

POTASSIUM:

Only a handful people don't know what Potassium is. Equally, only a handful people are aware of its importance, what does it do and why we need it?

In animals, life would be difficult if not impossible without it as it is part of every cell of the body. Potassium helps with the metabolism, muscle strength, stress, blood pressure, stroke, anxiety and heart and kidney problems.

When it comes to plants, and of course orchids, we know that next to Nitrogen and Phosphorus, Potassium is one of the most crucial nutrients. In fact, it is the "must have nutrient". It is absorbed by the plants in its ionic form, K^+ .

Potassium is required for good growth as well as for the reproduction of plants. It influences everything from shape to size, to form and colour and the taste. Of special interest is the fact that Potassium also assists plants to defend themselves.

The main roles of Potassium are:

- It activates many growth related enzymes.
- It activates the enzymes responsible for the process of starch synthesis.
- It is essential for production of Adenosine Triphosphate (ATP), an important energy source for chemical processes that take place in plant tissues.
- It is important in Photosynthesis.
- It is required for the Protein and starch synthesis in plants.
- By regulating the opening and closing of stomata, Potassium regulates the CO_2 uptake.
- Increases root growth and improves the drought resistance.
- It regulates the uptake of water through plant roots as well as the loss through the stomata in plants.
- It helps to retard plant diseases.

A study, carried out by the International Potash Institute (Perrenoud 1990) and reviewed more than 2000 other studies, found that Potassium is a very important nutrient.

- The beneficial effect of K was most obvious for **fungal and bacterial diseases** where 70% and 69% of the studies reported a decrease of disease incidence.
- K application was found to be most **beneficial for the resistance against fungi**.
- A **decrease of insects and mites** was reported in 63% of the studies.
- **Viral infections were more frequent** in plants with high K status.

Compiled data suggests that: **K application tends to diminish the incidence of fungal and bacterial disease as well as insect pests in crops; however, the opposite can be true when viruses are concerned.**

Potassium deficiency may cause necrosis, chlorosis, brown spotting and wilting and may result in higher risk of pathogens.

Excessive use of Potassium can cause more harm than good as it can interfere with the uptake of Calcium, Magnesium, Manganese, Zinc and Iron.