Summary - aquaponics basics

- Hot water drives oxygen out of the water.
- Most plants prefer the temperature of the water to be less than 20 degrees.
- Fish cannot regulate their body temperature; whatever the temperature is of the tank water is the temperature of the fish.
- Fish require 75% less energy than what humans do to feed.
- The level for oxygen for an aquaponics system is always set by the fish as they require the most oxygen (10mg per litre at 8 degrees Celsius)
- In a gravel bed system when the water is pulled out by the action of the syphon, it pulls the air in to the system and brings oxygen down to the roots of the plants.
- When bubbles come out of an air stone, it's not the bubbles that add oxygen to a system; it's when the bubbles break the surface.
- pH is important because if the water is too acid or too alkaline, it will affect the fish and plants and bacteria.
- A sick fish means a sick tank.
- It is important to start with high quality seeds as this leads to efficient germination and high quality plants

- Plants require 13 nutrients for growth. Generally, calcium, potassium and iron will need to be added to aquaponics systems.
- Design the system so that it only needs one pump and let gravity do most of the work.
- It is very easy to over feed fish and although uneaten fish food can contribute to the nitrogen cycle, it can also cause serious problems. Observation is the best method to ensure that fish are not overfed. If there is uneaten food after 20 minutes, then the fish have been fed too much. Continue to observe as the fish grow.
- Uneaten food should be removed from the tank.