



**2013 Peony
Survey**

**Alaska
Peony Growers
Association**

March 2014

**Compiled by
American Flower Farmer, LLC
Fairbanks, Alaska**

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2013 Peony Survey

A 26-question survey (Appendix 1) was designed using the University of Alaska Fairbanks 2012 Peony Industry survey as a template. Original questions were designed by APGA members in cooperation with the UAF Georgeson Botanical Garden. Wording for the 2013 survey was changed to clarify some questions as well as to fit into the format of SurveyMonkey, the online survey service used in this project.

The survey was sent to all respondents from the 2012 UAF survey, all current members of the APGA, and members of an email list compiled over the past 10 years at UAF. It included emails from anyone who had expressed an interest in peony culture including non-APGA member. The goal was to identify as many people who were growing peonies as possible to gain an accurate understanding of the industry.

In addition, a paper copy of the survey was handed out at the APGA conference for new growers and those who did not complete the online form. The SurveyMonkey survey was released on 20 Jan 2014, and reminders were sent 27 Jan, and 8, 26, 28 Feb with at least three announcements during the APGA annual meeting. The planned final date for respondents to complete the survey was 15 Feb, but it was extended by the APGA Board for one final chance to respond. We also targeted APGA grower members with one final email to see if we could get 100% response from at least those growers with 500 or more roots in the ground.

On 10 March, with a portion of the data analyzed, we submitted an incomplete report to Ron Illingworth so he would have a chance to ask additional questions that should be included in the final report. He submitted one request – an analysis of member responses to the survey.

RESULTS & DISCUSSION

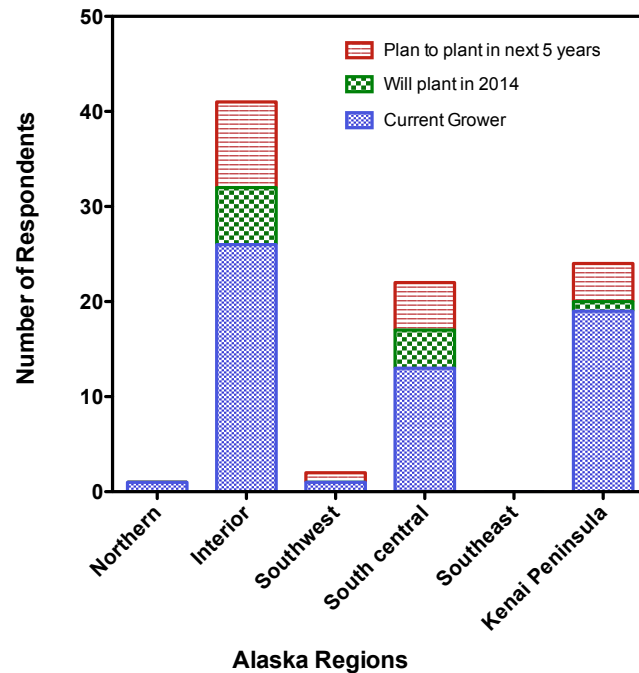
Respondents

The email survey was sent to 210 addresses, and 40 paper copies were handed out at the APGA annual meeting. Eighty nine growers or potential growers responded to the survey, one by paper survey and the rest by email. Three individuals on the original list opted out of the survey, thus the total mail list was 207 with a 43% response rate. This low rate of return was expected since the original email list included non-members and a ten-year-accumulated email list from UAF. We expected that a lot of those people would opt out or not respond.

Respondents included 20 full commercial members of APGA (60% of listed members); 20 associate members and 49 non-APGA members. The associate member list is a mix of growers, business supporters, extension agents and other government support. It was not possible to identify associate members who were strictly growers.

Forty-one percent of the respondents were located in the Interior Region (Fig 1), while Southeast, Alaska was the only region with no respondents. After the survey was completed, we learned of at least one grower who is in the process of clearing land and

Fig. 1. Respondents by location completing the peony survey and their status as growers

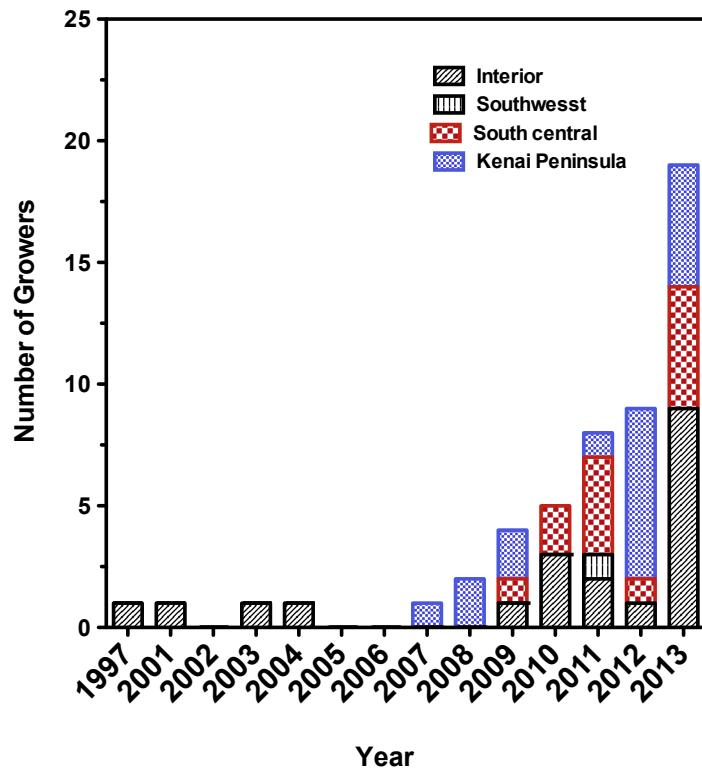


obtaining permits to plant up to 5 acres of peonies near Juneau. They will be added to the mailing list if future surveys are conducted.

Sixty respondents indicated they had peony roots in the ground as of fall, 2013; eleven plan to plant in 2014, and 18 will plant within the next five years. Most of the growth in number of farms will be in the Interior region (Fig 1) both for next year's planting and within five years.

More than half of current growers planted in 2012 and 2013 (Fig 2). With a 2-4 year delay in harvest, the farms currently in Alaska will not begin cutting until at least 2015, probably later depending on individual farm conditions. Some early farms did not begin cutting until year five. The greatest number of new farms occurred in 2013 in the Interior, 2012 on the Kenai Peninsula and in 2011 and 2013 in south central Alaska.

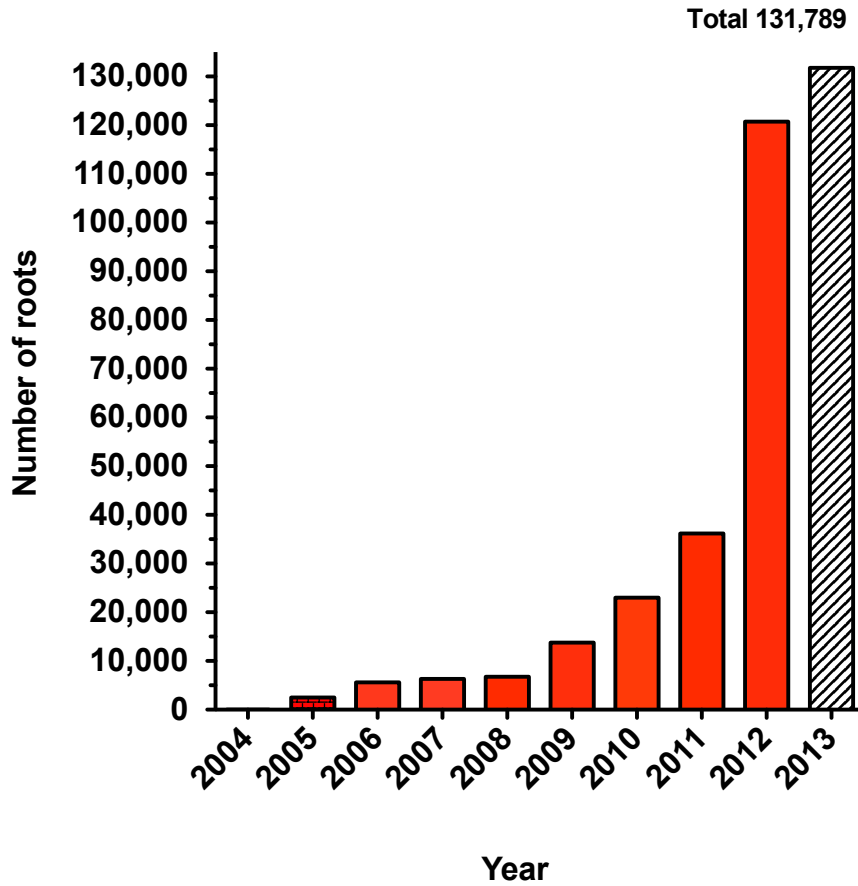
Fig. 2. The year growers in each region with peonies in the ground first planted roots



Roots in the Ground, end of 2013

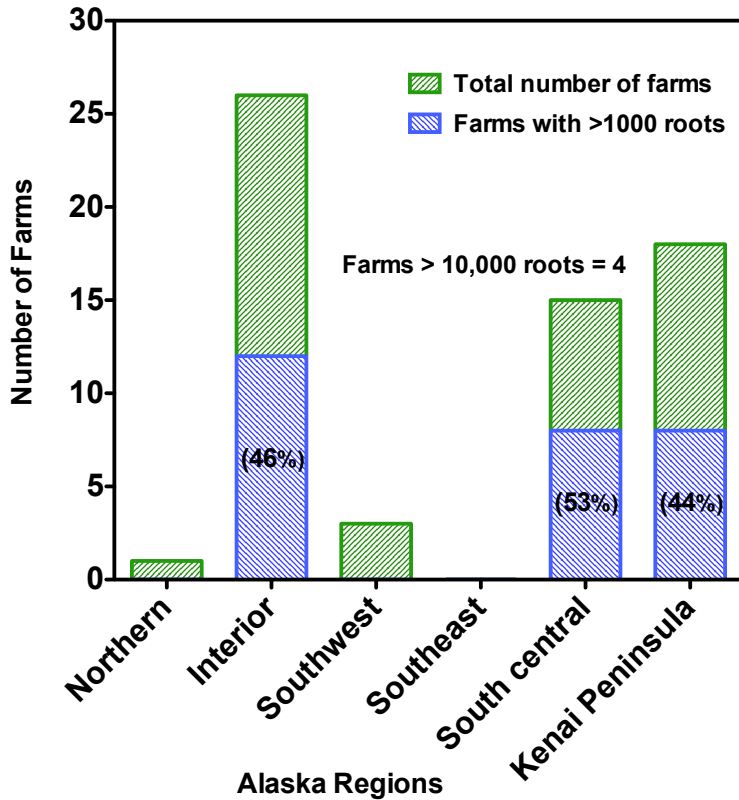
The total number of roots in the ground as of fall, 2013 reflect roots planted through last season plus losses recorded from winterkill and other causes (see next section). The total number increased by 11,054 roots from 2012 numbers (Fig.3). The total number of roots continues to increase but at a slower pace than the increase between 2011 and 2012. Growers commented that planting plans changed; they did not plant as many as they had expected; they miss-judged soil preparation times, and/or they experienced losses they had not counted on. Of the 89 survey respondents, 58 completed this question (n=58).

Fig.3. Roots in ground, Fall 2013



Thirty farms reported having 1000 or more roots in the ground, the most being in the Interior (Fig. 4). In the three major regions, between 44 percent and 53 percent of the farms reported 1000 roots per farm. The maximum number of roots per farm was reported from the Kenai Peninsula with 15,000 roots, and the fewest reported, 11 roots, was in the Interior. The average number of roots per farm was 2312 roots, although this number is almost meaningless because of the very wide range of roots reported. The largest growers added to their root numbers, but several new growers started in 2013, thus planting small quantities to test site qualities before investing time and money into a peony farm.

Fig 4. Total Number of farms per region with roots in the ground and those with >1000 roots



Number of Roots per Farm
 Maximum = 15,000
 Minimum = 11
 Mean = 2312

2013 Plantings and Future Plans

Of the 55 growers responding, 14 growers did not plant any new roots in 2013. Other growers planted from one root to 5830 new roots (mean 656.8 ± 1016.4 roots). Sixteen growers planted 1000 or more roots in 2013 (Table 1). Nine growers did not plan for any 2014 new root plantings. For 2014, growers estimated they would plant a total of 46,820 new roots (mean 867.0 ± 1233 roots). Most planting will occur in the Interior and on the Kenai Peninsula. Estimates ranged from 10 roots to 6000 roots per farm. Several farms showed a range of roots rather than a definite number. The tabulated numbers used in Table 1 included the lower estimate to show a conservative planting.

Table 1. Root planting activity in 2013 and estimated 2014 plantings by region.

	Interior	Southwest	South central	Southeast	Kenai Peninsula
Growers (No.)	18	1	11	0	12
Roots (No.)					
Max	5830	50	1400		2500
Min	63	50	80		1
Mean	872.2+1361.3	50	424.6+455.1		574.75+734.8
Total roots planted	20,934	50	9196		9196
Future Planting (2014)					
Roots (no.)					
Max	3600	100	2000		6000
Min	40	100	200		10
Mean	970+1234.0	100	611.5+721.3		968+1602.5
Total roots for 2014	24,250	100	7950		14,520

Root Winterkill and Injury

Concerns were raised primarily by growers in south central Alaska and the Kenai Peninsula about winterkill due to waterlogged soils, little or no snow cover, winter freeze/thaw cycles, frost heaving and/or too shallow root crowns. We asked respondents to report an approximate percentage of roots they lost during the 2012-13 season and what percentage was injured (delayed emergence, reductions in productivity, bud abortion). The scatter plots show individual responses; the vertical bar represents the mean (Figs 5,6).

In the Interior and Kenai Peninsula regions, more than half of the growers reported no losses or less than 5 percent root winterkill. One grower in the south central region and one on the Kenai Peninsula reported 100 percent loss. The Interior region had a maximum loss on one farm of 40 percent. All regions reported average losses of 25 percent or less (Fig. 5). Respondents also reported that root injury from winter damage averaged less than 5 percent at each farm (Fig 6). The greatest amount of root injury was reported from one farm on the Kenai Peninsula.

Fig 5. Growers reporting root winterkill in 2012- 2013

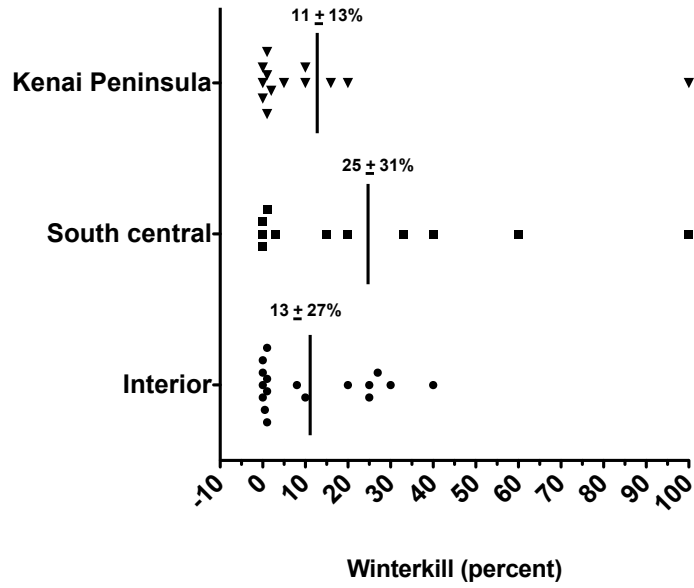
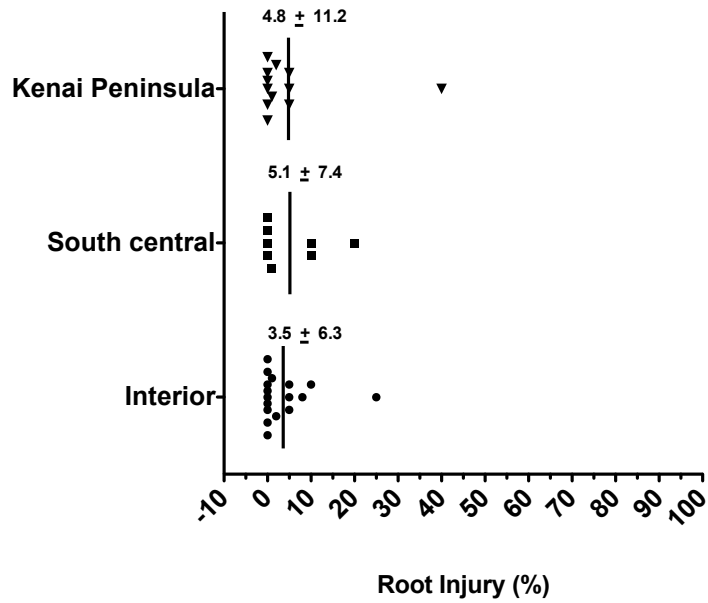


Fig. 6. Growers reporting root winter injury in 2012- 2013

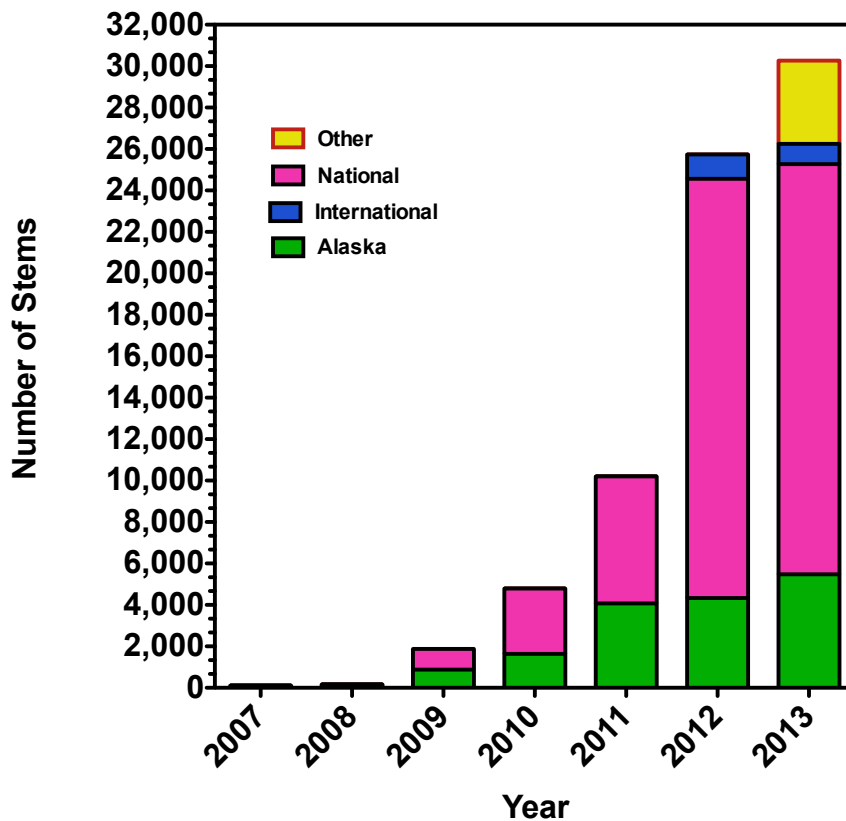


The question about root injury caused a bit of confusion with some respondents who replied --not applicable, don't know- covered with snow, unknown, unsure. This question needs to be re-written in future surveys.

2013 HARVEST

The total number of stems harvested was 31,360 stems for all regions. This number was higher than 2012 (Fig 7) but we added a category in 2013 from the 2012 UAF survey that makes exact comparison across years difficult. The category was “harvested, but not sold”. In previous years, only “total stems harvested” was asked. No doubt, there were stems harvested in 2012 that were not sold, but it is not identified. In queries outside the survey questions, two growers of the 52 growers responding to this survey indicated that their unsold stems were due specifically to unsold quality stems. One respondent noted that Dutch growers are storing their peonies for extended periods, thus competing with Alaska peonies. A second grower said he/she had similar issues in previous years, but buyers returned to the Alaska flowers after purchasing cheaper, stored imports because of quality concerns.

Fig.7. Stems harvested by destination



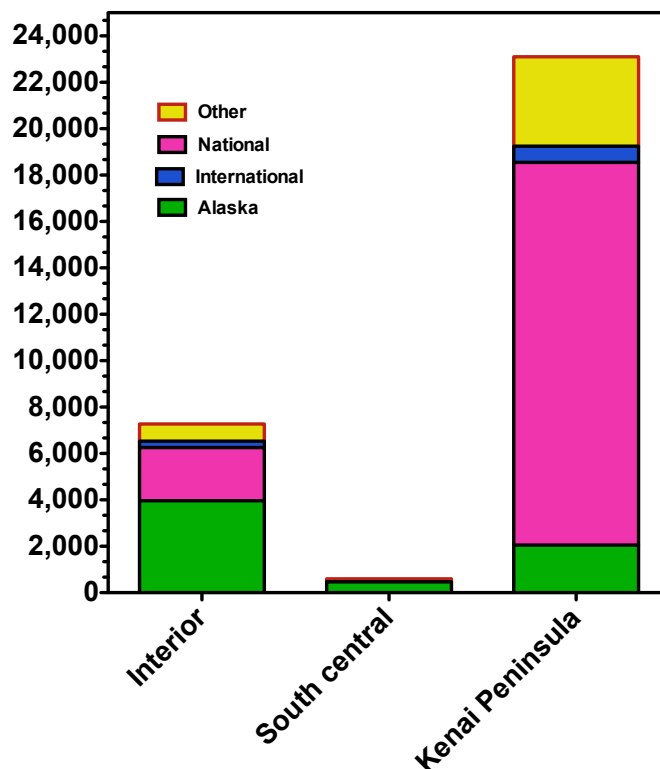
Other = marketing, advertising, public events, donations to charity, exhibits, unsold, wrong bud stage, storage losses

The literature on peony research for the past 20 years has emphasized a lot of work on extending storage life of fresh cut peonies with colder than normal storage temperatures, improved packaging materials, and chemical preservative solutions. All of these options will increase competition pressure on Alaska markets. This issue of competition might be a problem with large-scale brokers who will purchase the cheapest product regardless of source or quality but may not be as important for direct consumer sales and buy-local markets. It does emphasize the need to develop a statewide reputation and brand for the highest quality flowers to obtain top dollar.

Other growers replied that their unsold stems were used in marketing/advertising, public events such as parades and fairs, and donations to charitable organizations. Other growers commented that unsold stems were due to grade-out losses (blown buds, improper cutting stage, too short stems), problems in cold storage, and *Botrytis* in storage. In future surveys, these categories should be emphasized in order to increase the knowledge of solvable problems in the industry.

By region, no stems were harvested from northern and southwest Alaska. More than half the stems sold commercially were harvested from the Kenai Peninsula followed by the Interior and South central region (Fig. 8). Field production began as early as 2004 on the Kenai Peninsula and Interior, while planting has just begun in south central region.

Fig. 8. Stems harvested by region and destination

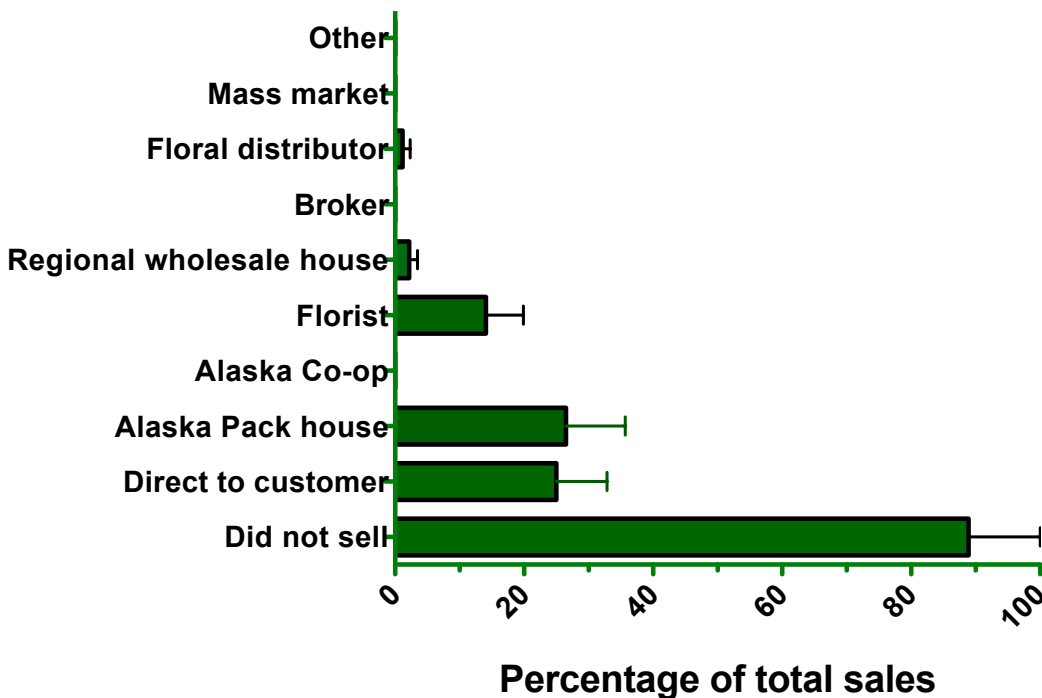


Six growers reported sales to national and international markets either individually or through a pack house. Sales to Canada (3 respondents) and Taiwan (2) led international sales for the second year. State sales included (most frequent to least frequently listed): Texas (3), California (2), New York (2), and one mention each for Michigan, Colorado, Washington, Louisiana, North Carolina, Wisconsin, Utah, Massachusetts, New Hampshire, South Carolina, Rhode Island, Florida, New Mexico, Connecticut. This list may include multiple sales to any one state.

2013 Buyers

Forty-one growers responded to the question about buyers of peonies. Twenty-eight respondents reported that they did not sell fresh cut stems to anyone (Fig 9.). The remaining growers reported the greatest percentage of their sales to Alaska pack houses and direct to customers. Four growers sold 100 percent of their stems to pack houses, but the remaining growers showed sales to multiple buyers. No flowers were sold to mass markets, brokers and Alaska co-ops. Since two co-ops just formed in 2013, sales will probably shift to these buyers in 2014.

Fig 9. Buyers of Alaska peonies



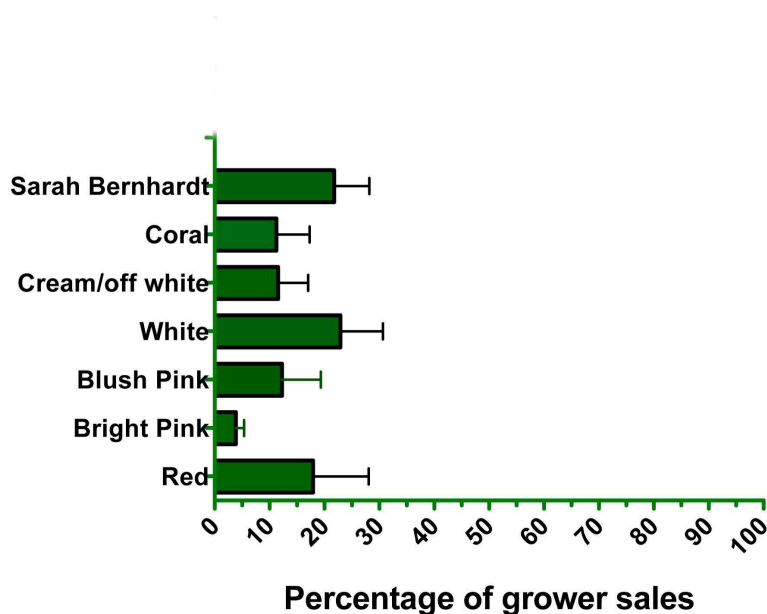
Price ranges were similar across buyer types and showed a wide range from \$2.00 to \$7.00 per stem (Table 2). Although we would have expected the lowest prices to be from wholesale buyers, the lowest prices were reported to pack houses and direct to customers.

Table 2. Price range by buyer for Alaska peonies

Buyer	Range of sales value (\$)
Mass Market	
Floral Distributor	3.50 – 5.00
Broker	
Regional wholesale house	3.50 – 4.00
Florist	3.50 – 6.00
Alaska Co-op	
Alaska Pack house	2.00 – 6.50
Direct to Customer	2.50 – 7.00

As in previous years, ‘Sarah Bernhardt’ and white peonies topped the sales according to color (Fig 10.) followed by red. Corals, creams and blush pink accounted for similar percentage sales by growers. Only three growers reported sales of a single color. All others who responded (n=41) showed sales of multiple colors.

Fig.10. Percent sales by color



Gross Sales

Flowers ranged widely in price and did not show a significant price difference based on color (Table 3). Cream/off white showed a slight advantage with the highest minimum price reported. The only color that ranged below \$2 per stem was 'Sarah Bernhardt' reported by one grower. Gross sales reported by all growers (n=32) responding to the survey was \$92,905.

Table 3. Price range per stem based on flower color and gross sales, all colors

Flower Color	Range of sales value (\$)
Red	3.25 – 6.60
Bright Pink	3.50 – 6.50
Blush Pink	3.00 – 7.00
White	2.00 – 7.00
Cream/off white	4.25 – 7.00
Coral	3.50 – 6.00
Sarah Bernhardt	1.85 – 6.00
Total gross sales, all colors	\$92, 905

Cultivars

As in 2012, the top five cultivars planted by Alaska growers were 'Sarah Bernhardt', 'Duchess de Nemours', 'Festiva Maxima', 'Felix Crouse', and 'Red Charm' (Table 3). Many other cultivars were grown and ranged from nearly 18,000 roots in the ground to one root as a trial. Sixteen cultivars on the list were only found at the UAF Georgeson Botanical Garden, and growers reported 54 new cultivars to add to the list in future surveys.

Table 4. Cultivars currently grown by Alaska growers.

Cultivar	Number of roots		Cultivar	Number of roots
Sarah Bernhardt	17,926		Coral Sunset	673
Duchess de Nemours	13,168		Lillian Wild	600
Festiva Maxima	12,000		Coral Supreme	400
Felix Crouse	4,155		President Roosevelt	400
Red Charm	3,434		Henry Bockstoce	301
Charlie's White	3,420		Paula Fay	301
Mons. Jules Elie	2,977		Mons. Martin Cahauzac	200
Edulis Superba	2,776		Rubra Plena	200
Coral Charm	2,766		Grover Cleveland	193
Bowl of Cream	2,647		Dr. G.F. Bretehour	180
Kansas	2,292		White Sarah Bernhardt	156
Avalanche	2,073		Mother's Choice	145
Felix Supreme	2,068		Lady Alexandra Duff	101
Shirley Temple	1,657		Paul M. Wild	100
Dr. Alexander Fleming	1,521		La Lorraine	100
Elsa Sass	1,294		Katie Kennicott	100
Victorie a la Marne	1,167		Walter Faxon	100
Shawnee Chief	1,160		Hermoine	100
Baroness Schroeder	1,100		Moonstone	60
Blush	1,020		Bartzella	56
Pink Hawaiian Coral	950		President Taft	50
Nick Shaylor	845		Gardenia	50
Karl Rosenfield	804		Adolphe Rousseau	50
Mary Jo Legare	701		Richard Carvel	30
Marie Lemoine	673		Alba Plena	7
Ann Cousins	527		Sweet Marjorie	4
Immaculate	450		Francis Ortega	1
			Buckeye Belle	1
Cultivars planted by growers and numbers planted that were not on the original list				
My Love	1950		Amalia Olson	150
Allan Rogers	653		Mother's Choice	145
Sister Margaret	500		General McMahon	124
Myrtle Gentry	375		Autens Pride	100
Mme Emilie Debantene	300		Joker	76
Avis Varner	200		Adonis	75
Big Ben	200		Garden Treasure	73
Mons. Martin Cahauzac	200		Easy Lavender	62
Mr. Ed	200		Moonstone	60

Mrs. F.D. Roosevelt	200		Raspberry Sundae	58
Nebraska White	200		Angel Cheeks	5
Eden's Temptation	51		Solfatare	3
Cytheria	50		Liumbimaja	2
Gardenia	50		Singing in the Rain	2
Nancy Nichols	50		Smith Family Yellow	2
President Taft	50		Yankee Doodle Dandy	2
Rowan Reilly	50		Francoise Ortegat	1
White Ivory	50		Leto	1
Ivory Victory	35		Magical Mystery Tour	1
Catharina Fontijn	32		Nadia	1
Pietretje Vriend Wagenaar	30		Phoebe	1
Bartzella	56		Princess Juliana	1
Queen of Sheba	25		Serebrenyi	1
Scarlette O'Hara	25		Serebro	1
White Sands	25		Solange	1
Many Happy Return	23		Sorbet	1
Border Charm	8		Voskhod	1

Since 2001, peonies have been grown at the University of Alaska Fairbanks, Georgeson Botanical Garden. The UAF collection includes 110 cultivars of herbaceous (*lactiflora*), Intersectional and species peonies that might be useful in home gardens, landscapes and commercial cut flower production. The Alaska Peony Growers Association (APGA) solicits comments from its members on the suitability and reliability of peony cultivars in fields around Alaska. Table 5 includes all the cultivars grown at UAF and by APGA members who complete cultivar evaluations once each year during the annual industry survey.

Table 5. Comments by growers and UAF trials of peony cultivars.

Cultivar/species	Color/Class	Notes
		Fairbanks UAF: Trials at the UAF Georgeson Botanical Garden APGA- notes from previous year's trials from APGA members (13) individual responses by APGA members, 2013 Blank field – someone has this cultivar planted but not enough time for comments
<i>P. anomala</i>	Rose, single	Fairbanks UAF: (heirloom from Fairbanks garden), blooms very early, Excellent hardy garden flower for early to mid June bloom season. One of the first garden flowers to bloom in Fairbanks. Outstanding foliage display all summer and ornamental seed pods in autumn

Cultivar/species	Color/Class	Notes
		Fairbanks UAF: Trials at the UAF Georgeson Botanical Garden APGA- notes from previous year's trials from APGA members (13) individual responses by APGA members, 2013 Blank field – someone has this cultivar planted but not enough time for comments
Adolphe Rousseau	Red, double	Fairbanks: some losses experienced in Fairbanks, Homer: (13) have had 2% loss over 2nd winter, the rest of the plants very high quality, average 24" stems and 8 stems per plant by second summer (13) good performer
Adonis	Light pink, double	
Alba Plena	White	Fairbanks: (13) not good; very few survivors 1st year Willow, Kenai: unappealing bloom, very short stems, not good cut flower
Allan Rogers	White, double	
Amalia Olson	White, double	
Angel Cheeks	Pink, Bomb-type double	
Ann Cousins	White, double	Fairbanks UAF: poor growth, possible herbicide (glyphosate) damage when sprayed very early before buds were visible, damage still visible in 2013, some cabbage heads Wasilla (13) difficult root to grow
Avalanche	White w/red flecks, double	Kenai: late bloomer, strong performer (13) very good
Avis Varner	Red, double	
Baroness Schroeder	White, double	APGA: disappointing Kenai (13) 200 winter killed
Bartzella	Yellow, Intersectional, semi-double to double	Fairbanks UAF: outstanding garden flower, hardy at warmer sites in the Interior, needs snow cover, short stems for cutting
Best Man	Deep red, double	Fairbanks UAF: poor growth in first years, recovered in year 2, few flowers, stout stems, ribbed, excellent flower quality, robust
Better Times	Dark Pink, double	Fairbanks UAF: died out
Big Ben	Red, bomb-type double	
Blush	Blush pink, double	Fairbanks: (13) seems vigorous and good survival rate North Pole: (13) hardy
Border Charm	Yellow, semi double Intersectional	
Bowl of Beauty	Pink w/ yellow centers Japanese	Fairbanks UAF: planted twice, died out both times

Cultivar/species	Color/Class	Notes Fairbanks UAF: Trials at the UAF Georgeson Botanical Garden APGA- notes from previous year's trials from APGA members (13) individual responses by APGA members, 2013 Blank field – someone has this cultivar planted but not enough time for comments
Bowl of Cream	Creamy white, double	Homer: best priced white, susceptible to <i>Botrytis</i> , slow to establish, may not be harvest able until 4+ years. (13) No buds 1st year. (13) planted 300, lost 200 the first year; the surviving plants healthy and strong although not very tall, average stem length 14" with 1 to 3 stems per plant. (13) takes long time to mature and not so many buds on each plant but beautiful Trapper Creek: (13) slow coming on Wasilla: (13) grows well
Brand's Magnificent	Crimson, double	
Bridal Icing	White guard petals, cream bomb petals, bomb-type double	APGA: great cut flower performer Fairbanks UAF: some gummy cabbage flower buds, has side bud, after cutting some blossoms dry before opening
Bride's Dream	White,	APGA: a favorite at the 2011 APGA conference
Buckeye Belle	Burgundy, semi-double	APGA- huge blooms, took many years to produce flowers
Catharina Fontijn (Katheryn Fonteyn)	Pale Pink, double	Fairbanks UAF: stubby flowers, short stems, best for gardens, not commercial cutting
Charlie's White	White, crown-type double	APGA: blooms abundantly soon after planting Homer: (13) flimsy stems (13) lots of cabbage heads Wasilla: (13) grows well
Cheddar Gold	White/gold center, semi-double	
Claudia	Pink, single	Fairbanks: (13) moderate survival rate, beautiful flower
Cora Louise	Pale lavender/purple semi-double, Intersectional	
Coral Charm	Coral pink, semi-double	APGA: excellent, very large blossoms & strong stems, do not disbud, very long bloom time in Homer-- into October. needs staking and protection from wind in some areas North Pole: (13) terrible survival rate. lost most. Trapper Creek: (13) hard keeper Wasilla:(13) grows well
Coral Sunset	Coral, semi-double	Homer: (13) Great buds 1st year. (13) best coral, holds longer than Charm Wasilla: (13) grows poorly
Coral Supreme	Salmon coral semi-double	Fairbanks UAF: wimpy plants, not many flowers, short stems

Cultivar/species	Color/Class	Notes Fairbanks UAF: Trials at the UAF Georgeson Botanical Garden APGA- notes from previous year's trials from APGA members (13) individual responses by APGA members, 2013 Blank field – someone has this cultivar planted but not enough time for comments
Corinne Wersen		Fairbanks UAF: looks nice in field, weak stems, some buds do not fully open- harvest stage will be important
Couronne d' Or	White, red flecks double	Fairbanks UAF: has side buds, lots of crooked stems
Cytheria	Medium pink, semi-double	
David Harum	Deep rose, bomb-type	Homer: (13) love this one, bright color and holds well
Doris Cooper	White, double	
Double Red	Red, double	Fairbanks UAF: lots of gummy cabbage buds in the second year, some buds do not fully open after cutting
Double White	White, double	
Dr. Alexander Fleming	Pink, double	APGA: scented, stores well Fairbanks UAF: great productivity, nice long stems, similar to Sarah B, after cutting some buds did not fully open, partial opening then decline Homer: (13) have only 50 planted and have been the least healthy variety so far., stems average length 18" winter die out 25%, (13) Everyone's Dr. looks different no true varieties in AK I've found Nenana: (13) grows well, very large flowers! North Pole: (13) good survival, strong stems
Dr. G.F. Bretenhour		Delta Junction: (13) less susceptible to wet soils in spring than Sarah, short stems

Cultivar/species	Color/Class	Notes
Duchess de Nemours	White or blush, double	<p>Fairbanks UAF: Trials at the UAF Georgeson Botanical Garden APGA- notes from previous year's trials from APGA members (13) individual responses by APGA members, 2013 Blank field – someone has this cultivar planted but not enough time for comments</p> <p>APGA: dependable, hold up well, fragrant, prolific bloomer, shorter stems than some other cultivars Fairbanks: (13) not good, very few survivors 1st year, (13) dependable and large bushes Fairbanks UAF: not the clear white as advertised in the 'lower 48', some years flowers are more pink than blush, excellent cut flower but opens fast, need to harvest more than twice a day to catch every one, stems shorter than most Homer: (13) no buds 1st year. (13) Out of 500 in the ground only 10 to winter die off, extremely good growth, average stem length first year 24" on two year plants 30 inches and stem count average 6 per plant on the two year olds. (13) reliable, blooms over long season, lots of blooms, not so large but many so \$\$ value Kenny Lake: (13) came up slow, good stalk and leaves for first year Nenana: (13) beautiful cream, if outer petals are damaged, unsalable because of flower type. North Pole: (13) good survival, long stems, big flowers Two Rivers: (13) these are doing just fine, no problems except for winter kill (13) did well, with some die off Wasilla: (13) the best long strong and abundant, wish the whole field were duchess. (13) grows well</p>
Duchess de Orleans	Pink, double	Fairbanks UAF: died out after 2 seasons
Early Scout	Red, single	Fairbanks UAF: interesting brilliant red blooms on top of feathery foliage, great garden flower, not for cutting
Easy Lavender	Pink, Japanese	Fairbanks: lovely plants with showy blooms, seems easy to grow, good survivor
Eden's Temptation	White, double	Fairbanks: nice plant, good survivor
Edulis Superba	Rose pink, bomb-type double	<p>APGA: favorite peony of willow gardener, Les Brake, good, young performer, fragrant, easily damaged by late spring frost Homer: (13) out of 250 roots lost 10 to winter kill, first year 2013, average stem length 18 to 24" average stems per plant 4 to 5 Fairbanks: (13) not good, very few survivors 1st year (13) excellent plant with excellent survival rate Wasilla: (13) not many had blooms (13) grows well</p>

Cultivar/species	Color/Class	Notes
Elsa Sass	White, double	<p>Fairbanks UAF: Trials at the UAF Georgeson Botanical Garden APGA- notes from previous year's trials from APGA members (13) individual responses by APGA members, 2013 Blank field – someone has this cultivar planted but not enough time for comments</p> <p>APGA: strong shorter stems, open bud style harvest peony, August, September, 2011 was super rainy, buds held water and rotted at the stem, needs rain protection, never saw true bloom, disappointing, a difficult cultivar. pick softer than others, opening problem, marks when squeezed</p> <p>Homer: (13) great bushy plant, no buds 1st year (13) out of 50 winter killed 15 , stem length 14 to 18 " , 2 to 3 stems per plant</p> <p>Wasilla: (13) would not open all the way (13) grows well, but hard to get blooms to open, must pick in a much later stage</p>
Emmaculate (Immaculate)	White, double	Homer: (13) takes forever to get to a good bud growth
Eskimo Pie	White w/pink stripes double	Fairbanks UAF: stems are too short for cut flowers, showy garden flower
Fairbanks	White, yellow centers, single	Fairbanks UAF: has side buds, huge blooms, excellent garden flower, tall stems, not for commercial cutting
Felix Crouse	Dark pink/red, bomb-type double	<p>APGA: many blossoms even when young, needs support, very popular with brides, ships well and holds well, very long stems, showed bruising from wind in 2011, good, reliable producer for several years</p> <p>Fairbanks: (13) beautiful flowers, excellent plant with excellent survival rate</p> <p>Kenny Lake: (13) small, but sturdy plant</p> <p>North Pole: (13) good survival, earlier plantings have long stems, newer plantings from different grower have shorter stems</p> <p>Two Rivers: (13) the worst performer, small, not a lot of stems, will try to replace them with Festiva Maxima. (13) poor growth and survival</p>
Felix Supreme	Deep rose, bomb-type double	<p>APGA: needs support, good producer</p> <p>Homer: (13) 50 in the ground, 20 second year stem length 18" 4 to 5 stems per plant the other 30 planted fall of 2012, no winter kill on that 30, first year stems were 16 to 18 inches 1 to 3 stems per plant. (13) holds color well conditions.</p> <p>Palmer: (13) out of 200 roots, only 21 came up, think it might be weather</p>
Fernleaf Peony, <i>Paeonia tenuifolia</i>	Red, double	Fairbanks UAF: very early bloom time in June, not a cut flower, finely dissected foliage with small deep red buds, excellent hardy garden flower

Cultivar/species	Color/Class	Notes Fairbanks UAF: Trials at the UAF Georgeson Botanical Garden APGA- notes from previous year's trials from APGA members (13) individual responses by APGA members, 2013 Blank field – someone has this cultivar planted but not enough time for comments
Festiva Maxima	White w/red flecks, double	<p>APGA: old time reliable, good performer, good production and does well in our soils, winters over well, strong stems in Fairbanks, wish I had a field of Festiva, incredible blooms, cream-ivory when young, then goes white, they seem to ship just fine.</p> <p>Fairbanks: (13) did not do well for me, lots of lose and never did thrive, (13) look good year 2</p> <p>Homer: (13) flipping leaves. undiagnosed ailment, probably weird soil conditions, we're working on it, (13) bushy, nice buds in first year. (13) 0 loss to winter kill, stems extremely hearty and tall, planted 2012. Stem length 18 to 24 " 3 to 5 stems per plant (13) huge flower but too much red flecks for some brides</p> <p>Kenny Lake: (13) sturdy plant, slow but good growth</p> <p>Nenana: (13) "steady freddy", very reliable, grows great! (13) can sustain more field damage before unsalable because of flower type</p> <p>North Pole: (13) good survival, big flowers, strong stems</p> <p>Trapper Creek: (13) hardy</p> <p>Wasilla: (13) seem a bit short, flowers smaller than I would like, would not plant again, (13) first year, blooms on a lot. (13) grows well</p>
Festiva Powder Puff	White, double	Fairbanks UAF: double shiny green dark foliage, elegant blooms, a UAF favorite in 2013
Florence Bond	White, double	Fairbanks UAF: died
Fragrant Pink Improved	Pink, double	Fairbanks UAF: has side buds, short stems, buds slow to open, most did not come to full bloom
Francis Ortega	Burgundy,	Fairbanks UAF: small flowers, lots of <i>Botrytis</i> in cut buds
G.F. Hemerick	Medium pink, Japanese	
Garden Treasure	Bright yellow, single	
Gardenia	White double	APGA- very large blooms, significant losses from winter injury in Fairbanks
Gay Paree	Rose pink, lt. pink centers, Japanese	
General McMahon		Nenana: flowers too small for floral market, plant very compact and prolific after 7 years of growth
George W. Payton	Pink, double	Fairbanks UAF: has side buds
Glory Hallelujah	Pink, double	<p>APGA- performs well, not the most prolific producer but gorgeous</p> <p>Fairbanks UAF: excellent large blooms, rivals Sarah B in size and show but lower in yield</p>

Cultivar/species	Color/Class	Notes Fairbanks UAF: Trials at the UAF Georgeson Botanical Garden APGA- notes from previous year's trials from APGA members (13) individual responses by APGA members, 2013 Blank field – someone has this cultivar planted but not enough time for comments
Going Bananas	Yellow, single Intersectional	Fairbanks UAF: some <i>Botrytis</i> in cut buds, too short as cut flower but great in gardens
Grover Cleveland	Dark rose, double	APGA- newly planted, growing well Fairbanks: slow start but good, compact foliage by end of summer; planted May 2013
Heidi	Rose pink, Japanese	
Helen Hayes	Dark pink, double	Fairbanks UAF: as cut flower, some buds withered on the stem, did not open
Henry Bockstoe	Bright red, double	APGA: needs support, delicate petals are easily damaged by weather, insects, disease, and fungi, can lose up to 50% of blossoms, do not disbud, huge red blooms
Hermione	Pink, double	Fairbanks UAF: crooked stems, disbud
Inspecteur Laverne		
Irwin Altman	Rose pink,	Fairbanks UAF: has side buds, small flowers
Ivory Victory	White, double	
Jaycee	Rose, double	Fairbanks UAF: died out
Joker	Pink, Double	
Julia Rose	Deep pink Intersectional, single to semi-double	Fairbanks UAF: earliest of the Intersectionals; gorgeous two-toned blooms; great garden plant with snow cover, warm sites only.
Kansas	Red, double	Fairbanks UAF: died out North Pole: (13) good survival, strong stems, large flowers APGA- works well at other Fairbanks sites, nice color, short storage life, petals appear burned after 2 weeks in cold storage, not easy to harvest
Karl Rosenfield	Red, double	Fairbanks UAF: died out Fairbanks: (13) lots of blooms, flower quality not the best, (13) after first season it appears to be an excellent variety, no losses. Wasilla: (13) harvest time was hard to judge, will probably replace them
Katie Kennicott	Pink	
La Lorraine	Creamy white/blush double	Fairbanks UAF: has side buds, nice tall stems, productive APGA- growing well, needs deadheading
Lady Alexandra Duff	Blush pink, double	Fairbanks UAF: lots of cabbage buds Kenny Lake: (13) good growth and sturdy
Lady Kate	Pink, double	Fairbanks UAF: <i>Botrytis</i> in cut blooms

Cultivar/species	Color/Class	Notes Fairbanks UAF: Trials at the UAF Georgeson Botanical Garden APGA- notes from previous year's trials from APGA members (13) individual responses by APGA members, 2013 Blank field – someone has this cultivar planted but not enough time for comments
Lancaster Improved	White, bomb-type double	
Largo	Dark rose guard, gold-tipped staminodes,	Fairbanks UAF: has side buds; as cut stem, some did not open
Leslie Peck	Pink, Japanese	
Leto	Dark pink,	
Lilian Wild	White, double	Wasilla: (13) grows well
Liubimaja	Pink, double	
Lottie Dawson Rea	Light Pink,	
Louis van Houtte	Rose pink,	Fairbanks UAF: dead
Love's Touch	Blush pink, semi-double to	Fairbanks UAF: lots of <i>Botrytis</i> in cut buds
Lowell Thomas	Dark red, semi-double to	Fairbanks UAF: nice long stems
Madame de Verneville	Creamy white w/red flecks, double	
Madame Emile Debantene	Pink, double	Delta Junction: they did better than the Karl Rosenfield and worse than Sarah Bernhardt Fairbanks UAF: has side buds, some fresh cut buds do not open in the vase
Magical Mystery Tour	Creamy yellow w/lilac pink blush, semi double to double,	Fairbanks UAF: great survival, outstanding plant and flower quality, needs warm site with snow cover
Many Happy Returns	Red, anemone to bomb-type	Fairbanks: appears to be similar to Coral Charm in growth and plant appearance
Marie Lemoine	Creamy white, double	APGA: voted first place in peony competition APGA 2011 Fairbanks: (13) my favorite white, excellent plant and great survival rate Homer: (13) 200 planted fall of 2012 3% winter killed, the remainder of the plants very healthy, stem length 18 to 28" 3 to 5 stems per plant
Marietta Sisson	Rose, double	Fairbanks UAF: crooked stems, has side buds, cabbage buds, some cut buds do not fully open, very poor performance in garden and vase
Mary Brand	Red, double	Fairbanks UAF: has side buds, gummy cabbage buds, lots of deformed, lopsided buds
Mary Jo Legare	Dark Pink, double	Nenana: (13) Does very well in my location - bud is kind of ugly (slightly open & wrinkly)[cabbage bud?] but flower is beautiful

Cultivar/species	Color/Class	Notes
		Fairbanks UAF: Trials at the UAF Georgeson Botanical Garden APGA- notes from previous year's trials from APGA members (13) individual responses by APGA members, 2013 Blank field – someone has this cultivar planted but not enough time for comments
Mighty Mo	Deep rose,	Fairbanks UAF: some cut buds never opened
Minuet	Pale pink, double	
Miss America	White, single w/yellow	APGA- very large blooms, amazing, vigorous, long flowering
Monsieur Jules Elie	Pink, bomb-type double	APGA: large blossoms, long stems, needs wind protection, huge blossoms with long stems that people ask for, but keeping them upright and straight is a challenge Homer: (13) small plants, no buds first year, (13) planted first 50 in 2011, plants extremely hearty and tall, 20 to 30", the rest planted fall of 2012, 2% winter kill, remaining plants very good and 3 to 5 stems per plant Wasilla: grows well
Mons. Martin Cahazac (Cahauzac)	Red, double	Fairbanks UAF: has side buds, popular color in the garden North Pole: (13) surviving well but too early to tell on rest
Moon of Nippon	White/yellow centers,	
Moonstone	Blush pink, double	Nenana: (13) stunning! flowers are luminous pearly pink!
Mother's Choice	Creamy white, sometimes blush pink, double	APGA: supposed to be white double but is a gorgeous antique soft pink Kenai: (13) short plants Wasilla: (13) lovely
Mr. Ed	Blush pink, bomb-type	
Mrs. Franklin D. Roosevelt	Pale pink, double	Fairbanks UAF: dead
My Love	Pale pink, double	Fairbanks: excellent plant, beautiful blush blooms, great survival rate Trapper Creek: awesome
Myrtle Gentry	Light pink, double	Trapper Creek: very slow.
Nadia	Pink, bomb-type double	
Nancy Nichols	White, double	
Nebraska White	White double	
Nick Shaylor	Blush pink, double	Fairbanks UAF: many crooked stems, has side buds Homer: (13) one of my absolute favorites, looks good enough to eat. One of our most requested Wasilla: (13) grows well, but slow to produce buds

Cultivar/species	Color/Class	Notes Fairbanks UAF: Trials at the UAF Georgeson Botanical Garden APGA- notes from previous year's trials from APGA members (13) individual responses by APGA members, 2013 Blank field – someone has this cultivar planted but not enough time for comments
Nippon Beauty	Burgundy, Japanese	
Norma Volz	Blush pink, double	APGA-supposed to be white, but like so many whites in the rainy summer of 2011, were fringed with light pink, bud tops were crinkled on the one year plants
Orlando Roberts	Burgundy, semi-double	Fairbanks UAF: second favorite “dark red” peony after Mons. Martin Cahazac, some people don't like the yellow stamens in the center of the dark petals
Paul M. Wild	Red, double	Homer: (13) holds color longer than any other red in our experience
Paula Fay	Bright pink, double	APGA-many gorgeous fluorescent pink blossoms with short stems first year, it doesn't ship well, lovely and packed with buds, but I still think there is a market for that big satin pink flower
Phoebe		
Pietretje Vriend Wagenaar	Dark pink, double	
Pink Hawaiian Coral	Pink, semi-double	Fairbanks UAF: dramatic color change as flowers open, nice color but plants are weak and not very floriferous, okay for home gardens but not for commercial cutting Kenai (13) short plant but young still
Pink Parfait	Pink, double	Fairbanks UAF: died in first 2 years
President Roosevelt	Medium-red, double	APGA: 3-yr plants in Homer are medium red that gets burgundy/purple stained petals as they age, they aren't heavy yielders but are reliable and have a nice bud eith lots of <i>Botrytis</i> in cut buds Homer: (13) nice deep almost maroon red
President Taft	Pink, double	Fairbanks UAF: many deformed flowers, lopsided opening APGA- young, strong performer
Princess Bride	White, bomb-type double	
Princess Juliana	Pink, double	
Queen of Sheba	Rose, bomb-type double	
Raspberry Sundae	Pink, double	APGA: huge, mostly pink, double blossoms on mature plants were very large and beautiful. They respond well to bone meal. Fairbanks UAF: died out.

Cultivar/species	Color/Class	Notes
Red Charm	Red, bomb-type double	<p>Fairbanks UAF: Trials at the UAF Georgeson Botanical Garden</p> <p>APGA- notes from previous year's trials from APGA members (13) individual responses by APGA members, 2013</p> <p>Blank field – someone has this cultivar planted but not enough time for comments</p> <p>APGA: very large blossoms, tall strong stems need support, expensive roots. Do not disbud. Good, reliable performer. One of the “favorites” at August, 2011 APGA Conference</p> <p>Fairbanks: (13) slow developer but gorgeous blooms; improves and strengthens more ever year</p> <p>Fairbanks UAF: short stems, gorgeous bloom color; great garden plant and cut flower even with short stems</p> <p>Homer: (13) doesn't bloom with consistent size etc. for us</p>
Richard Carvel	Red, double	Nenana: (13) plants are not growing very tall - 3 yr olds are only about 12" tall????
Rowan Reilly		
Ruth Cobbs	Medium pink,	Fairbanks UAF: has side buds, needs disbudding
Sadie Fisher's Peony	White, double	Fairbanks UAF: heirloom from Illinois garden; blooms, very productive, this is not a cultivar but an heirloom named after Sadie Fisher simply because it came from her yard, true cultivar unknown
Sarah Bernhardt	Pink, double	<p>APGA: old time favorite, dependable, some losses when snow cover is not sufficient, stores well, good season extender, very susceptible to fungal attack on Kenai P., killed completely on some Kenai Peninsula sites over winter in 2012</p> <p>Delta Junction: (13) more winter kill on Sarahs, biggest plant, fast growing, more susceptible to wet ground in spring than Duchess, (13) grows well</p> <p>Fairbanks: (13) good performer, nice hardy bush with many stems, improves each year, (13) vigorous growth - 100% survival in 2013 plantings</p> <p>Fairbanks UAF: very productive, large blooms, vigorous plants, one of the top recommended pinks for cut flower production</p> <p>Homer: (13) flipping leaves, undiagnosed ailment, probably weird soil conditions, (13) small plant, no buds 1st year. (13) 8% winter kill due to icing. first 30 planted in 2011, good strong plants 24 to 34" stems, 6 to 9 stems per plant the remainder planted fall of 2012 2% winter kill the rest very health and vigorous, stem length 18 to 30" 3 to 9 stems per plant (13) this is the plant we lost in 2013, never before</p> <p>Kasilof: (13) in the eight that died in '13, the roots rotted so I assumed that they suffered from the weird weather which continues this winter</p> <p>Kenny Lake: (13) small but sturdy plant, 3-6 stems with flower bud out of 30 plants (cut before maturing) some plants were very slow, no blight</p>

Cultivar/species	Color/Class	Notes Fairbanks UAF: Trials at the UAF Georgeson Botanical Garden APGA- notes from previous year's trials from APGA members (13) individual responses by APGA members, 2013 Blank field – someone has this cultivar planted but not enough time for comments
Sarah Bernhardt (continued)		North Pole: (13) excellent survival, strong stems, large flowers, very popular with brides Trapper Creek: (13) the best so far Two Rivers: (13) the best growth and height-wise; only had one that looked shorter, let one bud go and got a 6" flower! Wasilla: (13) good and faithful (13) good success and blooms best
Serebrenyi Velvet	Medium pink,	Fairbanks UAF: small flower size
Serebro	Violet pink, silver edges, double	
Scarlett O'Hara	Red, single	
Shawnee Chief	Red, double	APGA-grew well, late Fairbanks UAF: died out North Pole: (13) good survival, decent stems Wasilla (13) grows well
Shirley Temple	White, double	APGA-slow starters taking several years before they produce cut stems, but are not strong producers in Fairbanks, disappointing, does not grow well Fairbanks UAF: small blooms, many misshapen stems, cannot recommend as cut flower, lots of deformed flowers, cabbage buds, gummy cabbage buds North Pole: (13) a lot of cabbage heads Wasilla: (13) always the first to pop and harvest
Singing in the Rain	Two-toned light pink to orange, Intersectional,	Fairbanks UAF: small blooms but plenty of them, hardy in the Interior on warm sites and with snow cover, as cut flower does not open well, lots of <i>Botrytis</i>
Sitka	White, single	Fairbanks UAF: large blooms on tall, somewhat floppy stems, great display for gardens, not a cut flower
Smith Family Yellow	Creamy yellow, single, Intersectional	Fairbanks UAF: very ornamental, hardy in the Interior on warm sites with snow, not recommended for cutting
Solange	White to blush pink, double	Fairbanks UAF: needs disbudding, susceptible to <i>Botrytis</i> , lots of cabbage buds and gummy cabbage buds, poor garden and cut flower
Solfatare	Yellowish cream fading to white, double	
Sorbet	Pink and white double, layered	Fairbanks UAF: died within 2 years of planting, layer cake blossoms, intriguing, attention-getting blooms, prolific, stems need support

Cultivar/species	Color/Class	Notes
		Fairbanks UAF: Trials at the UAF Georgeson Botanical Garden APGA- notes from previous year's trials from APGA members (13) individual responses by APGA members, 2013 Blank field – someone has this cultivar planted but not enough time for comments
Sweet Marjorie	Pink, semi-double, cactus style	North Pole:(13) too early to tell but poor survival
Therese	Pale pink, double	Fairbanks UAF: lots of cabbage buds, many cut buds did not open, lots of <i>Botrytis</i> in cut buds
Victorian Blush	White/blush	Fairbanks UAF: short stems, short vase life
Victorie a la Marne	Purplish-red, double	Fairbanks: marginal performer, few buds even after 3 years in Fairbanks
Vivid Rose	Rose pink,	Fairbanks UAF: died within 2 years of planting
Voskhod	Pink bomb-type Pink, semi-	
Walter Faxon	Pink, double	Homer: (13) hard to get started but when established satisfies the blush needs
Westerner	Pink, Japanese	Fairbanks UAF: planted twice and died both times
White Ivory	White, double	
White Sands	White, Japanese	
Yankee Doodle Dandy	Rose pink w/ dark rose centers, semi-double,	Fairbanks UAF: blooms well, hardy in Interior gardens on warm sites with snow cover

Grower Comments by Region

Northern – none

Interior

We put in an irrigation system in 2013. All of our new plants did very well. The plants that were already in the ground (2012 planting) we lost due to too much water the summer before. Hopefully our problem is solved.

Had serious issues with watering. We only had 1 good rain all summer in the Interior where my farm is. I watered enough to keep them alive, but not sure how much root growth happened. We did install a drip irrigation system in May, running off of our house system, but discovered that the pump in our house was not strong enough to get water all the way down to the farthest rows in our field. I could only water 1/3 of the field a day. Ran our well out of water several times trying to water. Need to find alternate source of water if we ever have a dry summer like this. Suggestion to new growers - installing an irrigation system in a field that already has plants is not easy as you are trying to work

around plants and not damage them. It is better to put your irrigation in right at the beginning when first creating your fields.

Too hot and dry, hard to manage watering and fertilizer.

Since we are on permafrost, we are seeing losses and dormancy issues every year. Warmer spots in the field are of course doing better - best advice is related to site selection - the warmest, southern facing, slightly sloped piece of land you can afford. Weather too warm, too quick, ground temp too cold when air temp jumped so strange growth.

So far, I have had success each year with the Festiva Maxima roots providing large blooms.

Planted June 3-8 2013. Added phosphate and compost mixed in with soil into 2 feet depth. Plants came up in 8 days. Watered twice daily AM /PM with non fertilized water due to hot and dry temperatures. Watered less than 1/2 in each time with well water from hose. Water temperature varied.

Fewer stems sold than previous year. Previous year's lack of irrigation in one section of field greatly reduced the number of stems produced the next year though the plants seemed to be unaffected by less water.

Great summer. First time planting. Hot and sunny. Over fertilized the younger starts and burned many. Recovered most after removing as much as possible. Got water on board ASAP.

Crazy getting beds ready in 1 week after May 20 snows; planted 248 roots on May 26. Then right into 80 F weather for several weeks - drip irrigation put in at planting was a life-saver. Several volunteer plants (maybe *Dicentra cucullaria*?) came up with the peony roots from Oregon Perennials; I transplanted these out to another bed and will watch them.

The season was great. Flowers were productive and good quality.

Plot for planting became unavailable...sooo I improvised. I planted in 5 gal horticulture bags. Gardening by the square foot soil composition. 1/3 drainage, consisting of sand, perlite, wood chips, 1/3 compost (had wood chips) 1/3 garden soil 70%peat-30% sand. Did great!

Had issues with soil subsidence so roots were shallow. I suspect that caused a lot of winterkill. Hilling is valuable because of soil drainage in spring when ground is frozen. We had cold early with little snow in October and November.

We are new growers, so we learned a lot. Farming peonies has a steep learning curve ! Summer of 2013 was late and extremely dry. A lot of our challenges were because of the hot and dry weather. There was no Spring, we went from Winter to Summer in about a week. We had planned on having about three weeks before planting to finish up our field

prep. we had started in the Summer and Fall of 2012. Since this didn't happen, it was a race to finish field prep. while 2700 roots sat in our garage staying somewhat cool with the help of two air conditioners. We did not hook up our drip irrigation system yet as we are still working on planting grass between rows. So we used overhead sprinklers which had to be rotated around the field. This year we are planting fewer roots (2000). We will be installing our drip systems.

Have a good enough water supply to provide for unexpected times of drought! I would like to install a reliable irrigation system next year so I don't have to rely on hand watering.

I had problems with my watering hoses which didn't help with the dry, hot summer of 80+. I want to put in a well just for the peony's so they get water more often if need be. I have been putting white frost covers on my 6 rows and that has helped when there's an early thaw. I just wish I could have known not to plant Felix Crouse as I feel I've wasted 3 years. The Arctic Vetch that I planted in the paths has helped with weeds but I have to mow it several times during the summer. After taking the Tax class here from UAF I found out that the land clearing and dirt work that we had done to start to build the rows is not part of my business expense (which was a big chunk of \$) but an amount you would get back when you go to sell the property. It's an improvement on the land only. I also confirmed that I didn't have to start my business (license, insurance, etc.) until I'm ready to start selling. As long as I've been keeping receipts and records then that's ok. Some people might think they have to be part of the Coop or association before they even have roots in the ground.

Great season in the interior. Late spring but plants thrived on hot weather. Good air circulation really helps keep moisture off plants. Weed control is key to success. Weeds thrive in hot/dry and cold/wet conditions. Proper, soil sample-specific, and consistent fertilizer schedule/application really showed noticeable improvement in plant growth and health. Water soluble fertilizer is awesome.

Hot, dry--hot, dry Be sure you have irrigation option ready immediately upon planting.

Southwest

I need to find a better mulch for our area, as we get too many winds. Straw is not enough. We will look at installing some wind breaks for the winter, probably burlap.

South central

Couldn't keep the field watered. Drip system going in this spring.

Saturated soils going into winter was a big concern. During the warm weather thaw/melt in January we lost all snow cover. I noted that the rows facing east/west had a larger percentage of soil thawing in the raised beds then the rows planted north/south. But, the rows facing north/south had less snow melt between the rows. We recovered all of

the raised beds with 2-4 inches of loose and packed snow as the temps started to drop. This seemed to moderate the soil temps to around 32 degrees. Next season, all rows will be planted in a north/south orientation with a emphasis on drainage. I want to modify my raised beds to make them wider and taller to facilitate drainage. I will make that final decision during spring when I can note any problems or successes over the winter.

Fall of 2012 was very wet when we planted. About 40% of our roots failed to grow.

Thank God I have good drainage.

Going into winter it was very wet with little snow cover early. Adequate snow cover arrived in late December. Spring was about 3 weeks behind normal followed by a very dry and sunny June. Blooms matured quickly and harvest was done before picking started in 2012. We suffered no root loss I believe because of attention to drainage. Our low attrition is attributed to being able to keep our roots relatively dry.

First year, hot & dry for June, terribly wet for Aug & Sept. We'll see how things look this next spring

Southeast- none

Kenai Peninsula

225 of roots temporarily planted for division in a high tunnel. 462 in test field.

Drainage is the most important feature for growing successfully. Keep the wild plants from growing close to your fields to avoid so many weeds.

Appx 40% bud blast on entire field. Lost only 200 plants of Baroness Schroder from winter kill. The bloom and harvest season came on quickly, all at once. We lost stems from too open buds and not enough labor to harvest. Harvested stems were cut too late and opened. Irrigated constantly last summer. Income lower than last year from this unpredictable heat and stems loss.

Took a long time to get to spring but when it did, it was warm from that day on. We dealt with drought conditions and an early harvest. We lost a very few plants to winter abuse but other than that we didn't lose any to the glaciation that occurred. Had leased cooler space for early part of season and in the cooler, the buds developed a black mold. We had to clean every bud again and dispose of some, it was troubling. Hoping to never see that again. We do not understand what caused the mold to develop, it was the first time we'd seen this.

Lost about #200 to rot from ice covering/rain (Homer area) about #200 were just late with weak shoots. I kept some and tossed some. We made a "hosp bed for those we kept. This fall we heaped up more dirt over the crowns and will uncover this spring. We are

wondering if we should put a cover on the rows to help with the ice/rain freeze/thaw problem? Right now the weather is :raining on the snow causing problems?

Great sunny summer, too hot. Plants needed lots of water. Bloomed very early.

Too early, too fast, Dutch still in the market. Bad year.

This was their first summer and there were no flowers because I snapped them all off so the roots can grow. I am getting my act together and installing some kind of watering system this summer ('14) because watering them by hand is not the best way. I will be able to keep them watered more consistently and evenly.

I planted my first 400 roots in grow bags in 2012: they grew without damage in a garage grow house...planted 2013 August along with 200 new roots. Our ground prep wasn't finished on time due to poor soil conditions. Peonies did well in bags...but We will see how much if a success our planting is in 2014.

The winter of 2012-2013 was extreme, cold, with no snow for the first half of the year, then warming up and giving us 4 feet of snow in late January through March. The spring and summer was hot and dry. Very little rain. I blame what loss I had on the cold with no snow cover early in the winter. It was not a usual winter for this area. The surviving plants were beautiful and they loved the sunshine and warm breezes. No pests, no fungus.

PACK HOUSE, CO-OP SURVEY

Of 51 respondents, 5 indicated they were a pack house, co-op, wholesale house or other type of re-seller that had sales in 2013. They buy peonies from other growers, combine them with their own for re-sale. Six other growers indicated they were organizing as a re-seller but had no sales in 2013. The re-sellers reported how many growers were served by their businesses. They were 1 grower (Interior), 3 growers (Kenai Peninsula), 8 growers (Interior) and more than 20 growers (south central).

Re-sellers reported rejecting from 0 to 85% of cut flowers brought to their businesses. The reasons flowers were rejected included (most to least frequently reported):

1. too open to ship/sell
2. too short stems
3. buds were not even a "A" grade
4. insect damage
5. buds too tight
6. damaged buds

Most sales were to national buyers (Table 6) with all re-sellers. Sales were similar averaging 30-45 percent of stems to consumers, florists, floral distributors and brokers, but it varied widely among re-sellers. One sold 95 percent of stems directly to consumers, but the others sold to two or three sources. The highest return was received from direct customer sales followed by florists. Buyers were located in California, North Carolina, Wisconsin, Utah, New York, Massachusetts, New Hampshire, South Carolina, Texas, Arkansas, Rhode Island Florida, Washington, Canada and Taiwan. Up to 10,000 stems were sold through pack houses in 2013.

Concern was expressed by some re-sellers stating they did not want to share price and sale information and wished to keep that information proprietary. If this survey is repeated, APGA members should discuss future information to gather.

Table 6. Sales by pack houses and other re-sellers

Sales:	Average	Max	Min
Alaska	17.3%	37%	5%
National	75.5	95	52
International	15.3	30	5
Buyers:			
Consumer direct	37.5%	95%	5
Florist	38.0	70	20
Floral Distributor	30.0	70	5
Broker	45.0	45	
Prices:			
Consumer direct		\$7.00	\$5.00
Florist		6.50	4.00
Floral Distributor		5.50	4.00
Broker		5.50	3.80
Stems sold:*	4399 ± 4937	10,000	676

*3 pack houses, re-sellers responded to this question

Re-sellers shared recommendations for growers interested in selling through a pack house or other re-seller:

We will monitor growing conditions for all our growers in future. More participation and better communications including written contracts with lots of pictures and requirements.

On farm refrigeration is critical. Talk to your pack house about their buying programs and how they meet your needs. If you want to sell a quantity of your stems retail look at contracting a % of your harvest to the pack house to cover expenses...at a minimum.

We look for top quality. Doubles or bombs. 22 inch stems. Double and triple A buds. Disease and pest free. Straight stems. Less than half of leaves removed. Chilled if kept for more than 2 hours before being brought to packhouse.

Take time to learn to harvest correctly for each cultivar. Proper chilling, handling and transportation as well as field production management are key elements for a successful harvest.

Absolutely critical is working with the pack house to learn what varieties they will accept before you plant. Choose just a couple of varieties and then perfect the cutting stage. Learn the peony grades that are acceptable and make sure you bring only those qualities to the pack house. The reputation of the pack house will be based on consistent quality throughout. Don't expect pack houses to sell junk or your definite seconds.

Appendix 1 Peony Grower Survey- 2013 Season

This survey is conducted by the Alaska Peony Growers Association (APGA) annually to establish the size of the industry, document its growth, and provide valuable marketing information to the industry. You do not have to be a member of APGA to participate. We appreciate your time and effort to help us produce an accurate picture of this amazing industry.

You do not need to have peonies in the ground to complete this survey. If you are still in the planning stages, complete the first couple of questions, and you're done!

The survey has two parts, one for growers and a second for pack houses or wholesalers. The individual grower survey comes first, followed by pack houses.

All responses are encrypted and confidential. Only summarized data will be released. No member of APGA, its board, survey respondents or the public have access to the raw business data.

Please complete by February 15, 2014

1. Please complete your contact information: Name, company, city/town and email address
2. What is the physical location of your farm or farms? Choose all that apply. Interior, Northern, south central, southwest, Kenai Peninsula, southeast, other
3. Did you have peony roots in the ground in 2013? Yes, No- I will be planting in 2014, No- I'm not quite there yet. I intend to plant within the next five years, other.
4. Please describe the roots/plants you have in the ground as of December 2013
 - a. Year you first planted peonies
 - b. Total number of roots in the ground right now
 - c. Percent of plants/roots killed from the previous season
 - d. Percent of plants showing winter damage in 2013 but not dead
 - e. Number of new roots plants in 2013
 - f. Number of roots you estimate planting in 2014
5. How many cut flowers did you harvest and sell in 2013?
 - a. Total number of stems harvested
 - b. Total harvested but not sold
 - c. Total sold in Alaska
 - d. Total sold nationally
 - e. Total sold internationally
6. If you sold nationally, internationally what states/countries were recipients of your gorgeous peonies?
7. Who bought your peonies? % did not sell, direct to customer, pack house, co-op, florist, regional wholesale house, broker, floral distributor, mass market, other.
8. If you chose the other category, please describe the business.
9. What was the price range you received from each buyer category?
10. What percentage of cut flowers did you sell in each color category? Red, bright pink, blush pink, white, cream, coral, Sarah B, other.
11. What price or range of prices did you receive for each color category?
12. Total gross sales for peonies in 2013.
13. How many roots of each cultivar did you have planted. Please list new cultivars as well.
14. Please provide comments on each cultivar's success such as poor growth, winterkill, few stems, etc.
15. Did you grow any other cultivars not listed?
16. Please comment on your growing season- the good, the bad and ugly.
17. Is your business an Alaska pack house?
18. Please describe your business- number of growers, total number of cut flower sold
19. Where did you sell flowers?

20. Who bought your peonies (see list question 7)
21. If you answered other, please describe
22. What price range did you receive from each buyer category?
23. What states/countries received your peonies
24. What percentage of flowers did you reject from growers and why?
25. What were the reasons flowers were rejected?
26. What advice do you have for growers interested in selling to your pack house, wholesale house?

Thank you so much for completing this survey.