

Serdang demonstration greenhouse

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Inspiration



Motivation: Tomatoes in Indonesia

Greenhouse



Open field



Greenhouse construction



Illustration: 7 January



12 January



20 January



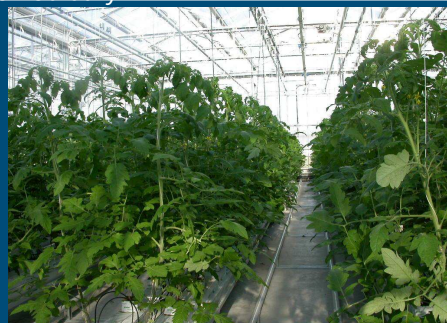
7 February



9 February



16 February



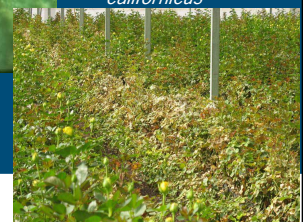
First harvest



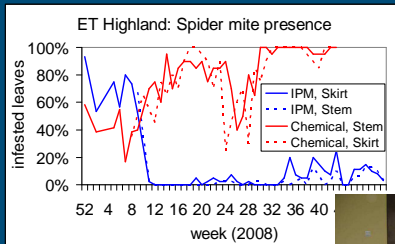
Expectation: IPM in Ethiopia



- Rose: various varieties
- Red spider mite (*Tetranychus urticae*)
- *Phytoseiulus persimilis* & *Amblyseius californicus*



On-farm research: results

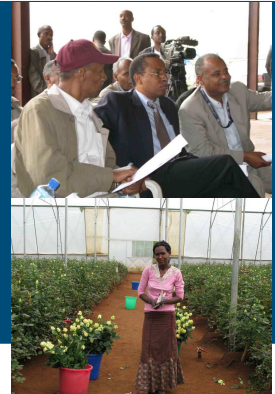


- 10-15% more stems m^{-2}
- Greater stem length



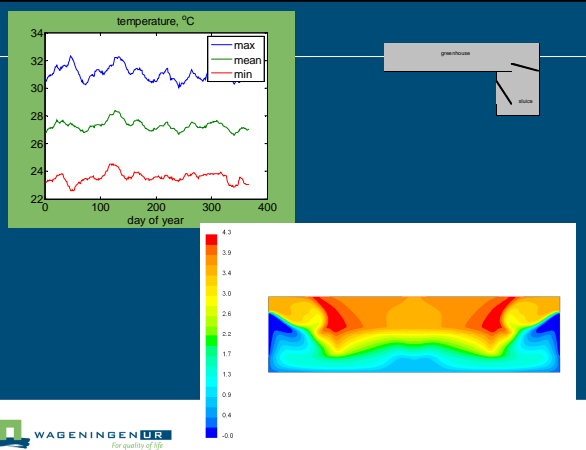
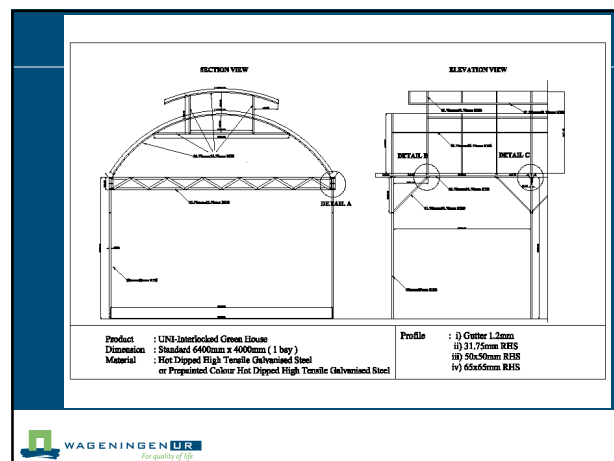
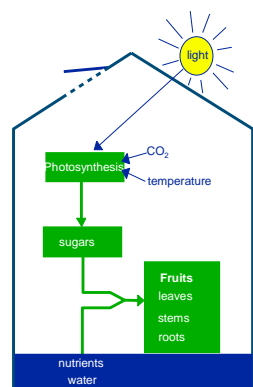
On-farm research: lessons learned

- Commitment
- Identification & monitoring
- Intensive communication
- During transition phase:
 - Low pest levels
 - No chemical residues
- Knowledge exchange



Greenhouse horticulture: more than just a crop

- Optimize
 - Crop
 - Climate
 - Greenhouse
 - Grower
 - Value chain
 - Enabling environment



Three greenhouses

- Greenhouse 1:
 - Recirculation
 - Drain meter, tensio meter and at light meter at pump house.
 - Drain water will be in a underground tank a pumped back to pump house to be used and mixed in the next irrigation.
- Greenhouse 2:
 - Tensio meter and light meter only.
 - Minimum drain.
- Greenhouse 3:
 - As greenhouse 2
 - But, before every irrigation the water will be pumped through the system (to flush previous warm irrigation water).

Sensors

- Weather station
 - Temperature (in & out)
 - Relative humidity
 - Wind direction & speed
 - rain
- CO2 (?)
- Tensio
- Light
- Medium temperature
- drain

Setting up the research

- reason for the research
- research goals
- research objectives: more detailed
- possibilities
- restrictions
- preferred working habits
- experimental details
- data to be acquired, how
- practical organization
- expected method of analysis