The Plumeria Society of America, Inc.



October 2012

Plumeria Potpourri

The next meeting of The Plumeria Society of America will be held Tuesday, October 9, 2012, 7:30 p.m. at the Houston Garden Center in Hermann Park 1500 Hermann Drive, Houston, Texas. Anyone with an interest in plumerias is invited to attend.



	President's Corner	Mark Wright	page 2
In	The PSA Luau Invitation	Mark Wright	page 2
	Storing Plumeria—The Early Days to the Present	Jerry Hurlbert	page 3
this	What I Did on My Summer Vacation	Dan Teel	page 5
issue	Optimal Angle for Grafting Plumerias	George Hadjigeorge	page 6
	Remembering Thea Whitenton	Mark Wright	page 12
	The Facts about Fertilizer	Eulas Stafford	page 12

## President's Corner

Summer in my part of the world is slowly winding down. The heat will stay for a while, then come and go, then finally leave for a few months. I look at the new inflos and wonder if they will have time to produce flowers.

All things considered, this summer was a kind one: less heat, more rain, and a generous amount of flowers—all good attributes.

A group of us recently returned from a trip to Florida. As part of our travels, we visited South Florida and the Keys, toured Naples Botanical Garden, and visited Florida Colors Nursery.

Naples Botanical Garden is very impressive—beautifully-done themed gardens, a children's garden, and artwork are just a few of the features to see. The plumerias are in two areas now, but there are plans to combine the two groups into one spectacular garden. The

# *by* Mark Wright, Texas *email:* wright5447@sbcglobal.net

natural beauty of the lakes and marsh areas combine to make a visit to the garden a great experience. Contact Hetty Ford if you would like to donate to the garden—a list of needed cultivars is on our website. All of the plumerias in the garden were donated and most have a plaque with the donor's name below the name of the cultivar. This is an excellent way to let others enjoy your favorites as much as you do.

In the Keys we saw many old plumeria trees. They looked to have survived many storms and years, and were blooming profusely in early August. We strolled along the shore of Sanibel Island and had our pictures taken at the marker depicting the southern-most area of the U.S.

I mostly resisted the temptation to bring back cuttings and rooted plants. However, a few did manage to follow us home.

### The PSA Luau Invitation

Plan now to attend our annual luau on **Saturday, October 13, 2012**. As usual, it will be held on the gorgeous grounds of **Lake and Eulas Stafford** at **2301 Primrose, Pasadena, Texas 77502**.

Arrive early at 6:00 PM to tour their garden and chat with friends. Dinner will be served at 7:00 PM, and the program will begin around 8:15 PM.

There will be a \$10 charge per person. As the meal will be catered, **we would appreciate reservations by October 9<sup>th</sup>**. Only a few tickets will be available at the door.

Call 281-438-3653 or email **wright5447@sbcglobal.net** to make reservations. Checks may be mailed to **Sharon Wright, 2819 Carnoustie Dr., Missouri City, Texas 77459**.

There will be drawings and contests for door prizes.

### Storing Plumeria—The Early Days to the Present by Jerry Hurlbert, Texas

When I was a novice just learning about plumeria, experts in the Houston area thought the only way to store plumeria was to hang them upside down in a garage. None of the people I talked with could explain the logic for this practice other than they read it in a book. The only logical explanation I could think of was that space was a problem, or gravity was supposed to pull the sap down into the tips and help maintain a healthy plant over the winter months. This may be an interesting research project—could hanging the plumeria upside down help prevent tip rot that sometimes occurs during winter storage?

I did try this method of storage the first few years when I started collecting plumeria. It is not too bad of a storage method if your garage is not enclosed with sheetrock. It is easy to tie a rope around the base of the plumeria plant, throw the rope over a rafter, and pull the plumeria up to the ceiling by its roots. My problem was that my garage was finished out with sheetrock, so I had to build a stand to hang the plumeria.

The plumeria stand that I built was a little unstable because it encroached on floor space. I could not extend the feet of the stand out very far without constantly tripping over the 2x4 feet, and the plumeria stand tended to tip over easily when bumped. (Yes, a few unintended cuttings were made that winter until I put in an anchor point going from the top of the stand to the wall.) As my plumeria collection grew in both size and number, I realized that this method was not feasible for a large collection.

The next step in storage evolution was stacking the larger plumeria like cordwood. (Note: This method is still in use by some members of the Plumeria Society.) Two sawhorses were made and placed along the side of the garage. On top of these sawhorses was placed two 10-foot long 2x4s, and the plumeria were then placed on top of the 2x4s. The 2x4s sagged some over the wintertime but this was corrected by moving the sawhorses closer to the center of the 2x4s instead of having the sawhorses at the ends of the 2x4s. This method works very well for plumeria that tend to grow straight up towards the sun. The problem comes when you start trying to store plumeria that tend to spread. Limbs tend to break off the wide-canopy plumeria.

So the next evolution in storing plumeria was born-storing plumeria in the pots in which they were growing. The plumeria were planted in pots and then the pots were planted in the ground during the Houston growing season. Before Thanksgiving, the plumeria were dug up and moved to the garage. This method worked well except a few adjustments needed to be made over the years. It was found early in the evolvement of this storage procedure that the plumeria suffered if the pots were placed on the concrete floor. It seems the concrete floor becomes cold and then transfers this cold to the pots sitting on the floor. The plants in the terra cotta pots were affected the most. Placing corrugated cardboard on the concrete floor, and then placing the pots on top of the corrugated cardboard resolved this problem. The only

problem with using corrugated cardboard is it is a little messy to clean up in the spring if you have sprayed your plumeria with water during the wintertime. To resolve this, you need a mister on the end of a piece of PVC pipe to control the water flow. This way you can moisten your plumeria without soaking the cardboard. Another thing you can do is locate some plastic-coated cardboard or plastic that is corrugated. These two items are hard to come by at a price I am willing to pay. But it will take care of some of the messy clean up in the spring.

Another problem with storing plumeria in the pots in which they are growing is the size of the pots. Terra cotta pots are heavy. Straight-sided terra cotta pots are even heavier. (The nice-looking tapered terra cotta pots blow over easily and break on windy days.) Then, when you fill the pot up with the plumeria tree and dirt it gets too heavy to move. Now let's not forget the weight of the water in the pot. Almost every time you get ready to store plumeria it has rained within the last few days. This also makes terra cotta pots hard to pick up and move to the storage area, and then once you get them to the storage area you have to nudge them into place. In this nudging process, you usually make a cutting as you intertwine the limbs of the different plumeria you are storing. These were the reasons for migrating from terra cotta pots to plastic pots.

The other big problem that had to be overcome in storing plumeria in pots is the size of plastic pot to use. I increase the size of the pot as required by the growth of the plumeria. This worked fine until one day I realized that I could not move a 20-gallon pot in which a huge plumeria plant was growing. I had moved this plant in this pot into storage in the garage and planted back in the yard for two seasons. But this particular year, we had had a slow soaking rain the day before. Needless to say the pot and plant were not capable of being lifted out of its hole.

This brought about the next step in the evolution of storing plumeria. The plumeria were dug out of the pot and stored bare rooted. This was done with all of the plumeria down to the 15-gallon size. The plumeria that were in 10 and 15-gallon pots were placed around the perimeter of the larger bare rooted plumeria to support them in an upright position.

The way the plumeria are currently stored is that no plumeria is stored in anything larger than a 10-gallon pot because of weight. (Hardwood mulch and compost are now used to lighten up the pot.) The five and ten-gallon pots are placed around the perimeter of the larger plants to provide stability. The larger bare rooted plants have their root balls placed inside of 20 and 25-gallon pots that have been filled with mulch to control moisture in the roots and add a little stability. The mulch also provides a place to stack smaller one and five-gallon pots so less room is taken up on the garage floor. The mulch also provides a place to set large boulders to provide more stability than a five-gallon pot would provide if extra stability is needed.

The storage method will probably continue to evolve as the years go by and the labor of moving and storing gets more difficult, but for now this is the current method that is being used.

### What I Did on My Summer Vacation

On August 4, 2012, two cars full of members of the PSA left Houston for Florida. Car 1: Dan Teel, Joyce Teel, Joan Robertson, and Arlen Robertson. Car 2: Mark Wright, Sharon Wright, Eulas Stafford, and Lake Stafford.

We spent the first night in Lake City, Florida. On August 5<sup>th</sup>, we drove to Homestead, Florida and went to the home of Luc and Carol Vannoorbeeck, the owners of Florida Colors Nursery. The Vannoorbeecks were giving a party for visiting Dr. Richard Criley of Hawaii. We enjoyed a wonderful meal and an enjoyable tour of the Florida Colors Nursery. It was interesting seeing all the large plumeria plants and the work area where the Vannoorbeecks prepare their plants for shipping.

That evening we drove to Naples, Florida and spent the night. In the morning, we arrived at the Naples Botanical Garden for a guided tour of the gardens by Hetty Ford. We visited the area of the garden known as the Plumeria Hills. The Hills were created when dirt was dug from an area to create a lake. There were many plumerias planted there, and many of them had been donated by members of the PSA.

Another reason we were at the gardens was to plant a plumeria in memory of Thea Whitenton who had recently passed away after fighting cancer. A seedling plant named Thea's Dream was donated by the Vannoorbeecks and has been registered in Thea's memory. Her husband, Richard, and his brother had brought Thea's ashes to the garden that day to honor a request from Thea-she wanted her ashes spread over the Plumeria Hills.

We then toured the entire, amazing garden. After a luncheon at the gardens, we were given a driving tour of some of the beautiful homes in Naples, many of which had large blooming plumerias in their front yards. Then we drove to Hetty's house for a yard tour of her garden and met her husband Bruce-they have a nice collection of plants and a beautiful home.

On August 7<sup>th</sup>, Luc Vannoorbeeck arranged for our group to have a tour of the USDA Research Facility's plumeria collection at Homestead. They had many plumeria plants in their collection, and we were allowed to take a few cuttings from their plants.

On August 8<sup>th</sup>, we traveled to the Florida Keys and spent the night in Key West. Along our way to Key West, we saw several large plumeria plants that were probably planted by Emerson Willis on one of his annual visits to South Florida. We did the tourist things of eating seafood at a nice restaurant, watching street entertainers, and enjoying the sunset. We drove around Key West and saw several large plumeria trees growing in the local yards.

On August 9<sup>th</sup>, we drove back to Homestead and Florida Colors Nursery to pick up plumeria plants that we had previously ordered from Luc. Our groups then took different routes back to Houston. Our vehicle stopped that night in Clermont, Florida.

On August 10<sup>th</sup>, we stopped in Bilouxi, Mississippi to spend the night. The next day we drove a short distance back to Mobile, Alabama to tour the Bellingrath Gardens and Home. Walter Bellingrath had arrived in the Mobile area in 1903 to bottle Coca-Cola for a

by Dan Teel, Texas

sales region stretching out 100 miles. He started out with foot and hand-operated machinery and a mule-driven delivery cart. From this meager start, in a few years he was a very wealthy person. He purchased a 65-acre fishing camp stretching along the Fowl River. His wife turned this property into a fabulous home and garden, and today it is one of the city's showplaces. The landscape and home are unbelievable. The only problem we found was they only have three plumeria plants which had not be shaped or trimmed for some time. The rest of the garden was immaculate—not sure why attention was not paid to these plants. It was a very worthwhile visit.

The next day we returned to Houston. We met some interesting people and saw many beautiful plants. It was a very nice trip.

### **Optimal Angle for Grafting Plumerias**

The best method to graft plumerias is the single slanted slice (or angle cut) method. It is widely used by the pros, and there are many reasons it is the best method. This will be the subject of a future article.

Different people use different angles and ways to put the graft union together. Some use rubber bands, pins, screws, plastic wrap, hot glue, etc. However, little is known about what is the best angle to cut the scion and the rootstock. Is there such a thing as an optimal angle for grafting plumerias?

In order to understand how the cutting angle affects the forces that cause the scion to either stick to the rootstock or slide against the rootstock, we need to do a simple engineering analysis of the graft union. As the picture below shows, using just two fingers or a rubber band can hold the graft union together. The

scion and rootstock support each other. When we do that, what in essence we are doing is applying a force perpendicular to the graft union, on both the scion



### by George Hadjigeorge, Texas

and the rootstock sides. Two arrows, perpendicular to the graft union, can represent this force. The direction of each arrow shows the direction of the force, whereas the length of the arrow shows the relative size of the force. The two arrows on each side are symmetrical so I will only show one side for simplicity.

Let us start with a 45-degree angle. The picture below is a schematic, which shows a

scion and a rootstock cut at 45 degrees. For a 45-degree angle, the height of the cut equals to the diameter of the rootstock. The force, let us call it F, which is applied



perpendicular to

the graft union, has two components relative to the cut line of the graft: a) a force  $F_P$ perpendicular to the cut, which causes the scion to stick to the rootstock, and b) a force  $F_H$  horizontal to the cut, which causes the

#### Plumeria Potpourri

scion to slide against the rootstock. Friction is not that important in this case because the cut plane is lubricated with sap. As shown in this same picture, for a 45-degree angle,  $F_{\rm P}$  equals to F<sub>H</sub>. This means the two forces are balanced, and we have a neutral situation.

Let us now look at an angle larger than 45 degrees. The picture below is a schematic, which shows a scion and a rootstock cut at 60 degrees. For a 60-degree angle, the height of the cut equals to half of the diameter of the



rootstock. Again the force F. which is applied perpendicular to the graft union has two components relative to the cut line: a) a force F<sub>P</sub>

perpendicular to the cut, which causes the scion to stick to the rootstock, and b) a force  $F_H$  horizontal to the cut, which causes the scion to slide against the rootstock. As shown in this same picture, for a 60-degree angle  $F_{H}$ equals to two times F<sub>P</sub>. This means the force  $F_{H}$ , which causes the scion to slide against the rootstock, overwhelms force F<sub>P</sub>, and the scion will slide against the rootstock every time any kind of force is applied from the side. This is true for any angle greater than 45 degrees. The bigger the angle, the easier it will be for the scion to slide. Note that the diametrically opposite force, applied on the rootstock side (by the other finger), pushes the rootstock down in relation to the scion. As a result, the

force applied on the side pushes the scion up and the rootstock down. This makes it extremely difficult to put the graft union together without any additional help.

The picture below shows an actual example of a graft union cut at an angle greater

than 45 degrees. One cannot hold this graft union together with just the two fingers. The scion slides up and the rootstock slides down every



time the fingers are squeezed.

In order to hold the graft union together, people use pins to hold it temporarily until they put a rubber band on it and then wrap the graft union. In the pictures below, I



used two pins on opposite sides. Modifying regular long pins, by adding a nice tubing handle on them, makes it easy to penetrate the plumeria wood. Copper pipe solder was used to cast the pins inside the tubing.

As the picture to the right shows, the pins are removed in the process of wrapping the graft union with plastic tape. The wrap then prevents the scion from



sliding against the rootstock.

#### Plumeria Potpourri

The next picture shows a commercially purchased, grafted plumeria which is one year old (after purchase). One can still see the two pinholes from the pins used to align the graft



union. This is not really a problem because eventually these pinholes disappear.

Some people use big screws to hold the graft union together. There is really no need to use pins and screws. Watch what happens when the cut angle is less than 45 degrees. The picture below is a schematic which shows a scion and a rootstock cut at 30 degrees. For a 30-degree angle, the height of the cut equals to



twice the diameter of the rootstock. Again the force F, which is applied perpendicular to the graft union has two

components relative to the cut line: a) a force  $F_P$  perpendicular to the cut, which causes the scion to stick to the rootstock, and b) a force  $F_H$  horizontal to the cut, which causes the scion to slide against the rootstock. As shown in this same picture, for a 30-degree angle  $F_P$  equals to two times  $F_H$ . This means the force  $F_P$ , which causes the scion to stick to the rootstock, overwhelms force  $F_H$ , and the scion

will not slide against the rootstock when any kind of force is applied from the side. This is true for any angle less than 45 degrees. The smaller the angle, the larger  $F_P$  is and the more difficult it is for the scion to slide. For best results, an angle of 30–37 degrees should be used. As a rule of thumb, the height of the cut should be 1.5–2 diameters of the rootstock to get the right angle.

The picture below shows an actual example. One can easily hold this graft union



(cut at about 30 degrees) together with just the two fingers. The scion does not slide up every time the

fingers are squeezed. The scion is secure against the rootstock and does not lose alignment to the rootstock.

A rubber band can easily be put over the graft union to hold it together (picture below). There is really no need to use pins and

screws or anything else. By cutting at the right angle, I stopped using pins in grafting plumerias. The rubber band itself will hold the scion in alignment, and the scion will not slide against the rootstock. If one wants to adjust the



alignment, simply pull the scion away from the rootstock and move it up or down into alignment. (This can be done because the rubber band is elastic.) The graft union can then be wrapped easily with a plastic tape.

Commercial nurseries that sell grafted plumerias appear to be aware of this. As the

### Plumeria Potpourri

pictures below show, most purchased grafted plumerias are grafted with an angle that is less than 45 degrees.



However, as the picture to the right shows, they do sometimes sell plants that are grafted with just about a 45-degree angle, which makes you wonder what they know.



In conclusion, there really is an optimal cutting angle for grafting plumerias. For best results, an angle of 30-37 degrees should be used. As a rule of thumb, in order to get the right angle, the height of the cut should be 1.5–2 diameters of the rootstock. At these conditions, the scion sticks to the rootstock and will not slide easily because the force that causes the scion to stick to the rootstock is much greater than the force that causes it to slide against the rootstock. Cuts made at this optimal angle make it easy to put the graft union together and keep the scion in alignment with the rootstock. There is no need to use pins and screws at all. Steeper angles are better, but they are not practical, because it is difficult to cut the scion and rootstock at such steep angles.

Flowers from top down: 1) Raspberry Sundae (I) and a seedling of Raspberry Sundae (r); 2) Mardi Gras seedling (compact plant); 3) Jeena Red, aka Gina

### Plumeria

A poem by Carmen Clegg Arn

The flower fills the wanting in the breeze of morning air with fragrance light and lovely for the world to hold and share It clusters all together with the petals opened full The touch is soft and mellow with a warming glow of cool Plumeria ... plumeria ... the flower of my choice The beauty of it speaks to me as if it has a voice The richest green surrounds the sweet bouquet to frame it all Look within the moment and you long to touch the call Trace your fingers all around the softness of each one Showing off their grandeur in the brightness of the sun Do not pick the flower as it reaches for the sky For if you do, the moment will be lost and it will die Although it takes my breath away ... there's one more thing to say Plumeria ... plumeria ... this flower makes my day







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#### The Plumeria Society of America Website

Additional information concerning The Plumeria Society of America and culture of plumeria plants may be found on the World Wide Web at the following address:

#### http://www.ThePlumeriaSociety.org

A listing of currently registered cultivars — Research Committee Bulletins — PSA By-Laws Plumeria Care Bulletins — Photos from past events — Map links to meeting and sale sites Photos of plumeria plants and flowers — past color insert pages in PDF format

#### Purpose of The Plumeria Society of America

- Promote interest in and increase knowledge of plumeria hybridization, propagation and culture of plumerias.
- (2) Share this knowledge with hobbyists interested in plumerias.
- (3) Provide a register for recording, identifying and classifying by name new types and varieties of plumerias.
- (4) Encourage and unite plumeria enthusiasts around the globe, throughout America and across the seas.

#### PSA Calendar — 2012

January 10meeting
March 13meeting
May 8meeting
June 9 Show & Sale I (Seabrook/Clear Lake)
July 10meeting
July 14 Show & Sale II (Fort Bend County Fairgrounds)
October 9meeting
October 13 Fall Social/Luau

- All regular meetings are held at the Houston Garden Center in Hermann Park, 1500 Hermann Drive, Houston, TX. Meetings begin at 7:30 p.m., workshops begin at 6:45 p.m.
- Bring your blooms. Bring your friends.
- Bring plants, cuttings, etc. for door prizes! These can be anything, not just plumerias.
- Visitors are invited and encouraged to attend.

The Plumeria Society of America, Inc. P.O. Box 22791 Houston, TX 77227-2791, USA Dues are \$25 per year

# Copy this page for all your friends who love plumeria or just want to know more about them.

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### Remembering Thea Whitenton

Thea lost her battle with cancer this summer. She was many things in her life, all of which were done with her unique blend of perfection and flair. I only knew the "plumeria nut" Thea.

She was Plant Sale Chairman for several years, making a big enterprise bigger and better. Thea served as Vice President and then as a Director. However, her most important service to the PSA was as an ambassador. Many people came to meetings and became members

#### by Mark Wright, Texas

because they met Thea at Home Depot, Lowe's, or a nursery. Her enthusiasm and optimism were contagious, and I will miss them greatly.



Thea is survived by daughters Paige and Megan and her husband Richard. She was about life and joy and sharing, and that is the way we will remember her.

### The Facts About Fertilizer

In the past, we thought that the higher the middle number (Phosphorus) the better. Now as we have our soils tested, there are some interesting facts coming to light.

One year, the soil test at the first of the year showed that there was some Phosphorus available, but the soil was low in Nitrogen and Potash. I added our slow release 6-30-5 formula and used a 9-58-8 formula as a liquid drench about every five to six weeks. The plants did well and had good blooms and growth that year.

When we talked to some other nursery people, we decided to test our soil after taking our trees up for the winter. The test came back extremely high in Phosphorus and normal for Nitrogen and Potash.

The next spring the soil was tested again and still had a high Phosphorus and normal Nitrogen and Potash. After talking to a chemist, it was determined that the Phosphorus in the ground was not breaking by Eulas Stafford, Texas

down fast enough for the trees to absorb and use the available Phosphorus.

The best solution was to use the high Phosphorus fertilizer at the beginning of the year and a more balanced fertilizer the rest of the year. This works well but the tree still needs the Phosphorus to help get the blooming cycle started. The solution is to foliar feed the plant; this gets the Phosphorus to the part of the plant that needs it.

Be careful not to mix the fertilizer too strong because it will burn the leaves with little brown spots. I prefer to mix the fertilizer a little weaker than the directions say and spray more often. This seems to work well for me as the blooms keep coming at a faster rate.

After using this method for a year, a soil sample was again tested, and the Phosphorus levels were more in line with the Nitrogen and Potash. This method works really well for me, and I would recommend that you try it yourself to see how it works for you.