Greenhouse climate control and risks management

Hortinergy is an on-line modelling software allowing to predict inner climate and to calculate energy consumption in horticultural greenhouses anywhere worldwide.

User can set climate control with:

- Temperature: day / night,
- Humidity: relative humidity / hydric deficit; min/max,
- Solar radiation: regulation of shading and black out screen.

Hortinergy model predicts the inner climate on hourly basis: temperature, relative humidity, hydric deficit and solar radiation.

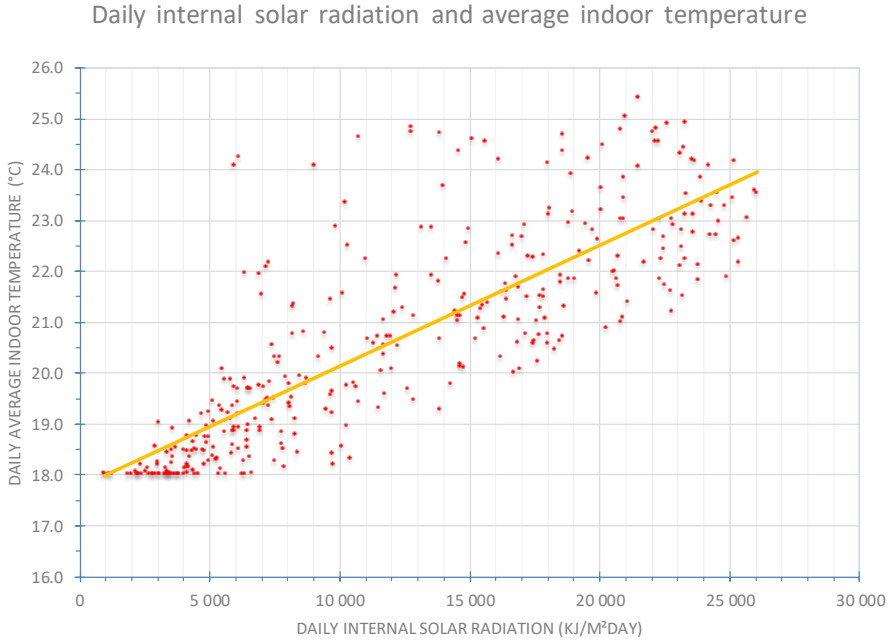
Based on these results, Hortinergy provides an analysis of climate control:

- Daily correlation between internal solar radiation and average indoor temperature
- Correlation between indoor temperature and hydric deficit

A. Daily correlation between internal solar radiation and average indoor temperature

The following chart shows daily correlation between internal solar radiation and average indoor temperature the production period

It helps to analyse climate control by assessing if average 24h temperature is not too low or too high according to solar radiation.



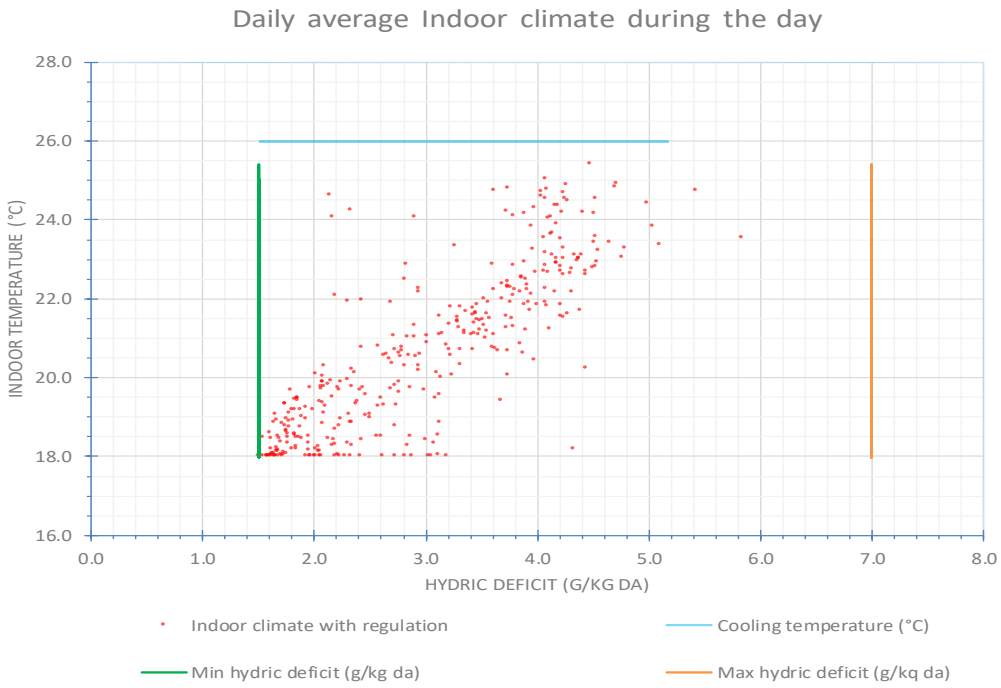
B. Correlation between indoor temperature and hydric deficit

Climate control is analysed by several correlations between indoor temperature and hydric deficit:

- average temperature and hydric deficit during daytime
- indoor climate during daytime in January
- indoor climate during daytime in July
- daily lowest and highest temperature

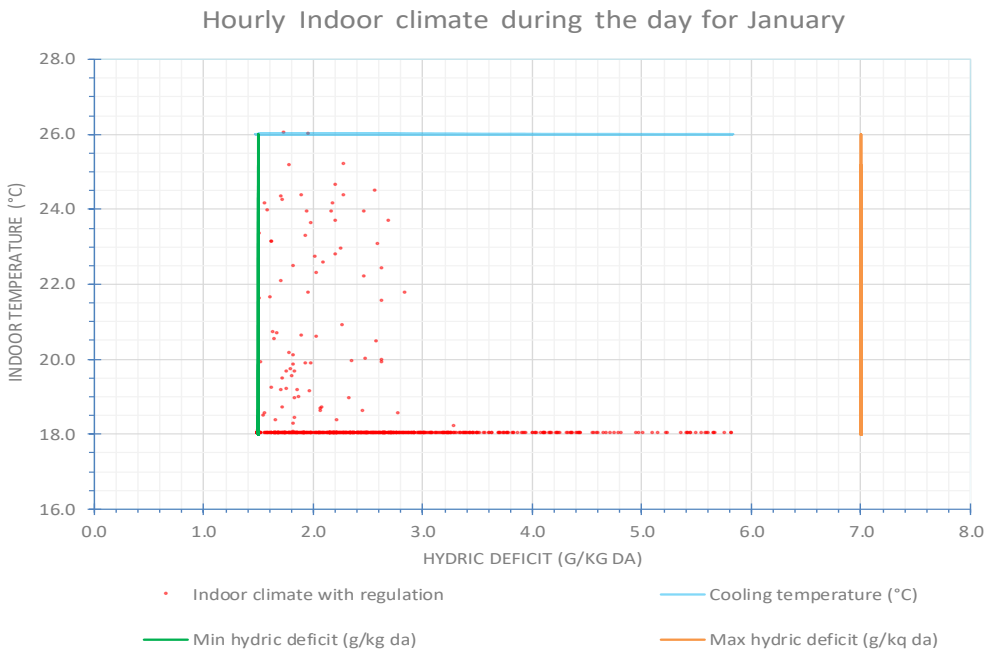
<u>Average temperature and hydric deficit during daytime</u>

The graph shows average temperature and hydric deficit during daytime for each day of cultivation period.



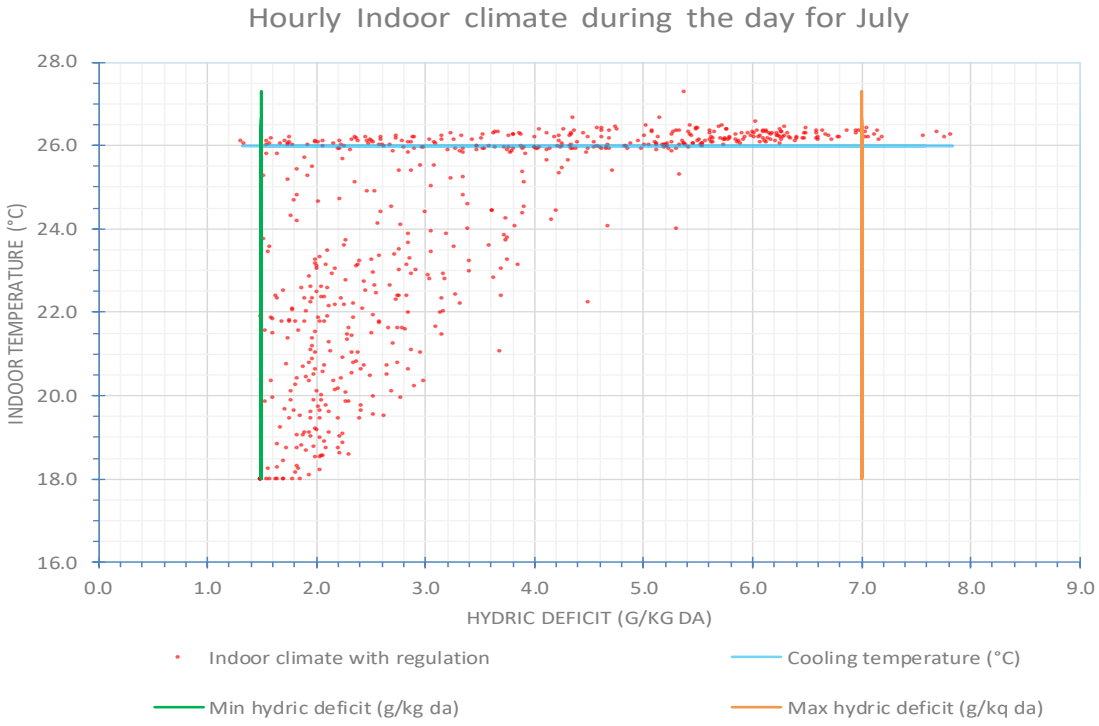
<u>Indoor climate during daytime in January</u>

The graph analyses hourly correlation between indoor temperature and hydric deficit during daytime in January. User can assess if hydric is not too low during morning and evening period.



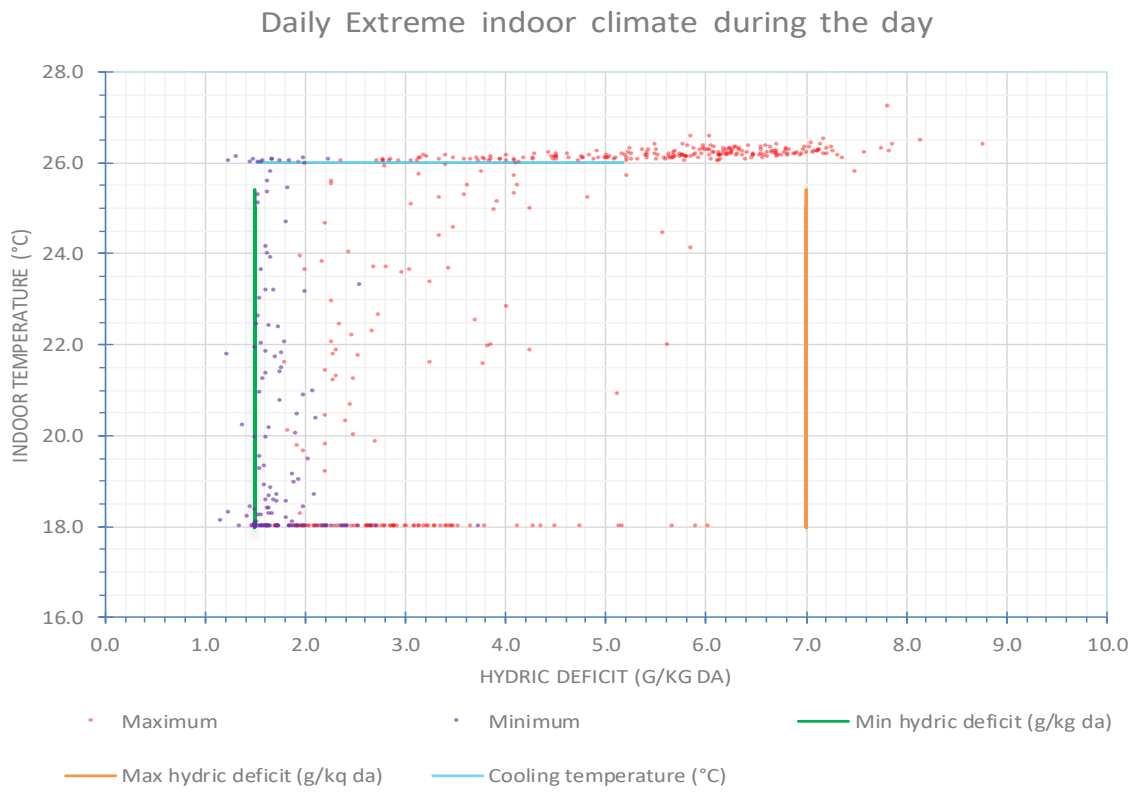
Indoor climate during daytime in July

The graph analyses hourly correlation between indoor temperature and hydric deficit during daytime in July. User can assess if hydric is not too low during morning or too high when temperature and solar radiation rise.



Daily lowest and highest temperature

The hydric deficit correlated with daily lowest and highest temperature is also useful to improve climate control.



User can optimise the climate control and reduce risk based on these analyses.

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