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Cooperative Extension
Nassau County

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African Violets

African violets were first discovered toward the end of the last century by the District Governor in East Africa. The first hybrids were introduced in the United States in 1936. The plants were eventually brought to the attention of the Director of the Royal Botanic Gardens at Herrenhousen, Germany, who issued the description of the species and named it *Saintpaulia ionantha*. The genus name *Saintpaulia* was chosen to honor the family responsible for introducing the plant to culture. The species name *ionantha* translates from the Latin as "with flowers like a violet." African violets are not violets nor are they even related.

In their natural state, African violets root in rock crevices where there is a high humus content, indirect sunshine, high humidity and warmth. Duplicating these conditions as closely as possible in the home should assure continued success.

The African violet has become our most popular flowering plant. It is attractive, easily grown, readily propagated and the only potted plant to bloom year 'round in the home. Increased consumer interest has served to encourage hybridization efforts to continuously develop and introduce new types.

Varieties

When African violets first became popular, approximately a dozen varieties were available. Today there are hundreds. Flower colors include blue, purple, red-violet, orchid, lavender, pink and white as well as bi-colored and multi-colored forms. There are single, double, semi-double, star-shaped, fringed and ruffled flower types.

Leaf types include such shapes as plain, quilted, spidered, ruffled, fringed, scalloped, pointed and variegated.

It is a misconception that African violets require extra special fertilizers or growing media and rest periods between blooming. The fact is that a mature African violet will grow indefinitely and throughout the year when some simple cultural conditions are provided.

Light

Light is the most important factor influencing flowering. High light intensity gives good flowering, but if too bright can cause lightening of the foliage color, short petioles and plants that look squat and lack vigor. Avoid putting African violets in direct sunlight during the spring and summer months. The plants can yellow and burn. Curtains may be used to cut the light intensity or the plants can be moved further back from the window. From October to the end of February, the plants can be given full winter sunshine. The amount of light at any location varies with the season. Because light is so important, you will have to experiment a little to find the best location for continuous flowering.

To maintain bloom from November through February, locate plants so that the sun shines on the plant surfaces. This exposure will be too intense from March through October and locations that do not receive direct sun will be required if continued flowering is to be maintained. With a large collection of plants, moving all of them twice a year may not be possible; supplementing low natural light with an artificial source would allow the plant to remain in the same location.

African violets grown under artificial light develop a symmetrical shape. To maintain this shape with natural light at window areas, rotate the pot with each watering.

Artificial light

Incandescent lamps (ordinary household lamps) are generally not satisfactory because the heat from the high wattage needed, and the duration of the necessary exposure, will damage the plant.

Plants can be grown entirely under artificial lights. Use two 40-watt fluorescent tubes (preferably two different types, i.e. one cool white and one warm white) suspended 12-15 inches above the plants, and turned on for 14-18 hours each day. However, fluorescent light sources will provide the intensity of light without the heat and do not reduce atmospheric humidity as incandescent sources do. Fluorescent lighting more nearly duplicates natural light and is more economical. An automatic electrical time switch is recommended.

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Soil

The soil mixture should not be high in fertility, but should have a high moisture capacity. A mixture of 1/3 sterile potting soil or garden loam, 1/3 peat moss and 1/3 coarse sand or horticultural grade perlite is very good. To each bushel of this potting mixture, thoroughly mix in 1/2 cup of superphosphate. Although African violets will grow and bloom in a range of a pH between 6.2 and 7.0, they prefer a slightly acid mix between 6.0 and 7.0.

If the soil or pots need to be sterilized

Sterilize the soil by heating in an oven. The soil should be slightly moist and kept at a temperature of 180°F for 30 minutes once the inside temperature of the mix has reached 180°F. Often it is easier to buy a specially-prepared potting mixture from a florist or garden center, but be sure it exhibits all the requirements of a media necessary for African violets. It must be water retentive but sufficiently loose and open to allow for good air exchange. Pots can be sterilized by soaking in a solution of 9 parts water to 1 part bleach.

Fertilizer

A complete fertilizer containing nitrogen, phosphorus and potassium should be used. These are the three elements used by plants in the greatest quantity. A fertilizer with a rating of 20-20-20 is suitable for African violets. Two months after purchasing a plant, begin a regular fertilizer application by mixing a level tablespoon of this fertilizer in a gallon of water. Always use surface application when using fertilizer solutions and apply to a wet growing medium every 8-10 weeks.

Overfertilization can damage plant roots severely and cause other problems such as wilting foliage and yellow-green leaves.

When the plants slow down in growth during the winter months, decrease the concentration of fertilizer by about half (1/2 tablespoon of fertilizer to one gallon of water).

Potting

The crown of the plant should be slightly above the soil. Potting too deeply can cause petiole and/or crown rot.

Water

The soil should not dry out at any time. Keep it moderately moist but never wet. Watering from the top is the easiest way to give your plants the moisture they need. Apply water to the surface of the soil until it starts to drip out of the drainage holes at the bottom of the pot.

Water was once thought to be harmful to the leaves of African violets, but it is now known that a temperature difference between the water and the leaf can cause spotting. Use room temperature water and occasionally even syringe the plant with the same water to keep the leaves dust-free and to improve the plant's appearance.

Because top-watering has to be done with care, many experts advise watering from below. This is perfectly acceptable as long as the plant is watered thoroughly from the top about every third or fourth week. This will keep damaging salts from accumulating in the soil.

A wick-watered pot is also excellent. Do this by slipping one end of a fiberglass wick through the holes in the pot, fraying it so it spreads over the inside bottom of the pot. Pot your plant over the frayed end, and water for the first time from the top until the wick drips. After that, put the wick in a water reservoir under the pot so watering is continuous. Water by leaching from the top on a regular basis.

Temperature

Plants grow best at a night temperature of 65-70°F. (5-10°F higher during the day). Lower temperatures cause leaves to become pale green and curl downward. Plants near a window on cold winter nights are easily chilled and injured.

Humidity

African violets do best when the humidity is maintained at about 50%. A good way to moisten the air in the vicinity of the plants is to place them on pebble trays (trays filled with pebbles in which water is kept). Always make sure the water level is below the top of the pebbles so the pots do not sit in water, which can cause root rot. Locate plants, if possible, where the humidity is highest such as the bathroom or the kitchen (especially above the sink).

Propagation of leaf cuttings

Remove an upright leaf with one-half to one inch of petiole (leaf stem) and put it in a mixture of half sand and half peat. Vermiculite, perlite or sand are also satisfactory. Keep rooting medium moist. Cover the cutting with a glass jar or place in a plastic bag to prevent wilting. Do not place cuttings in direct sunlight. Roots should form in 4 to 6 weeks. When small rosettes of leaves appear at the surface of the propagating material (about 2-1/2 months after propagation), pot the small plants in a recommended potting mixture.

Plant Problems

Integrated Pest Management (IPM) Considerations

IPM is a common sense approach to pest control and plant care. It employs a number of measures to prevent, control or reduce plant problems. These include using resistant plant varieties, proper plant selection and placement, good aftercare and biological and/or mechanical controls. As a last resort, after all other remedies have been explored, a pesticide* that is least toxic to people and natural predators, can be considered. Prior to using any pesticides, plants should always be monitored for the degree of infestation and a sensible control measure considered.

* A pesticide is a substance that kills, or attempts to kill, a particular pest, e.g. **insect**icide, **fung**icide, **herb**icide, etc.

Cultural Problems

- Lack of flowering is usually caused by improper lighting.
- Petiole rot occurs where the petiole touches the rim of the pot. It is due to injury from fertilizer salts that are absorbed in the porous clay pot. A strip of aluminum foil on the rim of the pot prevents contact of the petiole with the pot. Do not overfertilize.
- Leaf spot - white spots on leaves are usually the effect of using cold water on plants. Use only warm water and if leaves become wet, keep them out of sunlight until they dry.

Insects

- Cyclamen mites injure the young growing portion of the plants, causing distortion of the young crown and deformation of leaves. A related mite, broad mite, causes somewhat similar injury and it is almost impossible to see. If you observe distorted young leaves, leaves with a glassy or silvery surface, or leaves curling down at the edges, dip or spray the plant in a solution of miticide, following the rates specified on the label. Be sure to use room temperature water and keep the plant away from sunlight until the foliage and crown are thoroughly dry. If this does not work, discard plant.
- Mealybugs may also cause unsightly appearance of the plant either by their direct sucking injury or by the production of honeydew, a sticky substance upon which a black fungus may grow. Mealybugs are sedentary creatures that are covered with a white wax or powder that makes them very conspicuous. Remove by hand. Wash plants with soapy water and a soft brush or cloth to remove insects. Thoroughly wash undersides of leaves where pests may also reside. Remove mealybugs with tweezers or a toothpick. Rubbing alcohol on a swab can also be used to remove insects. Make a swab by attaching a tuft of cotton to the tip of a thin stick. Dip the cotton end in rubbing alcohol, then touch the insect and gently remove it. Do not spread alcohol on the plant tissue because injury can occur. Insecticidal soap and other insecticides labeled for African violets may be used. Follow the instructions for dilution rates on the label and use room temperature water.
- Root knot nematodes are commonly a problem on African violets; the roots are galled and knotted. When this problem is noticed, sanitation is extremely important for they can spread very easily to other African violets and house plants. Plants should be discarded with soil. Sterilize the pot before reusing.
- Thrips are small slender insects that cause whitened or flecked leaves, buds and blossoms, curled leaf tips, blasted buds and small black spots on the lower leaf surface.

Diseases

- Botrytis blight (gray mold) - Use sterile potting mix. Practice plant sanitation. When plants are not wet, carefully remove and destroy or discard affected plant parts or portions thereof. Avoid wetting flowers. Avoid crowding plants. Space plants apart to allow air circulation. Prune to thin plants or plantings. Fungicides labeled for use on African violets may be used after following cultural plant sanitation practices.
- Crown rot (Pythium) causes internal browning of the stem and ultimately death of the plant. The oldest wilt first, with the smaller, younger ones wilting down thereafter. Use sterile potting mix. Avoid overwatering. Avoid wetting foliage if possible. Water early in the day so the aboveground plant parts will dry as quickly as possible. Avoid crowding plants. Space plants apart to allow air circulation. Prune to thin plants or plantings. Remove and destroy or discard entire infected plant and potting soil. Propagate by starting a cutting above affected area if root, crown, or lower stems are affected
- Powdery mildew - Practice plant sanitation. When plants are not wet, carefully remove and destroy or discard affected plant parts or portions thereof. Avoid crowding plants, Space plants apart to allow air circulation. Prune to thin plants or plantings. Apply fungicide labeled for use on African violets. Follow label directions.

WHENEVER YOU USE A PESTICIDE, ALWAYS READ THE LABEL AND FOLLOW THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

"This publication contains pesticide recommendations. Changes in pesticide regulations occur constantly and human errors are still possible. Some materials mentioned may no longer be available, and some uses may no longer be legal. All pesticides distributed, sold or applied in New York State must be registered with the New York State Department of Environmental Conservation (DEC). Questions concerning the legality and/or registration status for pesticide use in New York State should be directed to the appropriate Cornell Cooperative Extension specialist or your regional DEC office (631) 444-0340. Read the label before applying any pesticide. Cornell Cooperative Extension and its employees assume no liability for the effectiveness or results of any chemicals for pesticide usage. No endorsement of products is made or implied."