SUSTAINABLE CROP MANAGEMENT

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DIGITALIZATION OF SCOUTING AND NEW FORMS OF ADVISING ON BIOLOGICAL CONTROL IN GREENHOUSE HORTICULTURE BASED ON DATA

The route to faster and better decisions

Sam Gui – Market Development Manager High Tech IPM

sam.gui@biobestgroup.com

Delft – June 15th, 2022

Biobest as an early IPM pioneer

First producer of bumblebees

Growing company & growing solutions in a global market

Biological control

Pollination

Scouting and monitoring tools

The best-in-class technical advice

Solution driven

Personal

Independent

Take the IPM-game to an higher level

New monitoring and scouting solutions

Data-driven tailored advice

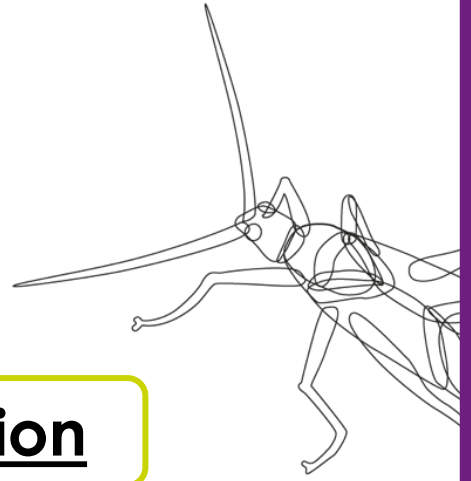
Its all about the best advice

That's Biobest!

- Best in class and tailored technical advice
  - Independent
  - Freedom to act
- Biobest offers total solution according the business case of customers
  - Integrated
  - Organic
  - Residue free
- Unburden the grower of IPM concerns

High Tech IPM

Around the….



Observing

- Digitizing human eye observations
- Sensors
- Cameras
- Automatisation

The Big Idea

Deciding

Analizing & processing data

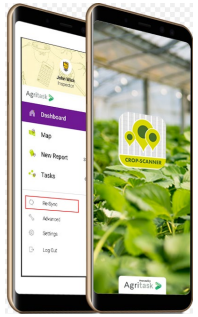
- Descriptive
- Diagnostic
- Predictive

Application

- Spot treatments
- Bug Dispenser
- Drones

How?

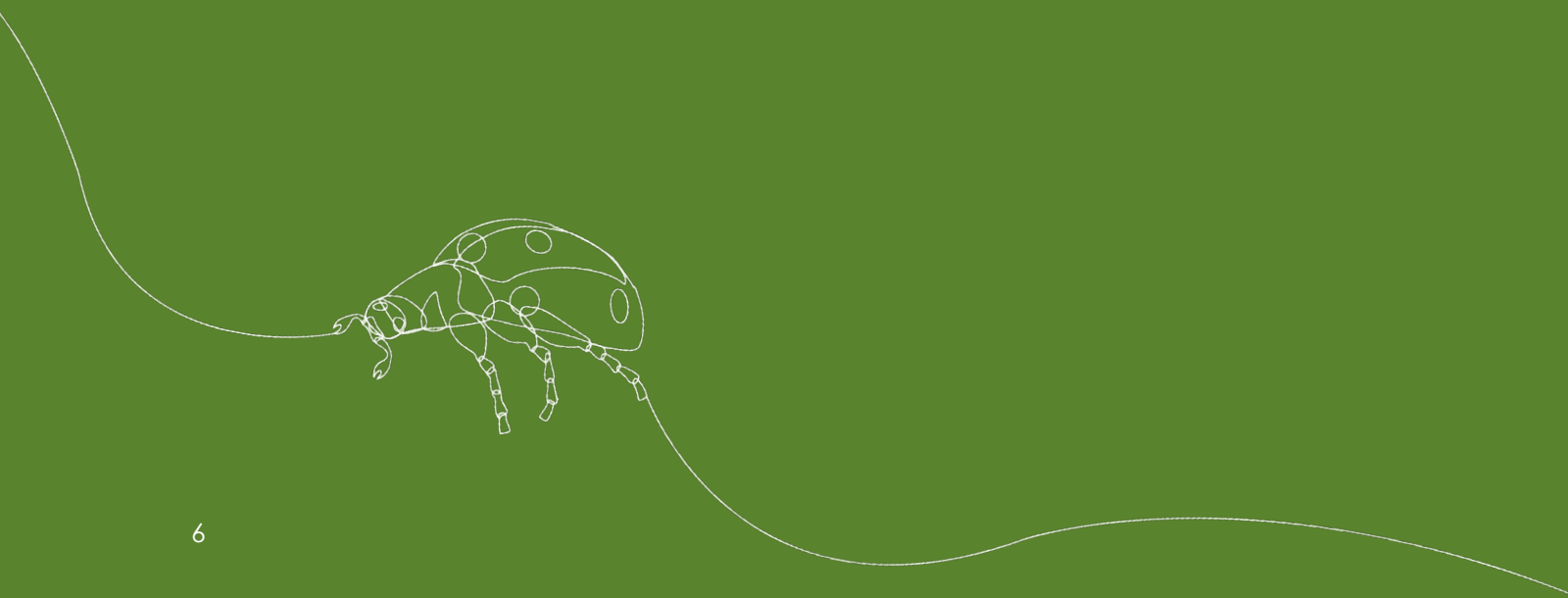
Our ecosystem of high-tech IPM solutions

CROP-SCANNER	Trap-Eye™ Trap-scanner patsX-C	OKO ecoation	OTTO ecoation
			

Adding more functionalities

Centralizes & visualizes scouting data	Automates pest monitoring	Measures climate, counts fruit & stem	Self driving vehicle with Plant Health sensor

ORGANIZE YOUR OBSERVATIONS



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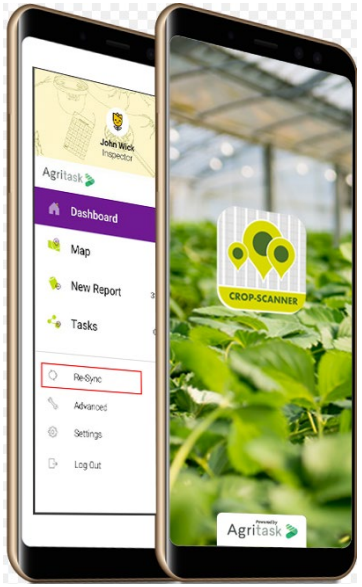
Crop-Scanner

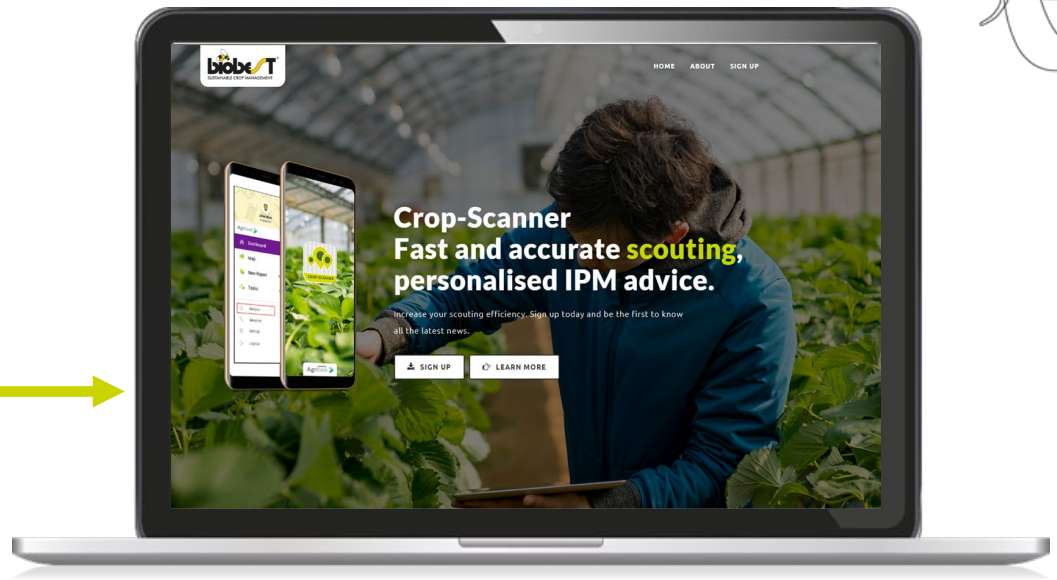
Centralizes and visualizes your scouting data

Cloud Crop-Scanner



App

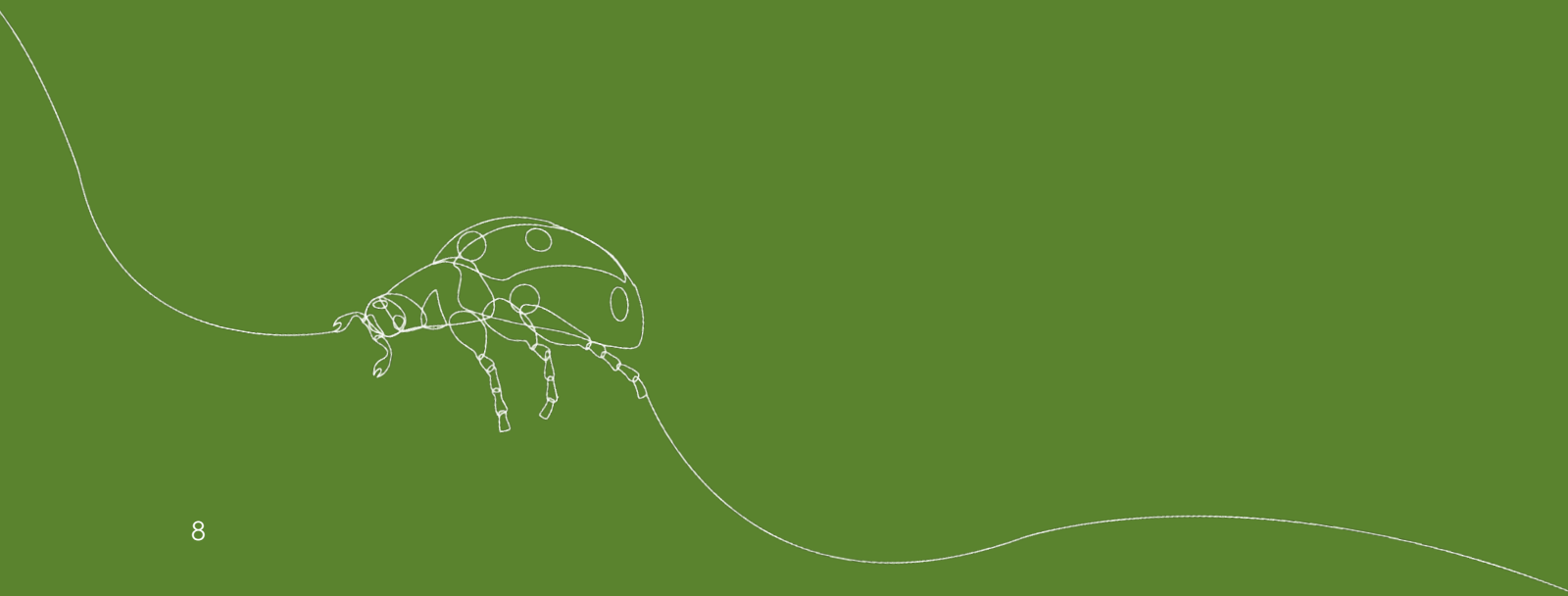
Input observations + basic reports



Web portal

Advanced reports & graphs

AUTOMATES PEST MONITORING



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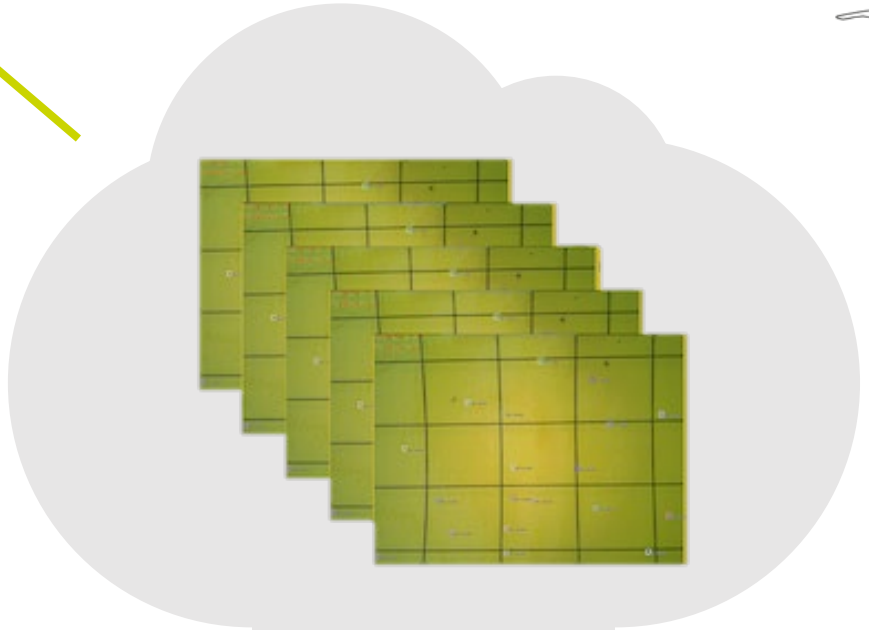
Trap-scanner

Digitizing and automates human sticky counts

Phone app

Real time overview pest population dynamic

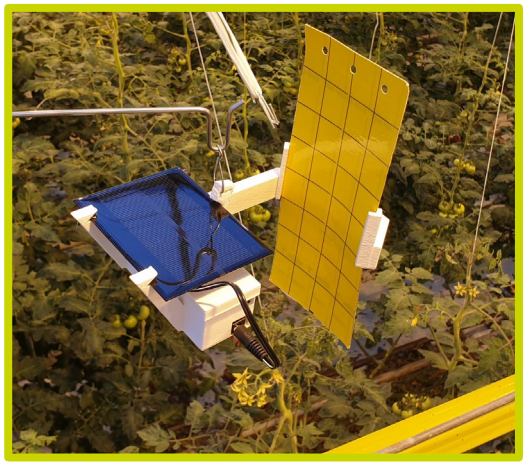


Trap-scanner AI in cloud

Picture of sticky trap

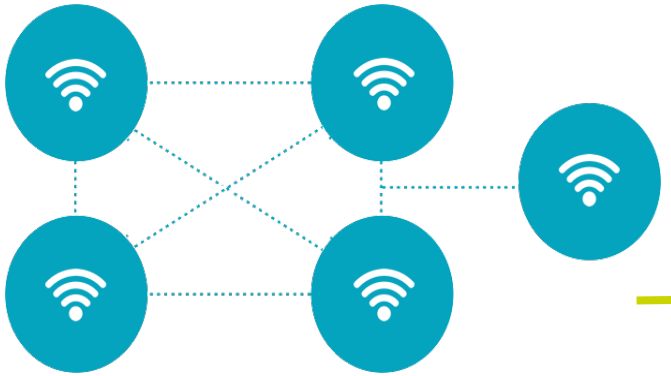
Trap-Eye

Fully automates your sticky trap counts



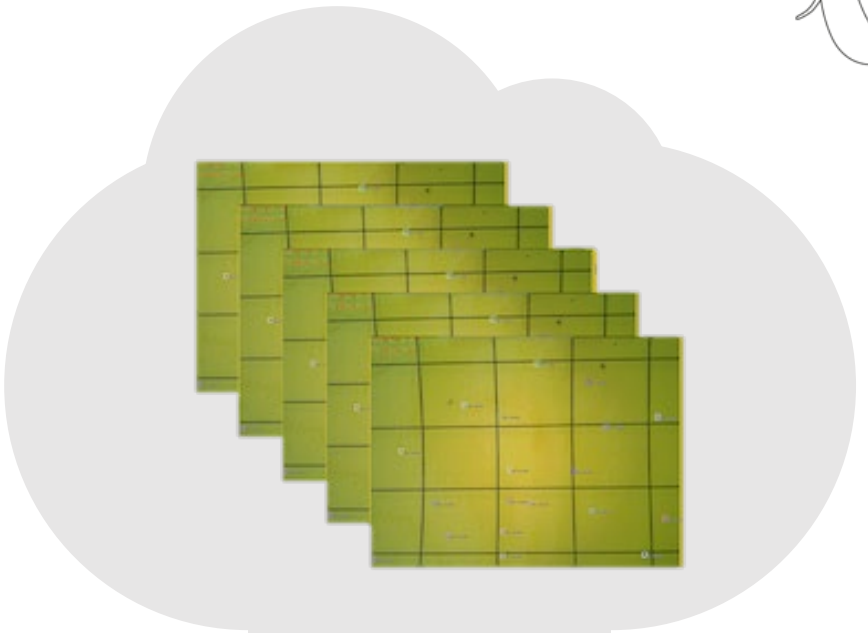
Trap-Eye units in crop

Picture of sticky trap



40 units/ha, daily pictures

Real time overview pest population dynamic



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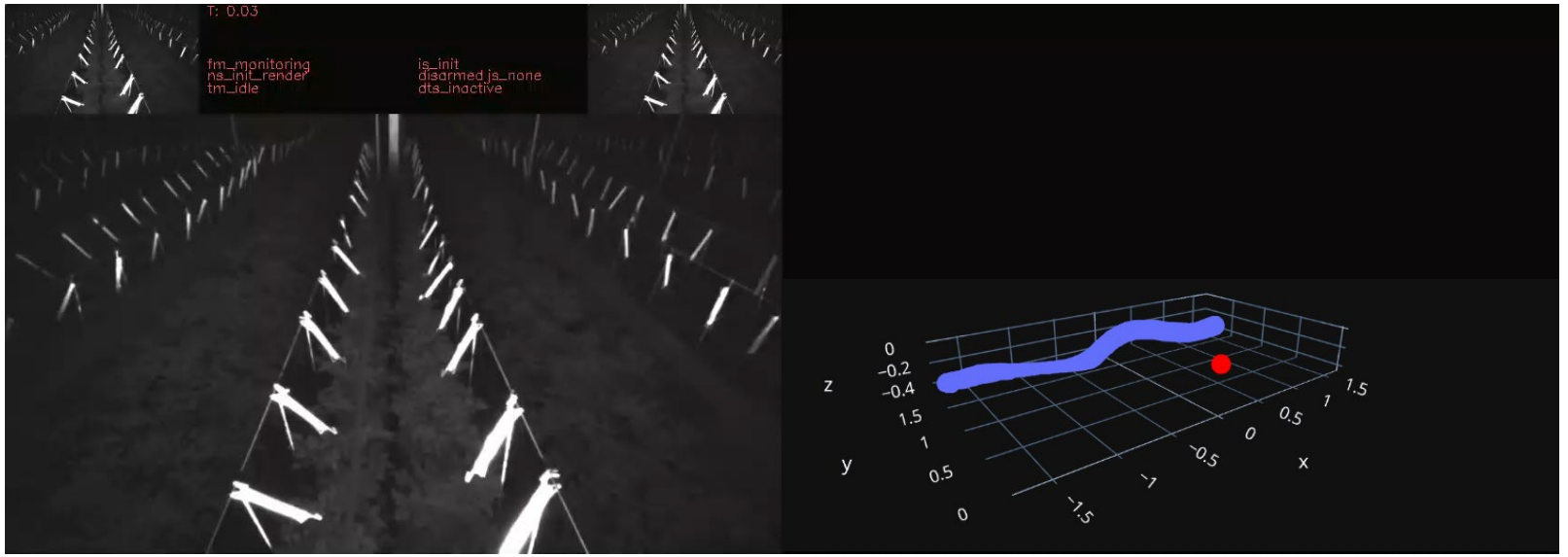
PATS-C

Automatically recognizes and counts moths

PATS-C camera to detect moths

Real time overview of moth populations and activity

LED-module to illuminate insects



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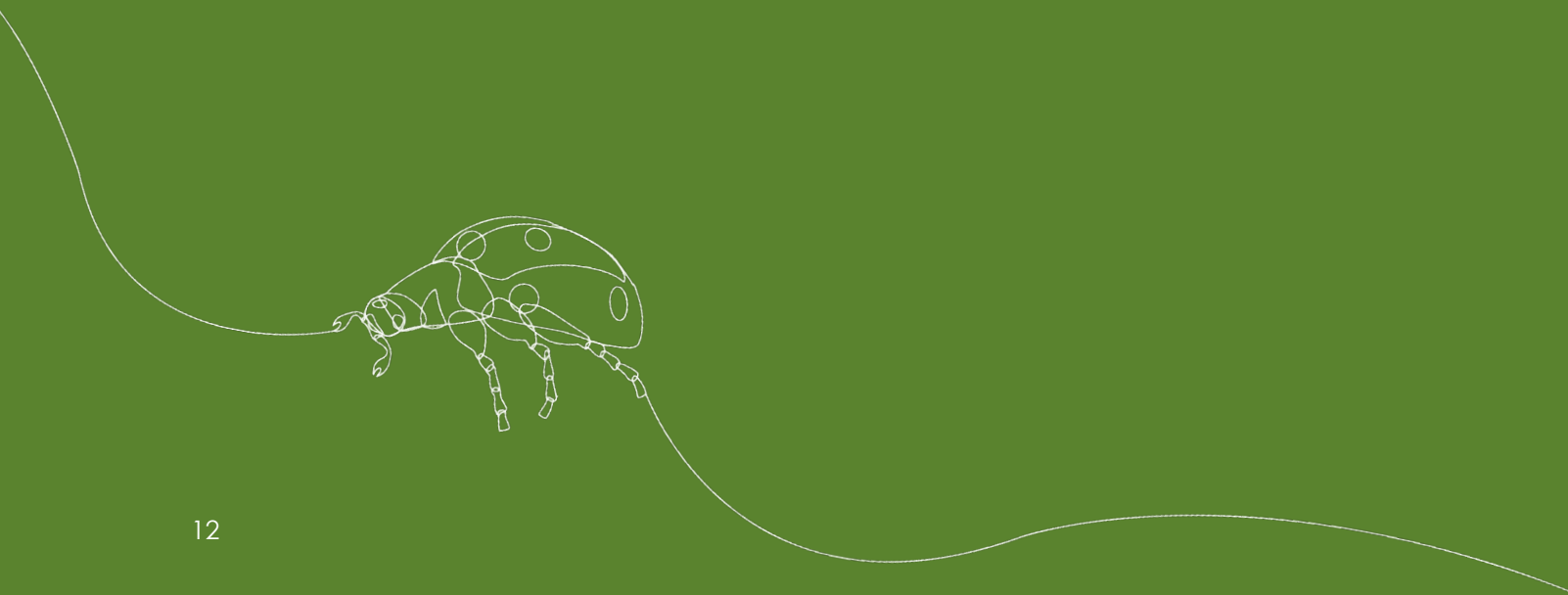
ADD CLIMATE AND CROP REGISTRATION



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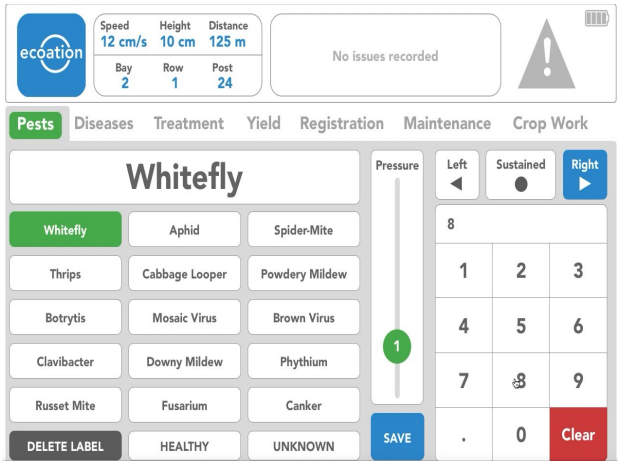
OKO

Closed loop IPM

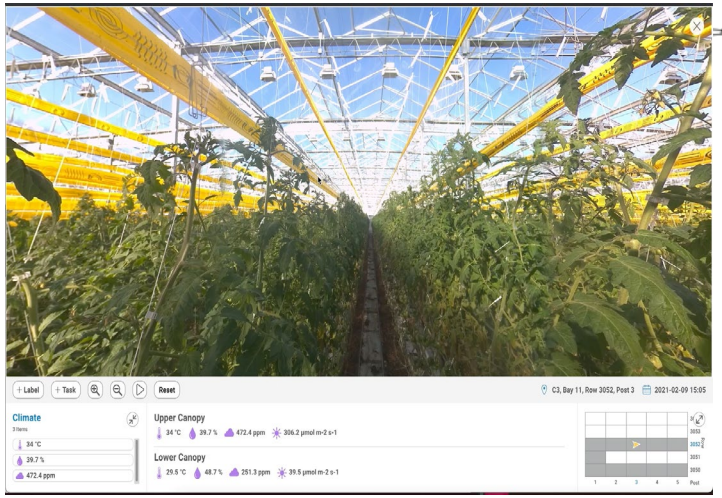
Fruit count,

Climate registration

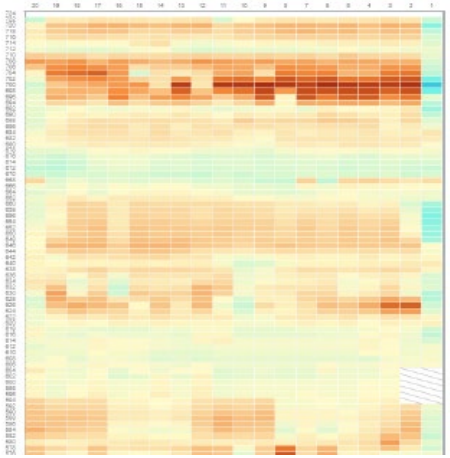
LCD to input scouting data



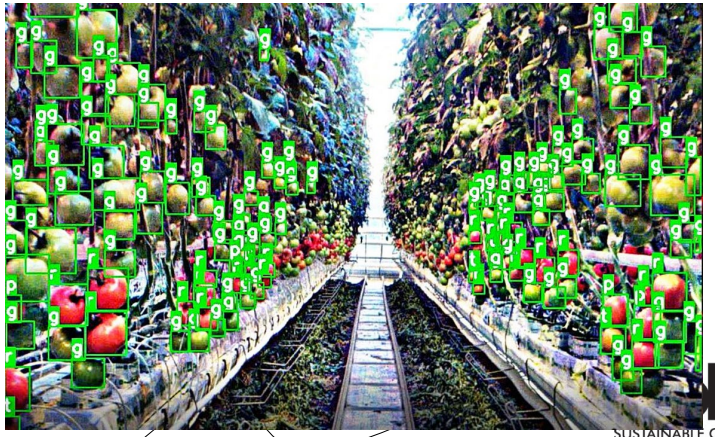
Virtual crop walk



Normalized climate maps



Fruit count



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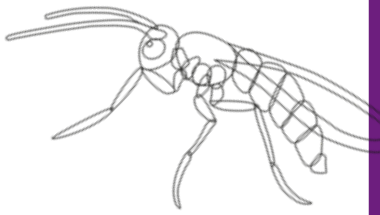
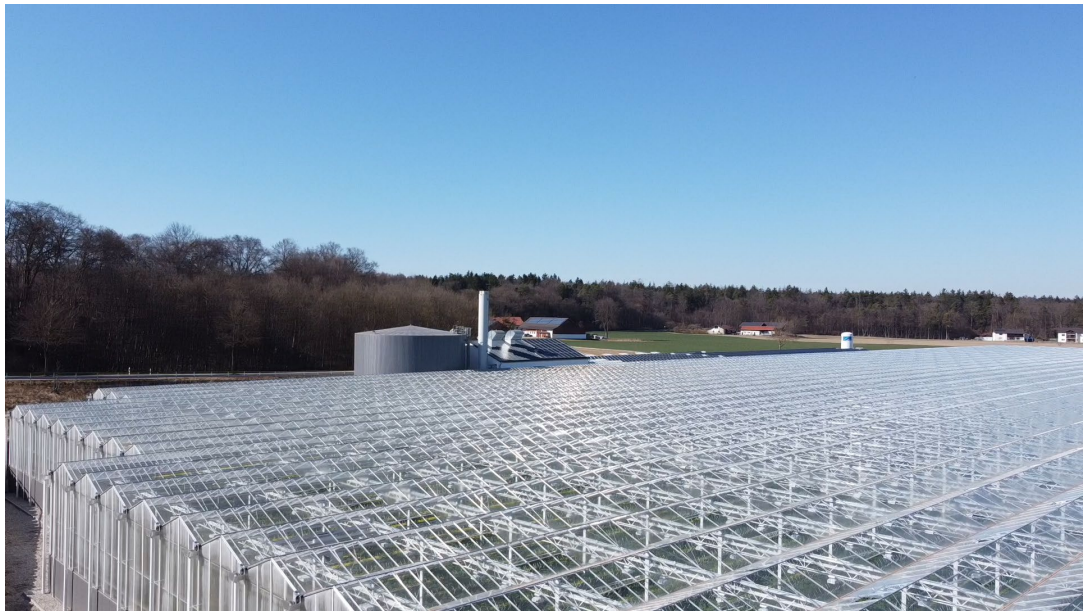
Why high tech?



- Growing companies
  - Synchronise activities across multiple locations
  - “Skilled” Labour shortage
- Strict retail limits (residue levels)
  - Increased need for precision treatments
- Energy cost pressure vs return/m²
  - Need for predictability in yield due to sharper margins
- Facilitates specialist advice from remote sources



MANY THANKS

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