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Domain: Smart Agriculture

Course: Growing of Hydroponics Lettuce

Project topic: Crop Management





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pH and EC of nutrient solution

- pH determines the availability of essential plant elements
- Optimum pH range of nutrient solution for development of plants is **6.0 to 7.0**
- Higher EC will prevent nutrient absorption due to osmotic pressure and lower level severely affect plant health and yield.
- Appropriate management of EC in hydroponics technique can give effective tool for improving vegetable yield and quality
- EC(dSm⁻¹) between **1.2 to 1.8** is advised for lettuce



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Crop Health

- Pest management Sanitation is the key to maintaining a disease-free system.
- The most devastating disease problems occur in hydroponics when a water mold (e.g. Pythium or Phytophthora) or other water-borne pathogen is introduced into the system.
- Water molds have motile spores that can quickly spread to all the plants within a recirculating system. Since there are no fungicides registered for controlling these pathogens on greenhouse lettuce, this type of disease outbreak can result in complete loss of the crop.
- The solution tanks will have to be drained and all equipment must be cleaned with a bleach solution or other disinfectant before planting subsequent crops.
- If the infection originated in the germination area, those benches and systems will also have to be thoroughly disinfected.



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- Other diseases that can occur on greenhouse lettuce include Botrytis gray mold, powdery mildew and downy mildew.
- Greenhouse pests of particular concern are aphids, thrips, whiteflies and mites.
- Taking steps to prevent insects and mites from entering the greenhouse is the first step to controlling infestations.
- The use of insect screening on the sidewalls (if sidewall ventilation is used) and other entry points can help in this regard.
- Plants should be inspected daily for signs of disease, insects and mites.
- There are very few pesticides labeled for greenhouse production of these crops, so preventative management and early detection of pest and disease problems will be crucial.
- The nutrient solution provides an ideal location for algal growth. Since algae thrive in wet, well-lit sites, shading solution tanks can inhibit their growth.



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Thank you...