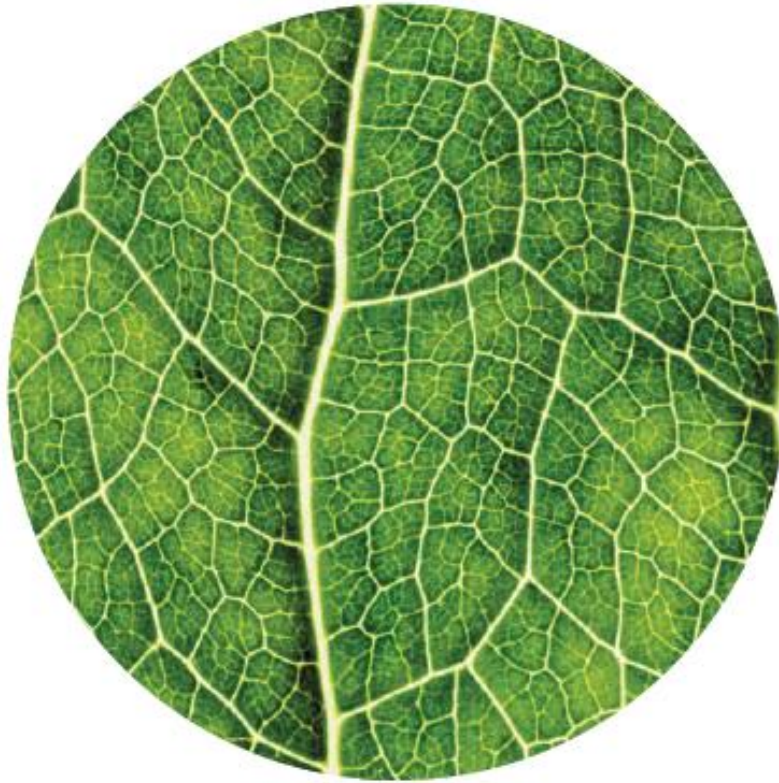




aralab

YOUR OWN CLIMATE



BIO

Plant Growth Chambers & Controlled Environment Rooms

ARALAB

ARALAB is a company specialized in designing, developing, manufacturing and servicing of **environmental chambers** and **controlled environment rooms**.

Since 1985 we have been perfecting ways to create and control **temperature, humidity, light, air flow** and many other environmental conditions.

What drives us is simple: to develop solutions that go beyond the expectations of users so customers can enjoy the **best equipment for their research and testing applications**.



Aralab is ISO:9001 certified for its Quality Management System





ARALAB BIO

Plant Growth
Tissue Culture
Arabidopsis research
Seed storage & Germination
Insect rearing
Entomology
Other life sciences applications

Aralab FitoClima chambers provide the control and flexibility to meet the evolving needs of researchers and research requirements through time.



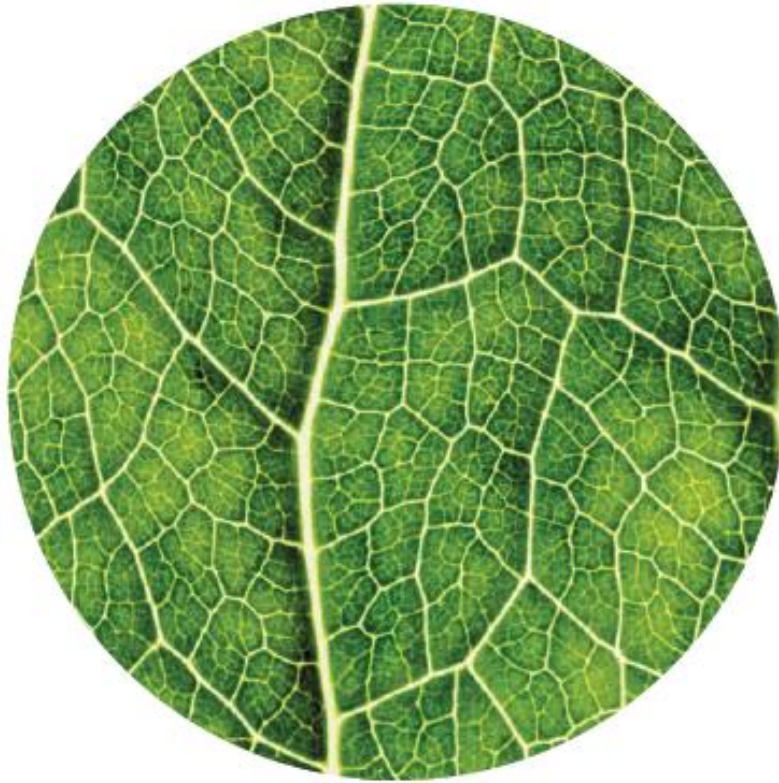
KEY FEATURES

- The most advanced and efficient technology in climate control
- Temperature, Humidity, Light intensity and Air Flow controlled with consistent precision through the years
- Adaptive future proof design with easily removable trays and height adjustable shelves
- Lighting options to suite multiple research requirements and stages of plant development
- All environmental conditions easily programmable with the new ClimaPlus® multicolor touchscreen interface
- Stainless steel shelves for maximum resistance, durability and easy cleaning
- Research protection features, with configurable high / low temperature and humidity alarms and automatic remote notifications



Edge Hill University





BIO

Plant Growth Chambers & Controlled Environment Rooms

FITOCLIMA 600 & 1200



REACH-IN CHAMBERS WITH ADJUSTABLE SHELVES AND MULTIPLE LIGHTING OPTIONS



FitoClima 600 with
standard door



FitoClima 1200 (optional double glazed glass door and
high performance lights)

Lighting options

Solutions ranging from 200 $\mu\text{moles}/\text{m}^2/\text{s}$ on each shelf, up to high performance light shelves with 1.200 $\mu\text{moles}/\text{m}^2/\text{s}$ output in a self refrigerated lamp loft.

Lamps: from fluorescent cool-white lamps, high frequency fluorescent, LEDs with fixed or adjustable spectral distribution and also combinations of fluorescent and LEDs.

Quantum light meter can be integrated for intensity control (and data logging) in μmoles , instead of percentages.

Temperature & Humidity

Light OFF: -5°C to 45°C | 40% to 95% RH

Lights ON*: 5°C to 45°C | 40% to 80% RH

* Depending on light type and intensity, humidity and temperature ranges can be diminished

Air Flow

Vertical and then laminar horizontal air flow across shelves.
Air flow speed can be adjusted between 50% and 100%

MULTIPLE LIGHTING OPTIONS (600/1200 CABINETS)



Traditional fluorescent cool-white 840



White LED for retrofitting



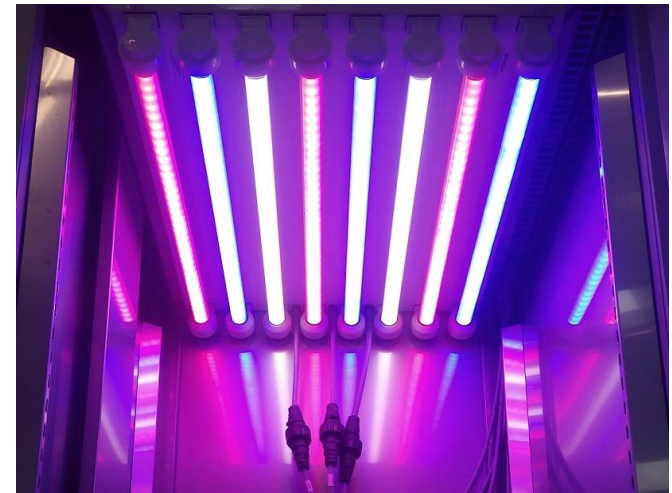
High intensity cool-white fluorescent



High performance LEDs



Adjustable spectra LEDs



Blue, White, Green, Red and Far Red LED Modules

FITOCLIMA 600 & 1200



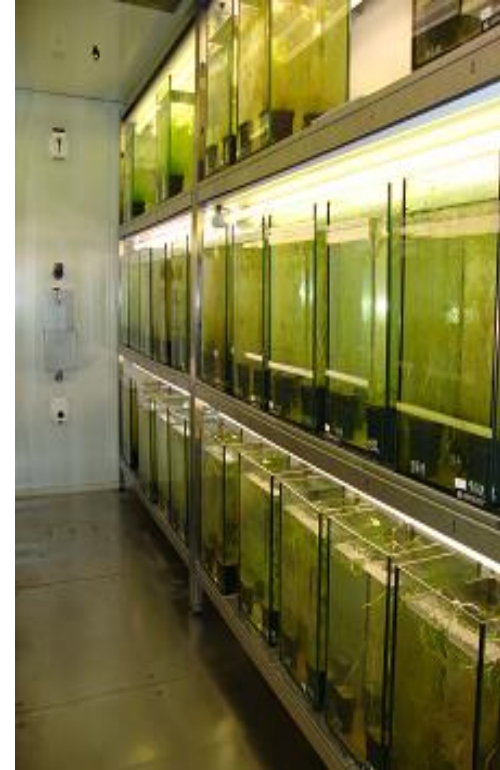
HIGHLIGHTS – VIDEO PRESENTATION



MULTI-TIER CONTROLLED ENVIRONMENT ROOMS



WALK-IN CHAMBERS WITH CENTER CORRIDOR AND MULTIPLE SHELVES WITH INDEPENDENT LIGHT CONTROL



MULTI-TIER CONTROLLED ENVIRONMENT ROOMS



CONSTRUCTION – LIGHTING - AIRFLOW



Plant growth modules

Multiple modules divided by center aisle. Each module is composed by three lamp canopies distributed vertically and three corresponding height adjustable shelves bellow the lamp canopies.

Lighting

Up to 500 micromoles/m²/s on each shelf, 10 to 100% intensity control or micromoles;

Lamps: from fluorescent cool-white lamps to full LED or combination of both.

Quantum light meters allow for light intensity at plant level at any give point.

Temperature & Humidity

Light OFF: -5°C to 45°C | 40% to 90% RH

Lights ON*: 5°C to 45°C | 40% to 80% RH

* Depending on light type and intensity, humidity and temperature ranges can be diminished

Air Flow

Horizontal laminar flow across shelves.

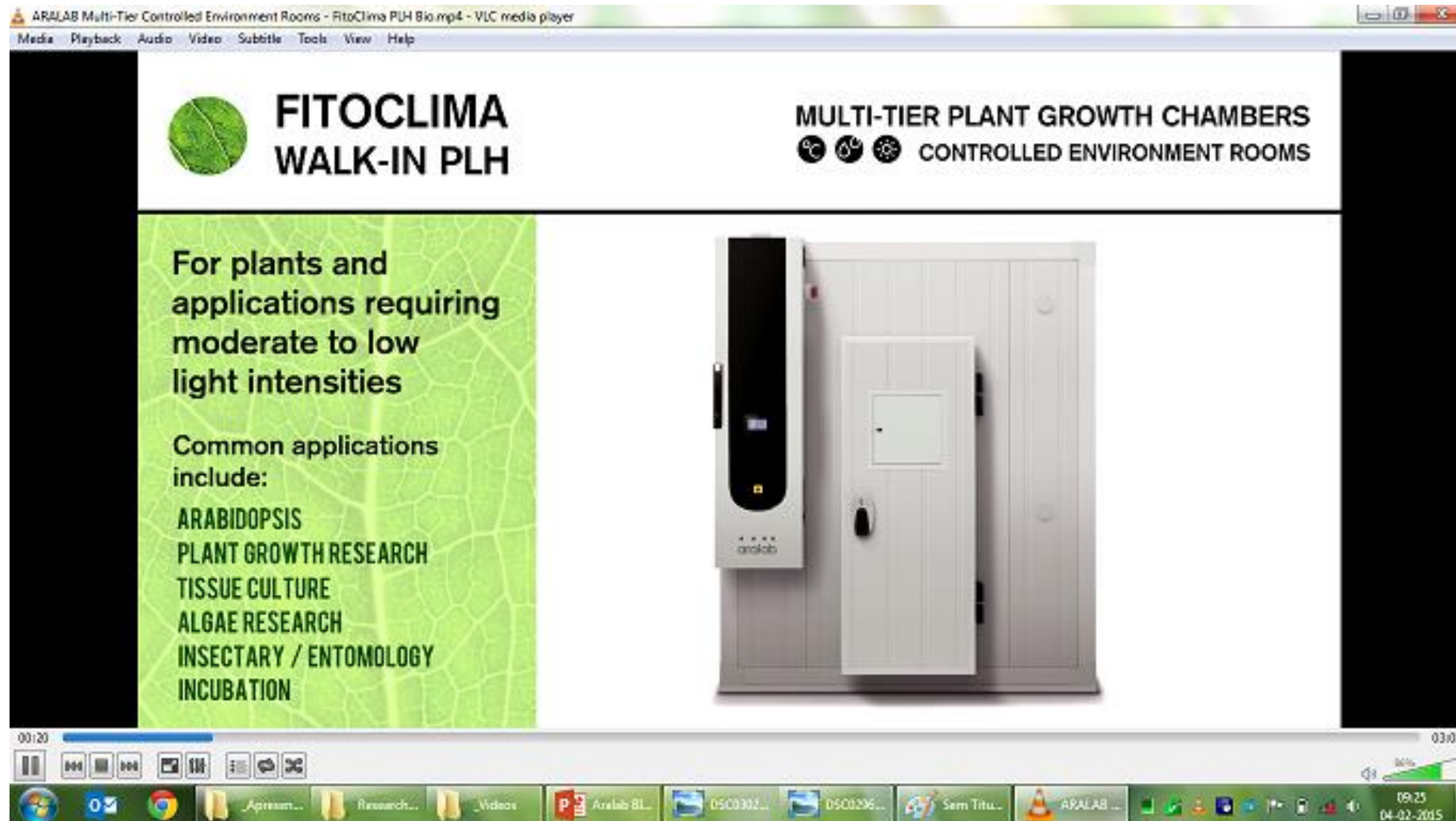
Air treatment tunnel (conditioning plenum) is located at the ceiling

Air velocity control 50 to 100%

FITOCLIMA MULTI-TIER CERs



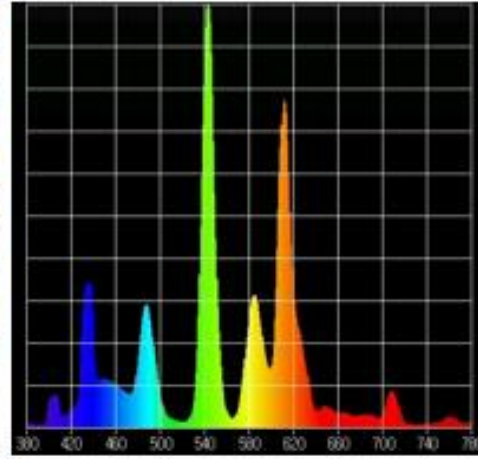
HIGHLIGHTS – VIDEO PRESENTATION



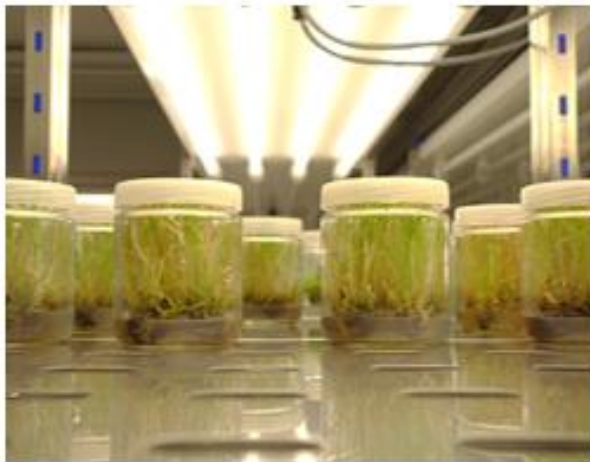
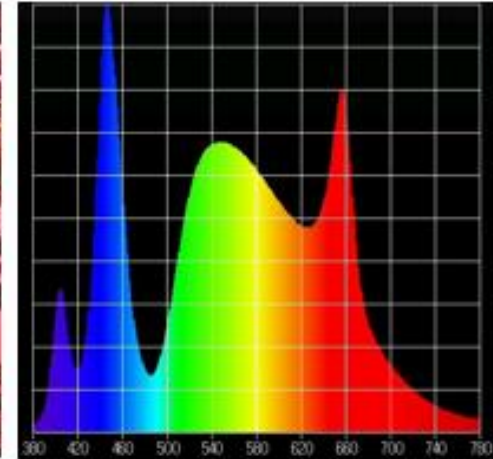
RESEARCH LIGHTS (MULTI-TIER C.E. ROOMS)



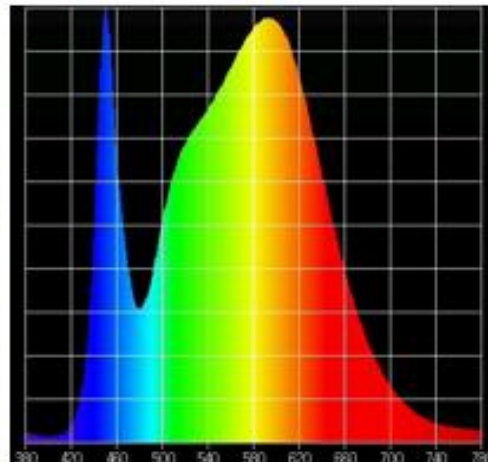
Traditional cool-white 840 fluorescent tubes



Research LEDs from Valoya (other spectral options available)



White light LED tubes for plant growth and in-vitro / tissue culture applications

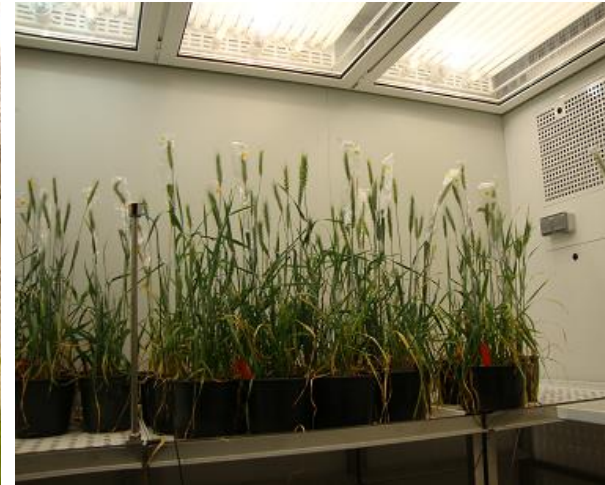


Integration of LEDs according to customer specifications

SINGLE-TIER CONTROLLED ENVIRONMENT ROOMS



WALK-IN CHAMBERS WITH HIGH PERFORMANCE LIGHT INTENSITIES AND A SINGLE GROWTH TIER



SINGLE-TIER CONTROLLED ENVIRONMENT ROOMS



CONSTRUCTION – LIGHTING – AIRFLOW



Growth modules / Growth Area

The entire chamber floor can be considered as growth area

Stainless steel tables and height adjustable trays provide 3 growth heights

Lighting

Up to 1,100 micromoles/m²/s at 1,000mm from lights.

Lighting structure is composed by self cooled light modules on the ceiling. Each light module is composed by new gen metal halide lamps. LED or other are optionally available.

Internal quantum light meter allows for light intensity management at any specific point

Temperature & Humidity

Light OFF: -5°C to 45°C | 40% to 90% RH

Lights ON*: 5°C to 45°C | 40% to 80% RH

* Depending on light type and intensity, humidity and temperature ranges can be diminished

Air Flow

Upward direction through perforated floor

Recirculated continuously by back wall plenum.

Air velocity adjustable from 50 to 100%

SINGLE-TIER CONTROLLED ENVIRONMENT ROOMS



HIGHLIGHTS – VIDEO PRESENTATION



NEW GENERATION CERAMIC METAL HALIDE



HIGH PERFORMANCE LIGHTING

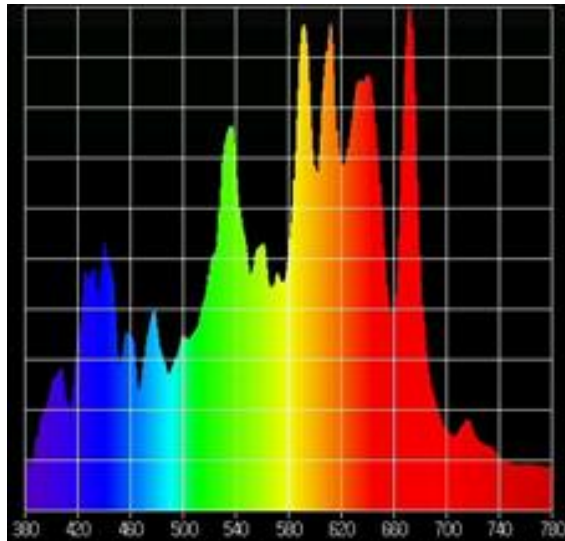
Ceramic Metal Halide with dimming function

1.100μmoles (78.000 Lux) at 1m from lights (ceiling)

Up to 70% more efficiency than older Metal Halide

Life span of additional 10.000 hours

2 versions with more Blue or more Red spectrum



FitoClima 10.000 HP with double CMH luminaire

OTHER LIGHTING SOLUTIONS



Aralab works with world leading manufacturers and suppliers to provide customers with the best available research lights.

Aralab and it's partners can provide:

- Adjustable light intensities on all cabinets and rooms to simulate day, night, dusk, dawn and clouding
- LED solutions with fixed or adjustable (configurable) spectral distribution
- Multiple spectral distribution configurations with different LEDs or combination of Fluorescent + LEDs
- The most efficient (energy saving) solutions with the most advanced electronic ballasts and light types

OSRAM

PHILIPS

Valoya



heliospectra



HORTILUX
SCHRÉDER

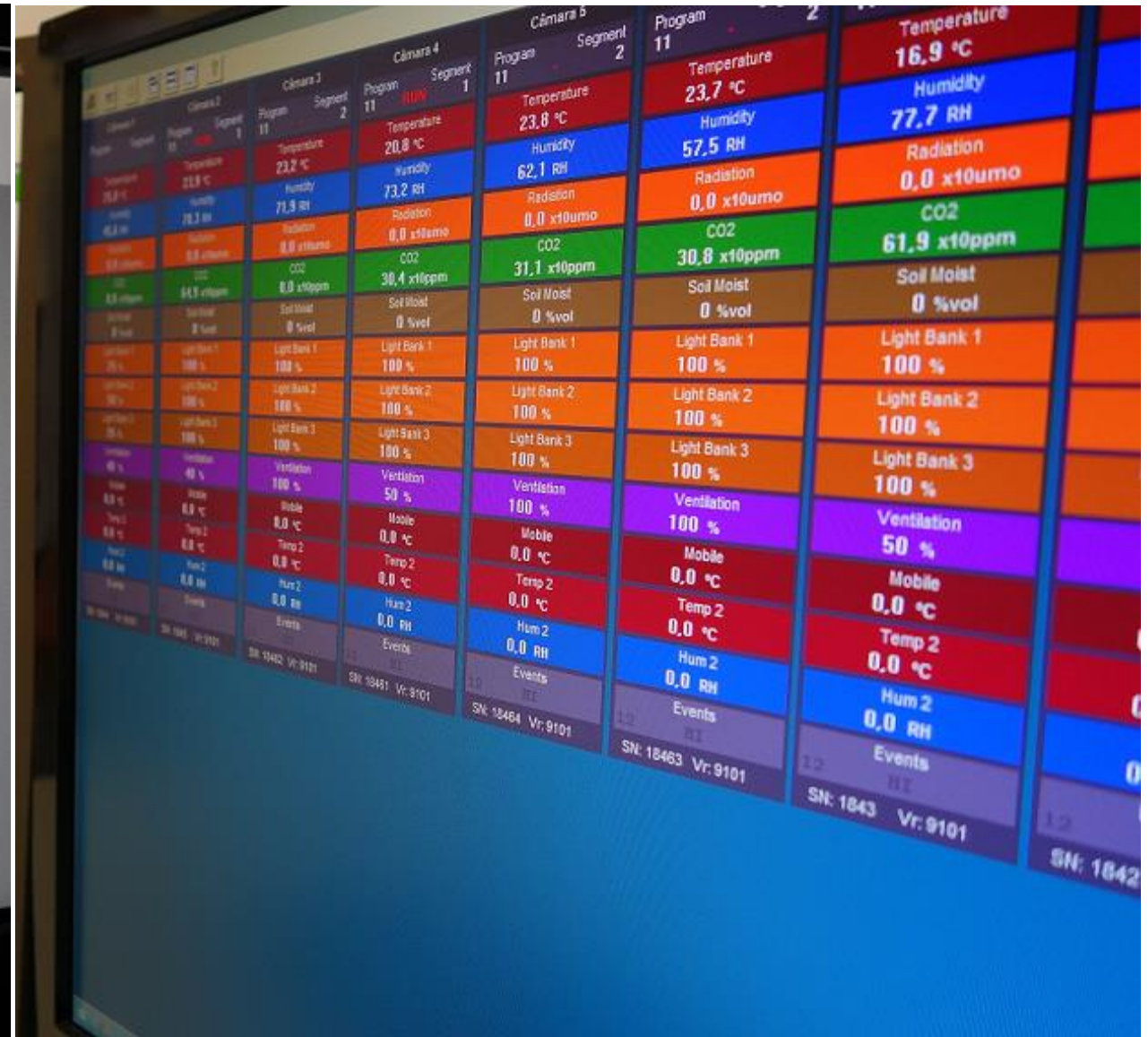
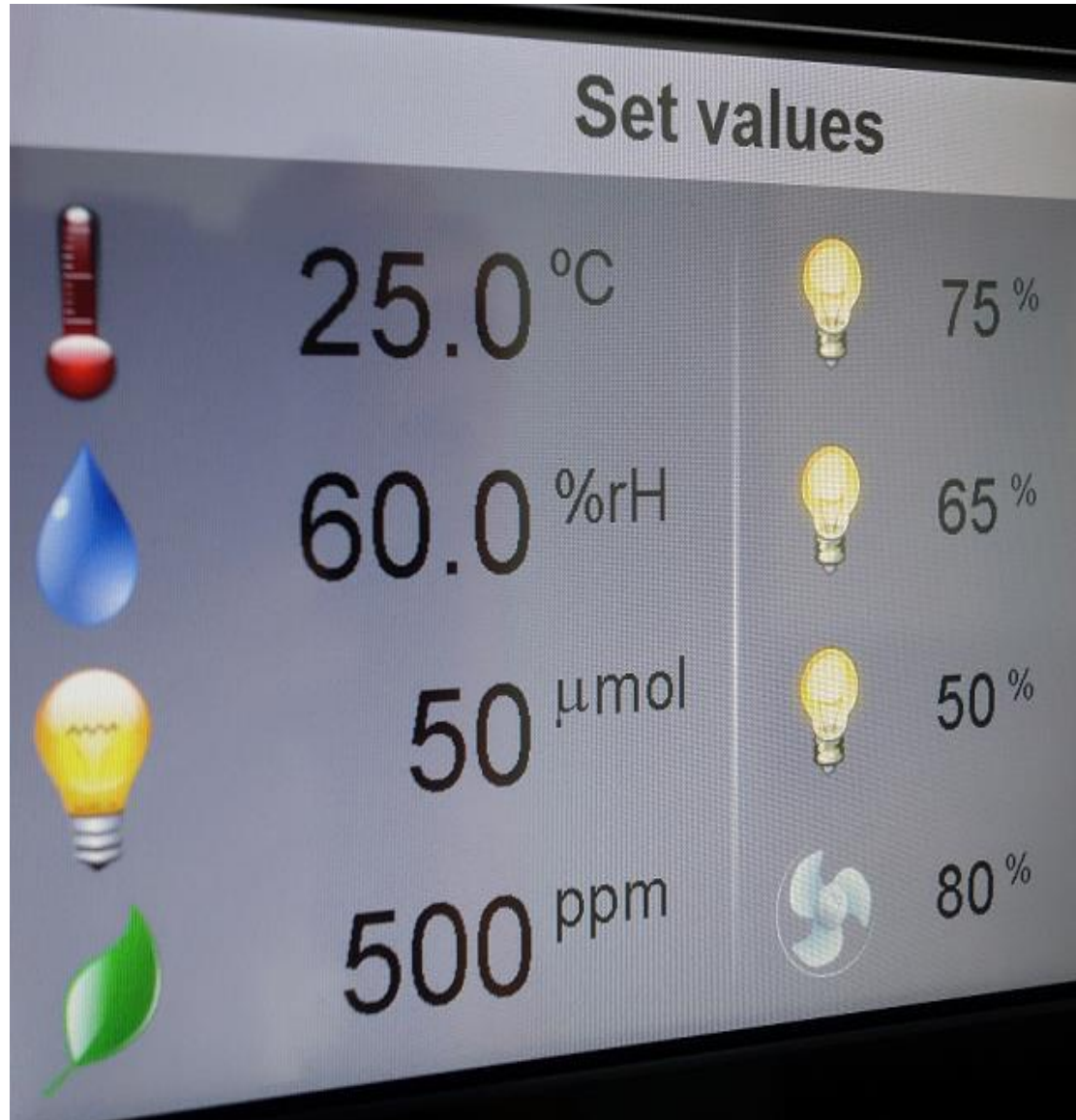
CLIMAPLUS® CONTROLLER



Intuitive touch-screen controller allowing researchers to easily recreate field-like conditions for their plants.

- Controls every environmental variable available for any specific FitoClima model (Temperature, Humidity, Lights, Airflow, CO2, Dew and connected external devices)
- Friendly program editor for creating 32 programs of 24 segments each, allowing the design of complex and comprehensive climatic simulation programs
- Research protection features with multiple configurable alarming functions (temperature humidity, lights, doors, power, and more)
- Non-volatile memory, with 6 months storage of logging data
- Graphical representation of research parameters
- PLC exclusively developed by and for Aralab

CLIMAPLUS® CONTROLLER & FITOLOG® SOFTWARE




CLIMAPLUS® - Recreating field-like conditions


Temperature

Humidity


CO2




22.0 °C




60.0 %rH




800 ppm




80 %




80 %



80 %



50 %



OFF


Light Intensity

Air Flow


Events

Watering / Nurturing function


(with timer or with soil moisture sensors)




OFF




0 sec




0 min




0 %vol



OFF



OFF



OFF

Additional Events

Dew / Fog / Mist simulation

CLIMAPLUS® - Recreating field-like conditions

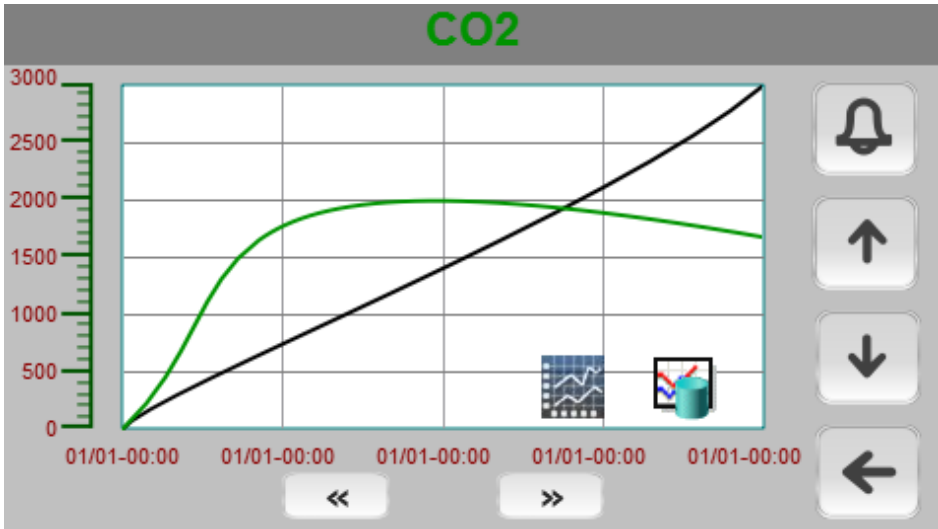
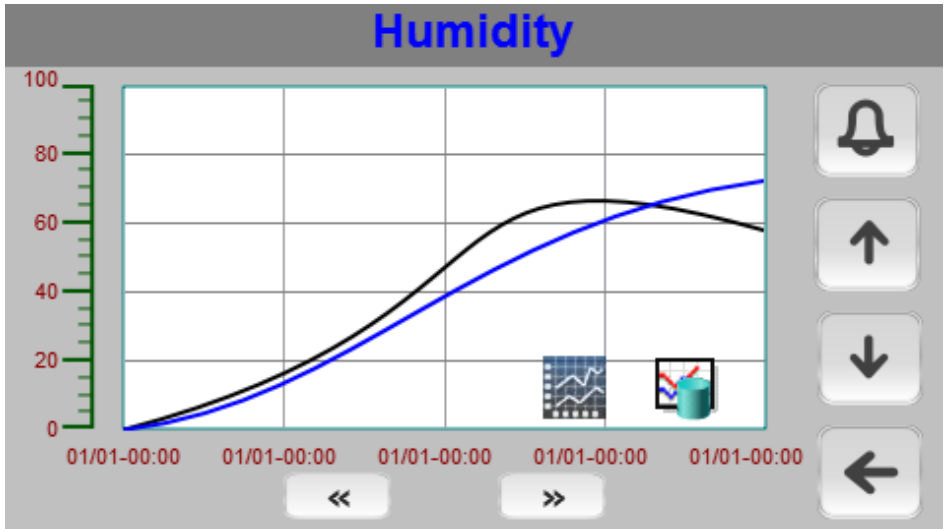
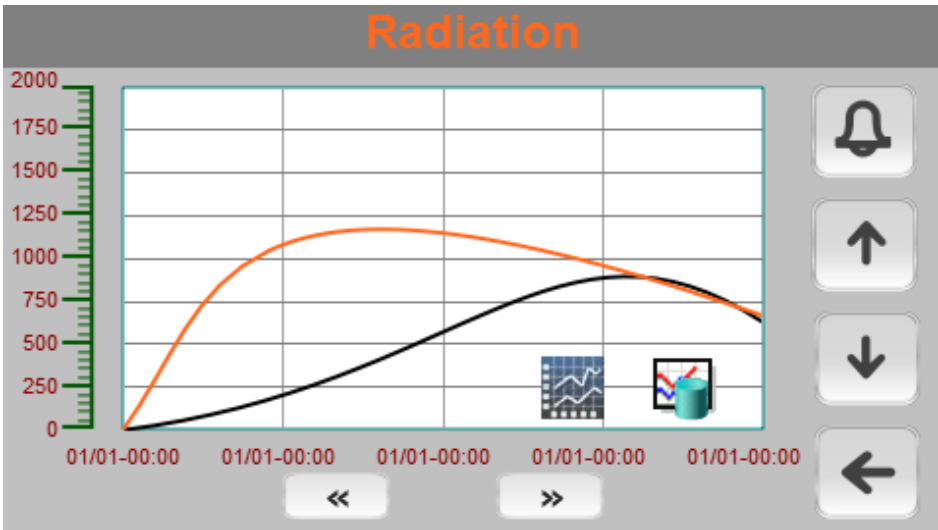
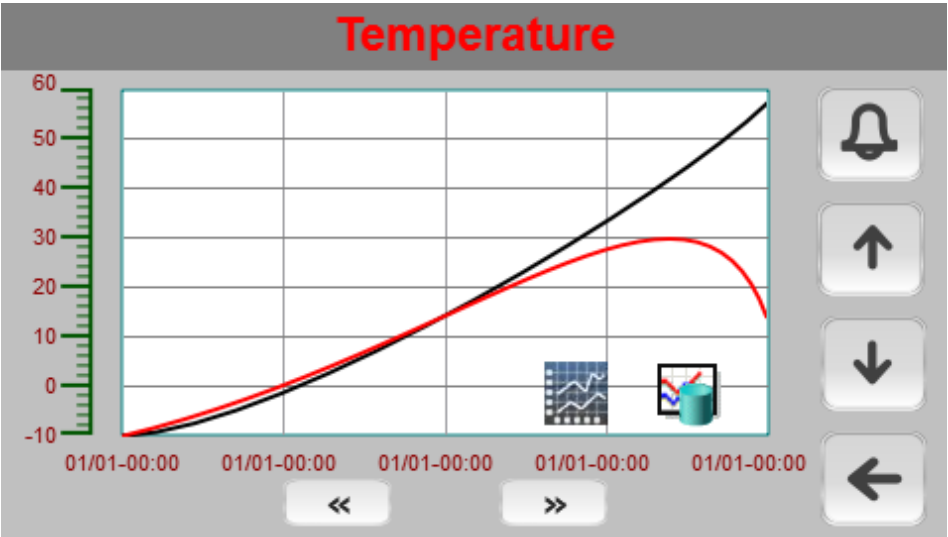


The goal is to enable researchers to mimic the same conditions plants find in the field.

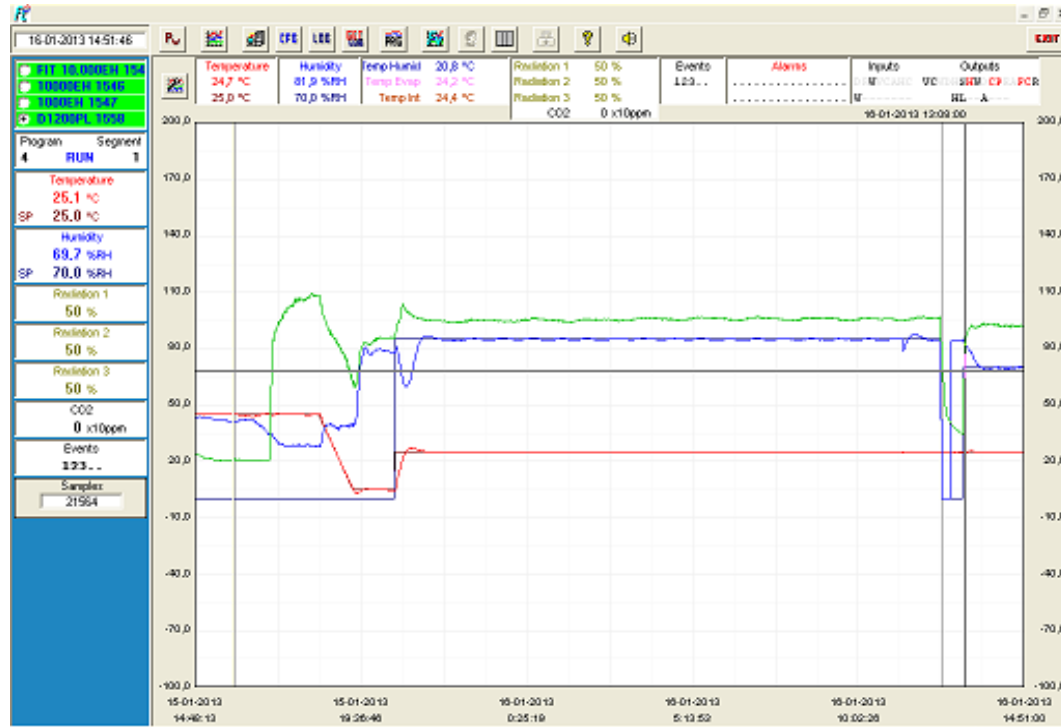
Detailing programming will allow simulations of:

- Day / Night cycles
 - Dusk and Dawn
 - Seasons of the year
 - Morning dew
 - Light breeze and wind
 - Fogging situations
- (and more....)

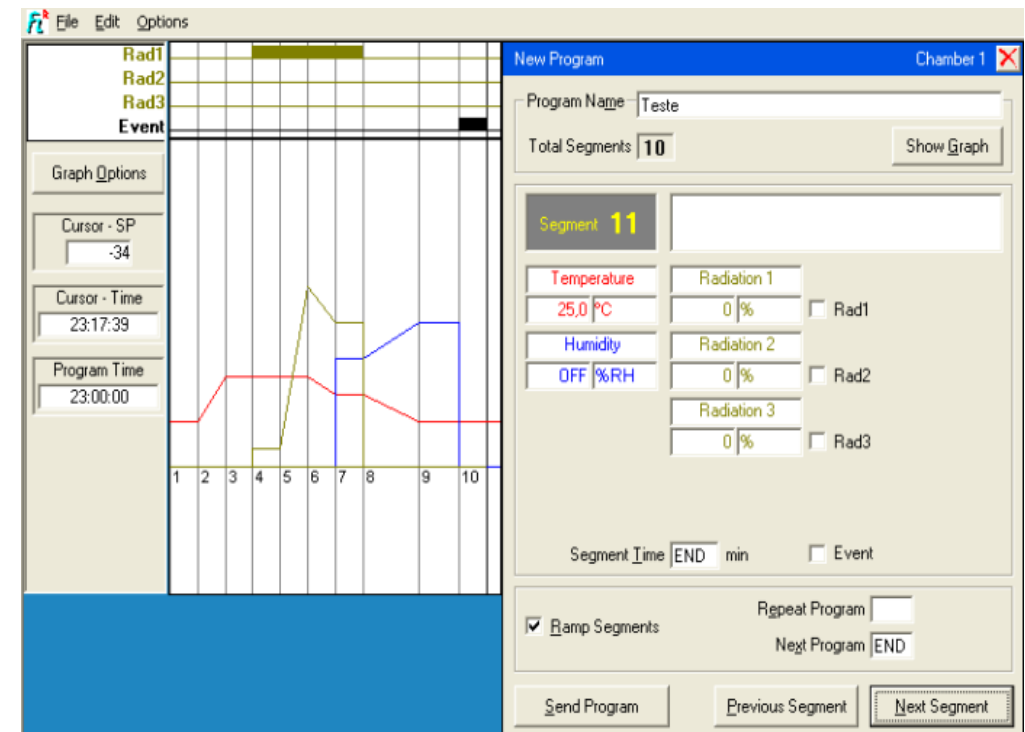
CLIMAPLUS® - Recreating field-like conditions



FITOLOG® - Software Pack



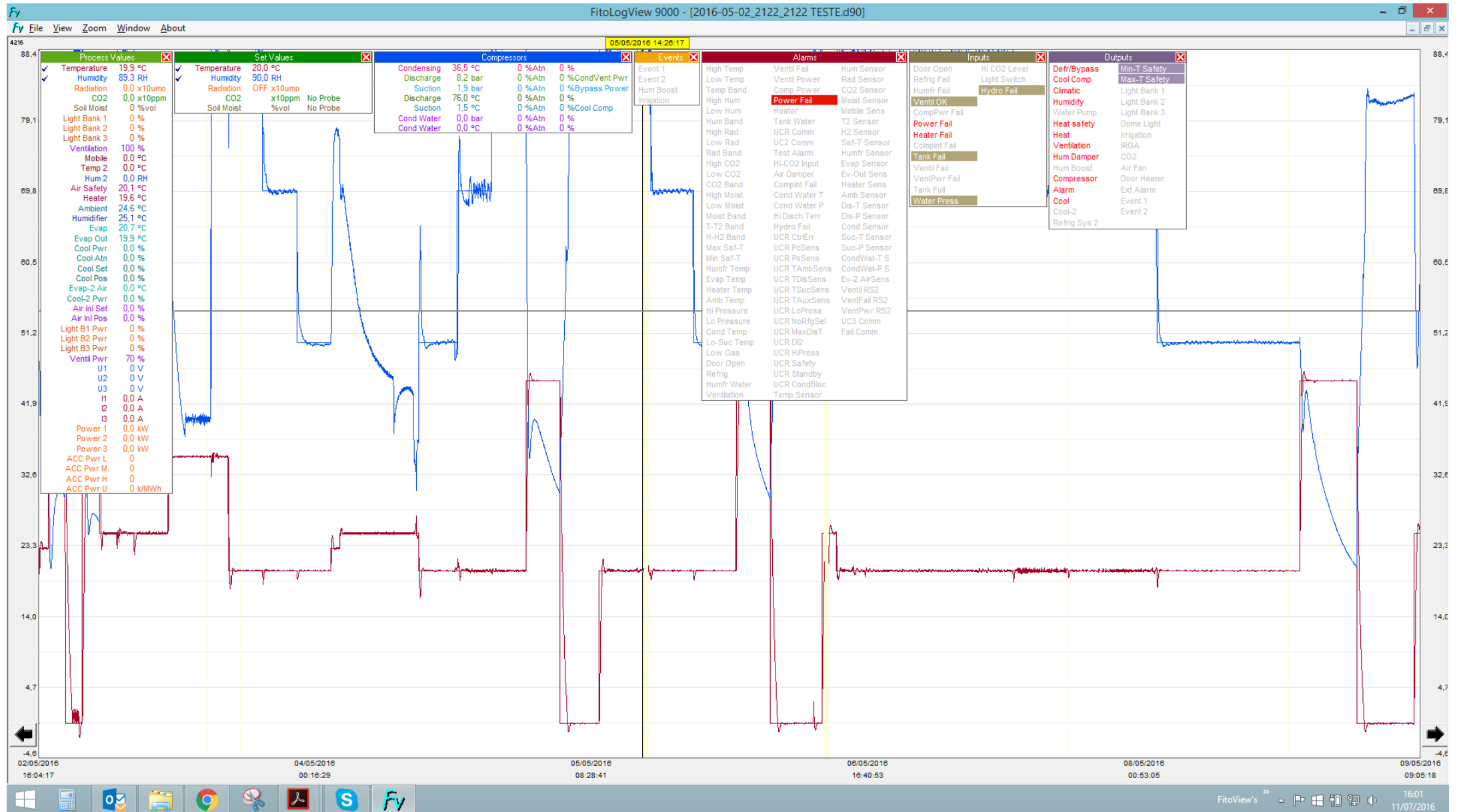
FitoLog and FitoLogView : Records and displays in real time all data and details related to the set-points, running variables and equipment behaviour. It also retrieves information about the active components of the chamber, running processes, errors, alarms and allows the configuration of periodic or alarm triggered remote notifications (by email or SMS, depending on existing connections and accessories).



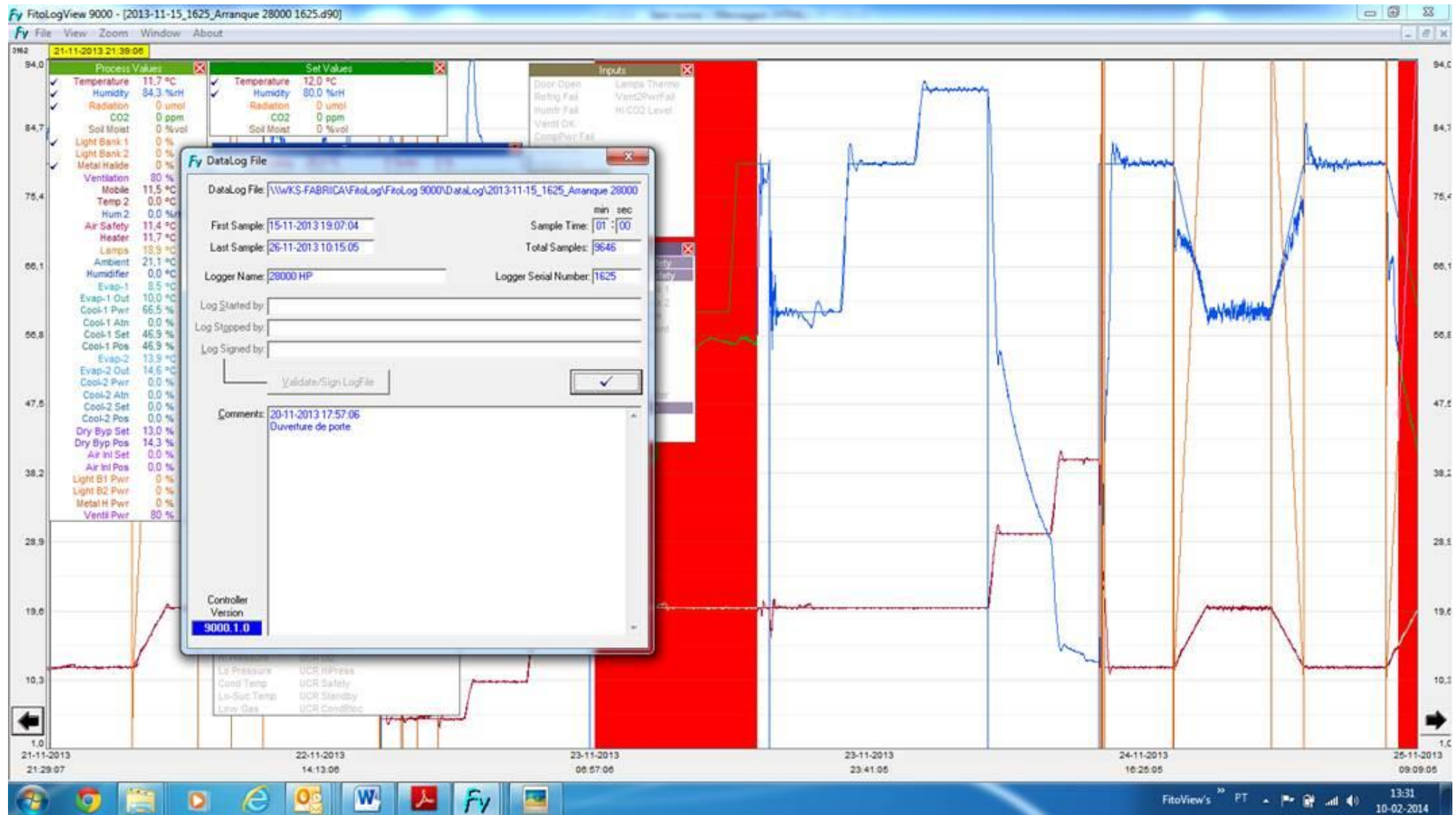
FitoProgram: This application simplifies the creation of programs and their integration on the chamber ClimaPlus controller. Easy create Environments that simulate days, nights, wind, clouding, increased CO2, and so on!

Research secured with alarms, notifications, fast diagnostics and prompt troubleshooting: With **FitoLog** it is possible to gather data from each of the chambers systems, which makes it a very useful tool to diagnose any necessary maintenance. This tool works as the “black box” of the equipment, giving Aralab technicians the necessary data to remotely carry out a fast and efficient diagnostic. All that is needed is a FitoLog file.

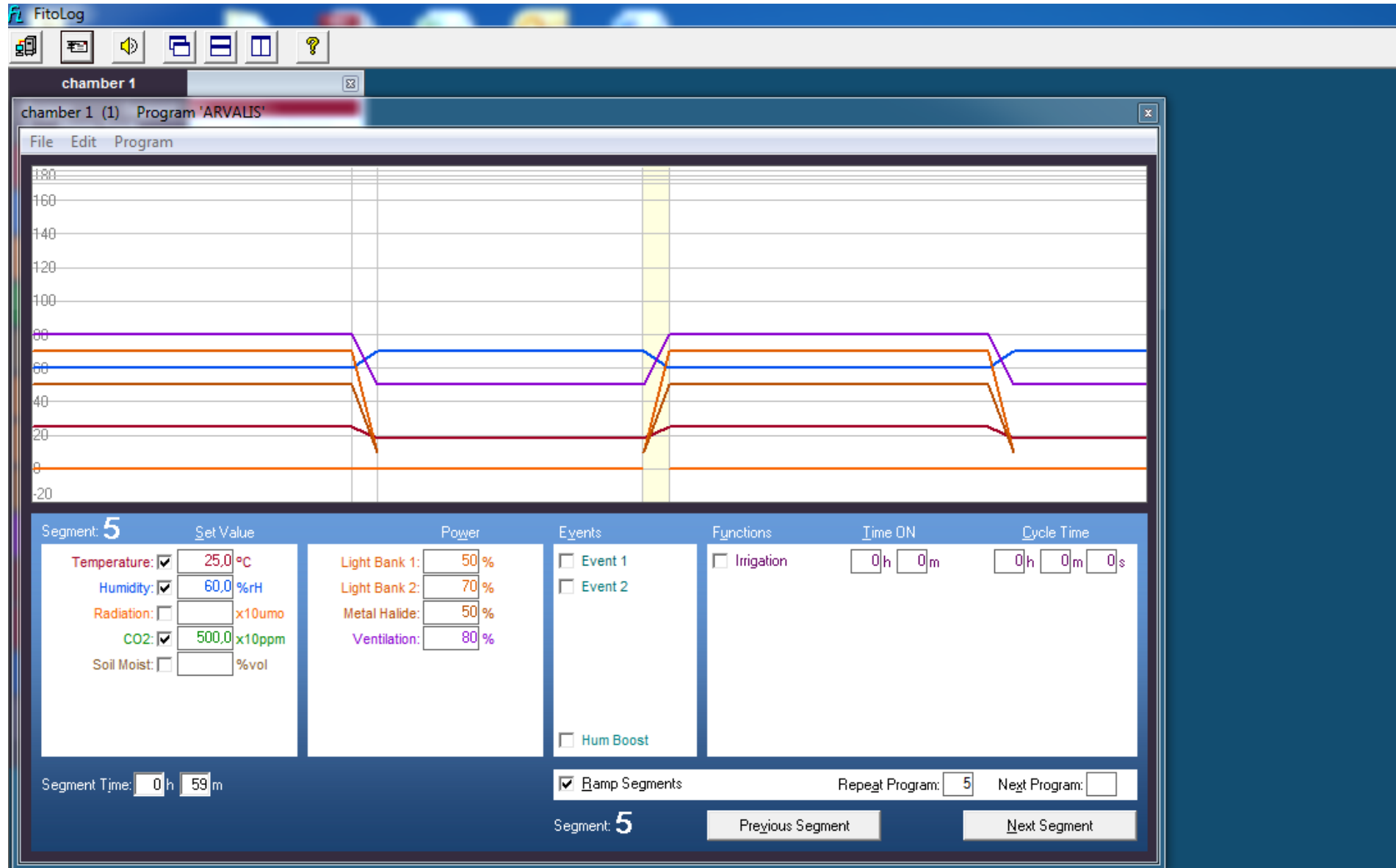
FITOLOG® - Equipment Status



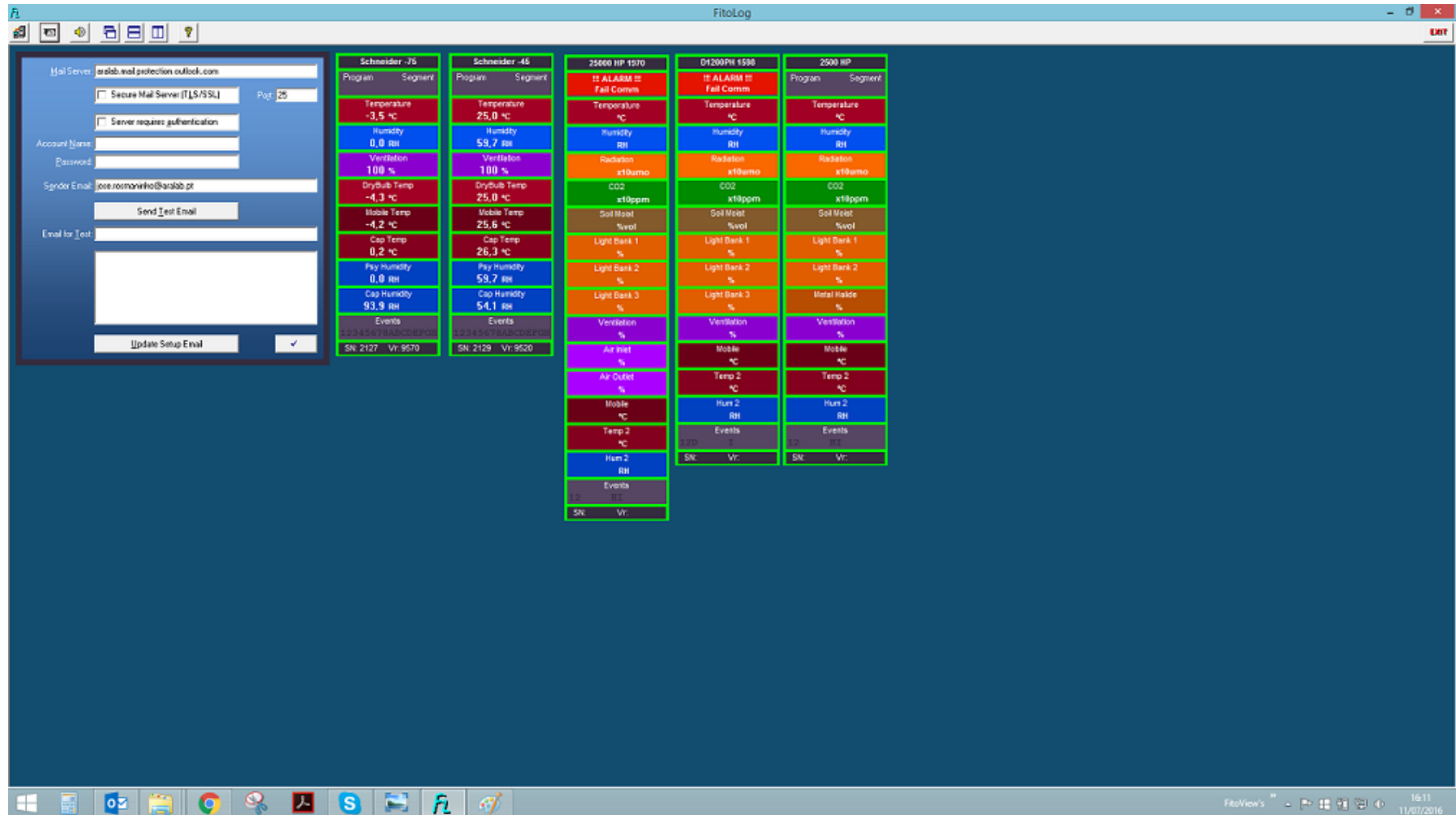
FITOLOG® - Saving FitoLog User Notes



FITOLOG® - Creating Programs easily



FITOLOG® - Automatic Notifications





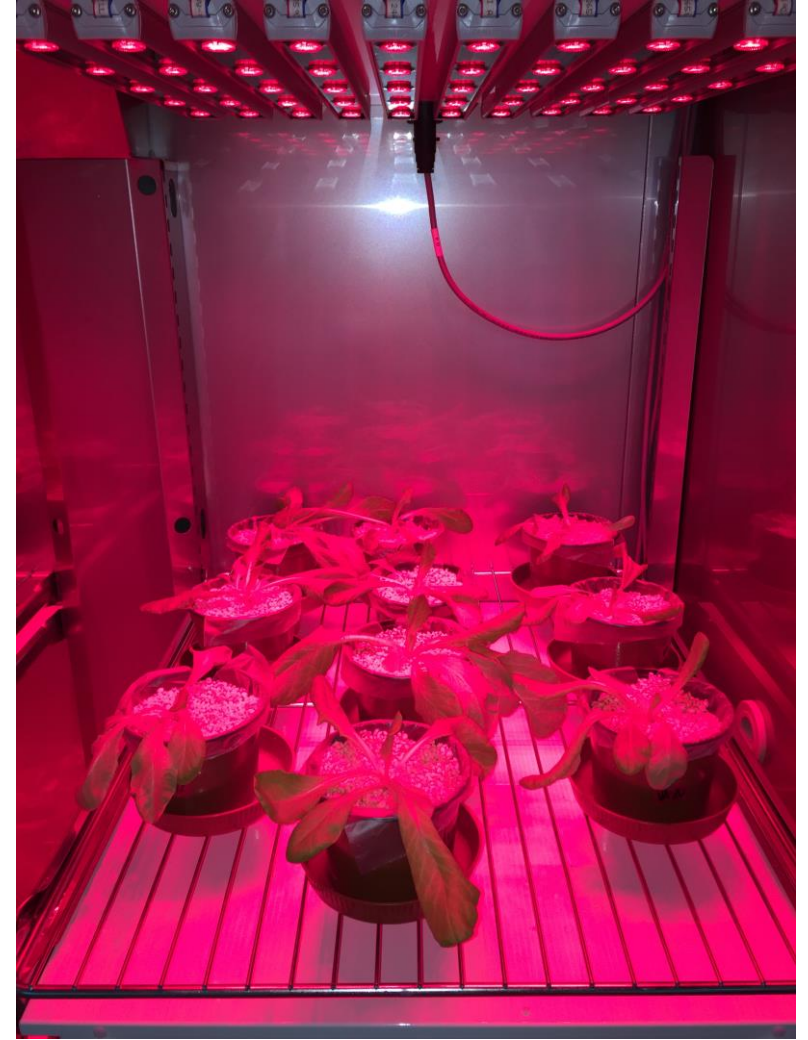
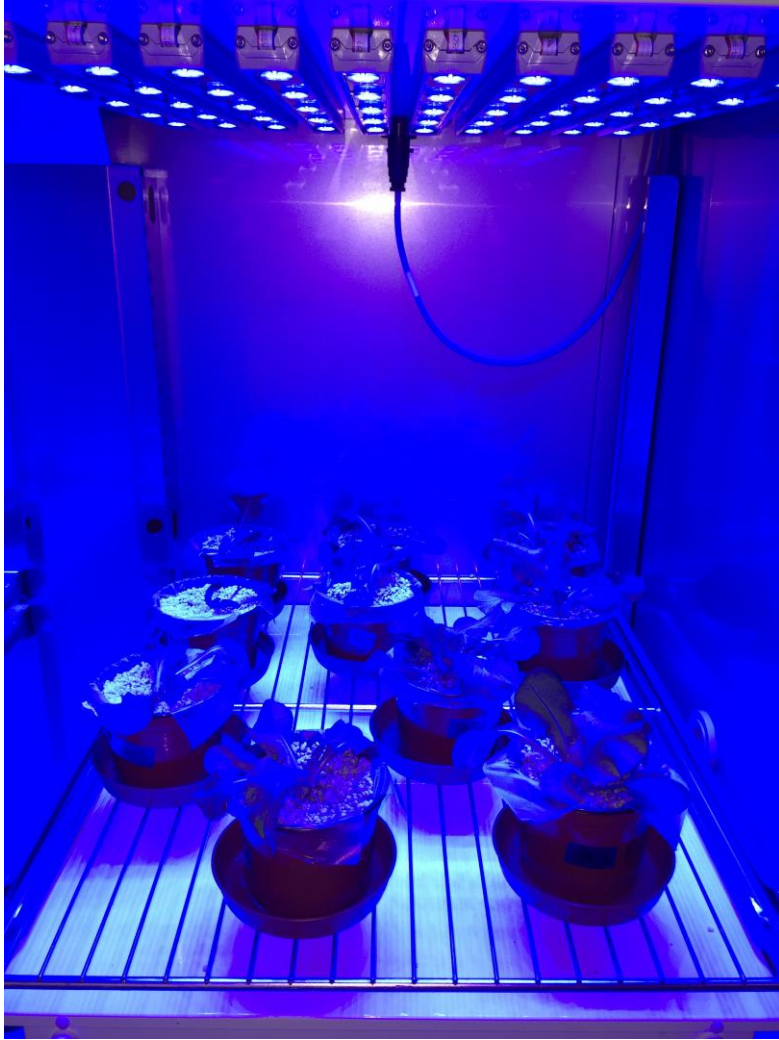
BIO

Recent Projects in Plant Growth Research

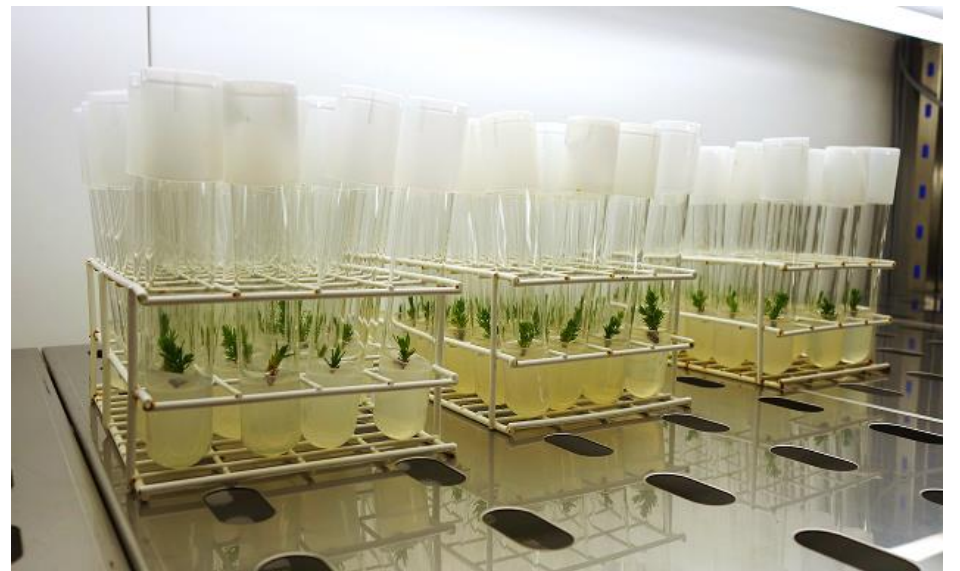
SPECIAL LED CHAMBERS FOR STUDYING WAVELENGTH IMPACT



SPECIAL LED CHAMBERS FOR STUDYING WAVELENGTH IMPACT



TISSUE CULTURE ROOMS



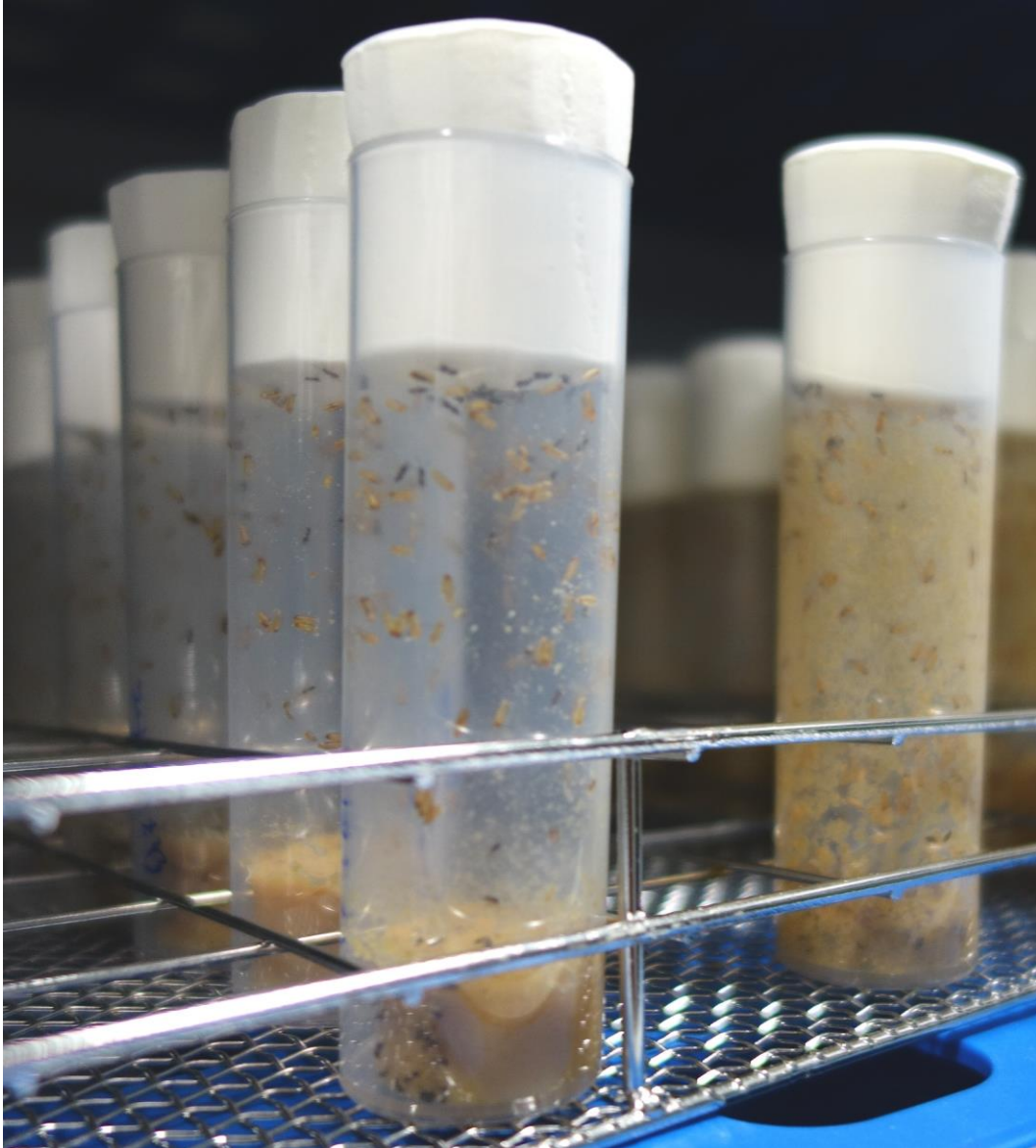
TISSUE CULTURE ROOMS



INSECT REARING – DROSOPHILA RESEARCH ROOMS



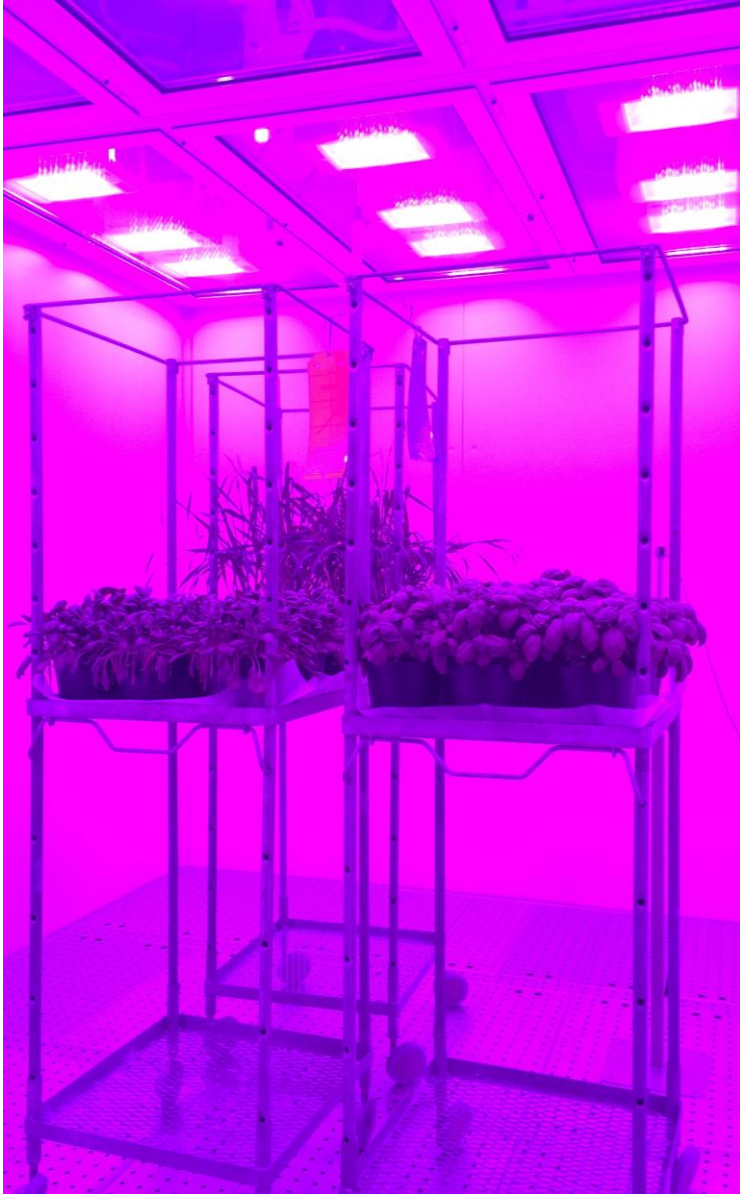
INSECT REARING – DROSOPHILA RESEARCH ROOMS



AGRICULTURE RESEARCH FACILITY – 12 HIGH PERFORMANCE ROOMS



AGRICULTURE RESEARCH FACILITY – 12 HIGH PERFORMANCE ROOMS



INDOOR VERTICAL FARMING – PLANT RESEARCH AND PLANT PRODUCTION



INDOOR VERTICAL FARMING – PLANT RESEARCH AND PLANT PRODUCTION



[More about Grow To Green](#)





YOUR OWN CLIMATE
Our main goal

Thank you for your time!

Find out more:



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T: +351 219 154 960

