



St. Augustine Orchid Society

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## Cleaning Clay Pots

by Sue Bottom, sbottom15@hotmail.com

If you want to reuse your clay pots, it is important to clean, sterilize and desalt them prior to reuse. It is a chore that can quickly become unmanageable unless you clean your pots daily while you are repotting during the marathon repotting season in the spring.



Clay pots are porous so they can absorb salts and pathogens which can be damaging to the next inhabitant of the pot. Pots should be cleaned and then sterilized before they are used again. Your final repotting chore of the day is cleaning the debris from the pots so you don't end up with the tedious chore of cleaning a stockpile of dirty pots.

**Scrub Debris from the Pot.** The first step is to remove the potting mix, roots and other detritus from the pot. I fill a 5 gallon bucket with water and drop the pots into the bucket as I am repotting. You can add dishwashing soap to the water if you like. Your last repotting chore of the day is scrubbing your pots. Use an abrasive pad to scrub away as much of the roots, encrusted salt and other debris as you can.

**Sterilize the Pot.** You sterilize the porous clay pot so you don't transfer pests, diseases or virus from the last inhabitant to the next inhabitant of the pot. You can use wither chemicals or heat to sterilize clay pots.



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*Traditional Bleach Soak.* The traditional advice is to disinfect your clay pots by soaking them for several hours in a 10% bleach solution (10% bleach or 9 parts water to 1 part bleach). If you are using a 5 gallon bucket, add one half gallon bleach, drop in your scrubbed pots and fill to the top with water. You can also add pool algaecide (2 tsp/gal if 10% strength) in lieu of or in addition to your bleach solution for extra killing power. You'll pull the pots out of the bucket, wash them off with a hose and drop them into a second 5 gallon bucket filled with water. Let them soak for several hours to remove any residual bleach or algaecide. Remember to use rubber gloves so your skin doesn't contact the bleach/algaecide solution, which after a very few exposures can cause skin sensitivity and chemical burns. The bleach/algaecide kills everything with the possible exception of virus so the next step is heat treatment. If you bake the pots in the oven at 400 degrees for two hours, any virus will be eliminated. Add your used rhizome clips and other wire products to the oven to decontaminate them at the same time. Let the pots cool off in the oven and they are ready to be reused, assuming the salts are gone.



Once you've removed the debris from the pot, you can use the dishwasher to finish cleaning them and help draw salts from the pot. The pots still require sterilization to eliminate virus particles.

and, if present, scrub with an abrasive pad while the pots are still warm. Then bake the pots in the oven for two hours at 400 degrees along with any wire products that need decontamination. Let them cool in the oven. If salts are not visible on the pots, they are ready to be reused.

*Dishwasher and Oven Alternative.* I have started washing prescrubbed pots in the dishwasher followed by baking them in the oven, thereby eliminating the need for the bleach soak. After the initial scrub, I let the pots soak in a water filled 5 gallon bucket to start dissolving any residual salts. Alternatively, you can bring them into the kitchen and soak them in hot water which will hasten salt dissolution. I scrub the pots a second time to remove encrusted salts and residual debris and then pop them into the dishwasher, sometimes with twice the normal amount of soap or a few teaspoons of Trisodium Phosphate (TSP). The heat and soap will draw the salts either out of the pot or to the outside edge of the pot. As they are removed from the dishwasher, check for any remaining salt encrustation



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**Remove Stubborn Salt Encrustation.** Sometimes you'll find or acquire pots with stubborn salt encrustations that are still present after your normal cleaning sequence. You need to remove any residual salts that have been absorbed into the porous clay pots. Otherwise, the roots of your newly repotted orchid can burn if they come into contact with the white deposits as a result of salt toxicity. If soaking and washing the pots does not remove all the salts, you have a few alternatives.

*Mild Acid Soak.* If the pots still have visible white stains, try an overnight soak in a mild acid. Use white vinegar in whatever concentration you are comfortable handling, either a pure or a diluted solution. Scrub any residual salt from the pot followed by a second soak in water to remove the acetic acid. Ray Barkalow of First Rays suggests using citric acid, a mild organic acid that is very effective for removing deposits. Citric acid may be sold in your grocery store for use in ethnic recipes as "sour salt". Even at an addition rate of one cup/gallon, it's still quite plant friendly, so you need not worry too much about rinsing. The product is used in fertilizers to enhance solubility and in leaf cleaners for removing deposits, it is also used in fertilizers to enhance solubility.

*Simmer on Stove.* For stubborn salt depots, drop your pots in a stew pot filled to the brim with water and set on a slow simmer for several hours. The heat will help draw the salts from the pot. You can add a mild acid like vinegar or citric acid to help solubilize the salts into the water. Then soak the pots in fresh water to remove acid.



Terry set up a heat treatment station in the boat house with a second hand oven he bought for \$50. I set the oven to 500F and let the pots bake for 2 hours to eliminate all pathogens and also to help remove stubborn salt encrustations.

*High Temperature Heat.* Then bake the pots in the oven for two hours at 500 degrees along with any wire products that need decontamination. Let them cool in the oven. If salts are not visible on the pots, they are ready to be reused.

The deposits on the pots are a combination of minerals from the water supply (probably naturally occurring bicarbonates and carbonates), minerals from the fertilizers (nitrates, sulfates, etc.) and plant wastes that are organic. Ray Barkalow of First Rays contends that these materials are all blended together and are probably deposited on the pot rather than chemically bonded to it. The cooking process destroys the sticky organics and possibly changes the physical or chemical properties of the inorganic material making them more friable and easy to remove. At any rate,



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cook the pots for an hour or two at your oven's highest heat setting and when the pots

are cool enough, place them in the sink and fill the sink with water for a brief soak. Best to use this alternative when the house is open and vapors can be dispersed easily. The fumes are similar to those you get when you put the oven on a self cleaning cycle. You'll have to ventilate to get rid of the fumes, but your pots will look brand new without using chemicals like bleach or acid.



Pots in the final soak after heat treatment. The pots look almost brand new and are ready to return to duty.

**One Step Cleanup Using a Kiln.** Bob Scully of the former great orchid nursery Jones and Scully uses a kiln to sterilize and desalt pots prior to reuse. He simply removes the coarse debris from the pots and runs them through a kiln. The kiln has a firing temperature on the order of 1000F, a high enough temperature that pests, diseases, virus and salts are all eliminated in one step. He brushes any residual ash off the pots after removal from the kiln and they're ready to reuse.

Cleaning up your pots can quickly become a chore if you stockpile dirty pots to handle "later". Drop your dirty pots in a bucket of water as you are repotting so the debris and roots will be softened up by the end of the day. Your last repotting chore of the day will be to scrub the debris from the pots. Then you either stockpile prescrubbed pots or continue on with the sterilization process and drop them into a bleach solution, wash in the dishwasher, cook in the oven or however you choose to sterilize your pots. You'll be able to sleep the sleep of the righteous knowing that your almost new pots are ready for your new beauties.