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HISTORY OF AQUAPONICS

Long before the term “aquaponics” was coined, the Aztec Indians raised plants on rafts on the surface of a lake in approximately 1,000 AD.

Before the Aztec people had built a great empire in Central America, they were a nomadic tribe in what is today central Mexico. They settled near the marshy shores of Lake Tenochtitlan. Since this fresh water lake was surrounded by marshes and rising hills, the Aztecs were faced with the problem of trying to find a place to grow food. They solved this problem with the incredible ingenuity which led them to become a great civilization.

The Aztecs constructed large rafts out of reeds and rushes they found near the lake. They floated these rafts in the water and covered them with soil which they dredged up from the bottom of the shallow lake. They then planted their vegetable crops on these floating islands that they called chinampas. When the plants matured, their roots grew through the soil and dangled in the water. Some remnants of the chinampas can still be found today in Central Mexico.

In modern times, aquaponics emerged from the aquaculture industry as fish farmers were exploring methods of raising fish while trying to decrease the dependence on land, water and resources.

Traditionally, aquaculture was done in large ponds but, in the past 35 years, much research and progress has been made in recirculating aquaculture systems (RAS). The great benefit of recirculating systems is that you can grow up to 3/4 of a pound (.34 kg) of fish per gallon (3.78 liter) of water. This means that large quantities of fish can be grown in a

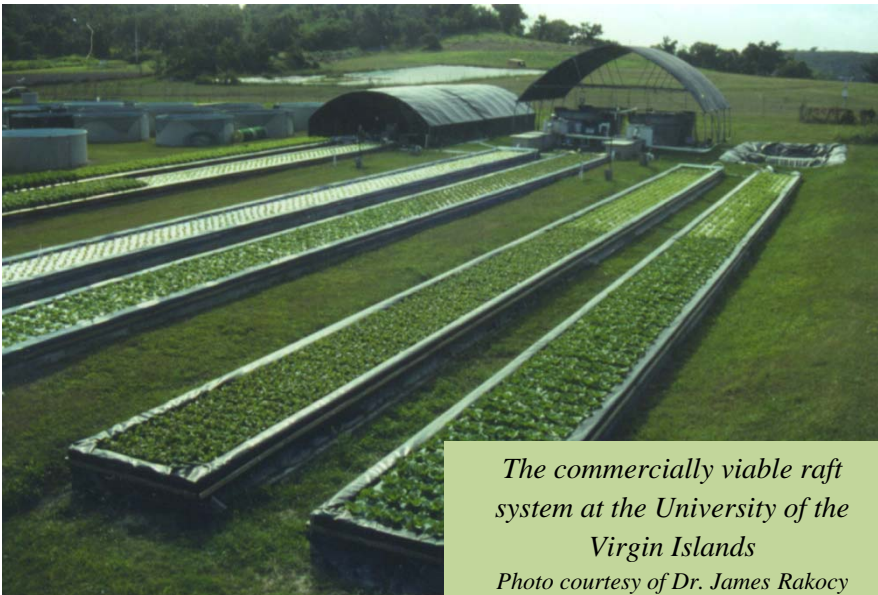
fraction of the space and water traditionally dedicated to aquaculture.

The disadvantage of highly concentrated populations of fish is the large volume of wastewater that accumulates daily.

Early on in the research of RAS, experiments were done to determine the efficiency of aquatic plants in consuming the nutrients in this waste-water, therefore helping to purify the water for the fish in the system. As research continued, terrestrial plants were tested and proven to be an effective means of water purification for aquaculture and this nutrient rich water a nearly ideal hydroponic solution for growing plants.

Although the practices of fish farming and soilless plant culture have been traced to ancient times, the combination of the two is quite new. Research in aquaponics began in the 1970's and continues today with several Universities worldwide dedicating resources to further the technology.

Most notably, the Agricultural Experiment Station at the University of the Virgin Islands (UVI), St. Croix, under the direction of Dr. James Rakocy, has earned world-wide recognition for over 25 years of work in refining aquaponic systems. UVI deserves credit for developing the commercially



The commercially viable raft system at the University of the Virgin Islands

Photo courtesy of Dr. James Rakocy