Hydroponics Encyclopedia Article

Hydroponics

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Hydroponics

Hydroponics is the practice of growing plants without soil. Plants may be suspended in water or grown in a variety of solid, **inert** media, including vermiculite (a mineral), sand, and rock wool (fiberglass insulation). In these cases, water that permeates the medium provides the nutrients, while the medium provides support for root structures. Hydroponics allows precise control of nutrient levels and oxygenation of the roots. Many plants grow faster in hydroponic media than in soil, in part because less root growth is needed to find nutrients. However, the precise conditions for each plant differ, and the entire set up must be in a greenhouse, with considerable investment required for lights, tubing, pumps, and other equipment.

Sprouts growing in a hydroponic hot house in Japan.

While hydroponics is as old as the hanging gardens of Babylon, modern hydroponics was pioneered by Julius von Sachs (1832-1897), a researcher in plant nutrition, and hydroponics is still used for this purpose. It is also used commercially for production of cut flowers, lettuce, tomatoes, and other high-value crops, although it still represents a very small portion of the commercial market.

See Also

Agriculture, Modern; Roots; Sachs, Julius Von.

Bibliography

Mason, John. *Commerical Hydroponics.* New York: Simon & Schuster, 2000.