

Online Extras

Aquaponics: Clean, Green and Organic

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As with anything new, there has been hesitation in introducing aquaponics as a viable option for growing food worldwide. Some of those challenges are discussed here.

Is aquaponics an “organic” solution?

The potential is there to sell aquaponic crops as certified organic, provided that no unacceptable pesticides have been applied, as it is produced entirely from natural manure (fish waste). However, in some countries organic certification is not permitted for hydroponic crops. It is difficult to see any logic in such a philosophy as not only are the plants only using organically derived nutrients, but aquaponics is far more sustainable than any soil based organic system.

The organic certification authorities have not asked the question of “what is soil?”

Essentially soil comprises to a greater or lesser extent:

- 1) solid particles (sand, clay, silt)
- 2) organic matter
- 3) micro-organisms
- 4) water
- 5) gases (oxygen, CO₂)

An aquaponics system contains these four components, though with a slightly different balance. This makes it nearly impossible to see where the problem lies, particularly as the aquaponics system uses no pesticides, and the nutrients for the crop are derived solely from the fish. In fact, it is a superior system to the usual soil based organic vegetable production garden in that it is highly sustainable and much more efficient in both nutrient uptake and in water use.

So why are more people not considering aquaponics? We believe that there are a number of reasons, namely:

- 1) It would be an exception to find someone who is both an expert in aquaculture and in hydroponics. The skills are very different for the two enterprises.
- 2) The major greenhouse vegetable crops are tomatoes, cucumbers and sweet peppers. These are normally grown hydroponically in solid media (such as rockwool or coco peat). They do not lend themselves to deep flow hydroponic systems. There is a need to develop a suitable aquaponics system that uses a substrate, rather than deep flow.
- 3) Control of conductivity is an essential component of modern greenhouse tomato production, and this is difficult (but not impossible) to achieve with dilute nutrient solutions, such as those used in aquaponics.
- 4) Social obstacles, for example, lack of public awareness and information about aquaponics technology especially in the financial sector, which makes it difficult for potential aquaponics operators to get bank loans approved.

