



FERTILIZERS: An Introduction

All gesneriads are constant feeders, i.e., they regularly and constantly need various nutrients in order to grow well. Constant feeding is predominantly accomplished through the use of fertilizers. Fertilizers are defined as any nutrient containing mixture which is added to the potting mixture of growing plants.

In order for plants to grow well they require 16 plant food elements. Three of these elements — carbon, oxygen, and hydrogen — gesneriads obtain from their growing environment, i.e., air and water. The remaining 13 elements required for healthy growth are easily provided through the use of fertilizers. These elements are referred to as primary, secondary, and trace elements.

There are three primary elements and these are essential for promoting balanced growth: nitrogen, phosphorus, and potassium. Nitrogen, in the form of nitrates, is vital for the growth of stems and leaves and for the production of energy-making chlorophyll. Phosphorus, in the form of either phosphoric acid or phosphate, promotes healthy root production. Potassium, in the form of potash, is necessary for the production of flowers. In brief: nitrogen for foliage, phosphorus for floriferousness, and potassium for general health.

In addition to the three primary elements, every plant requires much smaller amounts of a number of other minerals. These are referred to as secondary and trace elements. There are three secondary elements and seven trace elements. The secondary elements include calcium, magnesium, and sulfur and the seven trace elements include iron, boron, copper, zinc, manganese, molybdenum, and chlorine.

Fertilizer packaging and labelling will always indicate the relative amounts of the three main or primary nutrients. These are represented by their abbreviations: N for nitrogen, P for phosphorus, and K for potassium. These will simply be shown by a code consisting of three numbers, e.g., 18-10-7. The first number will always represent nitrogen and its relative percentage within the fertilizer product, while the second and third numbers will represent phosphorus and potassium respectively, and their percentages within the product, e.g., 18-10-7 indicates 18% nitrogen, 10% phosphorus and 7% potassium. In addition, many good products will also list the secondary and trace elements they contain.

Fertilizers come in two types: organic and inorganic. And each of these comes in a variety of forms: liquids, powders, crystals, granules, and solids, e.g., pills & spikes. The most convenient to use for gesneriads are the liquids and soluble powders that are dissolved in water and applied when plants are being watered.

Organic fertilizers are those derived from natural materials such as fish or animal sources. Due to their odour producing traits when used indoors, organic fertilizers are not generally recommended for use as fertilizers for gesneriads.

The vast majority of gesneriad growers prefer inorganic fertilizers, i.e., those fertilizers manufactured from chemical components. The most commonly used form of inorganic fertilizers are liquid or granular in nature and water soluble.

To produce luxuriant foliage and beautiful blossoms gesneriads need a regular well balanced fertilizing program. It is often too easy to forget to feed your plants, and before you know it, they are suffering from your neglect. A fertilizing program must be as steady and continuous as that of light, water, and grooming. There are two types of fertilizing programs: constant feeding and periodic feeding. Constant feeding requires fertilizing each time your plants are watered. Periodic feeding requires fertilizing at

Gesneriads are constant feeders.



Nitrogen for foliage.

Phosphorus for floriferousness.

Potassium for general health.

These are represented by their abbreviations:

N for nitrogen,

P for phosphorus,

K for potassium.



To produce luxuriant foliage and beautiful blossoms

gesneriads need a regular well balanced fertilizing program.



Avoid those products in which their nitrogen sources are predominantly urea based, i.e., urea nitrogen.



Suitable fertilizers for constant feeding programs will have the approximate total of their primary elements equalling less than 25.



Avoid "feast or famine" fertilizing schedules.

scheduled times, i.e., monthly or bi-weekly. Each has its advantages, however, gesneriads, as constant feeders, are more apt to respond well to a constant feeding program where the "feast or famine" aspects of periodic feeding are avoided. As a result, constant feeding is highly recommended.

Constant feeding requires that a dilute fertilizer solution be used each time plants are watered, no matter how frequently. In horticultural terms, a **dilute solution of fertilizer** refers to a solution in which the fertilizer has been diluted to proportions considerably less than those recommended, i.e, 1/4 to 1/8 the strength recommended on the labelling. The result is a fertilizing solution which is safe to use in a constant feeding program.



CHOOSING A FERTILIZER

A well balanced fertilizer is essential if a grower is utilizing a constant feeding program. Be selective, do not purchase the first fertilizer you see on the shelf, and avoid cheap or on-sale products, as well as those products without clear labelling as to their content. Also to be avoided are those products in which their nitrogen sources are predominantly urea based, i.e., urea nitrogen.

A suitable fertilizer for a constant feeding program must contain evenly balanced proportions of the primary elements as well as smaller or micro- proportions of the secondary and trace elements. **Every fertilizer recommended as suitable for gesneriads will undoubtedly serve its purpose.** The following distinctions, however, are worth noting.

Fertilizers with high or relatively high nitrogen concentrations will be especially good for leafy gesneriads or those grown as foliage plants. Formulas that include large proportions of phosphorus will promote good root systems as well as stimulate blooming in flowering gesneriads. And fertilizers with large proportions of potassium impart vigor and resistance to disease to all types of gesneriads.

Suitable fertilizers for constant feeding programs will have the approximate total of their primary elements equalling less than 25, e.g., 7-9-5, 8-7-6, etc. Fertilizer formulations that exceed this amount are not necessary nor required to grow good gesneriads. Such formulas should be used with care and caution, especially those where the sum of their primary elements reaches or exceeds 60, e.g., 20-20-20, 17-40-20.



REFERENCES

Gesneriads: The Miracle Houseplants, Viriginie and George Elbert

African Violets: Gifts from Nature, Melvin J. Robey

How To Grow African Violets, Sunset Books, Lane Magazine & Book Company

Growing To Show, Pauline Bartholomew

Success With House Plants, Reader's Digest

Growing Houseplants Under Lights, Charles M. Fitch