

# Aquaponics

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Aquaponics is a system of the integration of aquaculture and hydroponics in a recirculating "closed water loop" cycle. The fish effluent (or fish waste) accumulated in the water as a byproduct of an aquaculture system is collected and channeled to hydroponic grow beds where the nutrient rich fish waste (toxic to fish but rich in nitrogen and other byproducts.) fertilizes the planted grow beds. This waste is referred to as "effluent" . The planted grow beds in turn digest the filtered liquid effluent thus reducing or eliminating the toxicity before it is returned to the fish tanks clean and recycled.

The benefits of a Recirculatory Aquaponic System: Because RAS units recycle most of their water, they consume considerable less than other types of culture systems and are especially well suited to areas with limited water supplies. The required quantity of water needed to successfully grow fish varies with the species of fish selected, size of the unit system, and the unit process equipment design. A properly designed and operated recirculating system requires a minimum daily input of water, just enough to clean the waste from the filters and to replace water lost to evaporation.

April 2010 We changed to grow watercress. This was the old system below that we were using. We were having a few problems with this system due to leakages. The new system is called a CHIF/PIST- which means Constant Height In Fish tank and Pump in Sump Tank. This is the new wooden frame. The base was well supported to take the weight of the clay balls and plants. The water is carried through plastic pipes from the fish tank onto growbeds. All covered in very thick black plastic. Note grill for water to escape into sump tank and growbed then filled with clay balls. Water from fish tank before running through the clay balls. Watercress replanted in the new system. Two 1000 gallon fish tanks holding common and mirror carp. The growbeds showing one system with watercress and the other with various herbs. We shall now leave the system to settle in and for the watercress to re-establish itself. Watch this space!