

## **The Low Carb, High Phosphorus Diet: Waterlily Nutrition in a Nutshell**

by Karen Fiske

Water lilies are among the oldest flowering plants and are related to magnolias. This relationship is seen by comparing blossoms of a white night blooming lily to a magnolia blossom. Water lilies grow many places in the wild. They have adapted their nutritional requirements to their aquatic environment that replenishes nutrients by recycling decaying plant parts. Water lily leaves only live about four weeks before beginning to turn brown and decaying. In nature, leaves fall to the bottom and nitrogen is returned to the system. We have to add these nutrients to maintain healthy blooming plants.

### **Nutrients needed by plants**

The first group of nutrients is non-mineral nutrients supplied by nature. These are carbon, hydrogen and oxygen. In aquariums, carbon dioxide is often added. Lilies also need minerals that are divided into two groups, macro nutrients and micro nutrients.

#### *Macro Nutrients*

The first group of macro nutrients includes nitrogen, phosphorus, and potassium (NPK), elements supplied in fertilizers. Nitrogen (N) is a part of all living cells. It is needed for all proteins, enzymes and processes for synthesis and transfer of energy. It helps increase growth and seed production and improves quality of leaves. It is found in air, fertilizer and even in rain after a thunderstorm. (Energy of lightning is powerful enough to break the strong bonds of elemental nitrogen. Nitrogen then combines with oxygen, hydrogen and other elements in the atmosphere and falls to the ground with the rain (nitrogen cycle). Phosphorous (P) is the key ingredients for blooming plants. It is also needed for photosynthesis, formation of oils, starches, sugars, changing solar energy into chemical energy, plant maturation, stress tolerance, rapid growth, blooming and root growth. It is supplied in fertilizer and bone meal. There is even a fertilizer with higher phosphorous levels for use in the fall to prepare plants for winter stress. Potassium (K) (potash) is needed by plants in large amounts second only to nitrogen. It is used for photosynthesis, fruit quality and reduction of diseases. It is supplied by minerals in soil, organic materials and fertilizer. If plants in a pond lack a nutrient, it is most likely potassium.

#### *Secondary Macro Nutrients*

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