

African Violets

African violets were first discovered in 1892 in east central Africa, the Usambara Mountain region of current day Tanzania, by Baron Walter von Saint Paul. They are found at moderate equatorial elevations, 5-6,000 feet, growing in cracks or crevices in rock out crops with filtered light. Baron Walter von Saint Paul sent seeds back to Germany to his father, Baron Ulrich von Saint Paul. From these seeds, were grown plants later identified as two separate species, *Saintpaulia ionantha*, violet like, and *Saintpaulia confusa*, the first two species were “confused” and considered to be only one originally. The first plants came to the US in 1893. “The violets from Africa” soon became known as “African violets.” They are not violets. They are a member of the family Gesneriaceae, not the family Violaceae. In 1927, Armacost and Royston Nursery in Los Angeles, CA imported seeds from England and Germany. From these seeds, the 10 initial named varieties of African violets were propagated, two from the German seeds and 8 from the English seeds. These plants had single violet, blue, or purple blooms. Most of today’s varieties are hybrids from these 10 seedlings and the two species. To date, there are about 20 species of African violets, thousands of named and registered varieties and an unknown number of named and unnamed non-registered varieties. The African Violet Society of America (AVSA) maintains the international registry for African violets.

African violets come in four sizes. Single crown plants less than 6” in diameter with small leaves are “miniature,” single crown plants between 6” and 8” in diameter with small leaves are “semiminiature,” single crown plants between 8” and 16” in diameter with large leaves are “standard,” and single crown plants greater than 16” in diameter with large leaves are “large.” Plants genetically predisposed to having multiple crowns are “trailers.” They come in all sizes. Some trailers have long, cascading stems, while others have short stems with a bushy growth habit.



There are many different types of leaves, see illustration. Other descriptive terms will be seen to describe leaves. “Bustleback” refers to when the base of the leaf folds back on the underside of the leaf to form a bustle. “Ovate” refers to an egg-shape; the base of the leaf is wider than the tip. “Round” refers to a leaf that is round rather than ovate. “Ruffled” refers to a leaf edge that is ruffled. “Scalloped” refers to a leaf edge that forms a series of semi-circular curves. “Supreme” refers to a large, thick, hairy leaf. A plant with “supreme” leaves is often referred to as being “supreme.” “Tailored” refers to plain, flat leaves with a slight rising of the area between veins, i.e., slightly “quilted.” “Trumpet” refers to leaf that is partially fused at the base forming a trumpet.

The basic flower is single, five petaled with three larger, lower petals and two smaller upper petals, known as a “pansy,” see illustration.. A flower with 5 equal sized petals is a “star.” Also, there are semi-double and double blossom types. The basic flower is a single, solid color. “Edged” blooms have a distinctive edge of a contrasting color or a different tone of the same color. “Fantasy” blooms have spots or splashes of a contrasting color or a different tone of the color scattered throughout the bloom. A “Geneva” bloom has a white edge. A “multicolor” bloom has two or more colors. And, “pinwheel” or “striped” blooms have rays of contrasting color or different tones of the same color. This is the result of a mutation known as a “chimera.” These plants have two different types of genetic material. Chimeras will not propagate true from a leaf cutting. They must be propagated from suckers or blossom stem cuttings. And, even then, they might not be true. When buying a chimera it is important to purchase it when it is in bloom to make sure it is true to form.

There are many sources for African violets. They are often available inexpensively at the big box, mass merchandisers. But, the plants are often unnamed varieties or mislabeled. More mature plants of named varieties

are often available at garden centers and where cut flowers are sold. Show plants or the latest named, registered varieties are available from local specialty growers or by mail order. Many large specialty growers will ship small plants or leaf cuttings during most of the year depending on weather conditions, especially temperature. African violets are sensitive to temperature below 55F and above 90F. Most specialty growers have catalogues, from which you can select the plants you want.

In the past, like most plants, African violets were grown in terra cotta pots. Pots come in several depths, i.e., tall pots are called "standard," a shallower pot is called a "tub" or "azalea pot," and a very shallow pot is referred to as a "bulb pan." Because African violets have a shallow root system in the wild, they only need a "tub" or "azalea pot" depth to accommodate the root ball. The diameter of the pot should be one-third the diameter of the plant, i.e., the maximum diameter for a miniature plant is 2", the maximum diameter for a semiminature plant is 3", and the maximum diameter for a standard plant is 5". There are several problems with terra cotta pots. Because they are porous, they lose moisture rapidly. And, this encourages the build up of salts from fertilizer around the top of the pot and along the sides. Therefore, most African violets are now grown in plastic pots similar in size to terra cotta pots. Decorative containers can be used for African violets, but care must be taken to provide adequate drainage and not to over water the plants.

For the hobbyist or casual grower, commercial, soilless potting mixes for African violets are adequate. The ones containing Sphagnum peat moss are less dense and work better in my experience than ones made from wood products. All contain perlite and may contain vermiculite, charcoal, and/or dolomitic lime. A recipe for a soilless potting mix that can be "home made" contains 5 qt of Sphagnum peat moss, 5 qt of perlite, 1 cup charcoal (optional), 1 tablespoonful of super phosphate (0-20-0), and 2.5 teaspoons of dolomitic lime (this amount will vary to provide a final pH of 6.5-6.7). Before use, potting mixes need to be pasteurized by heating to a temperature of 180F for 30 minutes.

African violet growers get very passionate about the best method for watering their plants. It really doesn't matter as long as the plants receive enough water and are not suffocated by a lack of oxygen due to excessive watering. If watered intermittently from the top or bottom, the soil should be allowed to dry out between watering. The tip of a finger inserted 0.5 to 1" into the soil should feel dry prior to watering. Many growers can tell if the plants need watering by lifting the pot. Many growers use a constant watering method. Water is placed in a reservoir and is taken up by capillary action into the soil. This can be done by using a wick from a reservoir into the pot, by the use of special double pots like the Oyama reservoir, or by the use of the "Texas-style" potting method. Water used should be at room temperature and have a neutral pH of 7.0.

African violets may be maintained on a constant or an intermittent fertilization schedule. Constant fertilization results from adding fertilizer to all the water provided to the plants. Intermittent fertilization results when fertilizer is not added to the water for every watering for plants receiving intermittent watering. High nitrogen fertilizer, i.e., 15-3-3, is used for plain foliage varieties. It encourages large leaves and general growth. Low nitrogen fertilizer, i.e., 4-15-12, is used for variegated foliage varieties. It encourages variegated coloration and discourages green. High phosphorous, low nitrogen fertilizer, i.e., 5-50-17, or "bloom booster" is used to encourage full blooming. In the winter the amount of fertilizer should be decreased or fertilization stopped. In the low light conditions of the winter, at best fertilizer will be wasted or the plants stressed because of over fertilization. Because salts will accumulate regardless of the fertilizer or schedule used, the salts need to be leached out of the soil intermittently by running water from the top through the pot.

Most casual growers of African violets will grow them using natural light from a window. The light should be indirect and bright. Direct light should be avoided. Remember, African violets grow in bright, filtered light in the wild. Plants should be turned and moved on a regular basis to even out the light received by the plants to maintain growth symmetry. The serious hobbyists may want to grow African violets under artificial light. They can easily be grown on plant stands using cool white lights. Special grow lights are not necessary. The plants should be placed about 14" below the lights. The lights should be on for about 14 hours a day. Because

the center of the shelf is brighter than the edges and the ends, the plants need to be rotated and turned to even out the growth and maintain symmetry.

Ideally, temperatures between 60-80F are best for growing African violets. The maximum range is 55-90F. Plants will not do well at temperatures outside this range. Above 80F, blossom coloration will change, fantasy spots will disappear, and variegation of foliage will decrease or disappear. The ideal humidity for African violets is 60%, 50% minimum. Thus, supplemental humidification is needed in the winter months. And, ventilation is important, especially in the winter when there are relatively high temperatures from heating during the day and cool or cold temperatures near a window at night. These are the ideal conditions for many fungus problems seen with African violets.

New varieties of African violets are grown from seed produced by hybridizing current varieties or from the propagation of sports of current varieties. Most African violets are produced by asexual propagation of existing or new varieties. An easy way to propagate new plants is by rooting a young, mature leaf. Cut the petiole at an angle about 1.5" from the leaf. Dip in rooting hormone and place in pre-dampened potting media that is in a small paper or plastic cup. It is important that the cup has a drain hole in the bottom. The cup and leaf are then placed in a sealed plastic bag. This also can be done in plastic trays with a cover. New plantlets will appear in 4-8 weeks. When they are 1.5" tall or the leaves are about the size of a dime, the plantlets can be separated from the mother leaf and transplanted to individual, small paper or plastic cups. Blossom stems (petioles) and suckers can be rooted in a similar manner. Propagation from blossom stems is the only way to reproduce chimeras.

Grooming of African violets is an ongoing process. Suckers, excess bloom stalks, spent blossoms and bloom stalks, and damaged, immature, off-sized, or wayward leaves should be removed weekly. The foliage should be wiped with a damp cloth once a month to remove dust. If conditions require, the foliage can be washed every 2-3 months to keep them dust free. If a large showing of blooms is desired for a special occasion, the plant can be disbudded 10-12 weeks before the desired blooms are wanted. Otherwise, most violets will bloom continuously. Because some plants tend to have leaves that droop over the side of the pot, leaf supports can be used to prevent this.

As young plants outgrow their pots, they need to be potted in the next size bigger container. Mature plants may require repotting once or twice a year. As they grow and age, the outer row of leaves will be lost. Eventually, a neck forms, i.e., bare stem appears above the soil line and below the leaves of the plant. When this happens, it is time to "pot down" the plant. This is accomplished by removing the plant from its pot and trimming the bottom of the root ball sufficiently to allow the neck to be less than 0.5" when the plant is returned to the pot (or a new pot) and potting media added. Before the plant is returned to the pot, the dead debris on the stem should be removed and the surface treated with rooting hormone. Plants can be rejuvenated by restarting (re-rooting) the crown. This is done by stripping all the foliage except 6 or so leaves, cutting the stem with a razor blade to 1.5-2.0", scraping the debris off the stem, treating the stem with rooting hormone, and placing it in pre-wetted potting media in a 2.5" or 3.0" pot. Place the pot in a closed plastic bag for 2 weeks. Open the bag for another 2 weeks before removing the plant from the bag. Pot up as the plant grows.

A number of pests can infest African violets. Aphids are soft bodied, sucking insects that may be found on the underside of leaves. They can be removed and killed by hand, or a general aerosol insecticide approved for indoor use on African violets and effective for eliminating aphids can be used. Fungus gnats, if present, are easy to identify. They fly out of the pots with the slightest movement. They can be removed by hanging pest strips near where the African violets are grown or by using a general insecticide as for aphids. Broad and red spider mites are sucking critters that cause the foliage to be distorted or bleached. Cyclamen mites cause the plant centers to be tight and cause graying of the center leaves. Although, mites can be eliminated with miticide treatment, infested plants should be discarded unless they are of particular value. Foliar mealy bugs appear as white cottony specks on petioles, axils, and the backs of leaves. If there are only a few, dip a cotton swab in alcohol and touch each bug with it. Repeat daily until all plants are clear of mealy bugs. If there is a heavy

infestation, discard the plant. Soil mealy bugs appear as small, white, waxy ovals in the soil. Treatment is very toxic, so the best thing to do is discard the plant. Springtails are often seen scurrying around the bottoms of pots and saucers. They cause no harm, so ignore them. Thrips announce their presence by pollen spills on blossoms. They can be eliminated, with difficulty, with the use of Malathion or Othene. Unless the plant is especially valuable in a collection, it is best to discard it.

Many fungi infect African violets and cause root rot, crown rot, leaf rot and damping off. Fungicides can be used to treat these infections, but prevention of fungal infections is preferred. Prevention includes good plant hygiene, regular grooming (see above), not over watering plants, and good ventilation and air circulation.

African violets are susceptible to a number of physiological problems, see table. Other problems that might be encountered include: leaf spotting caused by water that is prevented by keeping the leaves dry, leaf tip burn caused by salt build up that is prevented by leaching the soil under running water on a regular basis, and orange crusting of the center leaves caused by salt build up that is corrected by washing the slats off and leaching the soil under running water on a regular basis.

REFERENCES

Bartholomew, Pauline. *Growing to Show*. AV Enterprises Press, Oxnard, CA, 1996
The Editors. *Sunset How to Grow African Violets*. Lane Publishing, Menlo Park, CA, 1977
For information: African Violet Society of America. WWW.AVSA.ORG

Prepared by
Glenn R. Hodges
Johnson County Extension Master Gardener

K-STATE

Research and Extension

Johnson County

Johnson County K-State Research and Extension
11811 S. Sunset Drive, Suite 1500
Olathe, Kansas 66061-7057
(913) 715-7000
www.johnson.ksu.edu

"Kansas State University Agricultural Experiment Station and Cooperative Extension Service.

K-State Research and Extension is committed to making its services, activities, and programs accessible to all participants. If you have special requirements due to a physical, vision, or hearing disability, please contact Johnson County Extension at 913.715.7000. K-State Research and Extension is an equal opportunity provider and employer.