



Hydroponic Monitoring and Reporting Systems

Many growers have experienced equipment failures and out of range environmental conditions that have ruined a healthy crop. Electrical components such as exhaust fans, intake fans, timers and pumps, will usually fail when least expected. The humid and somewhat corrosive atmosphere within a hydroponic micro climate can cause problems with hydroponic growing equipment.

An exhaust fan failure will cause temperature and humidity levels to rise quickly when HID or Sodium lights are hot. High temperatures and high humidity levels are often detrimental to plants and may ultimately destroy a crop. Intake fans providing fresh air and cooling can fail, resulting in poor air circulation and overheat conditions. Adequate air circulation is a vital element of a hydroponic micro climate, keeping the area cooled and providing adequate air circulation to plants. Receiving information remotely that heat levels have risen will give growers the chance to repair or replace faulty equipment before damage occurs.

As all hydroponic growers know, consistent, scheduled nutrient supply is crucial to healthy plant development. Nutrient availability to plants depends on the correct operation of the timers and pumps that do the work. Aeroponics, Ebb and Flow, and NFT systems all rely on electric pumps to deliver nutrient. Pump failure is often hard to detect unless a grower manually checks that pumps are working. If a pump failure occurs, it may be a long period of time before the problem is detected. Left undetected plants may quickly deteriorate. To know that a pump has failed to perform its scheduled operation is valuable information that all hydroponic growers can benefit from.

Stable TDS levels in a reservoir are key to the success of any hydroponically grown product. TDS levels can get dangerously high when water levels drop too low, causing symptoms such as nutrient lockout. Reservoir dry up can occur due to a leak in the system, or excessive time between reservoir refills. A reservoir detector will detect that the minimum allowable level has been reached and a refill is required.

Most hydroponic systems depend heavily on electricity to power lights, fans, pumps, timers and many other important devices. Power failures due to breakers tripping or an outage in the area will shut down essential systems. If unattended to, a short power outage can result in timers becoming out of sync, affecting scheduled lighting or nutrient

feed times. HID and Sodium lighting kits are fast becoming popular targets among thieves. Theft and vandalism of growing equipment and crops can set back production by days or weeks. Greenhouses and indoor growing areas can be protected with newly available monitoring systems.

Monitoring all aspects of a cultivating environment will insure that a crop matures fully with a minimum of set-backs. In addition, yields may be improved and protected due to speedy repair of broken equipment. This type of information technology, will ultimately, save time, and, increase yields. The statement "if only I knew" can become a thing of the past.

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