

VERTICAL FARMING

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**“Vertical Farming
potential
in Italy and
in the World”**

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CERES SRL - Activities

- **Crop advice (vegetables, berries, flowers, herbs)**
- **Consultancy on Distance – Crop Modelling**
- **Greenhouse planning (hi-tech turn-key projects)**
- **Soilless Crops (substrate, NFT, Floating, Aeroponics)**
- **Integrated Pest Management (IPM)**
- **Organic Farming (biological control)**
- **Crop Managers trainings (Practical School)**
- **Consultancy for United Nations**
- **Trainings For European Union**
- **Seminars for World companies (Monsanto, Syngenta)**
- **Global-gap Certification**
- **Media Activities (magazines, newspapers, TV)**
- **Trading and assistance to export companies**

Ceres Worldwide



Main Countries:

Italy
Holland
Russia
Morocco

Main Crops:

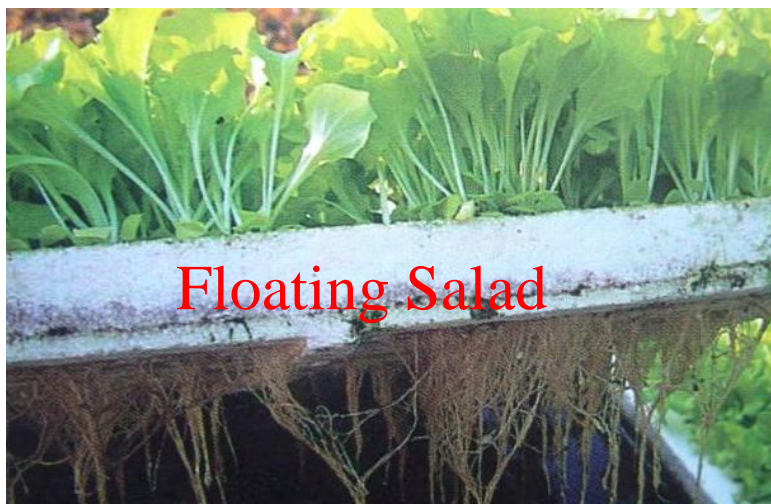
Tomato
Cucumber
Melon
Lettuce
Herbs
Berries

Soilless Systems:

Substrate
Floating
NFT
Aeroponics



FLOATING HYDROPONICS & AEROPONICS



« THE LETTUCE FACTORY »



TOTAL AUTOMATION

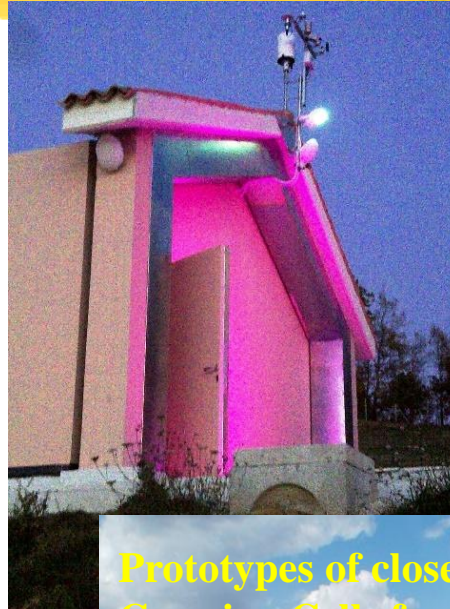


NFT System

CERES



AgroSpace Conference 2014



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EXPO 2015 – MILANO

THE FUTURE FOOD DISTRICT – VERTICAL FARM

(in co-operation with M.I.T. Senseable City Lab, ENEA)



CERES

Better Use of Land 0 kilometers



Above Ground



Under Ground

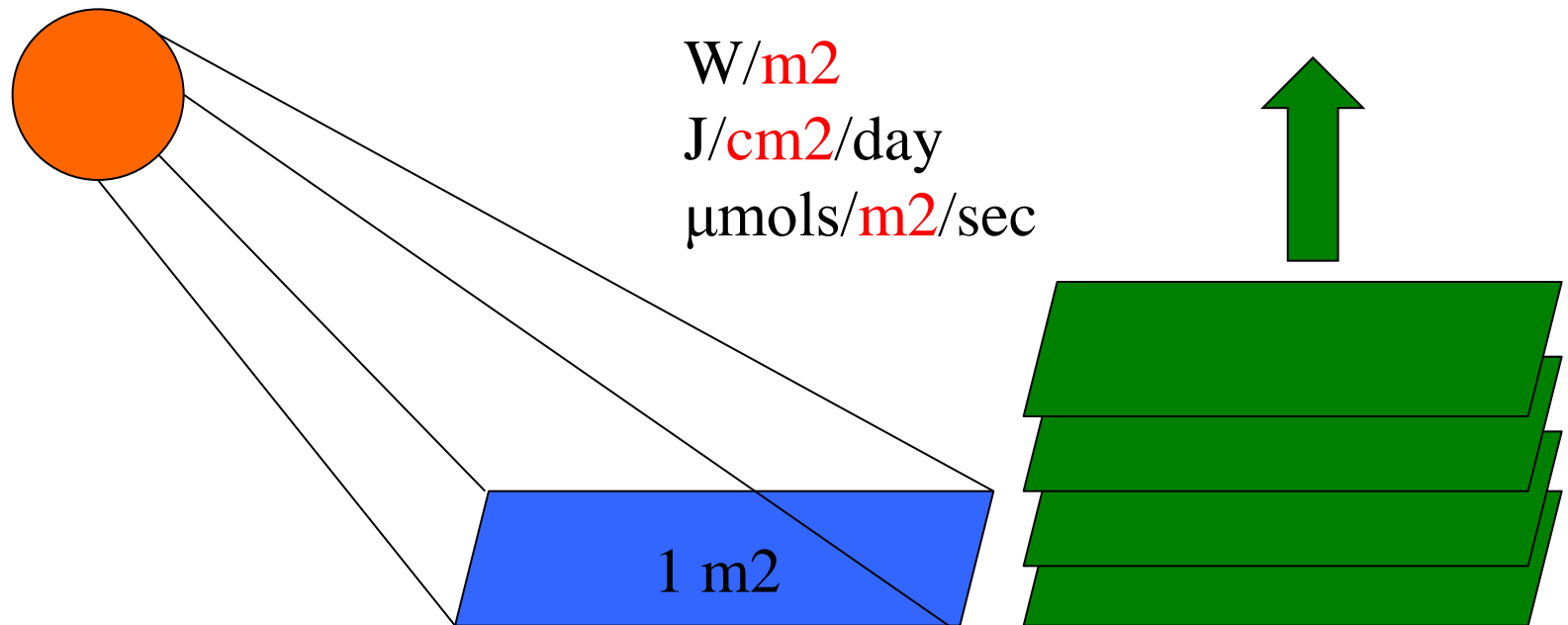


Indoor

Natural or Artificial Light?



Sun Radiation & Multilayer Growing



“unfortunately” sun light comes to Earth by m² NOT by m³!

High Efficiency of Photosynthesis

Total Air Conditioning
(T° RH% CO2)

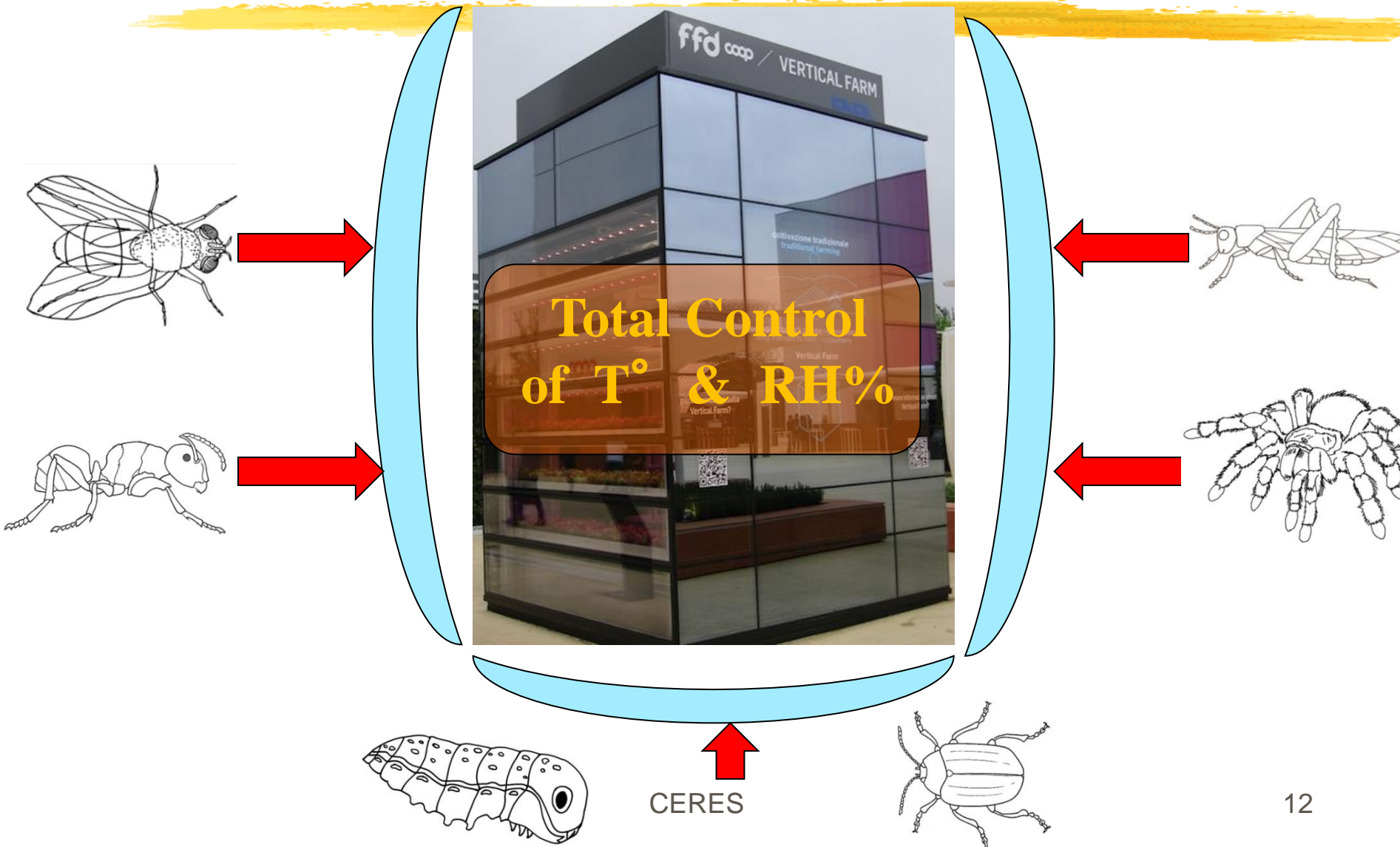
Specific “Light Recipes”
($\mu\text{mol}/\text{m}^2/\text{s}$, B/R/FR)

Perfect Nutrition
(Macro, micro, EC, pH)



CERES

Totally Hermetic = 0 Chemicals



Total Recycling of Water & Nutrients

condensation of transpiration



1 kg plant
=
1 lt water



0 pollution!



Automation = Labor Saving



BOTTLENECKS



HIGH INVESTMENTS

LEDs

Air Conditioning

HIGH ENERGY COSTS

LEDs

Air Conditioning

Where/When Vertical Farms are possible now?

TOO COLD



EXTREME ENVIRONMENTS



TOO HOT



Where/When Vertical Farms are possible now?



High Density
"Expensive" Cities

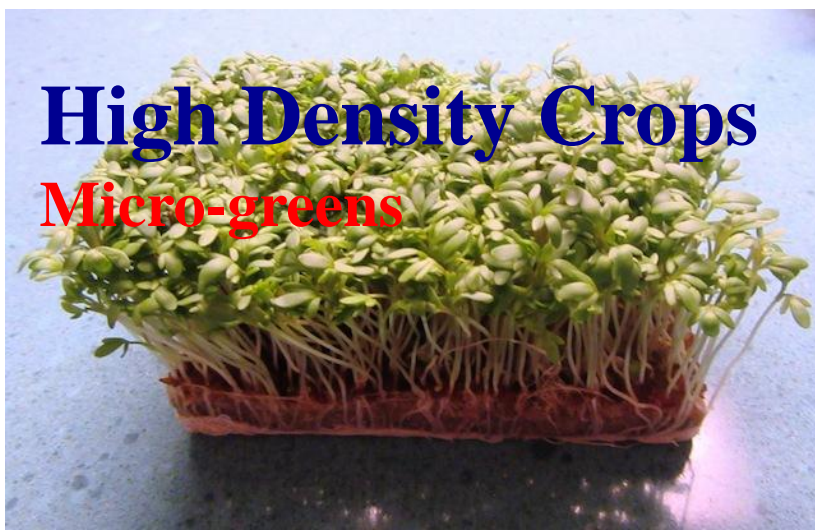


Re-Use of Old Buildings



Healthy Food

Where/When Vertical Farms are possible now?



GRAZIE & ARRIVEDERCI



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