



The Plumeria Society of America, Inc.

July 2013

# Plumeria Potpourri

*Next Meeting: Tuesday, July 9, 2013, 7:30 p.m.*

*Houston Garden Center in Hermann Park*

*1500 Hermann Drive, Houston, Texas*

*~ Anyone with an interest in plumerias is invited to attend ~*

## Come to the July meeting!

George Hadjigeorge will tell us about the advantages of callusing a plumeria cutting (before rooting) and how to build a humidity chamber!



*In  
this  
issue ...*

President's Corner	Mark Wright	page 2
Steel Magnolia	Emerson Willis	page 3
Bud Guillot's 91 <sup>st</sup> Birthday	Robert Fovall	page 4
How to Avoid Making Worthless Callus	George Hadjigeorge	page 6
July 2013 PSA Sale	German Collazos	page 13
Photos		page 16

## President's Corner

by **Mark Wright, Texas**  
email: [wright5447@sbcglobal.net](mailto:wright5447@sbcglobal.net)

This is an odd time of the year for me. I should be keeping up with my trees, collecting blooms for display, admiring new inflos, and sniffing flowers. Instead, we are between our two plant shows and sales, and I'm swept up in that. This next sale will be my last one as president. Even after the previous seven sales, they are a mystery to me.

Our chairman, German Collazos, has done a fantastic job organizing these events. This truly is a year-round undertaking. Our volunteers, however, are the backbone of this effort. They work very hard, usually in extreme heat, for only a "thank you" when it's all over. There are so many tasks they perform from putting out the tables and chairs; putting on the table cloths; placing the balloons identifying the sellers; organizing the bloom table; setting out the PSA sale items; getting the shopping carts ready; and last, but certainly not least, helping set up the check-out areas and assisting the checkers during

the sale. When it's all over, the floors must be swept and all evidence of our presence taken away.

At our sale last month, we sold over 1,200 items, most of which were rooted trees and cuttings, in 5½ hours. I think most small retail businesses would have a problem doing this. There is no magic involved—just hard work and great team work. I think enjoying what you do may have a lot to do with it too.

The checkout lines were very long for about three hours. There were probably some complaints from the customers, but I have never had one complaint addressed to me. Most folks stand in line talking with people they have never seen before, having a wonderful time.

I must admit, other than being visible, I don't do that much at these sales. I have always marveled at how smoothly they run. These events are called "Plumeria Show and Sales." The important word here is "plumeria"—the magic making these events work!

**The Plumeria Society of America**  
[www.theplumeriasociety.org](http://www.theplumeriasociety.org)  
**PLANT SHOW & SALE**  
**JULY 20, 2013**  
**Ft Bend County Fair Grounds**  
**3350 Hwy 36 South**  
**Cash, checks or credit Cards**

## Steel Magnolia

by Emerson Willis, Texas

Twenty-five or so years ago, our teenage son let an eighteen wheeler rearrange my pickup truck. Being a Texan, I thought it not possible to live without one but decided to give it a try.

A friend of ours offered to build us a 4' x 8' trailer with which to haul potting soil and other very important cargo which would later include potted plants to our wonderful PSA plant show and sale extravaganzas.

As the years passed, the trailer became, let us say, a tad worn. I first became aware of this when my fellow growers would show subtle signs of discontent every time I would pull up to unload.

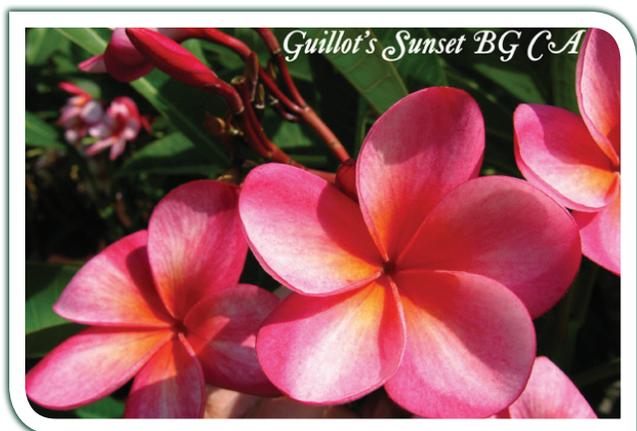
These signs would range from covering their eyes to shaking their heads. I couldn't believe John Brownlee could run his finger so far down his throat.

Nancy and I decided we should probably repaint our trusty but rusty plumeria wagon. The fellow who built it, repainted it, doing an excellent job. Using a plasma cutter, he cut writing and several stars out of plate steel to bolt onto the sides. Nancy gave him the shape of a bloom, and he replaced the stars. Then my wonderful wife did something she has not done in years. She took out her camel hair paint brushes. My Steel Magnolia painted the steel plumerias and the large ones on plywood.



## Bud Guillot's 91<sup>st</sup> Birthday

by Robert Fovall, California



Many of you are acquainted with the beloved plumarian, Mr. Bud Guillot, either personally or by reputation. Bud has taken the time and effort to write his memoirs in a book called *Reminiscences* about his early life on a Texas farm and years in service to his country during WWII. His incredible story inspired some of his friends to arrange a 91<sup>st</sup> birthday tribute to this incredible hero.

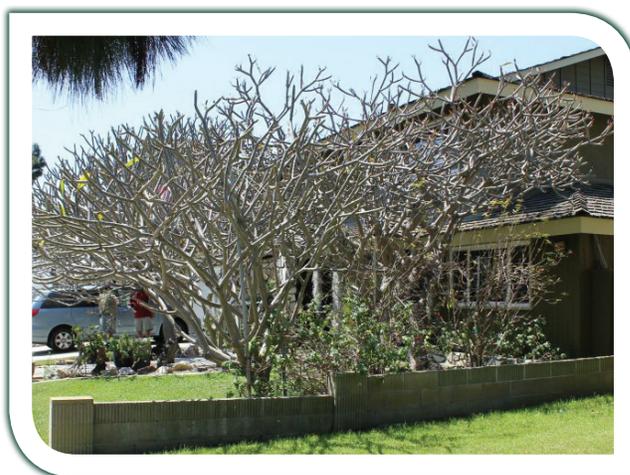
In *Reminiscences*, Bud graciously, generously, and with incredible detail shares his boyhood life on the farm. From a very early age, Bud learned how to get a job done and get it done right. His clever ingenuity got him out of many a seemingly hopeless predicament. He never once complained or seemed to think he had it rough. Little did he know how well his early conditioning would serve him in only a few short years.

It is clear Bud learned his love of the land, plants, and all the wonders of Mother Nature from a very early age. He really gets it and how it works. The Great Depression! What depression? They had everything they needed on the farm.

On December 7, 1941, the Japanese attack on Pearl Harbor changed the course of history and the life of Bud Guillot. After brief employment with Douglas Aircraft, in January 1943 Bud joined the Army Air Force and trained to become a gunner. On his 11<sup>th</sup> mission in 21 days, Bud's B24 took off with Berlin as their target. After being knocked out of

formation by another B24 that had been hit, Bud's aircraft was forced to crash land in enemy territory. He was taken as a POW to Hanover, Germany. His ingenuity and survival skills served him well during those dark days.

In Bud's own words, he says, "My first sign of liberation from the German concentration camp was two Jeeps with two American soldiers in each coming down a narrow dirt road towards us. Not a shot was fired. Our German guards dropped their guns and started running, some for the woods and some, hands in the air, towards the two approaching Jeeps, each containing two American soldiers, to surrender. About 30 minutes later, General George Patton and his driver came down that same dirt road in his Jeep, unescorted, but General Patton had his two famous pearl-handle 45 automatic pistols strapped on his hips. Three Jeeps, five soldiers, and one general liberated 6,500 American airmen that day. Yes, I am fond of Jeeps and have a heap of respect for one of America's best and most flamboyant generals, George Patton. It will never be lost to me: those Jeeps coming down that narrow dirt road." What an thrilling moment to know you are finally free after being held captive for 370 days.



### **Bud Guillot's plumeria trees in April**

A few of Bud's friends decided to honor his 91<sup>st</sup> birthday with a ride around his neighborhood in

a 1946 vintage Willis Jeep belonging to Tim Castillo. Tim, himself, is an ex-member of the 82nd Airborne. A few other plumeria friends joined in the



**Bud Guillot, Tim Castillo, and the Willis Jeep**



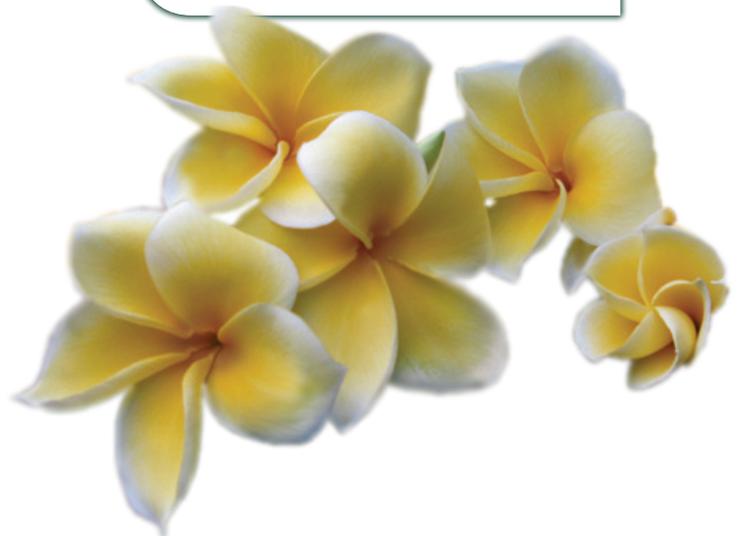
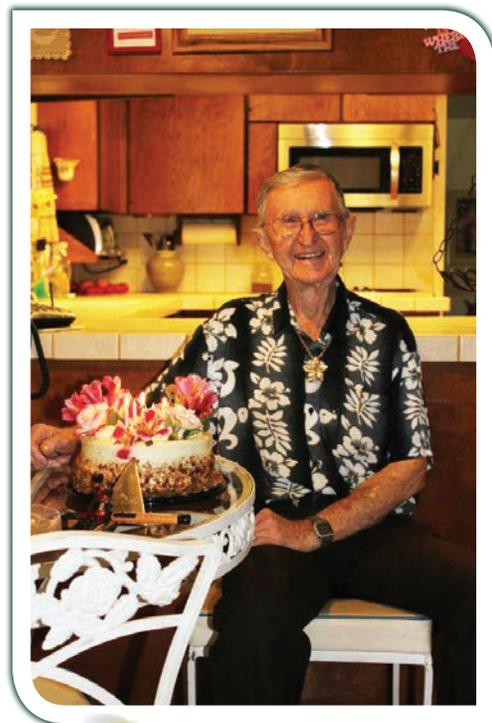
celebration and once again thanked Bud for his selfless service to our county. Those in attendance were Bill and Sherry Spurgeon, John Tarvin, Phil and Georgia Caverly, Robert Fovall and Ellen Panaro, David Mora, and Tim Castillo.

Bud proudly wore his original flight jacket and seemed genuinely moved by the chance to ride in

the wonderful old Jeep. He happily declared, “This is the first time I have ridden in one of these since my liberation, and we didn’t have seat belts then—we would pile in as many guys as could hang on.”

After Bud’s ride, everyone enjoyed some birthday cake and saw Bud’s military awards, including his two Purple Hearts and extensive collection of memorabilia. Bud certainly knows how to live life to the fullest and especially treats all his vast network of friends with unfailing generosity and kindness.

Thank you Bud Guillot for being such a superb role model and all around extraordinary guy!



## How to Avoid Making Worthless Callus

by George Hadjigeorge, Texas

What is a worthless callus? It is a name I came up with to describe a huge callus that does not produce many roots. It produces trees that are not anchored very well and are subject to wind damage. In addition, those trees will not be vigorous due to a poor root system. True to its name, as the pictures below of a 6-month old callus show, the worthless callus makes a huge callus but few roots. The whole bottom is covered by a big blob, which not only fails to produce many roots on its own but, in addition, covers the cambium line and blocks it from forming roots. Roots have a hard time pushing through the large callus mass; as a result, roots typically come out from the side of the callus.



In the last issue of *Plumeria Potpourri*, I described how to design and build a humidity box to callus cuttings. Understanding how to make a good callus and how to judge the quality of the callus is as important as having a well-designed humidity box.

What is a callus? It is living tissue with skin that is created by sap stored in the cutting. The picture below left shows a typical callus and the picture below right shows its cut-away view. There are two distinctly different calluses: a) a ring callus around the perimeter of the cambium line (line



between the bark and the wood), and b) a callus covering all of the pith. The main sap flow is at the cambium line. However, the pith also contains sap. Both calluses are formed by sap stored in the cutting. Both calluses are very important in rooting cuttings: a) all major roots form at the cambium callus, and b) the pith callus protects the cutting from rotting (rotting generally starts at the pith).

My preferred method of preparing the cutting for callusing is to dip the cutting in wettable sulfur dust. It does two things: a) it stops the bleeding of sap quickly (preserving cutting sap), and b) it creates a hard crust at the bottom, which protects the pith callus from getting scratched by things in the soil when it is planted. People claim that a sulfur cake at the bottom of the cutting delays the callusing process. They claim the same thing about rooting hormones. That is not true. Both the sulfur and rooting hormone cakes are permeable to moisture, and the callusing process proceeds normally. The sulfur cake at the cambium perimeter breaks up within days after putting a cutting in a humidity box. The

picture to the right shows a cutting callused for two weeks in a humidity box. The sulfur cake over the cambium



line is gone and a very nice cambium callus ring has formed. Both the bark and the pith are still well protected by an intact hard sulfur cake. Later on I will show a comparative study that proves beyond any doubt that a sulfur cake or a rooting hormone cake do not hinder or delay callusing or rooting.

The pictures below shows a 3-year old plumeria (left) and a 5-year old plumeria (right). Most of the perimeter still has no roots. I have shown with many examples that once plumerias are over a year old, the cambium callus has turned

into solid wood and no more major roots develop. The plants in the pictures will stay like that for the rest of their lives.



Various dissections have shown that the cambium callus turns into wood somewhere between six months and a year. Once that happens, no more major roots develop. The next two pictures show the cut-away view of two quadrants from the above 5-year old plant. Both show that the bottom 3/4" of the pith has turned into solid wood and that the cambium wood that anchors the roots has encapsulated the bottom of the pith. Still the pith new wood and the cambium wood that encapsulated the pith are still two different entities. A clear separation line between them is visible. The huge callus that is visible from the outside is really part of the cambium wood. It has not developed a single root over five years! As the pictures below show the whole cambium callus turned into solid wood some time ago. The fact that it developed no roots reinforces the observation that a callus will stop producing new roots once it turns into wood.



It is very important to develop a good root system in the first six months. A worthless callus does not have many roots in six months time. Also, it will not develop any more roots resulting, in a very weak tree.

Here is another example of a worthless callus (6-months old). This cutting and the one shown in the first picture were planted in September 2012, and the pictures show what the cuttings look like in March of 2013. In this one, the bark and pith were puffed up and there was a valley where the wood is. No cambium callus was visible.



Making a huge callus is not necessarily a good thing as most people think (they call something like this a "walnut" callus because it looks like a walnut). These calluses were made in a batch of cuttings that were sprayed with a mixture of 50% isopropyl alcohol and 50% hydrogen peroxide. I had a problem where some cuttings were rotting from the side of the bark and not from the bottom (picture to the right). After several re-cuts did the same thing, I decided that the pathogens were on the cuttings from the mother plant, and I sprayed the cuttings to disinfect them. That worked beautifully with no more rotting. However, in March when I re-potted the plants, I discovered they did not have many roots.



Around this time, some people in the Facebook groups started wiping the cutting end with a paper towel laced with alcohol, and they were reporting the formation of huge calluses. Those calluses looked like my worthless calluses I

made after spraying the cuttings with a alcohol/hydrogen peroxide mixture. So it looked like the alcohol and hydrogen peroxide had something to do with the formation of these worthless calluses. I decided to investigate the effect of alcohol and hydrogen peroxide on callus formation.

Could I make the worthless callus, like I did in September 2012, by just spraying the cuttings with a 50:50 mixture of alcohol and hydrogen peroxide? It made the worthless callus every time I did that, just like clockwork. I sprayed two cuttings with this mixture and placed them in a humidity box. The picture below left shows what the first cutting



looked like at two weeks. The bark and pith really puffed out, there was a valley where the wood was, and there was no sign of cambium callus.

I planted this cutting. In seven weeks when I checked this cutting, it was rotten (picture to the right). So that huge callus did not really offer a good protection against rotting.



The picture below top left shows the callus on a second cutting after four weeks in the humidity box. The pith has puffed so much it looked like it extruded out. The bark also puffed and blistered. There was a valley where the wood was and there was no sign of a cambium callus. This is a perfect example of a worthless callus. The picture bottom left shows this cutting seven weeks after it was planted. There are no



roots, and there was little action on the surface of the callus. Roots were really delayed because, as I will show shortly, the set of cuttings (same tree) that had a cambium ring after callusing rooted in four weeks. There is no doubt that this is a worthless callus.



A good callus looks very different from these worthless calluses. As the picture right shows, it has a nice cambium ring callus (this is where all the roots grow), the bark is flat with no growth or blisters, and the pith is not puffed so much.



I decided to study the effect alcohol and hydrogen peroxide have on callusing at widely different dosages. I soaked a cutting in 1" of 5% household hydrogen peroxide in a glass for two minutes. I then placed the cutting in a humidity box. After three weeks, little callus had formed at the cambium line.



The picture below left shows the cut-away view of the above cutting. Some hydrogen peroxide penetrated the pith. However, this does not explain the lack of cambium callus. The picture below right shows the wood after the bark was peeled off. The hydrogen peroxide had killed the lower 1/4" of the phloem. No healthy phloem means no cambium callus can form.



So, hydrogen peroxide is a poison to plumeria tissue and can do some serious damage. What

about in smaller quantities? The end of a cutting of the same variety was wiped with a paper towel laced with hydrogen peroxide. After three weeks in the humidity box, it developed a little more callus than the first cutting, but it still looked pretty bad.



The next two pictures show a cut-away view and the bark peeled off the above cutting. Again, there was penetration of hydrogen peroxide into the



pith and bark. The bottom 1/4" of the phloem was killed by the hydrogen peroxide. The bark also showed some damage. So, even in very small amounts, hydrogen peroxide is deadly to the plumeria phloem.

In another experiment, a cut branch was sprayed with hydrogen peroxide, and after it dried the branch cut was coated with LET (liquid electrical tape). The picture right shows what it looked like after six weeks.



The bark, the wood, and the pith were penetrated for about one inch and were killed. The cutting end looked scorched like you get with a chemical burn.

Concluding, hydrogen peroxide is a deadly poison to all plumeria parts except the skin (epidermis) and should not be used on open wounds. It is OK to wipe the skin of plumeria branches with hydrogen peroxide to kill viruses and pathogens; hydrogen peroxide does not penetrate the skin.

What about isopropyl alcohol? What does it do? I soaked another cutting from the same tree in

1" of alcohol in a glass for two minutes. After three weeks in a humidity box the cutting's bottom looked really bad and there was no trace of cambium callus anywhere.



The next two pictures below show the wood with the bark peeled away. I was fooled at first in that the cut-away view of the pith did not show much damage. I re-cut the cutting and dipped it in sulfur. When I peeled off the bark from the wood, I realized there was extensive damage to the phloem much higher up than I cut. The alcohol penetrated the phloem to a length of 5" even though the alcohol level in the glass was only 1" inch high. Alcohol has a much lower surface tension than hydrogen peroxide and went much farther up the phloem capillary tubes. Alcohol really wiped out the phloem much worse than hydrogen peroxide. It also wiped out part of the bark and wood. Alcohol is much deadlier to plumeria tissue than hydrogen peroxide.



In another experiment, a cut branch was sprayed with alcohol, let dry, and then coated with LET to seal it. The picture below shows a cut-away view of the branch in five weeks time. The alcohol penetrated deeply (more than 1") and killed the bark, the wood, and the pith. Alcohol, just like hydrogen peroxide, is also a deadly poison to plumeria tissue.



What about in smaller quantities? The picture below shows three cuttings from the same tree

after three days in a humidity box. The first had nothing on the cut, the second was wiped with a paper towel soaked in alcohol, and the third was wiped with a paper towel soaked in a 50:50 mixture of alcohol and hydrogen peroxide. Knowing alcohol and hydrogen peroxide are deadly poisons to plumeria tissue, I tried to put as little as possible on the cut. The cutting with nothing on it showed no visible sign of any change. The bark and pith of the other two cuttings were puffed out. Normally when a cutting is callused, the bark never puffs or grows. This shows that the puffing of the bark and pith was just a reaction to the alcohol and hydrogen peroxide poisoning. The plant was trying to reject the very small amounts of alcohol and hydrogen peroxide that absorbed into the cut. So it made this reaction callus trying to eject them—just like human skin reacts to poison ivy. The skin puffs and oozes trying to reject the urashiol oils from the poison ivy. It is pretty obvious this was a reaction callus because there was a valley where the wood was and no cambium callus formed on any of the cuttings. Normally, the first callus that forms is the cambium callus.

A study was done to see if small amounts of alcohol have a positive effect on callusing. A set of four cuttings were taken from two different trees, one with lots of sap and one with little sap. Nothing was put on the first cutting. The other cuttings were wiped with a paper towel soaked in alcohol. The third cutting was dipped in rooting hormone. The fourth cutting was dipped in sulfur multiple times to make a cake. The two sets of cuttings were placed in a humidity chamber for two weeks. The two pictures below show the two sets of cuttings in this order: nothing, alcohol wipe, alcohol wipe/rooting hormone, and alcohol wipe/sulfur cake. In both



sets, all four cuttings developed a very nice cambium callus and one can not tell them apart. A very small amount of alcohol neither helps nor hurts the speed or quality of cambium callus



formation. The claim of people that alcohol wipe enhances and speeds up callusing is just not true.

These callused cuttings were planted in Stuewe tubes. In four weeks the first set of cuttings had roots coming out of the bottom of the tubes.

The picture below left shows that all cuttings had similar amount of leaves.

The picture below right shows that all cuttings had similar amount of roots.



Thus, alcohol wipe does not accelerate root development nor does it enhance root growth.

The pictures below show a cutting dipped in rooting hormone callused for two weeks in a humidity box. A crack around the cambium line can be seen in the picture top left. A cambium callus forming underneath caused this.



The rooting hormone cake was scratched off in the picture bottom left. The massive cambium callus that developed below the cake is visible. Rooting hormone cake is permeable to moisture and does not inhibit or slow down callus formation.

The pictures below show a cutting that was dipped multiple times into wettable sulfur powder after being callused in a humidity box. A crack around the cambium line can be seen in the left picture. A cambium callus forming underneath caused this. The sulfur cake was scratched off in the right picture. A nice cambium callus that developed below the sulfur cake is visible. Sulfur cake is permeable to moisture and does not inhibit or slow down callus formation.



The claim of people that rooting hormone and sulfur cake delay callus formation and lead to an inferior callus is just baloney. Both rooting hormone and sulfur cake are permeable to moisture and have no effect on the speed or quality of callus formed. The cakes offer some protection against scratching of the pith callus by objects in the soil when planted. These powders also quickly stop the bleeding of sap from the cutting.

What about the effect of alcohol spray (where the plant uptakes more alcohol than alcohol wipe)? A cutting from the same variety was sprayed with alcohol (in a hand sprayer). The cutting was placed in a humidity box. The picture below left shows the cutting after four days and the picture below right after two weeks. The reaction callus was much bigger than with alcohol wipe—the pith and bark really puffed out, and there was no sign of cambium callus. At two weeks the whole bottom of the cutting



was really puffed. The bark was really blistered and there was no sign of cambium callus. This reaction callus covered the whole cambium line.

I put the cutting back into the humidity box for two more weeks. The picture below left shows what



the callus looked like at four weeks. The callus color changed from white to green. The whole bottom was one big mass but the pith in the center had not

bulged out as much as the bark. There was no sign of a cambium callus. I planted this cutting. The picture below right shows this cutting after seven

weeks. No roots developed

around the cambium line, which was covered by a thick (worthless) callus. All roots emanated from the inside perimeter of the pith callus that was not as thick.

The roots found a weak point over the pith part of



the worthless callus to come out. This was not the case for most other calluses, which did not develop any roots after seven weeks.

It appears that the worthless callus does not produce roots of its own. Also, it covers the cambium line and roots cannot push through such a thick mass of callus. Here are some more



examples to demonstrate this. All these cuttings were from the same tree. The picture left shows the callus two weeks after the cutting was sprayed with alcohol and placed in a humidity box. The picture right shows the same cutting seven weeks after it was planted.



The callus had grown bigger but no roots formed. That huge callus was covering the bark, the cambium line, and the wood and blocked root development. As shown earlier, cuttings from the same tree developed lots of roots in just four weeks after planting.

Here is another example of before and after at the same conditions. Here the worthless callus covered the whole bottom of the cutting. Little was happening seven weeks after planting.



I have many examples all showing the same thing.

The massive worthless callus covers the cambium line and prevents any roots from emerging. For comparison, here is a cutting that was sprayed with hydrogen peroxide, dipped in rooting hormone, and air dried for two weeks. It was then planted. The picture to the left shows the cutting after seven weeks. The cutting developed many roots around the cambium perimeter. The picture below right shows the bottom view of this same cutting. The hydrogen peroxide scorched the bottom of the cutting. The pith, the wood, and the bark at the end of the cutting absorbed hydrogen peroxide and died. However, from deep inside the cambium perimeter, higher up in the trunk, a massive callus developed from the healthy cambium line and all



It was then planted. The picture to the left shows the cutting after seven weeks. The cutting developed many roots around the cambium perimeter. The picture below right shows the bottom view of this same cutting. The hydrogen peroxide scorched the bottom of the cutting. The pith, the wood, and the bark at the end of the cutting absorbed hydrogen peroxide and died. However, from deep inside the cambium perimeter, higher up in the trunk, a massive callus developed from the healthy cambium line and all



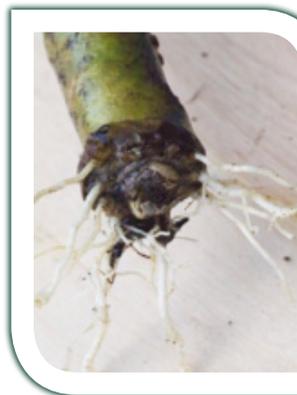
nothing on it five weeks after planting. It was growing roots at the perimeter of the cambium line. The white bumps will also grow roots. The fact that most of the worthless calluses had no roots at seven weeks proves that the worthless calluses significantly delay rooting.

roots were anchored to it. It is remarkable that this cutting, that suffered so much damage from the hydrogen peroxide, recovered so nicely and developed lots of roots whereas all the cuttings with the worthless callus could not overcome the massive callus covering the cambium line and develop roots. What is the point of callusing a cutting if we were to make the worthless callus? It is better to air dry the cuttings instead!

Sometimes there is a weak spot or two in the worthless callus and a few roots pop through. That is how the cutting forms a few roots from the side of the callus.



For comparison, a cutting that was dipped in rooting hormone and rooted at the same time, developed lots of roots around the perimeter of the cambium line in seven weeks (picture below left). The picture below right shows a re-cut cutting with



nothing on it five weeks after planting. It was growing roots at the perimeter of the cambium line. The white bumps will also grow roots. The fact that most of the worthless calluses had no roots at seven weeks proves that the worthless calluses significantly delay rooting.

The picture below shows a cutting from the same tree, with nothing on it and callused for two weeks in a humidity box, four weeks after planting. Lots of roots were emerging around the perimeter

of the cambium line. The base of the roots was white bumps. So, all the white bumps seen on the callus will most likely grow into roots. All the evidence points to the fact that with the worthless callus rooting is delayed and eventually only a few roots develop from it.



Concluding, I would not use alcohol or hydrogen peroxide on plumeria cuts and wounds. They are both deadly poisons to plumeria tissue, and even in moderate amounts, they both kill the phloem. A cutting with a dead phloem cannot be callused and rooted. In very small amounts (wipe with a paper towel soaked with alcohol or hydrogen peroxide), both alcohol and hydrogen peroxide had little effect on callusing, even though a reaction callus was formed within days. Alcohol neither accelerated callus formation nor did it make a better quality callus. It did not have any effect on root formation either. But alcohol and hydrogen peroxide in larger amounts (like spraying the cuttings and many times by wiping with a paper towel laced with them) had an adverse effect on callus formation. Both caused the formation of the worthless callus that developed few roots, delayed rooting significantly, and created inferior plants with a weak root system. The worthless callus covered the cambium line with massive mass. As a result,

cambium roots could not break through the callus mass and come out. On top of that, the worthless callus did not form many roots on its own. Formation of the worthless callus is due to plant reaction to alcohol and hydrogen peroxide poisoning. There may be also other ways of forming the worthless callus besides alcohol and hydrogen peroxide poisoning. These will be investigated and presented in future reports.

In other words, both alcohol and hydrogen peroxide did not help callusing in any way but could have some disastrous effects if absorbed in larger amounts. It can cause a worthless callus and weak plant or can kill the phloem completely in which case the cutting cannot be rooted. There is absolutely no reason to put alcohol or hydrogen peroxide on plumeria cuts of any kind. As long as the cutting equipment and bark of the cutting are sterilized prior to cutting, there are no pathogens on the cut, and it does not need sterilization.

If you have any plants that were wiped with alcohol or hydrogen peroxide as cuttings, I would dig them up and examine the root system. If the plant does not have many roots I would re-cut the bottom 1" and root it again, but this time without alcohol or hydrogen peroxide wipe. Ditto for any cuttings being presently callused or rooted. Note that plants that did not uptake much alcohol or hydrogen peroxide will be OK and would not need re-cutting.

## July 2013 PSA Sale

by German Collazos, Texas

Our next plant sale is at the Fort Bend County Fairgrounds on July 20 <sup>th</sup> . The sellers' meeting will be held after the general meeting on July 9th in order to allow time for people to arrive. Please contact German Collazos with any questions at 713-670-4064 or <a href="mailto:german.collazos@tic.toshiba.com">german.collazos@tic.toshiba.com</a> .	<b>Fort Bend County Fairgrounds Sale—July 20</b>	
	July 2	Commitment to sell on July 20
	July 9	Sellers' meeting (after general meeting)
	July 10	List of plumerias to be sold on July 20
	July 20	Sale at Ft. Bend County Fairgrounds



**Brad's Buds and Blooms**  
 Your local nursery for  
 plumeria, heliconias, adeniums, gingers  
 and beautiful and uncommon tropical plants

**605 OLD GENEVA RD  
 GENEVA, FL 32732  
 USA**

T: (407) 349-9510  
 E: bradsbudsnblooms@earthlink.net  
 W: www.bradsbudsandblooms.com

Plumeria Musk Rainbow



**Sacred Garden  
 Frangipanis**

Australia's best range of Frangipanis  
 Specialist breeders, named varieties & rare species

Bare rooted plants carefully packed for  
 mail order worldwide

For a full color catalogue send 4 x 50¢ stamps to:  
 132 Silver Valley Road MS 415 Mount Garnet QLD 4872  
 Int. +61 7 4097 0065 Ph/Fax (07) 4097 0065

Email: prowsesa@ Cairns.net.au  
 Website: www.sacredgardenfrangipanis.com



**OVER  
 40 VARIETIES  
 OF PLUMERIAS  
 AVAILABLE**

P.O. Box 9868, New Iberia, LA 70562-8868  
 www.stokestropicals.com  
 Phone: 1-800-624-9706 FAX: 1-337-365-6991

**Jim Little Nursery and Farms**

*"Leading the way in plumerias  
 since 1973"*



**Haleiwa, Hawaii**  
 www.theplumeriaworld.com

**Caldwell Nursery**  
 2436 Band Road, Rosenberg, Texas 77471  
 Phone: 281-342-4016 — email: salvia 123@emsn.com  
 1 mile west of Ft. Bend County Fairgrounds off Hwy. 36  
 (take US 59 South to Exit 36, left on 36 to Band Road)  
 website: www.caldwellhort.com

Great Selection of PLUMERIA, DAYLILLIES, ROSES,  
 UNIQUE and RARE TROPICALS and OTHER PLANTS  
 HOURS: 9:00–5:30 MONDAY through SATURDAY  
 CLOSED SUNDAYS EXCEPT SPRING 11:00–4:00

*Plumeria Paintings by Marcia*

**Watercolor  
 Fine Art  
 Giclées and  
 Note Cards**



Marcia Minnichhofer  
 P.O. Box 403  
 Lihue HI 96766  
 www.plumeriapaintingsbymarcia.com

**Florida Colors  
 Plumeria**




**305-258-1086**  
 www.FloridaColors.com

**Southwest Fertilizer**

BOB PATTERSON  
 5828 Bissonnet  
 HOUSTON, TEXAS 77081  
 TEL: (713) 666-1744 FAX: (713) 666-8108  
 VISIT US ONLINE @ YARDGEEK.COM

**10% DISCOUNT for PSA Members**





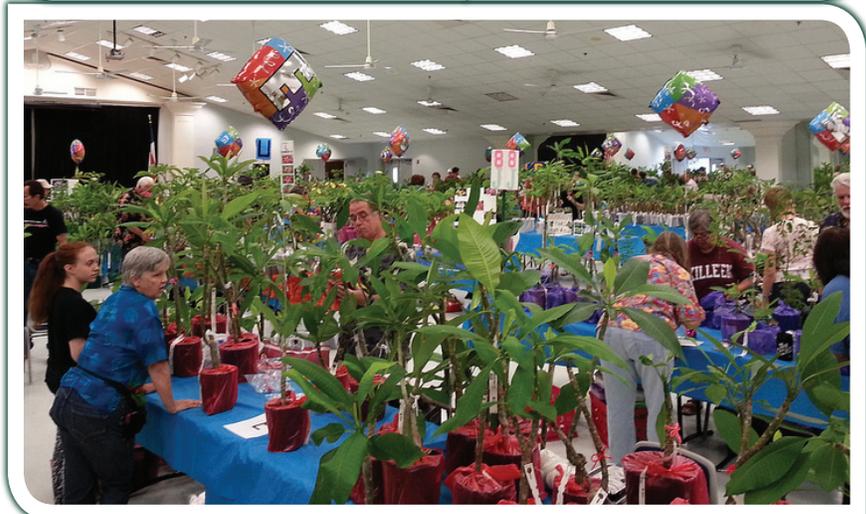
Photos from the Seabrook/Clear Lake Sale June 2013



*Sangwaan Tabtim*



*Heirloom*



*Dwarf Deciduous*



*Penang Peach*



*JL Bleeding Heart*