



OPTIMISE THE CLIMATE OF YOUR GREENHOUSE PROJECT

Check our website [HORTINERGY.COM](https://hortinergy.com)

contact@hortinergy.com

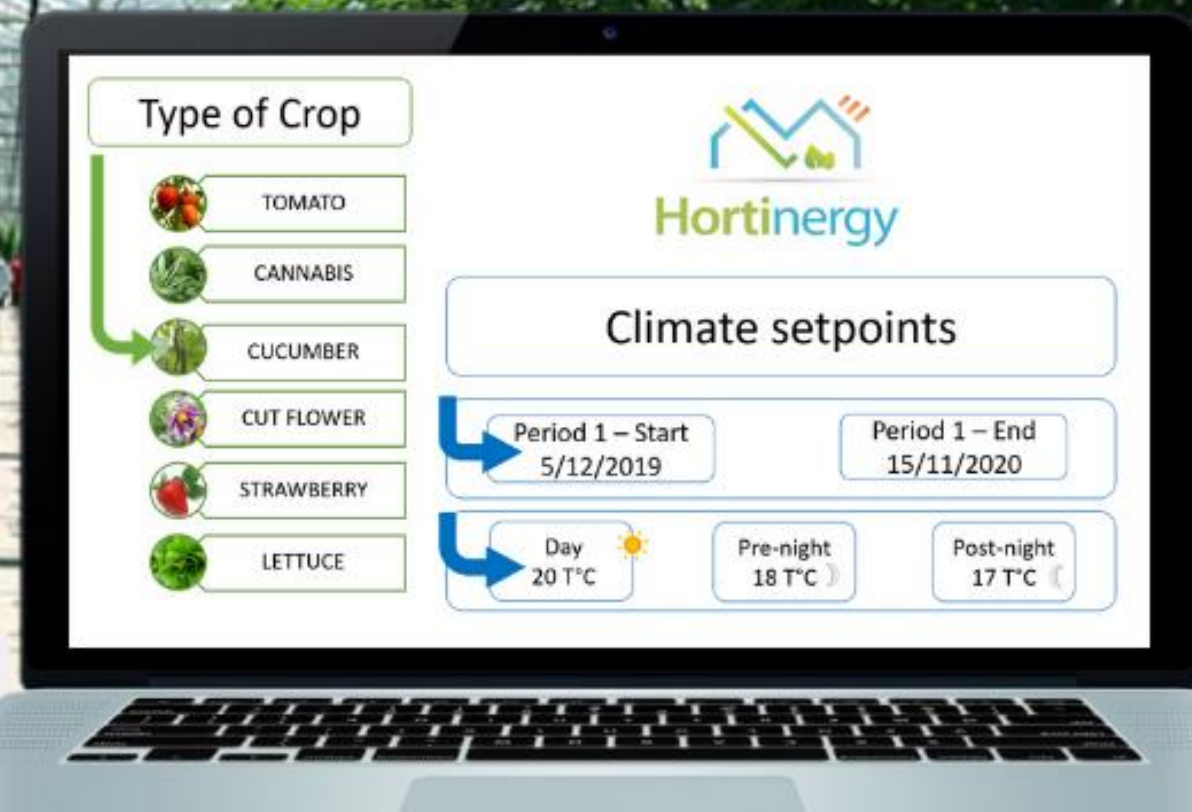
HORTINERGY : Climate modelling software

Compare climate sets

Optimise your climate

Increase profits

WWW.HORTINERGY.COM





Hortinergy – Climate modelling and analysis models and analyses the climate of a greenhouse anywhere worldwide to quantify and optimise both inputs and climate

This **decision-making tool** lets you:

- Model the climate inside the greenhouses anywhere worldwide
- Analyze the results according to your requirements
- Compare scenarios thanks to an online interface

Really useful for:

- preliminary construction project
- renovation
- new cultivation method



Brand new inputs related to climate control and plants:

- Shade and blackout climate screens can be regulated and modelled
- Ventilation, humidification, dehumidification:
 - Closed and semi-closed greenhouses
 - Pad and fan
 - Natural ventilation including insectproof net for vents
- Assimilation light (LED, HPS...)

Main output: climate inside the greenhouse on an hourly basis:

- Temperature
- Relative humidity / Humidity deficit
- Solar radiation and PAR including assimilation lighting
- CO₂ concentration



Hortinergy
Climate analysis for
greenhouse project

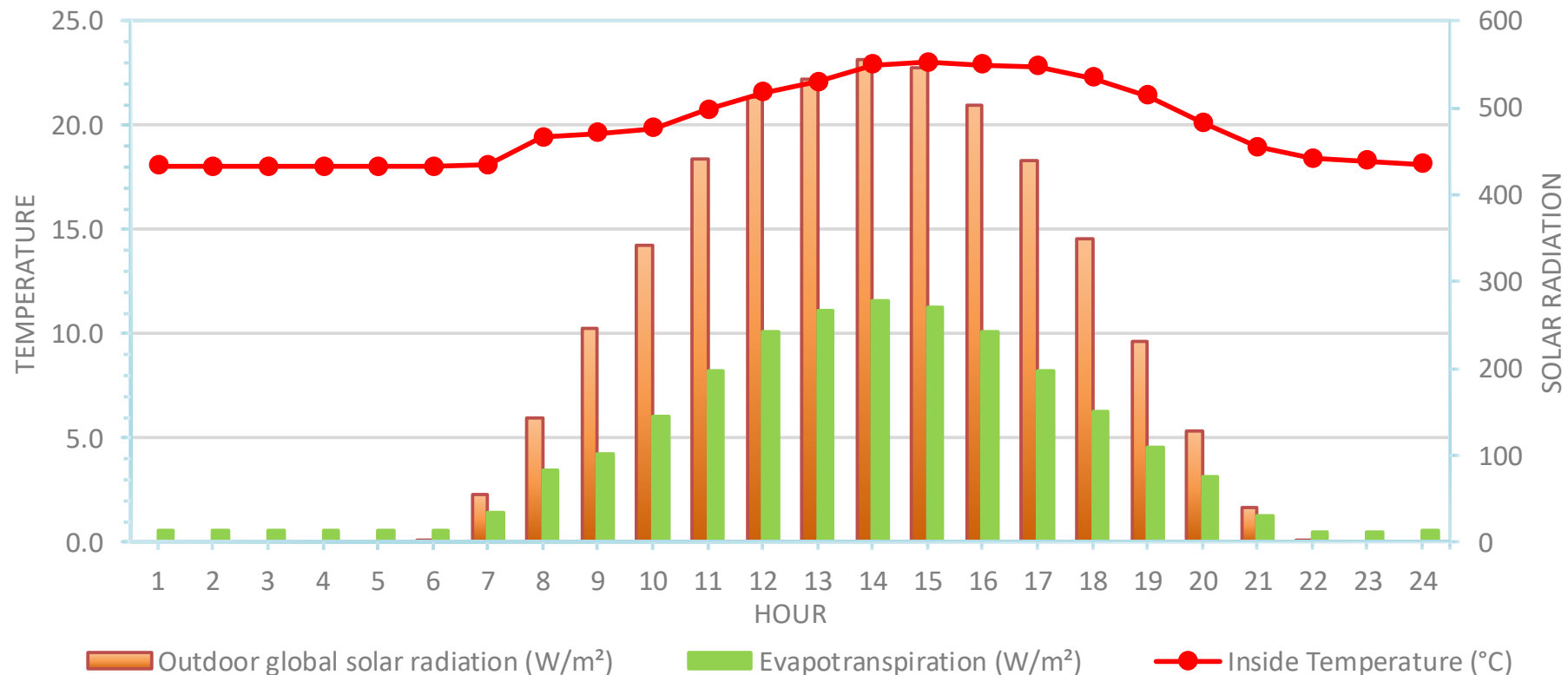
A comprehensive analysis based on hourly climate modelling:

- **PAR** reaching canopy and **assimilation light** required to reach DLI (Day Light Integral)
- Horizontal **temperature gradient** with pad & fan
- **Match light/temperature** during production cycle
- Estimation of **Greenhouse Gas Emitted** (g CO₂/m²) ...

Report and analysis

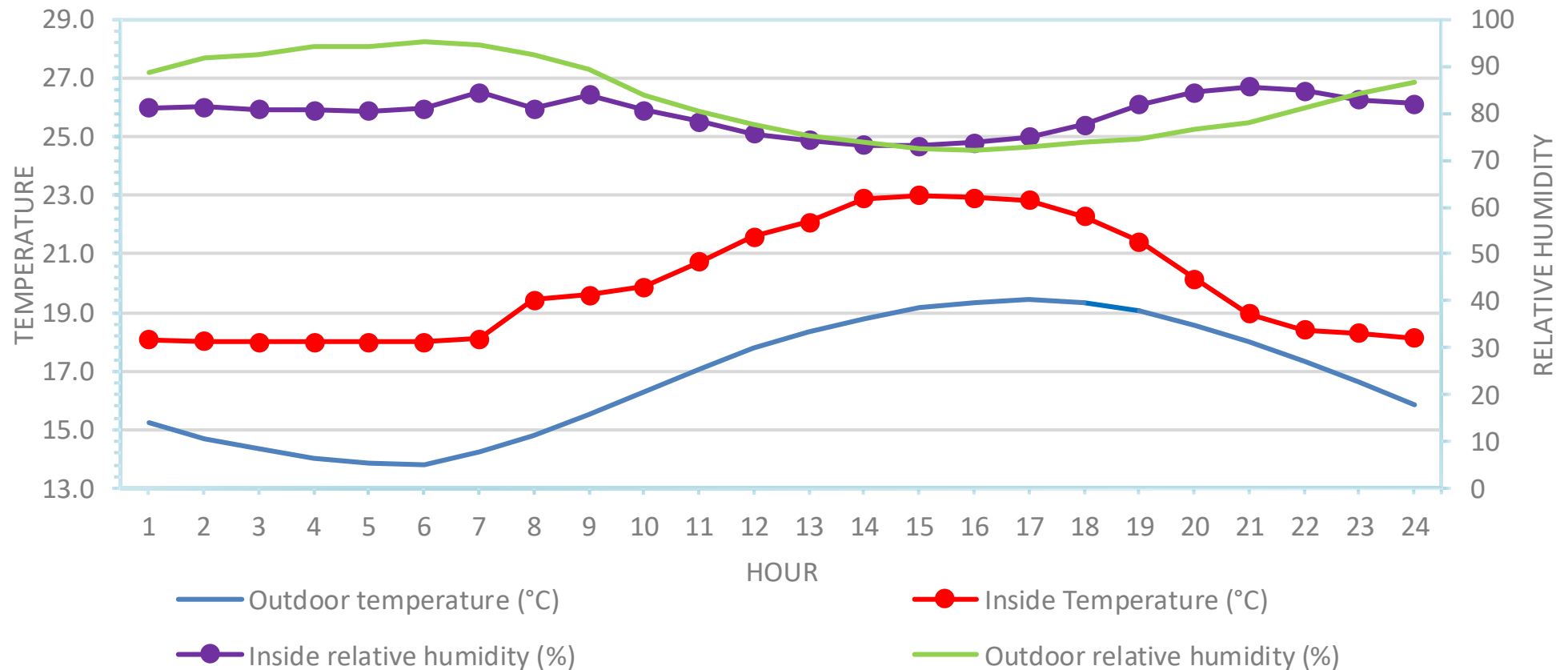
Indoor climate simulation (1/2)

Find detailed charts of **the indoor climate for typical days** for different months of the year



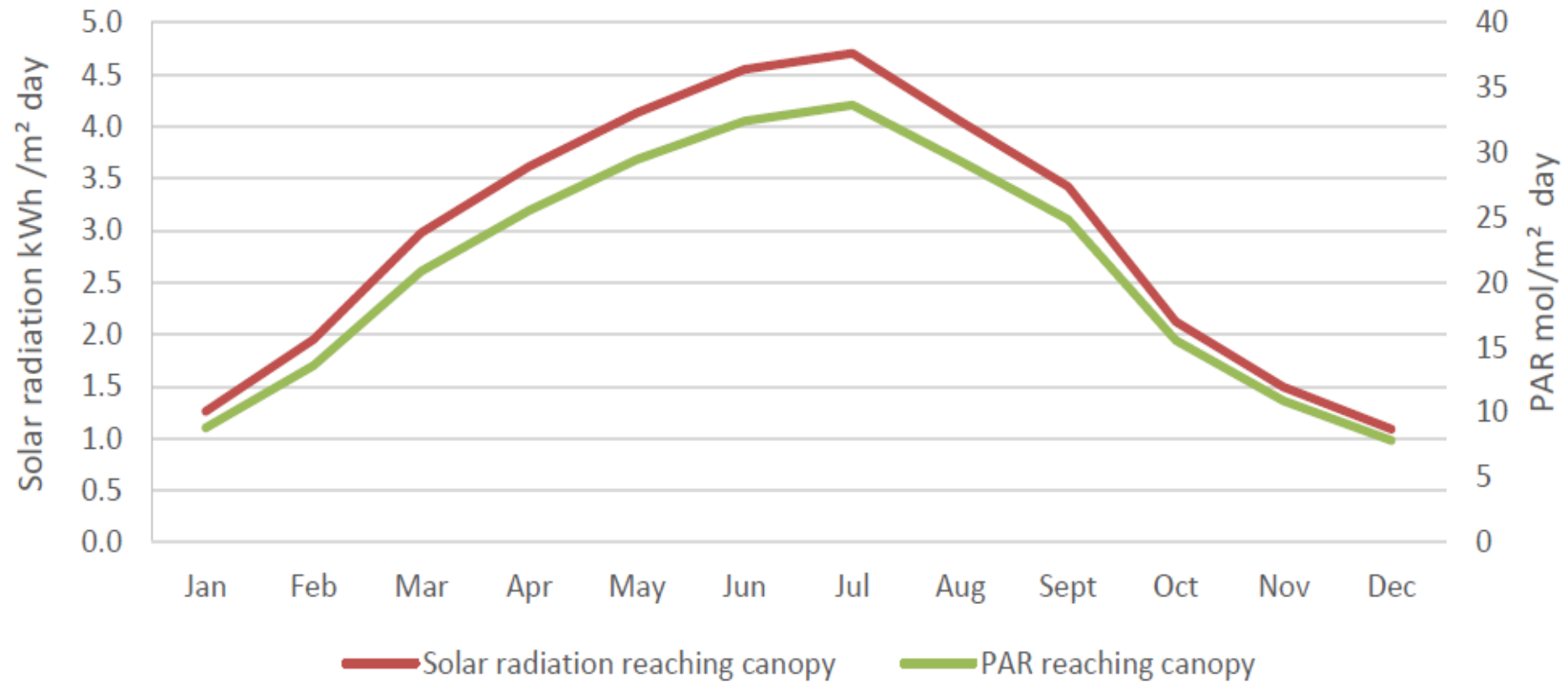
Indoor climate simulation (2/2)

Indoor climate for typical days: **Temperature and relative humidity**



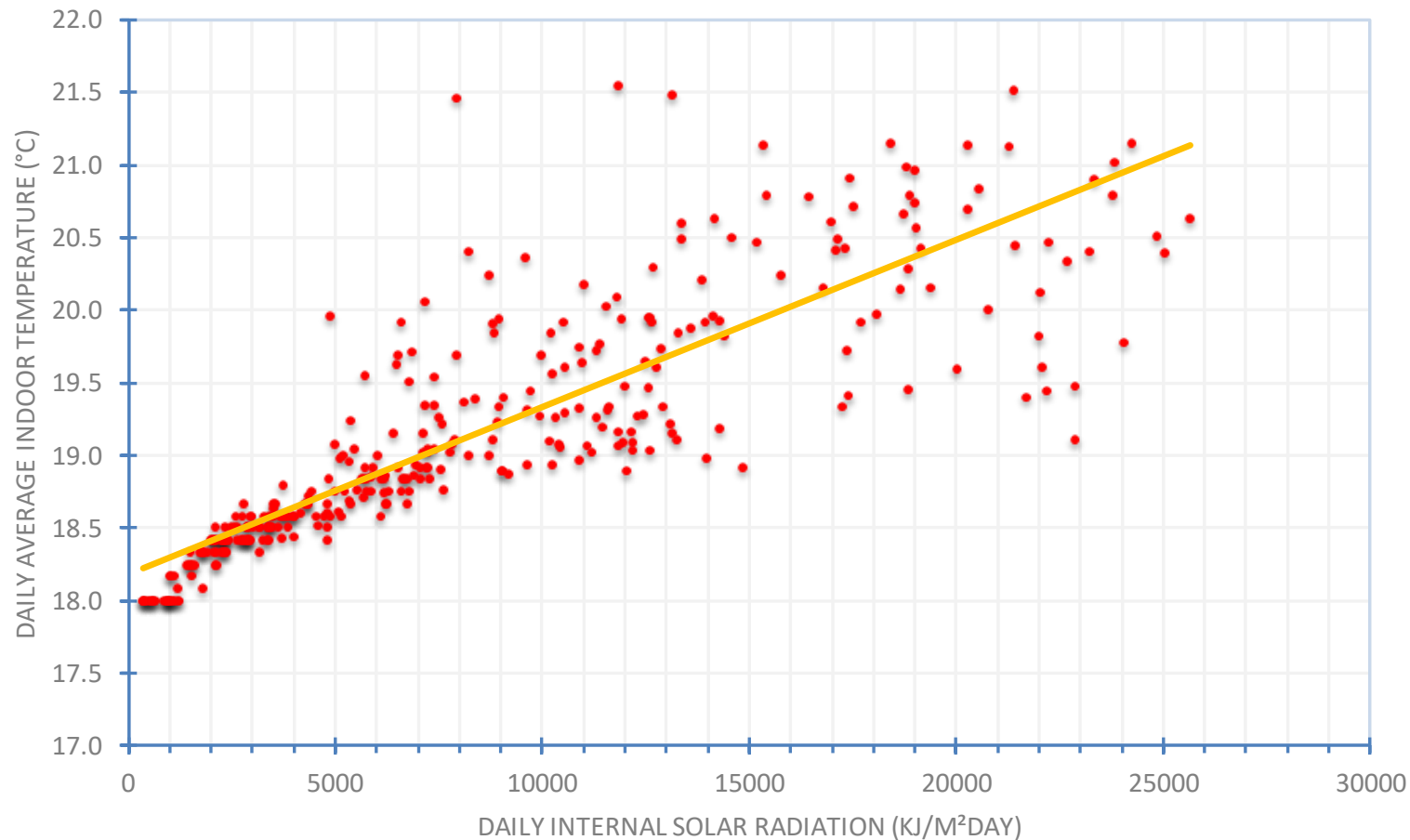
Light

Hortinergy calculates the **solar radiation** reaching the canopy into the greenhouse



Ratio temperature to radiation

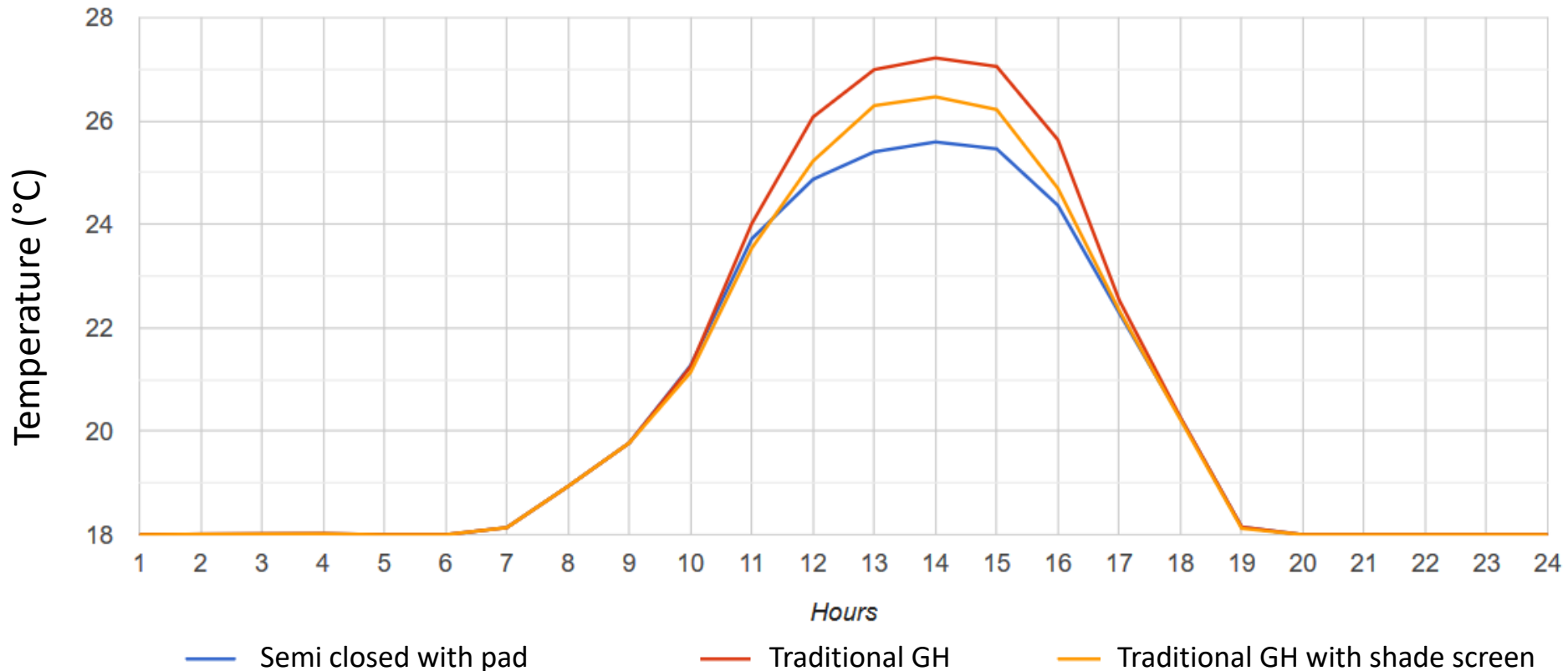
This ratio indicates the **way plants grow and develop**. It is the ratio between daily average temperature and daily solar radiation



Online comparison between scenarios (1/2)

Make the best decision by comparing online scenarios such as temperature, humidity, light..

Here is an example with temperatures comparison



T°C setpoints: Heating: 18°C Cooling / vents opening: 25°C

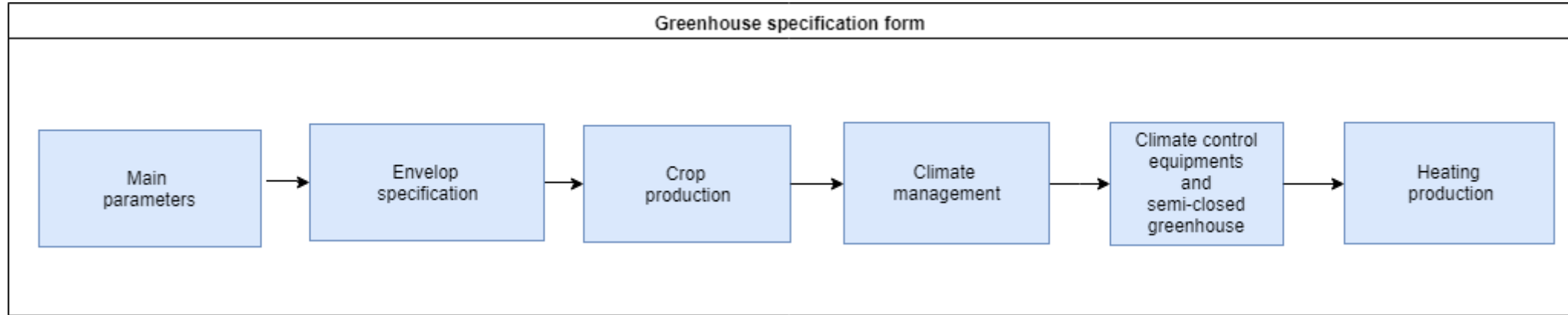
Online comparison between scenarios (2/2)

Here is an example with **PAR (Photosynthesis Active Radiation)** reaching crop canopy



Input form

7 parts on the form



Only 20 minutes to fill out the form !



A project is the geographical coordinates of your greenhouse
Each variation you make on this project is **a scenario**

Location of your greenhouse

Latitude * ?

In decimal degrees (4 decimals)

Please enter a value between -90 and 90.

Longitude * ?

In decimal degrees (4 decimals) (Becareful: west to the Greenwich Meridian, values are negative - click on the red star for help)

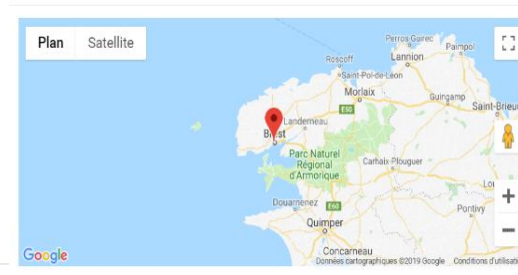
Please enter a value between -180 and 180.

CHECK MY COORDINATES

Altitude * ?

m (integer)


Check my coordinates



Type in the **geographical coordinates** of your greenhouse


Check easily the coordinates by clicking on the button « check my coordinates »

Characteristics of your greenhouse

Type of greenhouse shape *  Type of greenhouse shape *

Venlo


Venlo
Large span saw tooth
Flat arch or dome shape
Gothic

Orientation * 

(integer) Direction in degrees of the "north wall"

0


Please enter a value between **-180** and **180**.

Length * 

In m (2 decimals)

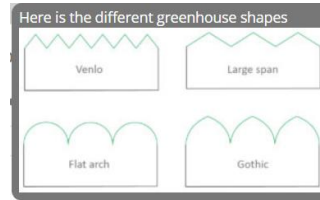
100

Please enter a value between **0.1** and **1000**.

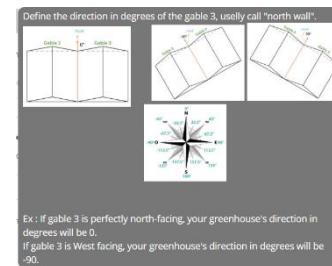
Span - chapel width * 

In m (2 decimals) (gutter to gutter)

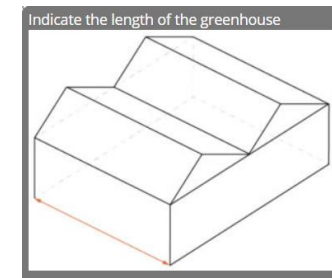
9.60



Enter **the type** of greenhouse



The orientation of the greenhouse



The length of the greenhouse

Cover and screen specification

Find the perfect cover for your project in our **large library**

Roof cover * ?

- 4mm clear glass
- 4mm clear glass**
- 4mm clear glass 1AR coating
- 4mm clear glass 2AR coatings
- Double inflated plastic film
- 4mm diffuse glass
- 4mm diffuse glass 1AR coating
- 4mm diffuse glass 2AR coatings
- 6mm clear glass
- Double glazing
- Low-E double glazing
- ETFE
- Double inflated ETFE
- Glass and ETFE
- Polycarbonate 8mm
- Polycarbonate 10mm
- Polycarbonate 16mm
- Polycarbonate 32mm
- Single plastic film
- ARK Sprung membrane ®
- Opaque

Choose your screen type from our list and **set its characteristics**

1st climate screen type * ?

Upper screen

☒ **Thermal**

- ☐ Thermal and Shade (aluminium)
- ☐ Thermal and Shade (white strips diffuse)
- ☐ Shade and Open (aluminium)
- ☐ Shade and Open (white strips diffuse)
- ☐ Black out

1st climate screen: Shade percentage *

(integer)

13

Please enter a value between **1** and **100**.

1st climate screen: Energy Efficiency *

47

Please enter a value between **0** and **99**.

Your crop production

Type of crop * ?

Tomato ▼

Tomato

Cannabis

Cucumber

Cut flower

Strawberry

Lettuce

Pot plant

Seedling

Pepper

Quickly fill in **your agricultural production** from those listed

Others will be added soon !


Climate set points

Number of period - Day/Night * ?

☒ 1
☐ 2
☐ 3
☐ 4
☐ 5
☐ 6

Period 1 - Start *


Simulation are based on yearly basis. Be careful, the total period shall not exceed 365 days.
example 1 : Period 1 from 1/1/2018 to 31/12/2018; example 2: Period 1 from 1/1/2018 to 1/3/2018 and Period 2 from 2/3/2018 to 31/12/2018.



Period 1 - T°C Day *

Please enter a value between -30 and 40.

Period 1 - End *



Period 1 - T°C Night *

Please enter a value between -30 and 40.

Enter the same parameters as those of a **climate computer** such as:

- ✓ Heating temperature set points
- ✓ Cooling temperature set points
- ✓ Min / max relative humidity
- ✓ Min / max humidity deficit
- ✓ Min PAR and DLI for assimilation light

Semi-closed and cooling system

4. Humidification and cooling system

☐ No
☒ **Pad**
☐ Fog

Pad thickness
(mm)

☐ 100
☐ 150
☒ **200**
☐ 300

Pad height
(cm)

Please enter a value between 1 and 700.

Pad length
% of greenhouse gable

Hortinergy calculates :

- ✓ Controlled ventilation
- ✓ Humidification needs
- ✓ Dehumidification needs
- ✓ Cooling needs

Find more information on **HORTINERGY.COM**



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