



Hydroponic Plants Triumph in Unlikely Places

By Dan J

The art of growing plants without soil (hydroponic growth) is now so advanced that it can help humans to survive for long periods in previously inhospitable environments such as Antarctica.

Traditional plant growth relies on plants absorbing minerals and nutrients from the soil. Plants do not actually need to be placed in soil to obtain the nutrients they need. In fact the soil is simply there to support them. There are many areas on Earth which do not have the necessary soils to support plant growth, preventing humans from living there.

Over recent years, this restriction has been combated by growing plants hydroponically. Hydroponics uses nutrient solutions applied directly to the roots instead of soil, in order to allow the plants to grow in unlikely places.

One of the earliest hydroponic success stories happened on Wake Island in the Pacific Ocean. The island was first discovered in 1568 by Álvaro de Mendaña de Nevra, who noted that it was a “low, barren island.” Later, when the island was surveyed in 1840 by the US Commodore Charles Wilkes, it was officially recorded as having no fresh water.

In the 1930s, Pan American Airlines began using the island as a refuelling stop between America and China. The airline constructed a village for its workers; the first time the island had been inhabited by humans. Because of the distances involved, it would have been expensive and impractical to import fresh food to the island, so the islanders relied on hydroponic methods for growing food instead for many years.

Hydroponic techniques are not as new or miraculous as some people may think; they have been developed over many centuries. However, perfecting the nutrient solutions which are used will really affect the success of hydroponic crops in remote or harsh conditions.

Perhaps the harshest environment of all is Antarctica. At the McMurdo station on Ross Island, a community of nearly 1000 people survive by relying on hydroponic techniques to grow food.

These techniques allow people at this icy station to enjoy fresh lettuce, spinach, tomatoes, peppers, cucumbers, fruit and herbs for use in cooking, throughout the year.

The Antarctic environment is unusual because it enjoys four months of continuous sunlight, followed by four months of darkness, not to mention high winds and extremes of temperature.

To survive this harsh climate, seeds are planted in a hydroponic mix of perlite and vermiculite and placed in a totally enclosed, insulated greenhouse at the station. Nutrient solutions are fed to the plants to ensure healthy growth and other environmental factors are dealt with by using hydroponic techniques. For example, artificial lighting is used to simulate a more normal day to night pattern in which the plants will grow best. The air is kept warm and humid by fans and hydroponic ventilation equipment, and at night an electric furnace is used to generate more heat. This gives the fresh fruit and vegetables ideal growing conditions to allow them to flourish.

Hydroponic techniques are now so advanced that we really are able to grow food anywhere on Earth, regardless of the external environment or the availability of light.

Growing food hydroponically is a fascinating process, making commercial sense for many growers who are now able to produce on a large scale without an enormous land investment.

In fact, the same techniques which keep people alive in Antarctica can be practiced in your own home using a hydroponic kit available online from Great Stuff Hydroponics. Kits and equipment for commercial growers are also available online, along with information downloads and expert advice.

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