

Convention Workshop
Growing Show Plants
By Pauline Bartholomew
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When I was asked to do a workshop for the AVSA Convention in San Francisco I accepted the title "Growing Show Plants California Style", without giving it much thought. As I started to prepare the program it dawned on me that I would have a lot of nerve speaking for all the growers in California. Also I use peat moss from Canada; fertilizers from New York, Ohio, Pennsylvania; pots from Wisconsin; and a potting technique from Texas. So much for the "California": the revised title is: "How I Grow Show Plants".

When I read articles or hear lectures on how to grow show plants I think to myself, "I would sure like to see your plants before I take your advice!" I can't show you my plants so I will establish my credibility by reciting my records of awards. I have been growing African violets for over 10 years but it took me a long time to achieve even modest success in growing show-quality plants. It wasn't until I began to perfect my grooming skills and happened to run across "Texas Style" potting that I began to take the top awards in judged shows.

In a five-year period I entered eight judged shows and each time won Best in Show and the national award of the AVSA gold rosette plus many additional awards. Last November at the Southern California Council show I was finally defeated for Best in Show for the first time in those five years by one of my best friends; but her joy in winning took the sting out of losing! She did let me win the AVSA gold rosette though, so I still have one leg left to stand on. I'm sure many records better than this exist in the AV world and probably by using much different techniques than mine, but at least you will be getting another viewpoint.

CONDITIONS: First the proper conditions need to be created to which to grow show plants. African violets are happy in the same atmosphere that we are comfortable in. Not too hot, not too cold, fresh air but no drafts, enough humidity to keep us comfortable, and enough sunlight to keep us cheerful. However, creating the maximum beneficial conditions for show-quality plants requires a little extra effort.

FLUORESCENT LIGHTING: Only artificial light can provide the precise timing required for floriferousness for a judged show. The first thing to consider is the proper amount of light. Since fluorescent light can't be measured with photometers designed for photographic equipment, growers think in terms of watts per square foot. For African violets most experts recommend 10 to 15 watts of fluorescent light per square foot.

I use two 40-watt Gro-lux regular (F-40) tubes above a shelf area 20 x 48 inches. This provides a little over 11 watts per square foot. It is important to use light fixtures with reflectors to get the maximum benefit from the lights. The tubes are about 10 to 12 inches above the tops of the plants and I keep the lights on 12 hours a day. About 10 weeks before a judged show I increase the light hours one hour per week until they are on 15 hours a day. After the show is over I decrease the light hours at the same rate until they are again at 12 hours.

Dust and grime cut down light output so keep the tubes and reflectors wiped clean. Replace the tubes every 24 months or when dark rings appear at the end of the tubes, whichever comes first. Arrange it so only one tube is replaced each year in a double tube fixture and make the change 2 ½ months before a show. If you change both tubes every two years then you will not have maximum bloom in the off-year. If you decide to replace both tubes each year, then change only one tube at a time, waiting a few weeks to replace the other tube to avoid burning the foliage with the sudden burst of energy from the new tube.

SPACING PLANTS: In order for the leaves to lie flat and for foliage to form symmetrically, the plants must be spaced so the leaves of one plant never touch the leaves of another. Also air circulation will be better if plants are not crowded together.

Since we all need to be aware of energy conservation and energy sources are becoming very expensive, we should get the maximum use out of the light energy it takes to grow plants. Many plants can be grown under one light fixture by elevating the plants at varying levels using different heights of inverted pots or other containers.

TEMPERATURE – HUMIDITY: Keep the violet room temperature between 60 and 80 degrees and the humidity between 50 and 70 percent. To achieve this it may take apparatus such as humidifiers or dehumidifiers, coolers, vaporizers, etc, but then its never been claimed that growing show plants was in inexpensive hobby!

WATER: Use a good quality of water preferably bottled purified water. Rainwater is no longer preferred because of acidity and pollutants from the atmosphere in all parts of the country. I have a reverse osmosis purifying unit installed in my kitchen sink and can draw up to five gallons a day. This is ample for the African violets and the potted patio plants plus cooking and drinking.

FERTILIZERS: Use a dilute solution each time you water. I alternate brands of fertilizers using a balanced formula such as 20-20-20 or 18-18-18 throughout most of the year and switching to a high phosphorus fertilizer 2 ½ months before a show to increase floriferousness. The exception is variegated varieties which get a 12-36-14 fertilizer the year around. With dry crystal fertilizers, if the total percentage of nitrogen, phosphorus, and potassium adds up to about 60 percent, use ¼ teaspoon of fertilizerto one gallon of water. If the total percentage is less than 60 percent, then adjustment will need to be made accordingly. I use a 5-50-17 (variegated special) fertilizer as a bloom booster or foliar feed with a recommended inorganic fertilizer twice before show; once 10 weeks prior and once 8 weeks prior. Never foliar feed variegated foliage plants. I learned this the hard way; within weeks all my beautiful variegates turned green.

POTTING MIX:

- 2 quarts peat moss (Canadian milled sphagnum)
- 2 quarts #2 grade perlite
- 1 quart coarse grade vermiculite
- 1 tbsp. Superphosphate
- dolomite lime

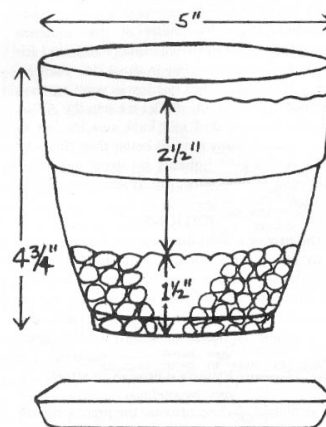
Since peat moss is quite acid, enough dolomite lime is added to raise the pH of the mix to 6.5 or 6.7. It is difficult to tell exactly how much dolomite lime to add to the mix since batches of peat moss will vary in acidity and the grind (fine or course) of the dolomite lime will be a factor, so it is important that an accurate pH test be made. The only ingredient to consider pasteurizing is the peat moss. Some growers feel peat moss is free from contaminants but I pasteurize it to be safe. It is also possible to buy peat from a nursery that does its own steam or chemical pasteurizing.

PESTICIDES: I don't believe in the use of pesticides by the hobbyist grower as a preventive measure. This includes systemic granules; pesticide sprays, and fungicidal drenches. Most of us are not knowledgeable enough about the dangers of these chemicals and some are very toxic, easily absorbed through the skin, and my be dangerous to our health. Entomologists warn us that pests can build up a tolerance to pesticides or can develop mutant strains that are resistant to existing pesticides.

When you do get a pest or disease in your collection (and haverit we all?) then use the proper chemical, carefully following directions and taking all precautions such as wearing a mask and rubber gloves. Don't bring any new plant into your collection without a 45-day quarantine at a safe distance. One little bug at the wrong time and you are out of show business until next year.

“TEXAS STYLE” POTTING: “Texas Style” was developed by Jodi Davis of Austin, TX and I think it was very considerate of Judi to be living in Texas when she came up with this idea. Through years of brainwashing by the Texas, we associate anything from Texas as being bigger and better and this applies to everything from cows to men, and now we add African violets! It certainly wouldn't have had the same impact if it were called “Nebraska Style” (forgive me Nebraskans!). Jodi uses a coarse granite gravel (turkey grits) as the base for “Texas Style” potting but I use a coarse sponge rock (#3 grade) because of availability of material. Check Jodi's article in the June 1978 AV Magazine.

Since man first took plants out of the ground and started growing them in containers, the search for better potting methods, better potting mixes, and better growing procedures, has never ceased. The “T.S.” potting method is so simple that the question is often asked, “Why wasn't it discovered before?” Well countless



horticulturists have been within a hairsbreadth of it through one technique or another but, as far as the hobbyist grower is concerned, the common failing of all of these techniques has been the cultural sophistication required, either by the grower or by the costly or complicated paraphernalia required. The simplicity of "T.S." is what has made it so popular with plant growers. It is easy to teach, almost any pot can be used, the materials are available at most nurseries and, of course, the results are amazing.

WHY "TEXAS STYLE" WORKS: The roots grow down into the sponge rock layer in the bottom of the pot and it is in this area where the magic of "T.S." potting takes place. There are two reasons this area provides extra growth advantages over conventional potting methods.

- 1 **THE SPONGE ROCK LAYER HAS AIR SPACES THAT ALLOW THE FREE EXCHANGE OF GASES AT THE ROOT TIPS.** Just like humans, plants have to breathe to live. We take in oxygen and give off carbon dioxide. Plants are just the opposite: they give off oxygen and take in carbon dioxide. This is referred to as the "gas exchange" and, whether in plants or in human beings, this gas exchange can only take place in air. Air spaces are present in a good porous potting mix but to a lesser, more restricted degree, so by providing the root area with more assured air spaces, plant growth is given a big boost.

Respiration in plants takes place in two locations: the leaves and the root tips. It is essential to the health of the plant that air is available to both of these areas. The leaves should be kept free of dust and grime and the plant room air should not be allowed to become stale and stagnant.

2. **THE ROOTS HAVE FREE ACCESS TO MOISTURE AND NUTRIENTS** getting The proper amount of water and nourishment is a very traumatic experience for the roots of container grown plants; they have a hard time getting their fair share of food and water. With the conventional method of potting, where the pot contains nothing but the potting mix, the roots are in competition with the soil for water, which to some degree is locked up physically such as absorption by the peat moss, and for nutrients, which to some degree are locked up chemically by the pH of the soil mix.

HOW "TEXAS STYLE" WORKS: "T.S." potting requires watering from the bottom with a dilute fertilizer solution. This nutrient solution is drawn up to the root system by capillary action.

CAPILLARY: Having a very small internal diameter, as a tube. **CAPILLARY ATTRACTION:** The force that causes a liquid to be raised against a vertical surface such as water in a small glass tube.

SURFACE TENSION: The molecules in water create tension, such as water beading on a smooth surface. It is this tension that starts capillary action. Particles such as sponge rock as the base of planting "T.S." or particles such as peat moss, perlite, charcoal, etc. in the potting mix, for a myriad of little "tubes" or capillaries.

WATERING, "TEXAS STYLE" You can water on a schedule with "T.S." Approximately ½ inch of water is added to the saucer at regular intervals. This interval is determined by the plant that needs water first, since newly potted plants will use water at a slower rate than a plant whose roots are well established. The rest of the plants are watered at the same time whether they need it or not because with "T.S." it is safe to add water when the soil is still quite moist.

When water is poured into the saucer it will be drawn up by the sponge rock until the saturation point is reached and then capillary action will start. If you are using a small, shallow saucer, fill it, wait a few seconds until some of the water is drawn up, then fill it again. If you are using large saucers or common trays then be sure the water level only comes up to the top one inch of the sponge rock. After the solution is all used up, wait 2 or 3 days, depending on conditions, then water again. The top of the soil should feel moist at all times.

THE BALANCE OF "TEXAS STYLE" POTTING: As you start trying this method of potting, keep in mind the "balance": the sponge rock layer needs to be deep enough so the top one inch of the sponge rock is above the water level and the potting mix layer needs to be deep enough to allow potting down a long neck and still leave enough roots so the plant doesn't go into shock. I have potted large show plants down with only a one inch thick "saucer" of roots left and have never had a plant go into shock or even a slight setback. It is possible to grow "T.S." in squatty pots with only a one inch layer of sponge rock but I've had more success using a slightly taller pot with 1 ½ inches of sponge rock and 2 ½ inches of potting mix.

POTTING DOWN A LONG NECK: Since the soil layer for "T.S." is shallow, pot the plant down before the neck gets too long; usually no more than ½ inch. Using a sharp knife slice away the sponge rock mass then slice off the bottom of the soil root ball equal to the length of the neck. Scrape the brown scar tissue from the neck, put new sponge rock in the bottom of the pot, and place the plant back in the same pot. Fill in around the neck with fresh potting mix. Most of my show plants are in 5 inch pots but I allow 5 or 6 of them to reach 18 to 24 inches by potting them in 7 inch bowls.



Drawing No. 2

POTTING UP: Another advantage of "T.S." is that plantlets in 2 inch pots may be potted up into 5 or even 6 inch pots without danger of root rot. The roots catch a hold immediately and the plant grows at a phenomenal rate. Use the "mold" method when potting up from a 2 or 4 inch pot into a 5 or 6 inch pot. Place an empty pot on top of the sponge rock in the new pot and tamp the mix down firmly around the inner pot so the density of the mix equals the density of the root ball of the plant. Remove the empty pot and place the rootball in the hole and press it down firmly so the roots come into good contact with the new soil. When potting up a plant that is growing "T.S." always remove the old sponge rock layer.

DISBUDDING: To develop more perfect foliage I partially disbud throughout the year. Use a pointed instrument and completely stub out every other forming bud allowing only two or three bloom stems on the plant at one time. This gives some color throughout the year but most of the energy of the plant will be directed toward the growth of foliage and the center crown leaves won't become distorted or stunted by heavy bloom.

About 10 weeks before show completely disbud using a sharp instrument and leaving a scant 1/8 inch stub so newly forming buds in the same juncture won't be damaged. Disbud again about 8 weeks before show. Each grower has to determine their own schedule for disbudding because timing for full bloom will vary according to the weather, cultural conditions, and variety characteristics.

GROOMING – REMOVING LEAVES: Don't take a plant to show with a "petticoat" of old, marred, or off-sized leaves. Removing immature or off-sized leaves is one of the more difficult skills to teach. The only way to develop this skill is through observation and patience. It is easy to recognize baby leaves on small plants but after the plant matures the decisions become tougher. I can remember when I first started growing violets I would agonize for hours over taking a leaf off. Now I can spot them clear across a room and can strip a plant down in nothing flat.

The following tips may be helpful: 1) An immature leaf will be smaller than the other leaves in the bottom row. The petioles will be smaller, weaker and paler in color. 2) The texture of the leaves will not be as deeply quilted or as curly or wavy, as the case may be. Suckers will often form at the base of an immature leaf, so if a sucker appears, then examine the leaf to see if it should be removed.

The goal is to have a perfect set of matching leaves on the outside row with proportionately smaller leaves for each of the other rows toward the center. If you have misjudged and are nearing show time with an outer row of off-sized leaves then "T.S." potting has a further advantage. Remove the row of leaves, take the plant out of the pot, and remove enough sponge rock so the plant can be seated at the proper depth. The main root ball will be undisturbed and the plant won't suffer any setback.

OTHER GROOMING TIPS: A soft camel's hair brush will remove visible specks of soil or lint but the only thing that will remove accumulated dust is a bath. I do this two or three times a year but particularly after the final disbudding before a show. Take the plants to the kitchen sink, run the tap in a gentle, tepid stream, and tilt the plant under the flow of water so water doesn't run into the center crown on the pot. Pat up the excess drops of water with tissue or a soft natural sponge.

PRE-SHOW CALENDAR

12 WEEKS BEFORE SHOW: Strip the plants of all marred or off-sized leaves and do the final potting down or up. Choose the appropriate size pot based on about an inch growth rate per month for the next 3 months.

10 WEEKS BEFORE SHOW: Completely disbud water with a bloom booster or foliar feed, put in one new tube, wash plants, increase light time to 13 hours.

9 WEEKS BEFORE SHOW: Change to a high phosphorus fertilizer such as 12-36-14 or 15-30-15, increase light time to 14 hours, disbuds variegated varieties for the last time (heavily variegated varieties sometimes require 9 to 10 weeks to come into full flower).

8 WEEKS BEFORE SHOW: Again use bloom booster or foliar feed, final disbudding for doubles, increase light time to 15 hours.

6 WEEKS BEFORE SHOW: Final disbudding for singles, check for suckers.

1 WEEK BEFORE SHOW: Final check for bloom stem stubs, suckers, soil particles on leaves, possible leaf removal and potting down.

I would love to hear about it if this helps any of you new growers bring home a winner.

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