The importance of supplying the right amount of air and oxygen (O) when growing with a deep water culture or ebb and flow hydroponics system.

Almost half of the total dry weight of a plant is made up by oxygen. This means you need a proper and even air delivery system when growing with a hydroponics system. With the absence of oxygen, which is a essential element disintegration of plant tissue soon accrues. Our research shows that the basic need for oxygen varies with temperature and different cycles during the grow stage. During warmer temperatures an increase in oxygen is much appreciated by the plant versus cooler temperatures.

Plants obtain some of the oxygen in the elemental state from the atmosphere, this enters through the stomata, along with the oxygen that enters through the roots in water is termed external oxygen. Oxygen is also liberated during the process called photosynthesis. This additional supply of oxygen is supplied within the plant, this is termed internal oxygen. Our study's show that by increasing an over all flow and even coverage of air delivery to the plants roots when growing hydroponically increases internal and external oxygen production and use.

Without an adequate supply of oxygen it is not possible for the oxidation of organic substances in respiration to take place. During normal conditions, the atmosphere contains about 21 per cent oxygen, but the air in your grow media is lower due to the proximity of the roots and the root mass. In this case the oxygen level can drop as low as 18 per cent. A fall of this few percent will have inhibiting effects on the plants growth rate and over all health.

The importance of ensuring that the roots of plants receive the appropriate amount of oxygen can not be stressed enough when growing with a hydroponics system. Lack of oxygen interferes with the respiration of the protoplasm of the root cells causing wilting and necrosis. This may be present as yellowing and or brown spots on the leaves, the plant does not look healthy in mild cases, but you are not sure what to do. Start by making sure you have the appropriate air delivery to the roots of the plant, weather you are growing with a ebb and flow or deep water culture hydroponics system.

By adding Air Injection Technology to your current deep water culture or ebb and flow hydroponics system, manufactured by modularhydro.com you can ensure that your plants roots are receiving the appropriate amount of air and oxygen 24 hours a day. This will increase your growth rates and ensure healthy plants.