

Fertilizers

The cultural methods used in growing beautiful African violets demand consistent care. We strive to grow our plants for optimum leaf size and beautiful symmetry. Plants will meet these high standards if fed properly. The fertilizing program must be as steady as that of light, water and grooming.

Thirteen elements are necessary for plant growth. The MAJOR elements are nitrogen (N), phosphorus (P) and potassium (K). These elements are generally found on the front label as % amounts of N-P-K. A balanced fertilizer contains these three basic elements in fairly equal proportions.

1. Nitrogen – This is the basic crucial ingredient. Plants need it for leaf and stem growth. In some soil mixes, nitrogen gets moved quickly by water through the soil. This reduces the ability of the roots to absorb it. Our plants use nitrogen to form proteins, chlorophyll, and enzymes for plant cells to live and reproduce. Nitrogen also combines with other nutrients to let them work. For African violets Nitrogen in the form of urea (used because it is an inexpensive source) can cause root burn. Generally you want to find a fertilizer with a urea content that is less than 20% of ingredients that are used for the Nitrogen element. Urea free formulas are preferred and are available.
2. Phosphorus – This is needed for all aspects of growth and flower production.. Fertilizers with high phosphorous counts are used to promote bloom for show plants. However, these types of fertilizers don't contain enough nitrogen to use for an extended period of time.
3. Potassium – Produces strength and vitality of foliage and resistance to disease. It enables a plant to move sugars and starches throughout the plant. This is what gives a plant energy.

The secondary elements are calcium – important for overall growth and the development of flowers, magnesium – necessary for the function of photosynthesis and the production of chlorophyll and sulfur – which plays a role in the synthesis of proteins and helps boost resistance to disease.

The trace elements are zinc, copper, chlorine, manganese, iron, boron and molybdenum. Trace elements may be unlisted in many fertilizers. They are not always included on the label because they may vary slightly and so cannot be legally certified. Boron is important for overall growth and development of flowers. Iron provides a catalyst in the production of chlorophyll. Chlorine, copper, manganese, molybdenum and zinc all play an important role in photosynthesis, while copper also helps to metabolize nutrients into usable energy sources.

Carbon, hydrogen and oxygen are often called free elements, since these are normally obtained from air and water.

Symptoms of nitrogen deficiencies are yellowing of leaves and spindly or stunted growth. Lack of Magnesium shows up as yellow leaves but veins stay green and foliage droops. A plant deficient in phosphorus has leaves lacking luster, outer leaves discolored, poor root growth, few flowers. Scorched leaf margins and lack of vitality is a symptom of lack of potassium. Poor calcium has yellow leaf margins and lack of vitality. Lack of iron is first seen on the tips of new leaves. They become pale or yellow and older leaves can turn blotchy then brown. If you notice any of these symptoms, check your potting mix for pests and PH. If these are all right, re-pot and start with a balanced fertilizer.

As with all things too much is as bad as too little. The biggest symptom of too much fertilizer is usually a orange crust on leaves. This crust can burn the leaf. It may also produce lesions on leaves and stems. In addition, an overload of certain elements, will actually

stifle and African violets ability to absorb certain other elements. For instance, an excess of magnesium may prevent the absorption of enough copper or iron, while an excess of either calcium or magnesium may prevent absorption of enough potassium. Such imbalances in the elements that are absorbed can cause a number of additional problems, such as droopy or chlorotic leaves.

Rules for fertilizing:

1. Never fertilize a dry plant.
2. Fertilizers have an indefinite shelf life and do not lose their effectiveness even though liquids may crystallize as they lose moisture and solids may liquefy as they absorb moisture.
3. Do not over-fertilize. You will burn your plant. A good rule of thumb is 1/8 teaspoon to a gallon of water in the summer and 1/4 teaspoon to a gallon of water in the fall. Add one drop of superthrive to a gallon of water to boost plant growth
4. Test new fertilizers on just a few plants. Never your whole collection.
5. Rotation of fertilizers is recommended for African violets to provide a balanced diet for the plants. Some brands of fertilizers contain more of the micronutrients than others and also use different percentages of both the macro and micronutrients
6. Leach every 8 weeks with tepid water to remove build-up of salts in potting mix. This is not as crucial if you re-pot every three months but it is a must if you re-pot less frequently.
7. For highly variegated plants and miniatures use a high nitrogen fertilizer when young. This helps produce new growth. When the plants mature a lower nitrogen brand is better for variegation

and to make sure miniature leaves do not grow too large.

8. Make sure your fertilizer is water soluble. Especially if you are using the wick watering method. Most natural fertilizers are not completely water soluble.

African violets cannot read labels. So they won't know the difference between say an orchid and house plant fertilizer. Find a formula that works for you no matter what the label says. Just because it says African violet does not mean it is the best for your growing conditions.

What about organic fertilizers added to the soil? Organic matter has to be broken down into elements before it can be used. This occurs through bacterial and other microbial action which increases with temperature. The decomposition, however, increases the acidity of the soil and can cause problems. Potting mix containing peat moss can also become more acidic over time. So plants must be re-potted reasonably often to avoid low soil PH.