

Aquaponics: a dynamic technology for enhancement of future food production

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Abstract

Aquaponics is a nature-friendly system where production of food performed by utilizing aquaculture and hydroponics to cultivate fish and crops without using soil in a common ecosystem. In aquaponics the fish waste is served as nutrient for the plant and in return clean the water for fish. Aquaponics has a great role for producing healthy and nutritious safe food. Faster growth of both plant and fish without any artificial fertilizer. Utilization of small space setup than the traditional farming. The water in aquaponics system is recycled well and not wasted. It gives us possibility to increase economic efficiency to grow vegetable and raise fish at the same time, so farmers can continue to earn money even in any season. Various types of plants, fish are being used in it for multiple purposes. More and more research and analysis should be done towards this technology for enhancing a quality product for the future generation. Future study will tell us the greatness of this technology to support us as well as to support our economy.

Keywords: - Aquaculture, Aquaponics, Hydroponics, Recirculating system, parameters.

Introduction

In the present situation the population of the world is increasing day by day and the technology also plays a vital role for fulfilling all the necessary needs of human being. By the improvement of technology and people's lifestyle, Ornamental fish and hydroponics plants become a part of daily life. Hydroponics means production of plant without soil where Aquaponics means farming of fish and plants in a single recirculating system. It's an ecofriendly way to produce both the fish and vegetable in a common ecosystem without any hesitation. In this process we can produce safe food without any environmental hazards. It is the interrelationship environment between the fish and vegetable where fish provides fertilizer to the plant and also the plants in return help to purify the water which is used as a nutrient where the fish live in. The aquaponics system is a recirculating close loop aquaculture system designed to remove toxic waste product and reusing it, and in reusing process the non-toxic product and organic matter accumulate. The nutrients in the form of ammonia are converted by denitrifying bacteria in the hydroponics system into forms readily uptaken by plants for energy and growth. mainly the hydroponics system and its crops serves as biofilter for the fish waste water before it is returned, then it cleaned back into the fish tank.