

Secrets Revealed: New Herbaceous Hybrid Peonies

Slide order and information for program

- 1) Secrets Revealed: New Herbaceous Hybrid Peonies. Nate Bremer, Solaris Farms.
- 2) Herbaceous hybrids are the new kids on the block in the peony world. They incorporate a number of species peonies into their genetic heritage and are quite different than the lactiflora peonies we have become familiar with. The major characteristics that are most evident are an earlier bloom period, color variation and unusual plant habits.
- 3) A herbaceous hybrid seedling and a joker with a shovel during the 2016 American Peony Society Convention tour at Solaris Farms. Seedlings are plants grown from seed and are genetically different than other cultivars. The hybridizer grows many seedlings in hopes of producing a few that are significantly different and are improvements on what already exists on the market.
- 4) Dr. A.P. Saunders is the father of the hybrid peony. He lived in New York and was the first hybridizer to undertake a detailed program of crossing all of the herbaceous peony species. The main period of his work took place during the 1940's and 1950's. Many of his plants remain in high demand for their interesting colors and plant habits. Further hybridization of his plants has been carried out over the past 65 years, but has been slow, until recent advances in fertility have been found. Pictured is 'White Innocence' which is an unusual white multi-flowered single. The plant can reach a height of 5 feet without support.
- 5) Why produce new generations of peonies? Goals that could improve the peony are: Hardier plants, better flower carriage, increased fertility, new colors and patterns, new forms, new foliar forms, new plant sizes, increased vigor and disease resistance. All good things for the gardener!
- 6) Presently herbaceous hybrids have a number of issues, including: poor stem strength, disease resistance, lack of fertility, flower quality, slow propagation, short bloom season and lack of fragrance. All of these problems are being addressed, but multiple generations will be required to 'fix' these issues.
- 7) A number of cultivars in the hybridizer's tool box have shown promise for producing better plants. Some plants are now available with improved stem strength. Many more plants are showing promise in variation of foliage, bloom season, plant size and propagation speed.
- 8) Hybridizer's love to know the heredity of their plants. What are the ancestors and what potential is hidden in the genes of these plants? A pedigree can be helpful.
- 9) This is a pedigree for the cultivar 'Little Corporal'. Bill Seidl of Manitowoc, Wisconsin hybridized this plant and it's genetic heritage is especially diverse. This diversity is of special interest to the hybridizer since there are numerous outcomes that could be expressed in their offspring. At this time, 'Little Corporal' has the greatest number of species in genetic line-at least 6.
- 10) For many years hybridizers had very few fertile hybrids to use as parents. This has changed quickly as greater exploration has occurred and interest has broadened. This is a list of some of the most used plants today. They are not only interesting to the hybridizer, but the gardener for their varied beauty.
- 11) *Paeonia lactiflora* is the most common herbaceous peony in northern gardens. There are thousands of registered/named cultivars, many which date back to the 1800's (or earlier). The entire group is actually a species that has been selectively bred for nearly 1000 years. In China, which is where the species grows in the wild, the emperors retained gardeners to grow them exclusively for their own viewing. *P. lactiflora* cultivars are often very fragrant and are what are commonly grown for cut flowers. New cultivars are less commonly produced by hybridizers since improvement is difficult due to the vast numbers already in commerce.
- 12) Omega Centuari is a new lactiflora introduction. Unlike many, it has very sturdy stems and does not lay on the ground after heavy spring rains.
- 13) Necromancer, another new lactiflora cultivar has rather unremarkable/typical semi-double flowers. The attention getting part of this plant is the very dark stems produced early in the growing season. Nearly black stems make this an interesting contrast to surrounding plants and its own foliage.
- 14) The herbaceous hybrids are of special interest in the garden due many blooming at an early date. In Wisconsin, many of these hybrids bloom at the end of May and the lactiflora cultivars generally follow a couple of weeks later. Their wide variance in height, breadth and flower characteristics adds much interest.
- 15) Blood Moon. Bremer. 2017. Advanced generation herbaceous hybrid. (Little Corporal x The Mackinac Grand). The medium sized ruffled flowers of the clearest red. The coloration is extremely rich and has a depth that is seldom seen in reds. Plants are 30" in height and have very sturdy stems that require no support (even in shadier locations). Foliage is very

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deep green, relatively wide and a perfect back drop to the vibrantly colored flowers. Stems not visible in the clump. The red stigmas, filaments and yellow anthers are not visible on older, more well established plants. Pollen fertility is good, but we have been unable to set viable seed on this cultivar to date. Bloom time is week 3-4 with lutea hybrid woody peonies. Blood Moon has been one of the most looked at herbaceous hybrid peonies in our display garden for several years and we are excited to get it into other peony lover's gardens. Limited availability.

- 16) Blushing Princess. Saunders/Reath/Rogers. 1991. Herbaceous hybrid. Blush pink, semi-double. It has stamens, pollen and seeds. Most reliable. Excellent substance, 32 inches in height. Fragrant, early to mid season bloom. Large medium green foliage. Sometimes the flower has so many petaloids in the center that it is close to double. This seedling came via the Reath Nursery. It was named by David Reath and registered by Caprice Farm Nursery, August 15, 1991. Seedling # 16350. One of the better tetraploid breeding plants to date and easily fertile.
- 17) Callisto. Bremer. 2017. Advanced generation herbaceous hybrid. (Carnation Bouquet x (Vanilla Schnapps x Dreamtime)). The medium-large sized flowers of Callisto have very wavy petals from the outside to the interior. Color is baby ribbon pink aging to a blend of light pink and cream. Stigmas and filaments are light pink and anthers carry nice yellow pollen. None of the reproductive structures is usually visible due the doubleness of the flowers. Some flowers do not contain stigmas, others have petals tightly wrapped around the stigmas. Callisto is fertile both ways. It's pod parent, Carnation Bouquet, has an interesting lineage and petal configuration, which Callisto carries on in it's genes. Light fragrance. Plants are slightly shorter than average at about 30". Stems with flowers do lean, but are more than adequate to hold the flowers from laying on the ground. Foliage is deep green and of typical hybrid structure. A fast increaser for us and produces more flower stems than average. Week 4-5 bloom time. Named for the third largest moon of Jupiter, or, if you like, a nymph in Greek Mythology.
- 18) Carnation Bouquet. Seidl. 1996. Herbaceous hybrid. Flowers are double cream-pink with darker pink highlights. Flowers will appear 'ugly' in their early stages of opening (brown and green petals), but never fail to produce superior pink coloration. Fragrance is best described as clove scented. Petals are ruffled and produce a large well organized display. Carnation Bouquet is easy to grow, but will benefit from some support, as the medium sized flowers are heavy. An excellent parent that produces both seed and pollen. Pollen is hidden and will require time to locate. (Blushing Princess x Sparkling Windflower)
- 19) Dione. Bremer. 2017. Advanced generation herbaceous hybrid. (Vanilla Schnapps x (Lemon Chiffon x The Mackinac Grand)). Dione has very large, bright, deep pink, double flowers with sharply folded petals. Flowers open slowly and have a high petal count. Oddly, as the flower opens the flower form is rather box shaped and later becomes a globe. As the flowers age petals become lighter at the outer edges creating a frosted affect. Stigmas/carpels are generally absent, but may be found sporadically. Pollen is present between petals. Stems are thick, but flower weight is great enough to bend them outward. Some mechanical support may be needed for best display. Foliage is deep green and wide. Dione is named for the moon of Saturn discovered by Giovanni Cassini in 1684. In Greek Mythology, Dione is a Titaness. Flowering height is 34". Seed fertility with work, pollen is easy. Week 4-5 bloom time. Limited supply upon this first offering.
- 20) Dreamtime. Seidl/Bremer. 2013. Herbaceous hybrid. Originated and named by William Seidl of Manitowoc, Wisconsin. Registered, propagated and distributed by Nate Bremer of Solaris Farms, Reedsville, Wisconsin. The seed-parent is from Blushing Princess x Salmon Dream. Two doses of Salmon Dream are in the pedigree and is why the word "dream" is part of the cultivar name. Seeds and pollen. Easily fertile and sets a tremendous number of seed. Tall, close to 4', stalwart, pink, semi-double. Dreamtime is a very fast and vigorous grower that needs no support. An excellent garden subject as stems are strong and foliage remains in fine shape throughout the season. Dreamtime's seedling number was #79H5-6 and much seed was distributed under this designation. Easily Fertile. (Pink Vanguard x Salmon Dream).
- 21) Europa. Bremer. 2016. Herbaceous hybrid. Seedling #NB46. Tetraploid. From seed purchased from William Seidl. Named for the light colored moon of Jupiter. Europa produces large cream-yellow double flowers with a soft inner glow of pink. Petals are fluted, ruffled and notched multiple times each. Petals often enclose the carpels and stigmas. Carpels are light green and stigmas are red. Yellow stamens are scarce and mixed among the petals. 32" stems lean, but do not meet the ground, even after rainfall. Foliage is deep green and give an embossed look by the veins. Healthy foliage throughout the summer. A very consistent plant. Was garden named 'Vintage Seidl'. Fertile pollen and seed. Pastelorama x (Archangel x Blushing Princess).
- 22) Golden Angel. Klehm. 2012. Herbaceous hybrid. Single soft cream-yellow blossoms. Beautiful, striking intense gold foliage in early spring that gradually changes to soft yellow-green, and then mellows to a medium green by mid July. Image shows flower

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and foliage color in late May. Cream carpels and stigmas. Light yellow stamens. Seed fertility and pollen. Week 4 bloom time. Excellent when planted next to plants with darker foliage to offset its bright early leaf coloring. Image at lower right is Necromancer, pictured for contrast.

- 23) Juliska. Seidl/Bremer. 2013. Herbaceous hybrid. Fragrant. Juliska has very large light pink heavy double flowers that are carried on tall erect stems. Gorgeous and very different. Flowers have excellent carriage and plants require no staking, great for cut flower production. Plants are 40"+. Foliage is wide and rounded, covering the sturdy stems easily. We have produced seed and have used pollen from this plant. Makes large roots quickly, causing large stumpy divisions. 'Ugly' divisions grow quickly however. Week 4-5 bloom time. Fertile both ways. Likely a tetraploid.
- 24) Kimberly. Bremer. 2019. Advanced generation herbaceous hybrid. Parentage is Pastelorama x Patelegance. Very large pink fully double with well organized flowers. Has 2 rows of large, flattened guard petals with the remaining ruffled petals filling the entire flower. Light red stigmas. Incomplete, nearly unidentifiable cream disc. Anthers distributed throughout petals, but concentrated toward carpels. Yellow filaments. Primary flowers often have abortive stigmas, while side buds have better developed reproductive structures. Best fertility on side buds, but primary flowers will occasionally produce seed. Has complete bud covers. Relatively short plants with excellent sturdy stems that carry the very large flowers without support. Flowers may be borne one per stem some years, or with 2-3 side buds other years. Plants have wide deep green foliage to the ground. 28 to 30 inch stems. One of the most coveted seedlings during tours of our herbaceous hybrids. Fertile both ways, but pollen is certainly easier. Named for my soul mate and partner for life. Superior in all aspects.
- 25) Lemon Chiffon. Reath. 1981. Herbaceous hybrid. APS 'Best In Show'-2000. Flowers are semi-double to double lemon yellow with violet stigmas and yellow stamens. Large and showy with excellent form and substance, Lemon Chiffon is still one of the best yellow herbaceous peonies on the market. Plants have large rounded foliage and stems are sturdy. Easily fertile both ways and a sought after plant for breeders (gardeners love it also). Week 5 bloom time. Requires well drained soil. (Salmon Dream x (Cream Delight x Moonrise))
- 26) Little Corporal. Seidl/Bremer. 2013. Originated and named by William Seidl of Manitowoc, Wisconsin. Registered, propagated and distributed by Nate Bremer of Solaris Farms, Reedsville, Wisconsin. Named for the stature of Napoleon Bonaparte. The Little Corporal is a short plant that reaches a maximum height of 20 inches. Foliage is broad with points and is a deep green. Foliage, stature and flower are unique and will not be confused with other reds from *P. peregrina* lineage. Each brilliant single rose red flower is carried on a sturdy stem. Flowers have a large ring of yellow stamens carried on white filaments with red bases. Carpels are green tipped with rose red stigmas. Entire flower is very symmetric. Flowers face upward. Bloom period is early-mid season. Plants are fast growing and floriferous. Easily produces seed, but no pollen. Of interest for hybridizing due to unusual pedigree. Little Corporal's pod parent, Roselegance is extinct and is the product of (Salmon Dream x Lemon Chiffon). Crossed with Seidl seedling LSW6 (Laddie x Sparkling Windflower), a single red. Genetics for double flowers are contained within 'The Little Corporal' via Roselegance and this has been proven out in crosses at Solaris Farms. As a short front of the garden peony it is outstanding for color and plant form. Could easily be used in rock gardens. Little Corporal's seedling number was #RELSW 6. Perhaps the finest parent we have used in our hybridizing program. Seedlings are often double or semi-double with outstanding color range. (Roselegance x (Laddie x Sparkling Windflower)).
- 27) Manitowoc Maiden. Seidl/Bremer. 2016. Herbaceous Hybrid. Tetraploid. Seedling #H-2. Multi-species hybrid origins. Large double medium pink blooms. Large guard petals have gentle waves, while the inner petals are smaller, are crinkled and turn in different directions. Cream-pink stigmas and light green carpels. Yellow stamens and anthers that are not easily visible without moving petals out of the way. Usually 1 bud per stem, but will occasionally produce 1 side bud. Stem strength is good and we have not needed to support stems. Manitowoc Maiden has deep green foliage with wavy leaf edges that lasts well through the summer. Easily fertile both ways. Plants are fast growers and make beautiful clumps quickly. Excellent looking seedlings being produced using other hybrid pollens. Week 4-5 bloom time.
- 28) Old Faithful. Glasscock/Falk. 1964. Herbaceous hybrid. American Peony Society Award of Landscape Merit. American Peony Society Gold Medal-1997. Old Faithful is a late blooming red hybrid. Flowers are large and double. Stem strength is outstanding and hold the large flowers upright very well. Foliage is good deep green that is a perfect backdrop to the flowers. Approximately 36" in height. Roots become very large after a short time and division is often difficult due to unusual crown configurations. Old Faithful is a slow increaser, but worth growing. Produces large roots that create big ugly

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divisions. Takes a couple of years to make a nice looking clump. A fourth generation Glasscock hybrid. Week 5 bloom time. Unknown parentage. Fertile both ways.

- 29) Pastelegance. Seidl. 1989. Herbaceous hybrid. APS 'Best In Show'-2016. Pastelegance is perhaps the finest peony available on the market today. The double champagne cream with pink highlighted flowers are quite unique for color and will not be confused with anything else. Large rounded guard petals surround a central mass of well shaped and ruffled petals. The central flower petals often appear layered and swirled, while the guards are always flat and rounded. Foliage is a dark blue-green and leaves are wide. Stems are sturdy, but minor support is beneficial. Pastelegance is the pinnacle of Bill Seidl's herbaceous hybrid breeding and is only now finding it's way into gardens around the world. Pricey due to demand and supply. A supreme show flower. Solaris Farms won 'Queen of the Show' at the 2016 APS Convention with this cultivar. Week 4-5 bloom time. Fertile both ways (easy). (Salmon Dream x Lemon Chiffon)
- 30) Pastelorama. Seidl/Bremer. 2013. Herbaceous hybrid. Pastelorama has had limited distribution over the years and is seldom available. The very large double flowers are pastel pink in coloration; some would describe it as antique pink. Flowers have excellent carriage on top of sturdy stems. Plants reach a height of 36 or more inches and have wide medium green foliage. This fertile tetraploid has produced many fine seedlings for us that may be future introductions. Pastelorama generally produces one bud per stem, but may have as many as three. My favorite Seidl herbaceous hybrid and always in high demand. Week 4-5 bloom time. (Salmon Dream x Roger Anderson Seedling). Week 4-5 bloom time.
- 31) Red Rock Canyon. Bremer. 2017. Advanced generation herbaceous hybrid. (Seidl #74H120-2 x (Lemon Chiffon x The Mackinac Grand)). Red Rock Canyon has dark red semi-double red flowers with wavy petals that turn upward. Petals are large, as is the flower. Carpels are green and slightly hairy. Stigmas are reddish-pink as are the filaments. A large number of yellow, pollen producing stamens encircles the stigmas. Bud covers are conspicuously streaked in red and green, visible before flower has opened and after petal fall, making the plant a long time attraction. Stem strength is good, but the large flowers do lean a bit. No mechanical support is needed. Foliage is wide and deep green throughout the growing season. Plants reach 36" in height. Bloom time is week 4. No fragrance noted. Fertile both ways. Named for the 'Red Rock Canyon' park in Nevada, which has deep red rock streaked in green vegetation and rock. Superior growth habits.
- 32) Salmon Dream. Reath. 1979. Herbaceous hybrid. (Paula Fay x Moonrise). American Peony Society Award of Landscape Merit. American Peony Society Gold Medal winner-2008. APS 'Best In Show'-2015. Salmon Dream has semi-double pink flowers of waxen texture. Petals are wide and plate-like which creates a stunning bud and bloom. Stems are strong and foliage is deep blue-green. Plants are not large or vigorous growers and can take some time to establish. Salmon Dream has been used extensively in hybridizing advanced generation herbaceous peony hybrids in recent years. Pollen and seed fertility is high and resulting offspring are often very good.
- 33) Solara. Bremer. 2018. Advanced generation herbaceous hybrid. (Roy Phersons Best Yellow x Vanilla Schnapps). Seedling #NB40. Single yellow with large wide pleated (like crepe paper) petals. Selected from a long cross for its exceptionally well colored flowers and good plant habits. Images often show this as being a light yellow flower, it is truly a bright well defined yellow that can be seen across the garden. The far left image is a good representation of the coloration. Brilliant red stigmas sit atop light green carpels which are covered in white hairs. An incomplete red disc is not easily visible. Filaments are yellow for most of their length, but have red bases. Anthers yellow with much pollen. Up to 6 side buds extent the season for weeks. Easily fertile both ways. Awarded a certificate of merit, Solara advanced to the Court of Honor at the 2017 APS Convention and was the winner of the best seedling. The vigorous plants stand 38 inches high and make a rounded bush of equal or greater dimensions. Foliage is deep green and healthy throughout the growing season. Excellent display of flowers need no support. A bee magnet, makes it a wonderful garden plant. Named Solara, Spanish for the sun.
- 34) Tranquil Dove. Saunders/Rogers. 1995. Herbaceous hybrid. Tranquil Dove is one of the more unique peonies we grow and is irreplaceable in our eyes. The small plants typically grow to about 28 inches, have very sturdy stems and commence flowering in the early part of bloom season. Plants have wide deep green glossy foliage. The flowers are an exquisite soft cream overlaid in pink. The pink shading is darker near the ruffled petal edges. Red filaments, yellow stamens and red stigmas create a gorgeous affect. Flowers are dainty at about 4 inches in diameter and face upward. An extra bonus comes at dividing time; the interior of the roots are a deep lavender color! Fertile both ways. Appears to be most compatible with tetraploids and has produced very interesting seedlings. (Halcyon x self). Very hardy and of easy culture.
- 35) Triton. Bremer. 2017. Advanced generation herbaceous hybrid. (Manitowoc Maiden x (Little Corporal x Salmon Dream)). Triton has large, double, bright deep pink flowers with petals that twist and turn. Stem strength is very good and

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does not require mechanical support. Foliage is dark green and typical of herbaceous hybrids. Green carpels, pink stigmas and yellow filaments. Fertile both ways. Height is 35". Week 4-5 bloom time. Triton is named for the largest of Neptune's natural satellites, or if you like, the Greek Mythological messenger king.

- 36) Vanilla Schnapps. Seidl/Bremer. 2013. Originated and named by William Seidl of Manitowoc, Wisconsin. Registered, propagated and distributed by Nate Bremer of Solaris Farms, Reedsville, Wisconsin. Previously garden named 'Bill's Best Yellow'. Light yellow double. Flowers are round and double on established plants, semi-double on new plantings. Rounded petals have an irregular toothed edge. Stigmas are red and are not visible on double flowers, but are on semi-double blooms. Per Bill Seidl: The seed-parent was a yellow single, yellow being the object of the cross. The pollen parent was a pink double. The seed for BBY root-germinated indoors in late '79, grew outside during 1980 and '81, and FB was in '82, the start of its 3rd year of growth. Had a sibling that was also very good, but stamens turned brown or black before opening (Vanilla Schnapps does not have this habit). Foliage is wide and deep green. Each stem produces 1 strong primary bud, but may have up to 3 more secondary buds, making a long bloom season. Stems are tall and strong. No staking is needed. Growth rate is fast. Easily fertile both ways. Many promising seedlings are being grown on for evaluation from this plant. (71Y6-1 x 74H119-5)
- 37) Hybridizing is an interesting and rewarding activity if you are patient. It is a rare mixture of art, labor and science. Planning, pollination, seed collection, seed planting, growing, dividing, evaluating, culling and registration are all involved and of equal interest. For many, simply growing the seeds of the future is all that is needed to start the 'bug'.
- 38) Seedlings are always exciting to observe over a number of years. Changes in flower characteristics and plant habit occur with each successive bloom season, until they mature. #NB-H52 (seedlings are given numbers, not names) has huge white dinner plate style flowers. Unfortunately the flowers are so large that they do bend the stems.
- 39) #NB-H64 has produced tremendously beautiful near white flowers with a light pink inner glow. Plant have been slow to propagate, but there is potential for further development.
- 40) These were seedlings during the 2016 American Peony Society Convention held in Green Bay. The plants only had numbers on them in the field and were a big hit with members touring the gardens. It is helpful to have others view the hybridizer's work for feedback. All these are now registered cultivars and saw their first year of distribution over the last couple of seasons.
- 41) 13#NB4 is a cream colored semi-double flower that has very interesting buds-nearly columnar in shape before they open. The plants are short compared to other peonies and have exciting possibilities for gardeners that would like smaller plants.
- 42) 13#NB6 was an interesting seedling for flower pattern. Unfortunately the pattern shows up best on the backside of the petals, but is nonetheless striking. This plant is also rather short compared to other peonies making it desirable for smaller gardens. Stem strength is very good. The plant may only be a 'bridge', but does cause intrigue.
- 43) #NB-H31 produces huge double deep red flowers. There are negatives to this plant, the largest being a 'sprawly' habit and extremely heavy flowers that bend toward the ground. It is likely only bridge plant for better offspring-we hope.
- 44) #NB-H35, a stunning blush with a deeper pink inner glow. The double flowers are large and extremely showy. Unfortunately the plant is prone to disease and may never be propagated due to continual setbacks.
- 45) #NB-H75 is a flower all about color and plant all about stem strength. The bright red semi-double flowers are carried on strong stems and put on a great show. Unfortunately, the American Public has little interest in this flower form.
- 46) #NB-H75 is a flower all about color and plant all about stem strength. The bright red semi-double flowers are carried on strong stems and put on a great show. Unfortunately, the American Public has little interest in this flower form.
- 47) #NB-H48 is a seedling that has great color that holds in the sun. It also has perfect double form. It is likely registration quality due to good plant habits and fairly good increase. At one point we had nearly 8 clumps of this plant, but February rain over the past two years killed a number of clumps that were planted in an area that water pooled during the winter.
- 48) #NB-H55 is another beauty with soft cream-white petals with an inner glow of coral. Unfortunately it has been prone to disease. Lemon Chiffon and Pastelgance often produce beautiful seedlings that are susceptible to disease.
- 49) #NB-H60a is a wonderful white double-most years. White double hybrids have been rather elusive to produce and when the hybridizer gets one, it a thrill. This plant, like its parents, has been inconsistent in its flower form from year to year and it dislikes being divided.
- 50) #NB-H61 is a yellow-peach toned double of mammoth size. It will never be registered because once the flowers open they stems cannot support the extreme weight of the blooms. It has some fertility and there is hopes of producing seedlings with similar size from it with better stem strength.

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- 51) #NB-H65 is another cream flower with a soft champagne inner glow. It is a beautiful flower and plant when in bloom. Unfortunately the foliage becomes poor not long after and is unpleasant to look at the rest of the summer. We'll grow it for some more years in hopes that poor climate conditions are responsible and more consistency is seen.
- 52) #NB-H66 is pink cream blended double. A gorgeous flower, but here again it has proven to be susceptible to disease (Pastelegance parent). The flowers also hang downward due to excessive flower weight.
- 53) Perhaps the finest peony I grow is #NB-H78. This seedling won best top honors at the 2016 flower show and was widely appreciated by attendees. Foliage is wide, deep green and stems are sturdy. Plants look great in and out of bloom. It has not been released or registered as we are using it heavily in our hybridizing programs.
- 54) #NB-H78 Clump. I have a story about the gentleman with the shovel.
- 55) #NB-H100 was a very unusual development. This plant produced semi-double flower that were rather flat upon opening. As the flowers aged they began to extend upward into a columnar shape. Unfortunately it was killed by deer digging in late fall two years ago. Why do the most interesting plants have issues?!
- 56) Origin of Serenity was registered this year and sold out in minutes upon our web update January 1. This plant was heavily photographed by APS member during the 2016 tour of the farm and social media apparently was responsible for building high demand. While it a beautiful double white with soft coral inner glow, I don't know if it warranted the attention given. Needless to say, Origin of Serenity is photogenic.
- 57) #NB-H104 is a wonderfully colored double. Plants are short and may be of value for smaller planting areas. It has been slow to increase and has been somewhat inconsistent, thus we wait and see!
- 58) Seedling NB-H18. A tremendously beautiful flower if no rain or dew occurs for about two weeks as it opens its large blooms. The problem with this flower and many other advanced generation herbaceous hybrids is that it produces open buds (bud covers do not cover interior portions of the bloom). The result of open buds is a rotten interior due to collection of water and decay organisms. This is not a trait that a hybridizer wants in his/her lines.
- 59) Peonies present many possibilities for the hybridizer. This row of seedlings is from the same cross. The flowers are single and are stunning colors. Foliage is deeply cut and produce a spectacular foil for the blooms. Being short, they are all potential winners for a rock garden. Unfortunately they require extremely well drained soil and resent any amount of wet feet, something that is not easily done in Wisconsin.
- 60) #NB-H114. Example from the row in Slide 59.
- 61) #NB-H118. Example from the row in Slide 59.
- 62) #NB-H118 close up.
- 63) #NB-H119. Example from the row in Slide 59.
- 64) Close up of #NB-H119.
- 65) This was an interesting cross in which we grew and bloom nearly 50 plants. All seedlings had single red flowers with varying degrees red coloration. Foliage was finely dissected, but variable. A number of selections were made, but never registered due to lack of resistance to stem rots. Perhaps this cross would have been a good one for growth in climates that are very dry, but not Wisconsin.
- 66) Seedlings are often tested for a minimum of 5 years before they are selected for further division further evaluation. Many do get through a second round due to a variety of reasons.
- 67) Growing peonies from seed is very rewarding, but requires patience and often some experimentation. Most herbaceous seed can be planted outdoors, immediately after harvest in the fall of the season. With a little luck they may produce their first leaf the following spring. Some seeds will lay dormant for another 1 to 3 years-patience. Once they have begun growth, it takes anywhere from 3 to 7 years before the seedlings produce their first flowers and another 2-3 years before the plants produce flowers that are stable in structure.
- 68) These are two year old herbaceous hybrid seedlings. Notice that most only have two leaves in their second year. Color and leaf form is highly variable and adds to the interest in growing them.
- 69) This group of seedlings is all from a cross of 'The Mackinac Grand' x 'Lemon Chiffon' and are blooming for their first time. Not the variability in color, form and size. Many of these seedlings grew older to have wonderful double flowers, but none of them were kept beyond their 4th bloom season due to poor plant habit.
- 70) Peonies are usually sold as root divisions with a crown that has 3 to 5 eyes (buds containing next year's growth). The division should not be overly large and the roots should not be old. Large divisions often have old roots and are not youthful in vigor.

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Smaller divisions usually have younger roots that are programmed to grow new root systems. An added problem with large old roots is their propensity to rot, often contaminating the entire plant and killing it. It is important that after digging an old clump of peonies that it is divided, if left intact the plant will look good for a year or two and then go into decline. This is due to the plant living off previously stored energy and not getting encouragement (through division) to produce new roots. With peony root divisions-bigger is certainly not better. The best time to divide and plant peonies in Wisconsin is in the month of September and early October. Herbaceous peonies are triggered to produce roots in cooling soils and will not produce roots at any other time of the year. Spring planting is a gamble due to the fact that the plants will have to rely on stored energy in their roots through the summer, before new roots are produced in the cooler soils of the fall season. Thus nurseries that sell peonies for spring planting are not considering the needs of the plant, but are rather preying on gardeners that prefer to plant in the spring.

- 71) Planting in fall is the proven best time of year. Plants should be sited in a location that drains well and is never covered by water or ice (good luck with this in Wisconsin). Soil should be friable and not overly water retentive. Addition of gravel and sand to a planting site often helps the plants to make good root growth. When ready to plant, dig a hole that will easily accommodate the root system (should not be force-fit). Situate the division so that the eyes are facing up and will be no more than 2 inches below the surface. The roots can be deeper and in all likelihood will be. Cover the plant in soil leaving a slight depression in which to pour water into, this will settle the soil around the root system. Once the soil is settled, fill the remaining depression and firm the soil. It's a good idea to build a slight mound of soil over the division, so that water runs away from it. No further watering should be necessary that fall, unless drought conditions occur. The biggest enemies of your peony planting are excessive water and frost heaving. To prevent heaving a light layer of wood chip or bark mulch is recommended in the first year. The following spring the plants will likely produce one to three stems, even if there were more eyes when it was planted. A number of eyes will remain dormant as the plant only activates growth that it can support. Some first year divisions bloom, but will not look good and should not be expected to. In the second and third year plants will look much better. After 3 years, plants can be expected to reliably bloom in successive seasons.
- 72) As much as we'd like to make our peonies grow more quickly it is advised to be cautious with fertilizers. Never use manure, even though some sources recommend it. Manure has proven to encourage certain fungal diseases in peonies. If you must fertilize, use one that is recommended for bulbs. High nitrogen fertilizers are especially problematic for peonies since they encourage rapid growth, which in peonies, causes soft stems and leaves that are susceptible to disease. Established peonies seldom need to be fertilized in average or better soils. Sandy soils may need enrichment through the addition of composted leaves and other organic material. Mid summer is a good time to fertilize, if you must do so. Plants have ceased active growth above ground and root growth will begin in a month or two.
- 73) Peonies grow well a wide range of soils, as long as they drain well and have a pH near neutral or slightly alkaline. Many growers recommend soils rich in organic material, but equally good results have been obtained on mineral soils. Soils prone to high compaction should be avoided. Peonies generally occur in nature on rocky/gravel based soils and do well with addition of limestone chips and gravel to their planting. Most peonies are very drought resistant and seldom require watering, even in very dry weather. Their roots are fleshy and are specifically adapted for long dry periods. Overwatering is far more dangerous than underwatering, in that excessive water encourages disease-primarily botrytis fungal diseases. Never water foliage if irrigation is required as this also encourages foliar disease.
- 74) A peony may not bloom for a number of reasons. 1) Plant is too young. 2) Plants have root competition from shrubs and trees. 3) Plants do not have enough sunlight. 4) Buds were frozen during development in the spring. 5) Buds were killed from excessive heat during formation. All of these issues may prevent a plant from blooming and individual cultivars react differently to the same conditions. Careful observation of the location and climate conditions will often reveal the issue.
- 75) Herbaceous peony foliage begins to go dormant in August and September. This is evidenced by the infusion of yellow and/or red in the leaves and ultimately the browning of all above ground parts. The stems and leaves should be cut off and removed from the garden as they begin to brown. This practice will prevent leaf and stem diseases that got a foothold during the growing season from re-infecting plants the following year. Foliage should not be composted, as disease organisms will lie dormant in the compost. Many people throw it in the garbage, burn it or haul it away to area that will not be used for gardening. Since peonies can easily out live us, keeping them healthy will insure many years of good performance.
- 76) Many people inquire why peonies are more expensive than most plants. A number of variables impact this: 1) Demand. On a worldwide basis peonies are in high demand as garden plants and for cut flower production. Europe buys more peony plants

Secrets Revealed: New Herbaceous Hybrid Peonies

than the rest of the world combined and many of America's newest cultivars are gobbled up by a this hungry market. 2) Peonies take a long time to propagate. Each division that is planted in a propagators field takes a minimum of three years before it can be divided. A yield of only 2 to 5 divisions will be harvested from the resulting 3 to 5 year old plants. 3) New cultivars are expensive due to demand and the need for hybridizers to recoup a minimum of 10 years of work developing the cultivar. Development of new cultivars is expensive due to cultivation costs, selection costs, labor and property taxes, among other things. The reality is that a \$20.00 peony division is a very good deal considering that it can live for more than 100 year if well taken care of. Many gardeners spend much more on annuals each year and have nothing to show for it the following year. Consider going out to eat? A \$20.00 meal is not all that unusual and that experience will last less than an hour and be out of our systems in a day!

- 77) There are a number specialty growers of peonies in the United States and they should be utilized to obtain the stock. The American Peony Society website lists commercial growers that are reliable sources of healthy stock and they guarantee that they are true to name. Getting what you pay for is the largest problem that many peony gardeners face. Most of the peonies sold by resellers are cheap imports or are grown by large nurseries that are not concerned with correct identification. This problem is evidenced when doing internet search for a particular cultivar-many different flowers with same name will appear in the search. Since peonies are very long lived, misidentification can be perpetuated and multiplied easily throughout the world. Buyer beware!
- 78) Recommended: Klehm's Song Sparrow Nursery, Adelman Peony Gardens, Oh My Peonies, Fina Gardens, Hollingsworth Peonies, Hidden Springs Flower Farm, Brooks Gardens and of course Solaris Farms. There are a number of others listed on the APS website that are fine choices as well, but may not offer current listing or have a website.