





How do you define hydroponics?



How do you define hydroponics?




- Definition of WF Gericke of University of California
 - Hydro – water
 - Ponos – labor
 - (literally water working)
- Growing plants without using field soil
- Debate – true hydroponics vs. soilless culture

Major significant events in hydroponic evolution

- Ancient history (Hanging gardens of Babylon)
- 1600's – Experiments to discover what plants needed to grow
- 1860's – 'Nutriculture' German scientists Sachs & Knop
- 1930's – Gericke- 'father of hydroponics'





Dr. William Fredrick Gericke

- University of California professor
- 1929 announced hydroponics
- Baltimore Sun newspaper - 25 foot tall tomatoes in 5'x5' area, 300+ pounds
- Published a book in 1940 about hydroponics
- Made a movie about hydroponics (see it on YouTube)
- Used sand, sawdust, pebbles, ag waste as media
- SALESMAN!

Major significant events in hydroponic evolution

- Ancient history (Hanging gardens of Babylon)
- 1600's – Experiments to discover what plants needed to grow
- 1860's – 'Nutriculture' German scientists Sachs & Knop
- 1930's – Gericke – popularizes hydroponics
- 1945 - U.S. Airforce Ascencion Island, crushed volcanic rock
- Popularization of plastic makes systems easier to build

What types of hydroponic systems do you have experience with?

- A. None
- B. Nutrient Film Technique
- C. Drip System
- D. Aeroponics
- E. Pond System
- F. Other



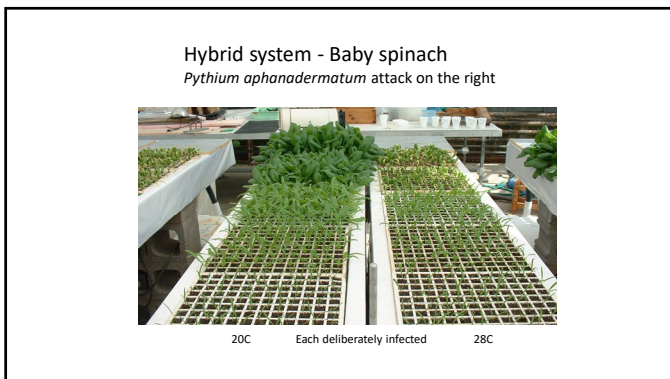
Hydroponic Systems – Floating Raft Technique (FRT)

(aka. Raft culture, Deep flow, Deep trough, Pond)





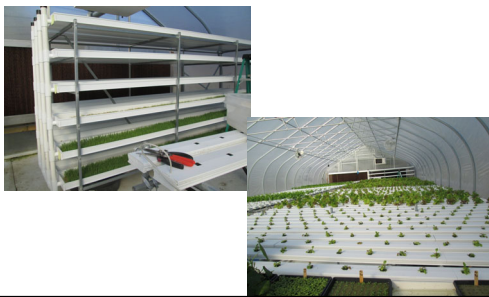




Hydroponic Systems – Nutrient Film Technique (NFT)



NFT Fodder and Lettuce





Hydroponic Systems Drip Irrigation

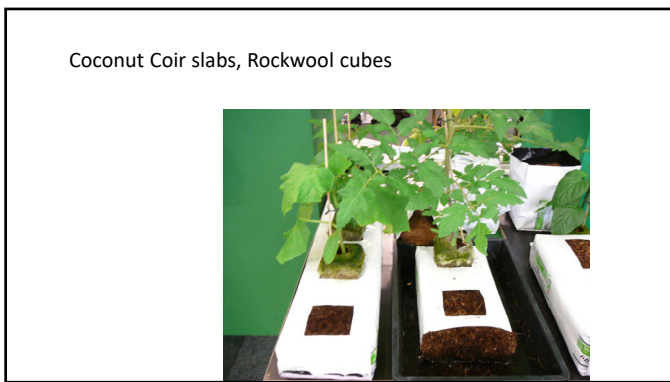




Rockwool in rockwool on rockwool







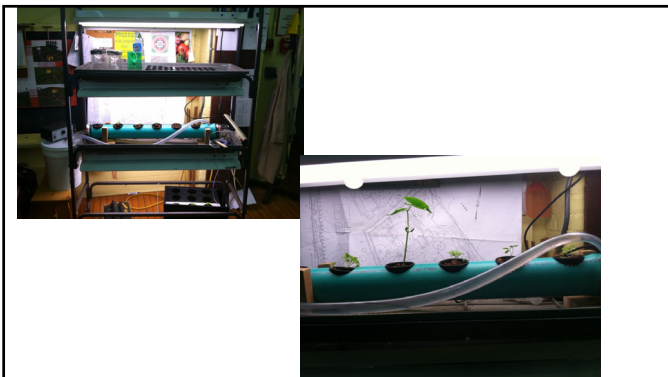


Cucumber Operation near Niagra Falls

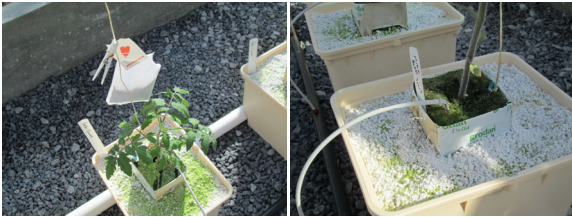




Strawberry plants at Eocot



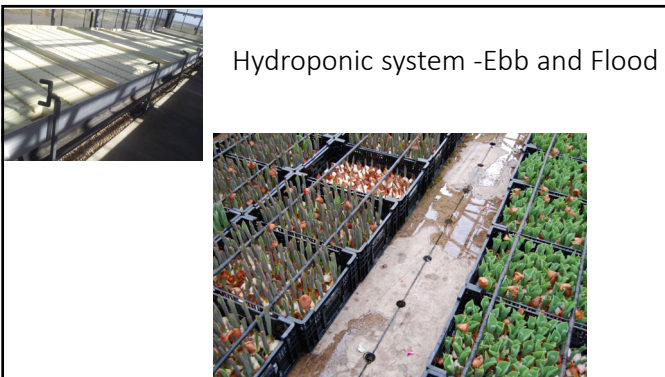
Bato Bucket (drip)



Bato bucket



Hydroponic system -Ebb and Flood



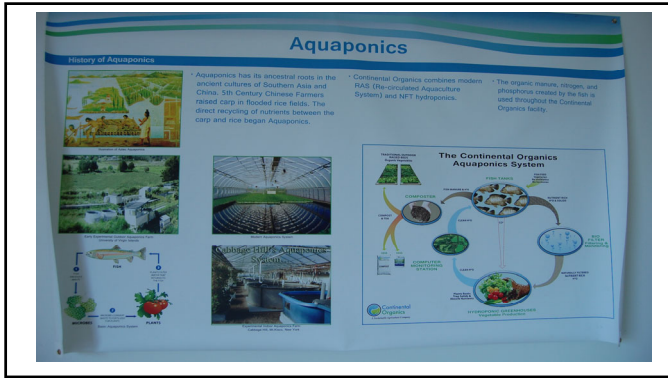
Hydroponic Systems - Aeroponics



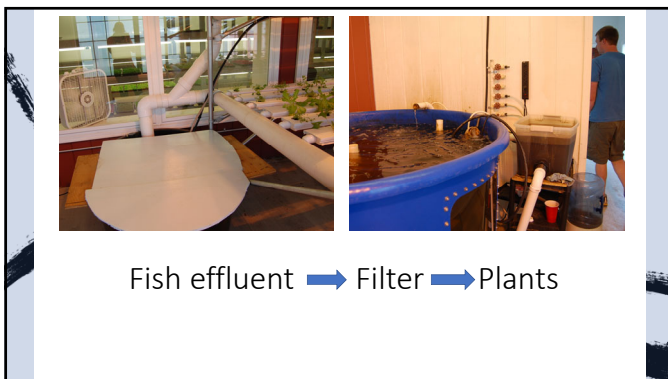
Aeroponics at Epcot - Photo Jim Ochterski

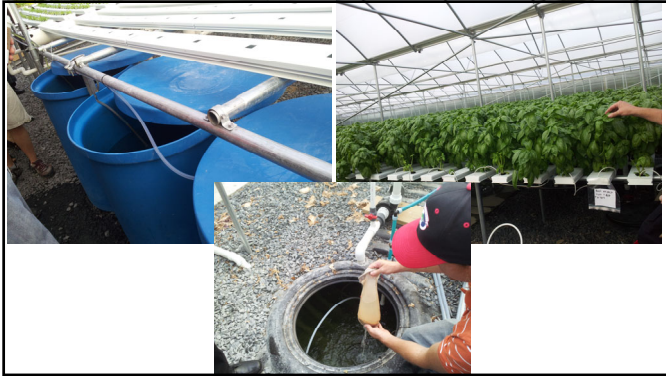












What should we think about when we look at different systems?