# The Ever-Expanding Controlled Environment Agriculture Industry



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## Controlled Environment Agriculture (CEA)

- Hydroponics
- Soilless culture
- Greenhouse farming
- Indoor farming
- Vertical farming











## Environmental Factors to be Considered for Control

- Light (quantity, quality and duration)
- Water (quantity, quality)
- Temperature
- Fertilizers (quantity, balance and forms)
- Soil (usually none or artificial soils called substrates)
- Humidity
- Air flow
- Carbon dioxide
- Microbiome
- Insect and disease pests



















































































References Company News Contact



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IRRIGATION AND FERTIGATION SYSTEM	SUPPLY OF GROWING MEDIUM	WASTE STREAM OF SUBSTRATE	MIXING OF LETTUCE

Products

Advantages

### BABY LEAF LETTUCE

#### Fully Automated System

The fully automated growing system is optimized for growing baby leaf lettuce, herbs and small head lettuces, that are to be sold cut. From substrate filling and sowing to harvesting and mixing, the plants are not touched by any human hands. A fully automated system for the cleanest, safest and freshest baby greens.



https://www.youtube.com/watch?v=zcb\_gATA\_v8



### Goals of the CEA Innovation Center

- Create an ecosystem around CEA and CEA technologies
- Assist in attracting CEA production companies and allied support companies
- Assist in work force development to support CEA companies
- Assist in work force development to prepare citizens to take advantage of CEA job opportunities

### Goals of the CEA Innovation Center

- Conduct research in CEA
  - Working with allied/support companies
  - Plant Scientists, engineers, computer scientists, etc.
- Attract and create new companies

### Where is the Future for Controlled Environment Agriculture?

- Expansion of CEA production to meet growing demand
- Increasing the crop diversity (e.g. breeding and genetics)
- Technology development for increasing sustainability and production (e.g. lights, sensors, robotics, sustainable materials, biologicals)





### Questions and Discussion

