PRODUCTION OF FISH AND PLANT: AQUAPONICS MODEL

The model of recirculating type integrated fish-plant production system essentially consists of fish tank, filter, and hydroponics unit. The tank is provided with an inlet and outlet for water management. Hydroponics unit consists of a trough with rows of models (nutrient film technique) for keeping plants saplings. A submersible pumping unit is installed in a filter unit which receives aquaculture waste water from the fish tank. The fish are cultured following standard protocol. Unfinished feed and animal excreta are mainly responsible for generation of aquaculture waste in the form of dissolved and suspended solids. The waste water fish culture tank is lead to primary filtration unit which contains a submerged pumping unit, which in-turn supplies the waste water to hydroponic unit. When water passes through hydroponics unit, nutrients present in aquaculture waste are absorbed and filtered water returns to fish tank under gravity. About 2 to 5% freshwater (or new water) is added/ top up to compensate water losses due to evapotranspiration in the system.

Salient features of the technology:

- Reduces chemical fertilizers use for Aquaponics
- Reduce water disposal for aquaculture operation
- Controlled environmental agricultural benefits: year-round and local organic food production