



GARDENING
INDOORS
With Soil &
HYDROPONICS

by George F. Van Patten

Gardening Indoors

I would like to express my sincere thanks to all of the wonderful gardeners who helped to make this book a reality. Many individuals, garden-center and hydroponic garden-center employees and owners contributed information, photos, and drawings. Thank you all for your assistance in making *Gardening Indoors with Soil & Hydroponics* the best book possible.

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The author and Van Patten Publishing have tried to the best of their ability to describe all the most current methods to garden successfully indoors. However, there may be some mistakes in the text that the author and publisher were unable to detect. This book contains current information up to the date of publication.

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A History of Hydroponics

From the earliest writings of man, we find many references to the plants used for food and the cultivation techniques they employed as civilization advanced. Cultivating one's own crops was essential to survival.

It is not known when a plant was first grown in a container. But the Bible tells us of King Nebuchadnezzar, who built the fabulous hanging gardens of Babylon.

In the first century A.D., the Romans used panes of mica as glass to construct some of the earliest greenhouses. Emperors demanded the freshest green vegetables and salads year round. Their slaves grew cucumbers year round in cloches, using early attempts at fertilization treatments.

Early "horticulturists" commonly believed that a plant needed nothing but water to grow, and that the soil merely held the plant upright! This led to early experiments, such as the willow tree that grew to a weight of 169 pounds in a tub filled with 200 pounds of soil. When the tree was removed, all but two ounces of soil was still there.

This led to experiments growing plants in nothing but water, or various solutions. Sir Francis Bacon described growing plants this way in the 1620s.

By the 1900s, scientists and others were experimenting with plants grown in sand, charcoal, and other support materials, with solutions soaking the roots.

In the United States, the rapidly growing population demanded lots of food, and the farmers around urban areas were having difficulty supplying all the mouths. Greenhouses started sprouting around the major cities, and farmers were looking for alternatives to manure, which was the major form of fertilizer available at the time.

W. F. Gericke, from the University of California, coined the name "hydroponics" (from the Greek *hydros*, water, and *ponos*, labor) in 1936, when he published a paper describing how to grow tomatoes this way. In 1940 he wrote a book called *Complete Guide to Soilless Gardening*.

In 1937 gravel cultures were introduced, and modern hydroponics was on the way to feeding the nation. Many huge commercial growers installed some type or another of a soilless garden bed with irrigation into vast greenhouses. Many were also embracing the new "science" of hydroponics, as it answered a need for increased production, in less area, at a lower cost.

There was a huge jump in interest for hydroponics during World War II, when the Air Force ordered a hydroponics setup to feed some remotely stationed pilots. This was so successful that many units in remote areas grew their own produce hydroponically during the war. The public also rallied to hydroponics during World War II, and gardening in general, as they were urged to grow much of their own food at home.

After the war, interest boomed, as hydroponics answered a need—for food. From island nations in the Caribbean to the Indian subcontinent, the race was on to build and experiment with hydroponics. Huge successes were reported worldwide from New Zealand and Australia to the Netherlands and Europe as growers exploited the technology to grow everything from ornamental flowers to the food we put on our tables.

To promote this, the International Working Group on Soilless Culture held a series of meetings worldwide during the late 1960s and the 1970s. More than 100 nations participated, and the use of hydroponics expanded worldwide as a result.

In 1982, Walt Disney opened the Land Pavilion at Epcot Center in Florida, and it features a huge hydroponics display.

Today, research continues into hydroponics, and the liquid nutrients plants need to grow this way. As our climate continues to change, it is becoming ever more apparent that we need to shift from a dependence on burning fossil fuels, and to rethink our present methods of food production. You can free yourself from potentially unsafe foods contaminated with pesticides or worse, by growing your own clean healthy food indoors—either in soil or hydroponically.

~ Chris Thompson

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