


Dehumidification using outside air



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Goal of the research



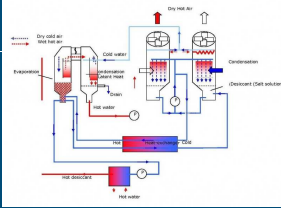



Development of a system to regulated the humidity in a greenhouse when applying a thermal screen.

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Ways to dehumidify




- Ventilation
- Condensation
- Hygroscopic material

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Conventional way of dehumidification



- Slightly opening the screen
- Ventilation
- Vapour transmittance through screen
- Additional heating

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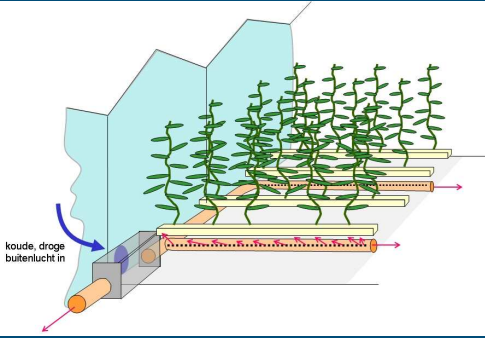
Mechanical dehumidification

- Distribution of the conditioned air
- Regulation of the airflow
- Possible heating of the air
- Outflow of air






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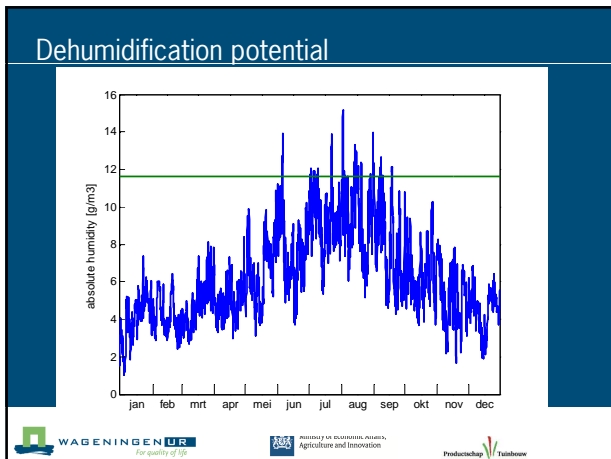
Mechanische vochtafvoer met buitenlucht



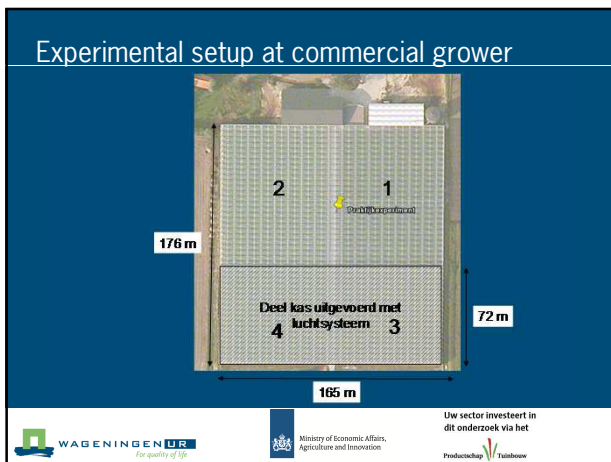
koude, droge buitenlucht in

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- ### Energy saving
- The maximum relative humidity is set higher
 - Thermal screens are used more
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For quality of life
- Ministry of Economic Affairs,
Agriculture and Innovation
- Uw sector investeert in
dit onderzoek via het
- Productieschap Tuitbosse






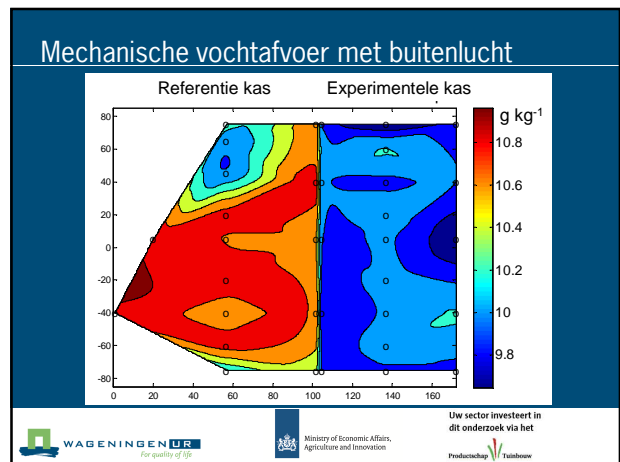
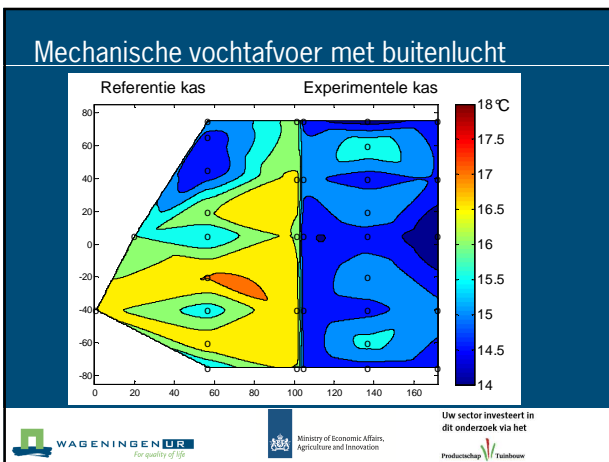
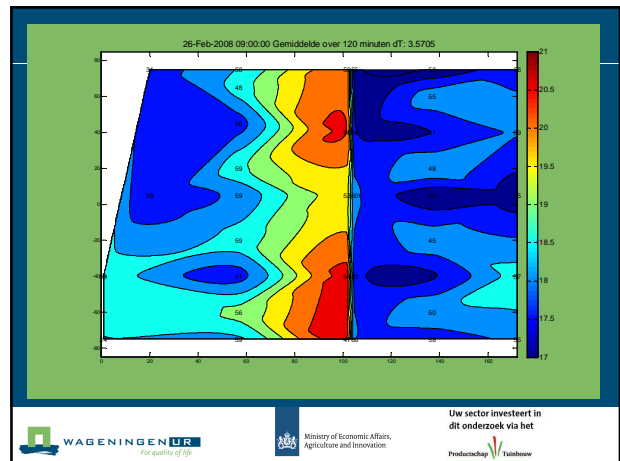
- ### Informatie over systeem
- System applied on 1.2 Ha
 - 18 vents in the side wall
 - Maximum flow of 3000 m³/h
 - Energy screen: LS10 Ultra Plus
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Result of experiment




- Temperature differences small
- Relative humidity remained within limits
- Full capacity not used
- Frequency controlled vent are needed




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Overall conclusion

- Relatively simple system
- Not costly
- Easy to operate
- Improved climatic conditions



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Innovation
green

Thanks to all my colleagues
contributing to this research

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Ministry of Agriculture, Nature and Food quality
Product board of Horticulture

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for quality of life

 **Productschap Tuinbouw**
voor een bloeiende markt

 **Ministerie van Landbouw, Natuur en Voedselkwaliteit**