nd growth flowers had long enough stems; Nice flower; Customers like it; Always in bloom; Great in many combinations of bouquets; Strong stems; Small enough heads for everyday design

-Too short (2); Stems are weak (2); Tendency for heads to droop after cutting (terminal heads held up the best) (2); I didn’t plant enough!!; Poor germination when direct seeded; In dark cooler they lose effectiveness because of dark color; Small flowers; Uneven branching pattern (some single stem, others very branching).

Additional Comments: Very well received in marketplace. Blooms good size for most floral work – nice intermediate size of flower. Great eye-appeal. Cut a bit early for sales (cut too late & they fade quickly); Darker than ‘Evening Sun’ – almost black-red; Will grow this next season; Should have grown for fall production, wrong color for summer. – Bad timing; Reported as lasting 7 days in vase,

great market value!; Similar to 'Evening Sun' & 'Red Sun'; People either love it or hate it; doesn't seem to be any middle ground.

Snapdragon 'Apollo Ivory'

+Seed germination good – excellent & quick (3); Excellent color (3); Unusual snapdragon flower form (2); Easy to grow (2); Long stems; Many cuts per plant; Early bloomer; Earlier than 'Spring Giant'; Uniform for production; Stem length better than the 'Rocket' series; Nice stems; Kept producing flowers until frost

-Florets are few and/or are too far apart on stems (4); Don't like the "open" form of the flowers (2); Not as vigorous and strong as 'Rockets' which were planted in same bed (2); Customers do not recognize them as snaps; Color looks dirty; Falls apart easily; Stems not as thick as I would have liked; Not a good producer in this color – color itself seemed somewhat weak; Short season – didn't last as long as 'Rocket'; Should have support; Low germination (48%).

Additional Comments: I liked the 'Animation' series better; Not the usual snapdragon type of floret but usable. Will try again with an April planting; The florists I sell to either really liked this open snap or they didn't like it at all. This was the only thing that made it questionable to grow again; Would probably make for a good early snapdragon; Cold wind damage occurred during hardening off process before planting in field (purple leaves); Important to pinch terminal bud early; I am not growing snaps after this year. Too short to compete with greenhouse and too low a price to florists (\$3.50/bu); I used them a lot in bouquets, but my customers passed them by when they made theirs.

Snapdragon 'Apollo Purple'

+Great color – magenta (10); Long, straight stems (5); Bloomed very early (earlier than 'Rocket' snaps) (4); Seed germination very good (4); Easy to grow (2); Many cuts per plant; No lag time between first cuts & next round of flowers (2); Unusual snapdragon form (2); Long blooming time; Pretty flowers; Good for market; 74% germination; Excellent stem strength with no support; Kept producing flowers until frost

-Florets are too far apart on stems (4); Very thin stems – weak (2); Flowers unevenly spaced (2); Somewhat spindly stems – not quite as durable as other varieties (2); Not as full a flower as 'Rocket' (2); Flowers are too simple; Flowers fall off the stem too easily; They don't look like snaps; Don't really fill in a bouquet well; Don't like the form of the flower as much as other varieties; Stems not as thick as 'Animation'; Short cutting season.

Additional Comments: The florists I sell to either really liked this open snap or they didn't like it at all. This was the only thing that made it questionable to grow again; A different type of snap floret, more open but usable; Liked the look – "different" from other snaps; Cold wind damage occurred during hardening off process before planting in field (purple leaves). – No damage to 'Rocket' snapdragons; This snap was short and spindly, but at least it fought its way thru the rain; Much stronger than Ivory. – We missed the "snap" in the dragon; I used them a lot in bouquets, but my customers passed them by when they made theirs.

***Statice* ‘Fortress Apricot’**

+Interesting color variation (3); *Statice* is always a good seller; Color was pleasant when harvested early while blooms still opening – tended towards yellow more than apricot; Transplants well; Bushy habit; Strong stems; Good strong growth

-Poor color – dull (5); Poor germination; Leaf disease susceptibility; Tended to grow slowly; Blooms were easily sun bleached, browned out; Poor stem strength; Poor vigor; Did not dry well – faded to mucky brown/yellow; Not much demand for this color; Very poor yield; Color varied from dark to washed out (gross); Do not like *Statice* dried – too brittle, breaks easy- better in fresh market

Additional Comments: ‘QIS Apricot’ has strong color and better disease resistance; ‘Sunset’ strain is far superior to ‘Fortress’; Some of the yellow color *Statice* does the same; Similar to Parks and Shades; Dries well – not much of a market for this color; We have grown this series many times, always a good strong crop.

***Statice* ‘Fortress Dark Blue’**

+Strong blue color (6); Strong stems (2); Good stem length (2); Transplants well (2); Well liked by the florists; Multi- branching; Dries well; Sturdy plants; Vigorous; Color holds well (even for drying); Large blooms.

-Leaf disease susceptibility; Does not have full stems (flowers); Not much yield; Low stem production.

Additional Comments: The best I’ve ever grown. I couldn’t keep enough of this on hand – marvelous; Indistinguishable from purple; Similar to ‘Fortress Heavenly Blue’; Last year I got substantially more with ‘QIS Dark Blue’, but 1998 seemed a poor year for *Sinuata*; This was very late for us to start *Statice*, so it did not have good production before heat set in; Dyed stems – glycerin preserved excellent market value.

***Statice* ‘Fortress Heavenly Blue’**

+Nice blue color (5); Sturdy stems (2); Good sized blossoms; Vigorous plants; Dries well; Transplants well; 72% germination; Excellent yield; Holds color well when dried.

-Leaf disease susceptibility; Poor germination; Do not like *Statice* dried – too brittle, breaks easily; Dried color washed out; Not as much height as the dark blue and purple ‘Fortress’ varieties; Some bloom drop after harvest; Very late blooming (common with blue *Statice* though)

Additional Comments: Nice intermediate blue for floral work – as this shade is difficult to come by in a filler flower; Glycerin preserved – stems dyed; All *Statice* in trial took glycerin/dye treatment well – which enhanced value.

***Statice* ‘Fortress Purple’**

+Clear true color, very vivid (6); Transplants well (2); Strong stems (2); Better production than most other colors in the ‘Fortress’ series; Good germination; Well liked by the florists; Holds up well after being cut (both foliage and flower); Tolerated heat well; Sold fresh to florist; Full bracts; First color to bloom; Dries well – retains color; 74% germination

-Color somewhat dull; Low production; Yield miserable (QIS did not do much better); Some difficulty retaining blooms after drying, some shattering occurred; Leaf disease susceptibility; Extremely varied (color shade and stem structure); Most stems did not have a nice head of flowers – it took a lot of stems to make a presentable bunch; Small flower heads

Additional Comments: Similar to 'Fortress Dark Blue'; Similar to 'Purple Monarch'; The 'Fortress' strain as a whole was not impressive; I have grown a lot of annual *Statice* for the past nine years, and this strain is, on the whole, inferior to anything else I've grown; Overall an exceptional plant. Customer appreciation very high – great cut flower; Shorter stems than other colors in series.

***Statice* 'Fortress Rose'**

+Color is strong (6); Long stems (2); Many shades of rose; Transplants well; Strong stems; Dries well – maintains color well.

-Stems seem shorter than other colors in the series; Not tall enough; Later than other two varieties ; 'Fortress' bloomed later than QIS and therefore had fewer flowers; Rose Sinuata tends to turn a darker color after being dried and stored; Weaker than white; Leaf disease susceptibility; Variable quality; Many stems per plant, but not many flowers.

Additional Comments: Vastly inferior to 'Compendi Rose', which I also grew this year; Bad year for Sinuata. Grown side by side with 'Grimes QIS Rose' – QIS bloomed earlier and had better yield. Neither variety produced as it had in previous years. Plants were mulched irrigated and had every advantage; Do not really like 'English Statice' as dried – to brittle, breaks apart too easy. Would be good as a fresh flower but not dried.

***Statice* 'Fortress White'**

+Attractive clear white flowers (3); Transplants well; 70% germination; Large full bracts; More open habit than others.

-Bloomed later than other *Statice*s (white always does) (3); Not much yield.

Additional Comments: Best performer of the 'Fortress' series by far (provided a few quality cut flowers for market and showed quite a bit more disease resistance than others in the series); Acceptable but nothing more; The 'Forever' series white-silver performed much better this season; Parks 'Soiree' white is much better; I have grown all varieties of white Sinuata over the years. This one had less brown, but not much yield; Similar to QIS, but not as good. If I ever grow *Statice* again it will be QIS; Best of the three 'Fortress' in trial. We were no longer growing *Statice*, but this one will make me reconsider that decision.

***Statice* 'Fortress Yellow'**

+Good color (4); Prolific bloomer (2); Less browning than the many other Sinuatas we've tried over the years; Stems straighter than other varieties; Nice stem length; Bloomed early; Good strong growth; Transplants well.

-Tangled stems hard to cut. Poor germination; Yellow is not a popular color – hard to market; When dried, it gets brittle faster than the other colors; No leaf disease resistance; Very uneven quality from plant to plant.

Additional Comments: Not a bad yellow, but there are several newer yellows that are better; We've grown QIS yellow and most other yellows; this one was the best; Stems more rounded than other colors – much more marketable when dried.

Sakata

***Aster* ‘Serenade Blue’**

+Great color (3); Nice spray type stems (2); Long vasselife (2); Well-branched (2); Good flower form; Didn't seem to get the usual Aster yellows; Good show. Was accepted in market with enthusiasm; Flowers ~3cm, small daisy-like flower; Novelty flower; Full sprays

-Not uniform for timing compared to other members of the series; Aster yellows can be a problem here (a few plants showed signs); Very late flowering when direct seeded; Did not produce enough dollars/square foot in greenhouse - could be a good candidate for field production; Leaves around flowers turned a dark purple ~too dry?

Additional Comments: Blue was last to flower of three serenade colors.

***Aster* ‘Serenade Red’**

+Candy apple red flowers - color (4); Long vasselife (2); Excellent breaks (2); Dark green foliage; Early & easy; Good side cuts first & then entire stem with lots of flowers; No aster yellows; Good show. Was accepted in market with enthusiasm; Very floriferous – makes full bunches; Vigorous; Flower – multi-petaled, ~3cm; Full sprays;

-Did not produce enough dollars/square foot in greenhouse - could be a good candidate for field production.

***Aster* ‘Serenade White’**

+Good vasselife (3); Pretty flower; We used in bouquets; Earliest to flower of the three colors; Lots of side cuts first & then cut complete stem with many flowers still attached; Small flowers worked easily into bouquets (Used this one for some wedding work); Multi-branching habit; Bright green foliage; Flower ~3cm; Good show. Was accepted in market with enthusiasm;

-No height; No branching; Did not produce enough dollars/square foot in greenhouse - could be a good candidate for field production

Additional Comments: Of all colors, this was the most marketable. – the darker colors “get lost” in the foliage.

***Lisianthus* ‘Mirage Blue Rim’**

+Color (2); Blue bleeds into white; Production; Good keeping quality; Good stem strength

-Rosetted very badly, extended flowering time by at least a month

Additional Comments: ‘Mirage’ and ‘Malibu’ were very similar in production and size of blooms. Didn't have any problems in germination or growing; Similar to ‘Malibu Blue Rim’ & ‘Flamenco Blue.’

***Lisianthus* ‘Mirage Light Pink Rim’**

+Nice touch of pink on edges; Flower size is smaller but acceptable; Floriferous; Good stems

-Rosetted; Flowers light pink, not a strong color; As flowers matured, the petals “roll back” leading to a loss of the desirable ‘vase shape’ other *Eustoma* possess

Additional Comments: Similar to ‘Flamenco Pink’

***Lisianthus* ‘Mirage Pure White Rim’**

+Uniform flowering time and height; This lisianthus was planted very late, but still grew tall; Very clean grower; Deep green foliage.

-Slowest to flower of all three Mirage varieties; 100% rosetting; White is creamy

Additional Comments: White mixes well with everything, but like double flowers better; Similar to other summer flowering *Eustoma*; Similar to Malibu, but much taller and later; Except for 'Flamenco Purple', this is the only single lisianthus I will grow next year.