

What is deep water culture hydroponics and how does it work?

Deep water culture hydroponics is a method of growing plants hydroponically while the roots are suspended in a nutrient solution throughout the entire grow cycle. A net pot or grow cup is suspended from the center of the lid, the roots are suspended in the nutrient solution, in a reservoir under the lid containing the nutrient solution. Air is pumped into the reservoir with the use of an air pump and an air delivery device such as an air stone. This keeps the water supplied with the amount of oxygen needed for the roots of the plant. The grow pot or net cup is filled with a grow media such as gravel, clay pellets, lava rock etc. it is suspended in the nutrient solution. The key to fast growth is make sure that when the plants are in their young stage the roots are at least touching the water. As the plant grows and you see signs of roots growing down into the water you can now drop the water level.

Aeration of a deep water culture hydroponics system is one of the most important things of the system. Let me explain, traditionally you would use an air stone to provide air to the pot or reservoir. It is more important to provide an even flow of air throughout the entire reservoir or pot than it is to provide a larger amount of air in a portion of the reservoir or pot. If you can look down on the top of your reservoir or pot and see a void of air bubbling to the top, you have a void in the system. The roots below are not receiving the appropriate amount of air. This void can be eliminated by utilizing Air Injection Technology manufactured by modularhydro.com. It allows an even air distribution in the reservoir or pot. There is no where the roots can hide, they are exposed to air and oxygen anywhere in the reservoir or pot. Example if you are growing in a 5 gallon bucket and are using a 3 inch air stone, you have a void of approximately 7 inches. Where you don't have air bubbling straight up. This is a void area, you now have roots exposed to the void area and are not receiving the amount of oxygen that they need. Also when using an air delivery system that does not evenly distribute air to the entire reservoir or pot it tends to push the roots to the void area.

Is there a solution to the problem above? The good news is yes. We talked about it above, you can introduce a technology developed by modularhydro.com to overcome the problem of root void when growing with a deep water culture hydroponics system. You will also increase the plants growth rate and have healthier plants. The roots have no where to hide, an even air delivery allows the roots to grow and not be pushed away to a void area by the air bubbles, such as with a smaller air delivery system like a 3 inch air stone with a void of 7 inches etc.