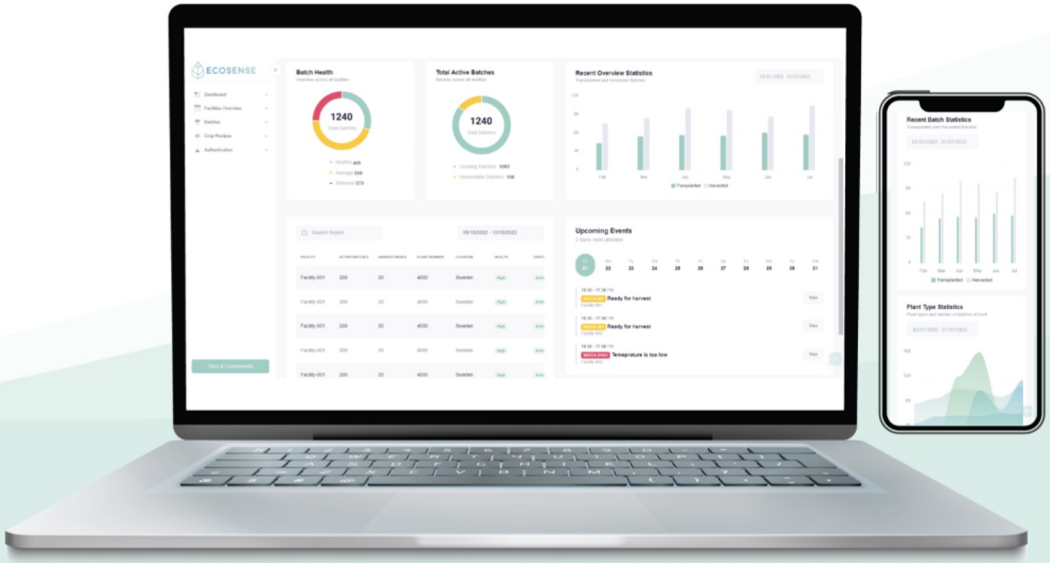
ECOBLOOM

How can we grow smarter?
Red Bull
BASEMENT

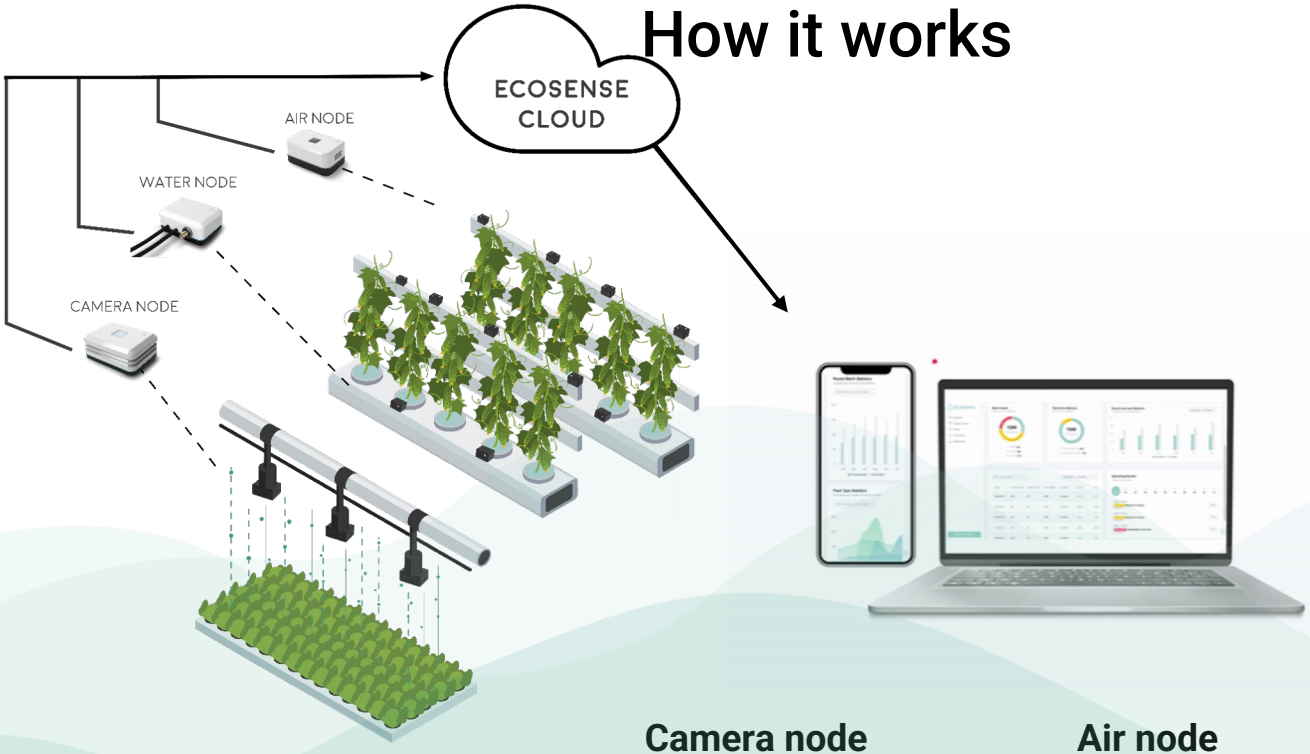
ECOSENSE BY ECOBLOOM



Ecobloom’s R&D facility

Monitor your farm through the push of a button 📱

How it works

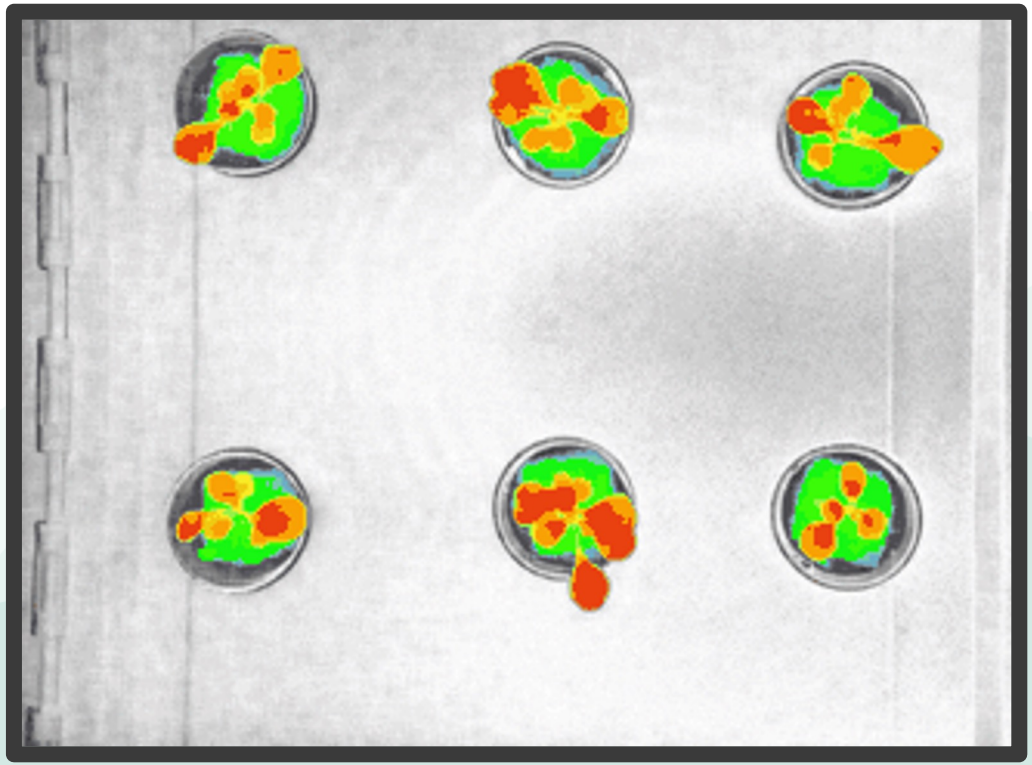


Camera node
- Growth & maturity
- Health & stress

Air node
- Temp.
- Humidity
- PAR
- VPD

Water node
- Temp.
- pH
- EC
- TDS

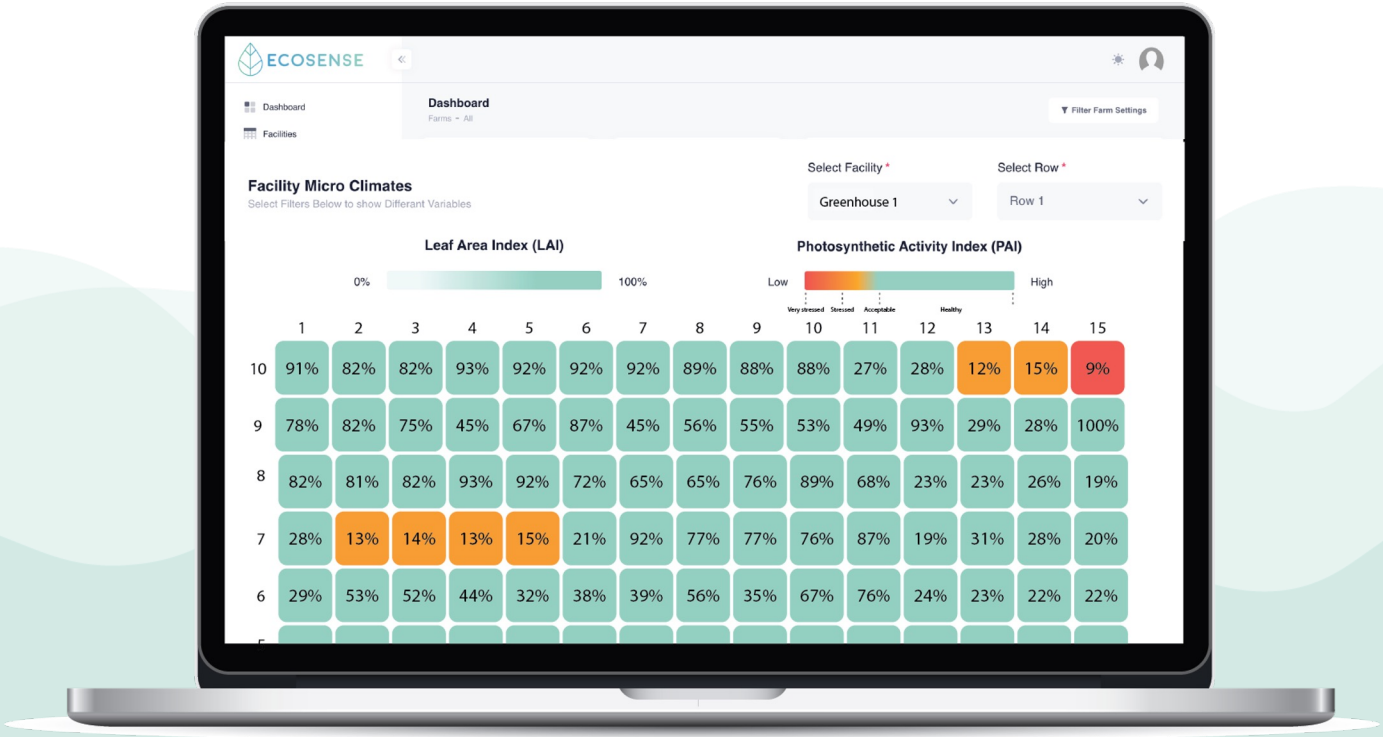
EcoSense multispectral imaging technology

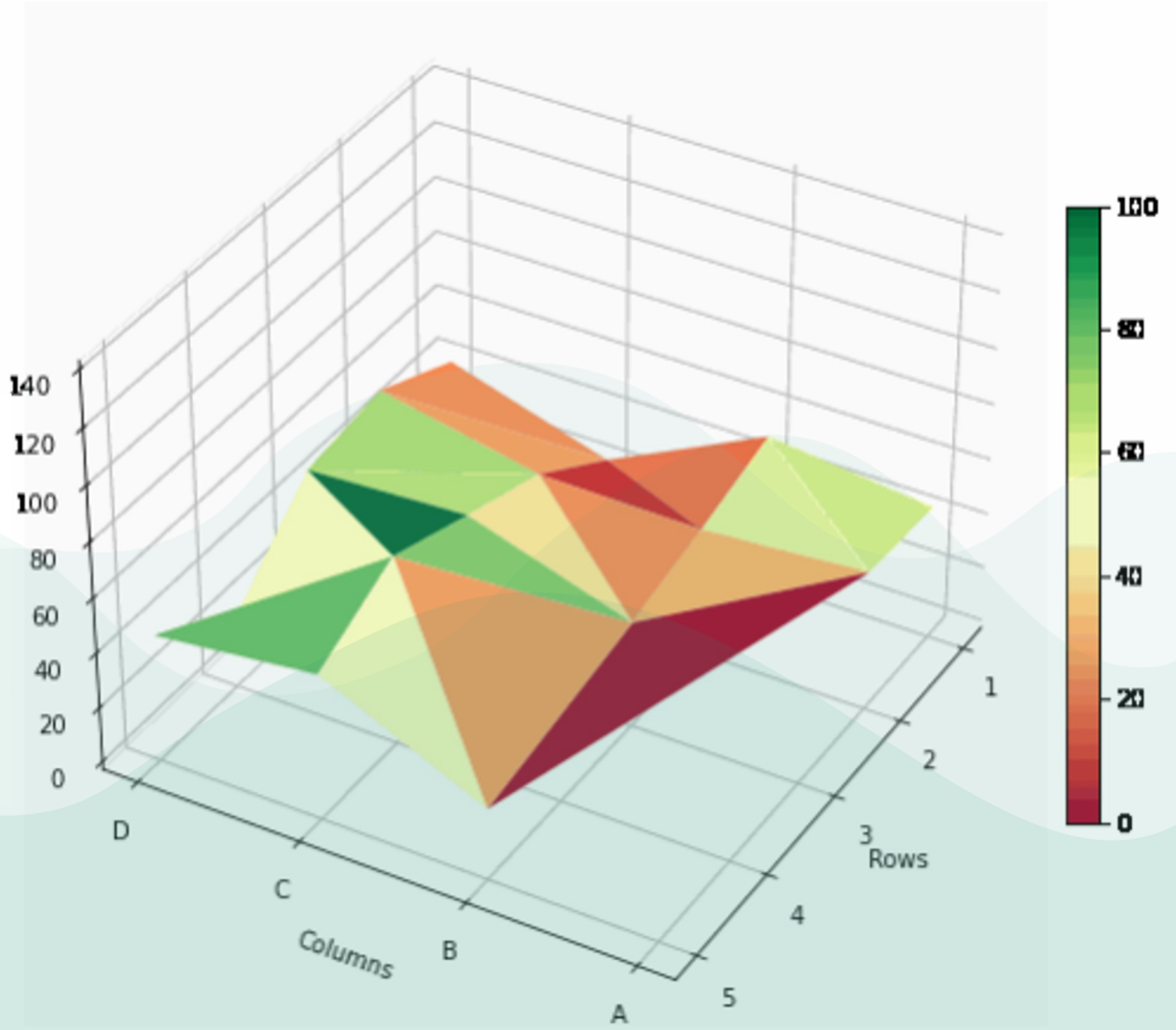


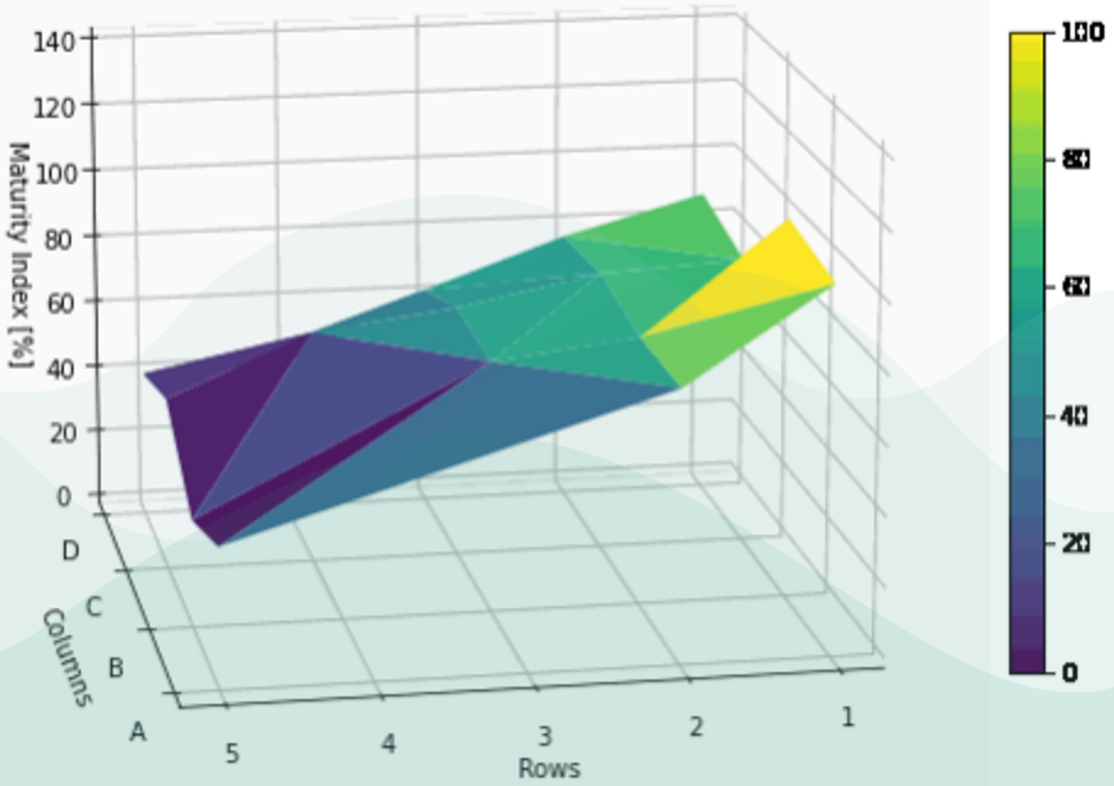
📷 Multispectral image analysis

- Disease identification
- Stress level detection
- Growth rate
- Photoperiod optimiization
- Maturity analysis
- Harvest predictions
- Algae growth warning system
- Real time Photosynthetic activity tracking

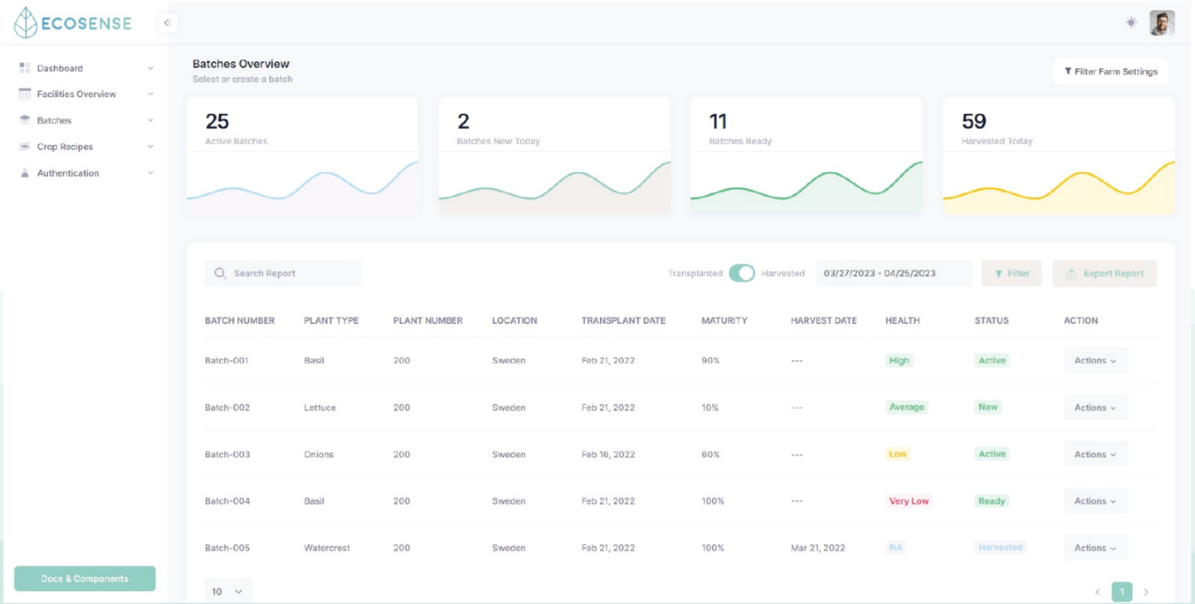
Full control and insight into the growth process




140
120
100
80
60
40
20
0
D
C
B
A
Columns
1
2
3
4
5
Rows
100
80
60
40
20
0


Maturity Index [%]
140
120
100
80
60
40
20
0
Columns
D
C
B
A
5
4
3
2
1
Rows
100
80
60
40
20
0

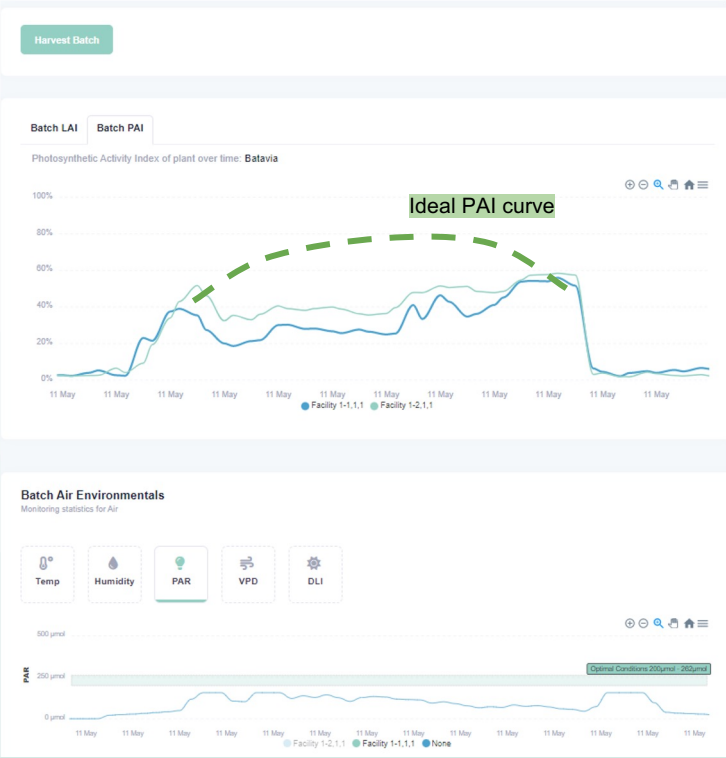
Monitor and control each batch

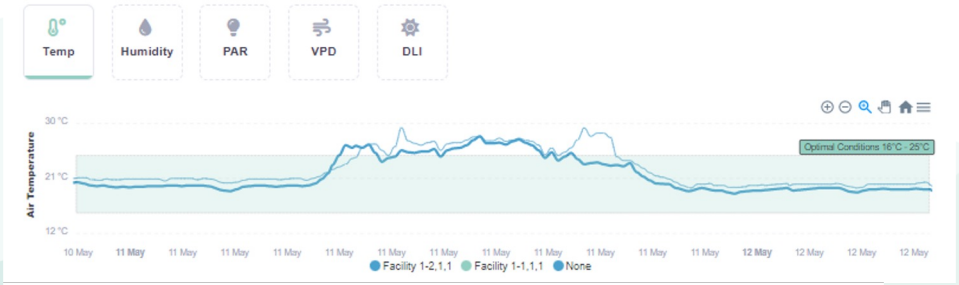


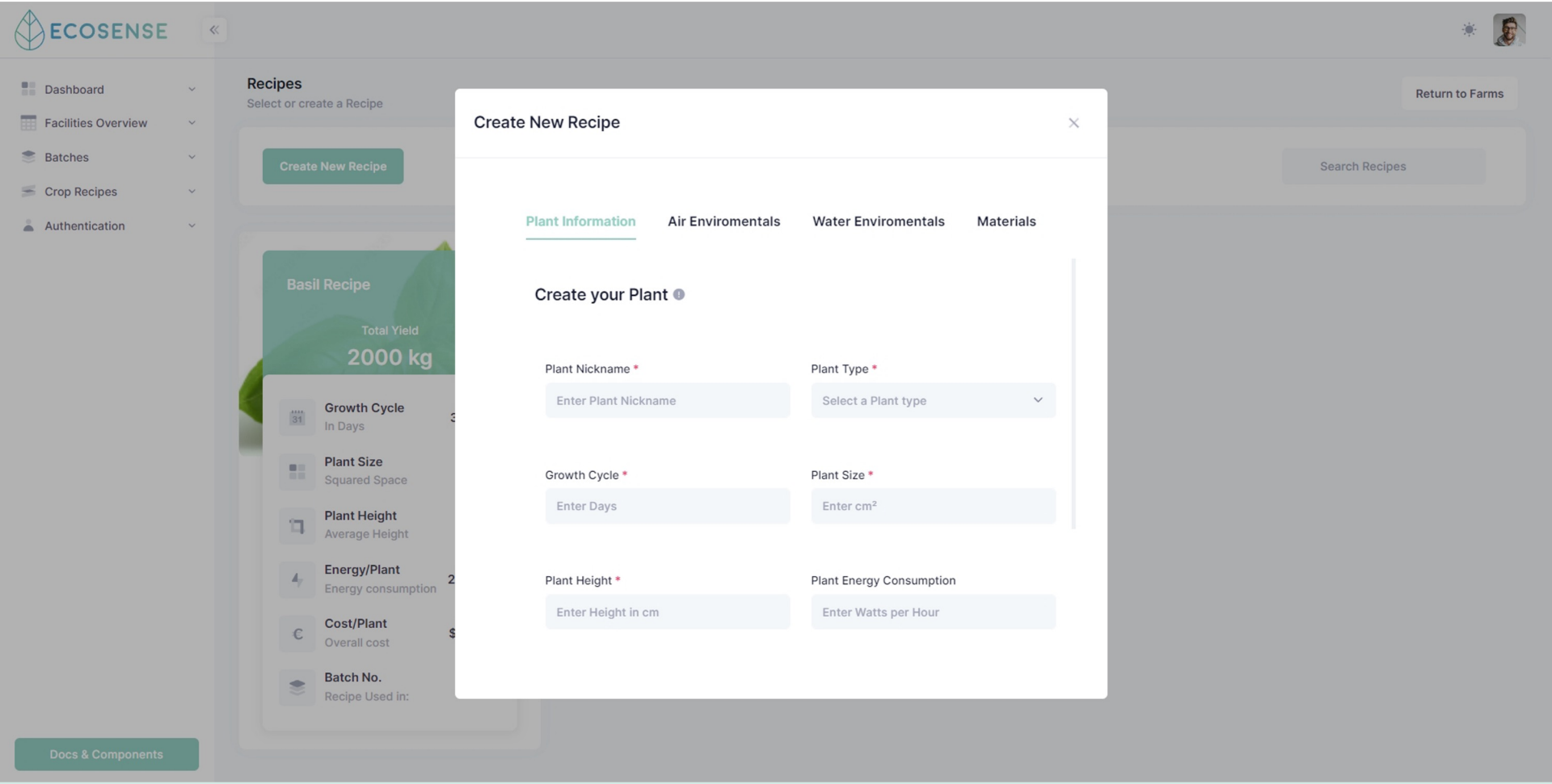
Batch Tracking

- Comprehensive Oversight
- Data-Driven Decisions
- Traceability
- Efficiency
- Learning and Improvement

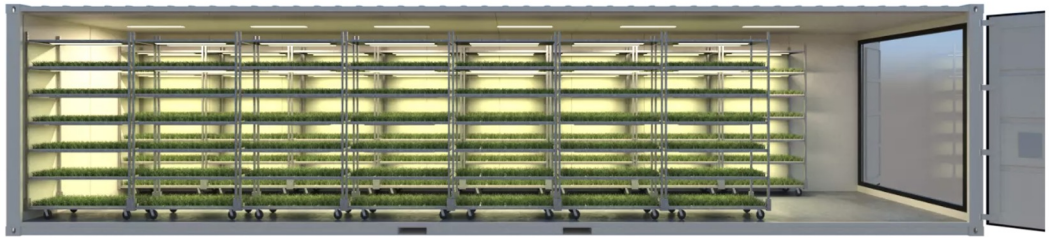
Growth rate and health index






ECOSENSE
Dashboard
Facilities Overview
Batches
Crop Recipes
Authentication
Docs & Components
Recipes
Select or create a Recipe
Return to Farms
Create New Recipe
Search Recipes
Basil Recipe
Total Yield
2000 kg
Growth Cycle
In Days
Plant Size
Squared Space
Plant Height
Average Height
Energy/Plant
Energy consumption
Cost/Plant
Overall cost
Batch No.
Recipe Used in:
Create New Recipe
Plant Information
Air Enviromentals
Water Enviromentals
Materials
Create your Plant
Plant Nickname *
Enter Plant Nickname
Plant Type *
Select a Plant type
Growth Cycle *
Enter Days
Plant Size *
Enter cm²
Plant Height *
Enter Height in cm
Plant Energy Consumption
Enter Watts per Hour

Benefits and Values



Implementation

- All types of indoor farms
- Plant agnostic

Increase yield and reduce waste

Reduce energy consumption

Improve crop health & quality

No manual documentation

The potential of HPC in CEA

Complex Ecosystem Simulation:

HPC can simulate entire controlled agricultural ecosystems in real-time, accounting for countless variables (like micro-climate conditions, plant interactions, soil composition) at a scale and complexity that is unmanageable for standard computing systems. This provides insights into optimal growing conditions and environmental impacts

Long-Term Environmental Impact Analysis:

HPC can be utilized to conduct long-term environmental impact studies of CEA practices. This involves processing extensive data sets over long periods to simulate and predict the impact of CEA on resources like water, energy, and land use. Such comprehensive environmental modeling demands the high-level data processing abilities of HPC, especially when considering multiple variables and their interactions over extended timeframes.

Real-Time Integrated System Management:

HPC can manage and optimize the integrated systems within a CEA setup in real-time. This includes controlling automated systems for planting, watering, lighting, and harvesting based on continuous data input. The complexity and need for real-time processing and response in such an integrated system require the robust computational power of HPC, which goes beyond the capabilities of regular cloud computing or local servers.

Enabling scalability - what we are looking for

- Research partnerships
- Funding / grants for R&D
- Investments

Thank you!

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ECOBLOOM

GROW SMARTER

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