



## African Violets: They Aren't What They Used To Be

Roy A. Larson

This issue of the Bulletin is "semi" devoted to African violets. A brief introduction (this article) and the more complete sections on insect, mite and disease control are contained in this issue, while growers' experiences and philosophies will be published in the December issue.

The third edition of the Ball Red Book (1935) states, "A number of hybrids have been developed in varying shades of blue, violet, and mauve, that will be heard from within a few years, and they will add considerable to the interest in these plants." You could make almost an identical statement 50 years later. Most of the significant progress with *Saintpaulia* has been done by plant breeders. Cultural information presented in 1935 is as valid today as it was then, except we don't use naphthalene flakes to repel mites, or nicotine to kill them. Diffused light was recommended in 1935, and it is needed now, with a light intensity of approximately 1000 foot-candles considered as best for vegetative growth and flowering. Leaf distortion often is a sign that light is excessive (over 1500 foot candles), while lack of flowers and long petioles could indicate that light intensity is inadequate. It has been suggested by several African violet experts that the best way to determine proper light intensity is to stand in the African violet section of your greenhouse at high noon on a sunny day. Light intensity is right if your body casts a faint shadow. Light is excessive if your shadow is easily distinguishable, lacking if you can't see it. African violets do perform very well under fluorescent lighting, a situation probably exploited more by African violet hobbyists than by commercial growers.

Successful growers in the past often attributed their success to a secret potting mix or a mysterious fertilizer program, both seeming to possess a "fragrance" surely not in keeping with the attractiveness of the foliage and flowers. Now most growers will admit that they use a medium high in organic matter, with at least half of the medium composed of peat moss. A pH of 5.5-6.5 is suggested by two suppliers of transplants. Growers who are accustomed to applying generous amounts of fertilizer to pot mums and poinsettias would over-fertilize African violets with the same program. Special fertilizers are available and can be soluble or controlled-release forms.

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Shadows should be faint in an African violet house. Clear shadows mean the light intensity is too high, no shadows indicate that light is inadequate.

Temperature interacts very closely with light intensity. Root zone or bottom heating could be very beneficial, as African violets seem to do best if the soil temperature is approximately 4°F higher than the air temperature. Most growers are not accustomed to recording bottom heat and place all their emphasis and thermometers in the air. Temperature recommendations from suppliers do vary slightly but it would be safe to provide an air temperature of 65° and a soil temperature of 70°. Water temperature cannot be ignored, either. Leaf spots will appear if the water temperature is more than 5° cooler than air temperature, and that water gets on the foliage. Those damaged areas can never be repaired. Watering early in the morning can lessen the danger of spotting. Capillary mat watering avoids wetting the foliage and is often used in African violet culture.

Varieties will be discussed in the next issue of the Bulletin when growers' comments will be reported. Loyalty to certain strains of African violet varieties is similar to likes or dislikes for certain makes of automobiles, tractors or athletic teams. Growers should be aware that there are customers who are enthusiastic African violet collectors and strive to obtain a full assortment of the varieties. Some growers do place labels in all pots but only to observe plant patent rights and not to identify the variety. Careless labelling is annoying to avid collectors and should be avoided.

Very helpful information is available from propagators of African violets and growers should request and read those cultural suggestions.

Photographs for this article were supplied by Ball Pan Am, Parrish, Florida. Use of the photographs is appreciated but does not imply endorsement by the author.

## African Violet Diseases

R. K. Jones and D. L. Strider

African violets are subject to a number of severe diseases in commercial production: powdery mildew, Botrytis blight, Pythium root rot, Phytophthora crown rot and foliar nematodes. These diseases can be difficult to control

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under greenhouse conditions without a total disease management program.

Powdery mildew caused by the fungus Oidium sp. is a major disease of the leaves, flowers and flower stalks of African violets. The fungus forms a white-mealy growth that causes flowers and leaves to turn brown and die prematurely. Powdery mildew spores are wind-borne within the greenhouse.

Powdery mildew can be controlled through the use of resistant cultivars (see Table 1) and regular sprays of fungicides such as: benomyl (Benlate 50 W) at 1/4 lb/100 gal or triadimefon (Bayleton 25 W) at 4 oz/100 gal.

Crown and root rot caused by the fungus Phytophthora parasitica is the most serious disease of African violet. This disease occurs at all stages of production from propagation to marketing. The fungus moves from the roots and crowns into the petioles and leaves. Phytophthora-infected tissue is dark brown with a water soaked appearance. Diseased plants wilt and die quickly.

Disease development is favored by warm temperatures and excess water. The disease can be a very serious problem in sub-irrigation using a sand base. The fungus has not been reported to spread in capillary mat watering systems.

Control of Phytophthora crown rot involves the use of disease-free propagation material, clean pots and media, and clean benches. A strict sanitation program must be followed at all times to prevent introducing the pathogen into clean media. Avoiding highly susceptible cultivars can also help (see Table 2). The fungicides metalaxyl (Subdue 2 E or 5 G), etridiazole (Truban 25 EC, 30 WP or 5 G) or etridiazole + thiophanate methyl (Banrot 40 WP or 8 G) are effective in aiding to control Phytophthora crown rot.

Pythium root rot is a common disease on African violets. Infected plants are stunted, lack normal dark green leaf color and may eventually die. Diseased roots are dark brown to black in color and the dead cortex root cells

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slough off, leaving a bare strand of vascular tissue exposed. Pythium root rot can occur on African violets at all stages of production.

Pythium root rot is managed and controlled in the same manner as is crown rot, caused by *Phytophthora parasitica*, described above.

Botrytis blight or gray mold caused by the fungus *Botrytis cinerea* can be a serious disease on African violet flowers and to a lesser extent on the leaves. The disease appears as small brown water soaked spots on damaged petioles and leaves. These spots can enlarge rapidly to destroy entire leaves and plants. All flower parts are susceptible to infection by *Botrytis* without a wound or injury. Infected flowers become covered with masses of the fuzzy gray to brown *Botrytis* spore masses.

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**Table 1. Reaction of some African violet cultivars to powdery mildew.**

Cultivar	Leaf Rating	Flower Rating	Cultivar	Leaf Rating	Flower Rating
Abby	S	HR	Laura Ann	S	S
Allison	HR	R	Laurie	S	S
Angie	S	S	Light Marta	R	S
Ann	S	S	Lisa	HS	S
Anna	S	S	Lucy	HR	S
Beth Ellen	S	R	Margaret Ann	HS	S
Brilliant Eva	HR	R	Marta	R	S
Cristina	S	S	Mary	R	HS
Diane	HR	HS	Mary Ann	S	S
Dolly	I	HR	Meta	HS	S
Erica	HS	R	Mitzi	HR	HR
Eva	HR	S	Paula	HS	HS
Farrah	S	S	Pearl	R	R
Frances	S	HS	Pink Ulli	HS	S
Georgeanne	S	HS	Rachel	HR	HR
Heidi	HS	S	Renee	S	HS
Helen	S	HS	Roxanne	HR	S
Helga	S	R	Sheri	HS	HS
Inge	S	S	Stacy	S	HS
Irene	S	S	Suzanne	HS	S'
Janet	S	S	Ulli	S	S
Jeanie	S	HS	Valerie	R	S
Julianne	HS	S	Vera	S	S
Karla	HS	R			
Kathy	S	S			

R=resistant, HR=highly resistant, S=susceptible, and HS=highly susceptible.  
I=immune.

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The Botrytis blight fungus produces tremendous numbers of air-borne spores on diseased tissue. This fungus can blight the flowers of most plants grown in the greenhouse. Good sanitation is very important in the management of Botrytis blight. Keeping the relative humidity below 85% is also very important. Several fungicides are recommended for control of Botrytis blight on African violet:

benomyl (Benlate 50 W) at 1/2 lb/100 gal  
 vinclozoline (Ornalin 50 W) at 1 lb/100 gal  
 chlorothalonil (Daconil 2787 75 W) at 1 lb/100 gal  
 chlorothalonil (Termil, a thermal dust) at 3 1/2  
 oz/10,000 cu ft

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Table 2. Relative susceptibility of African violet to Phytophthora root and crown rot.

Susceptibility	Cultivar			
	Rhapsody Series	Ballet Series	Melodie Series	Optimara Series
Highly Resistant	Barbara Astrid Ruby	Erica Inge Helga Karla	Kathy	New York California
Resistant	Elfriede Pluto Linda Michele Mars Cornelia Veronika Apollo Audrey	Dolly Anna Rachel	Allison Frances Pearl Diane Angie Stacy	Maryland
Susceptible	Denise Gigi Venus Ruth Gloria Bettina	Ulli Heidi Cristina Eva Meta	Farrah Beth Ellen Julianne	Colorado Virginia
Highly Susceptible	Maria Sophie Mercury Jupiter Neptune Candy Vanessa	Annette Marta Lisa Apollo Carmen	Sheri Mitzi Irene Adeline Suzanne	

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Foliar nematodes, caused by Aphelenchoides ritzema-bosi, can be a serious disease on African violet. The disease first appears on the lower leaf surface as small tan sunken areas. As the nematodes move through the leaf tissue, the spots become dry and dark brown. The nematodes are spread in splashing water and in the taking of infected leaves for propagation.

Control of foliar nematodes involves starting with healthy plants, avoiding the use of overhead watering and the use of nematicides. Several nematicides are registered for use on African violet to control foliar nematodes:

aldicarb (Temik 10 G)

oxamyl (Vydate 2 L)

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