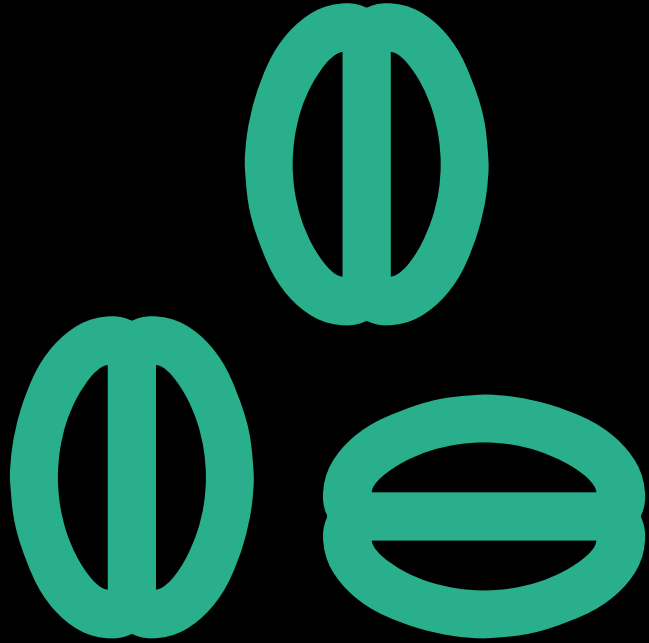
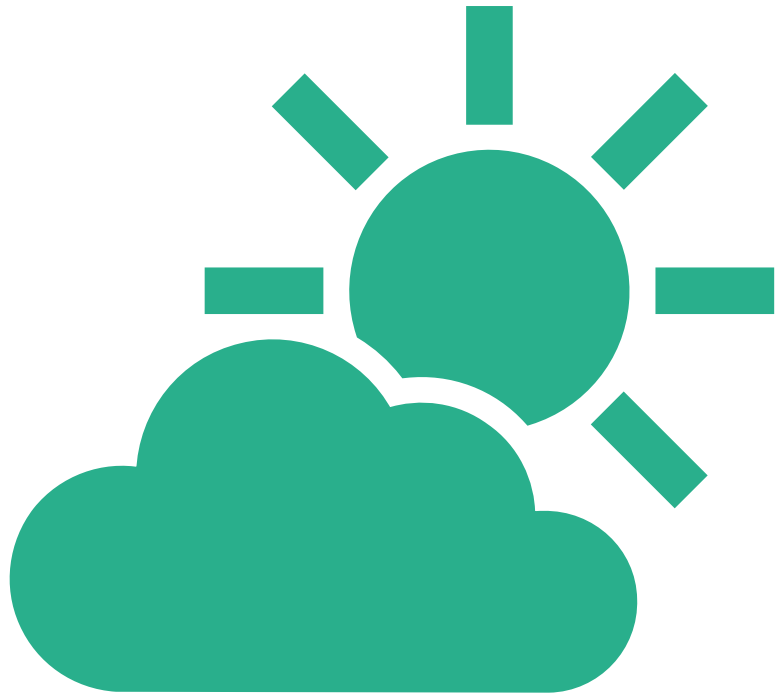


*Strategies to expand the profitability and
global competitiveness of seed production
and R and D in India*

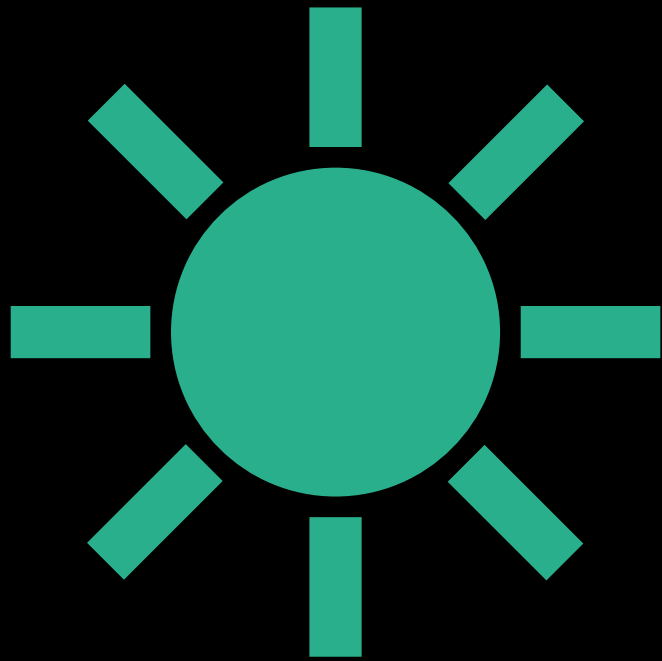


Options to increasing profitability.....

1. Increase yield per plant and quality of the seeds
2. Produce more difficult to grow crops
3. Have a second planting season later in the year



Weather extremes and seasonal changes in the weather is the #1 constraint to exploiting any of these 3 options



The climate
challenges change
by the season!

Fall/ Winter

Late monsoon rains delays
transplanting

Excessive dew accumulation
which causes foliar disease

Cold temperatures which slows
down growth

Frost which kills plants

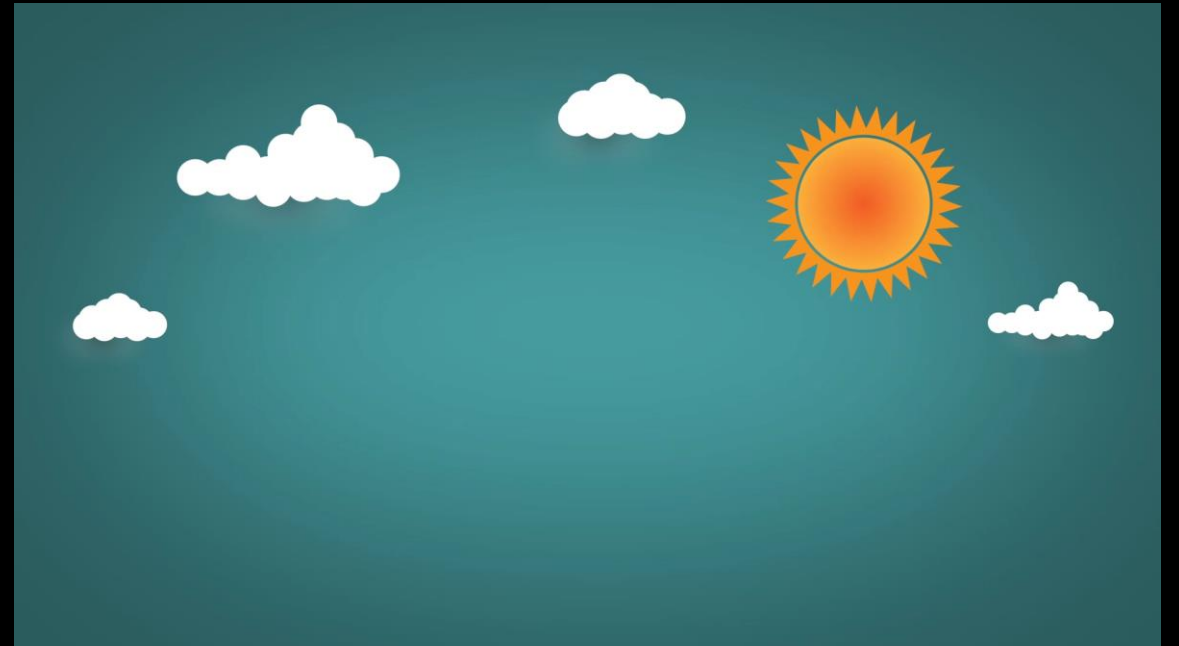
Nethouses challenges



- Late monsoon rains delay transplanting
- Excessive dew accumulation inside which causes foliar disease and low transpiration
- Cold temperatures slows down growth
- Frost kills plants

Summer

- High radiation and heat causes sunburn
- High radiation, heat and low humidity causes excessive transpiration and water stress
- Excessive water stress causes smaller fruits and increases disease and insect attacks



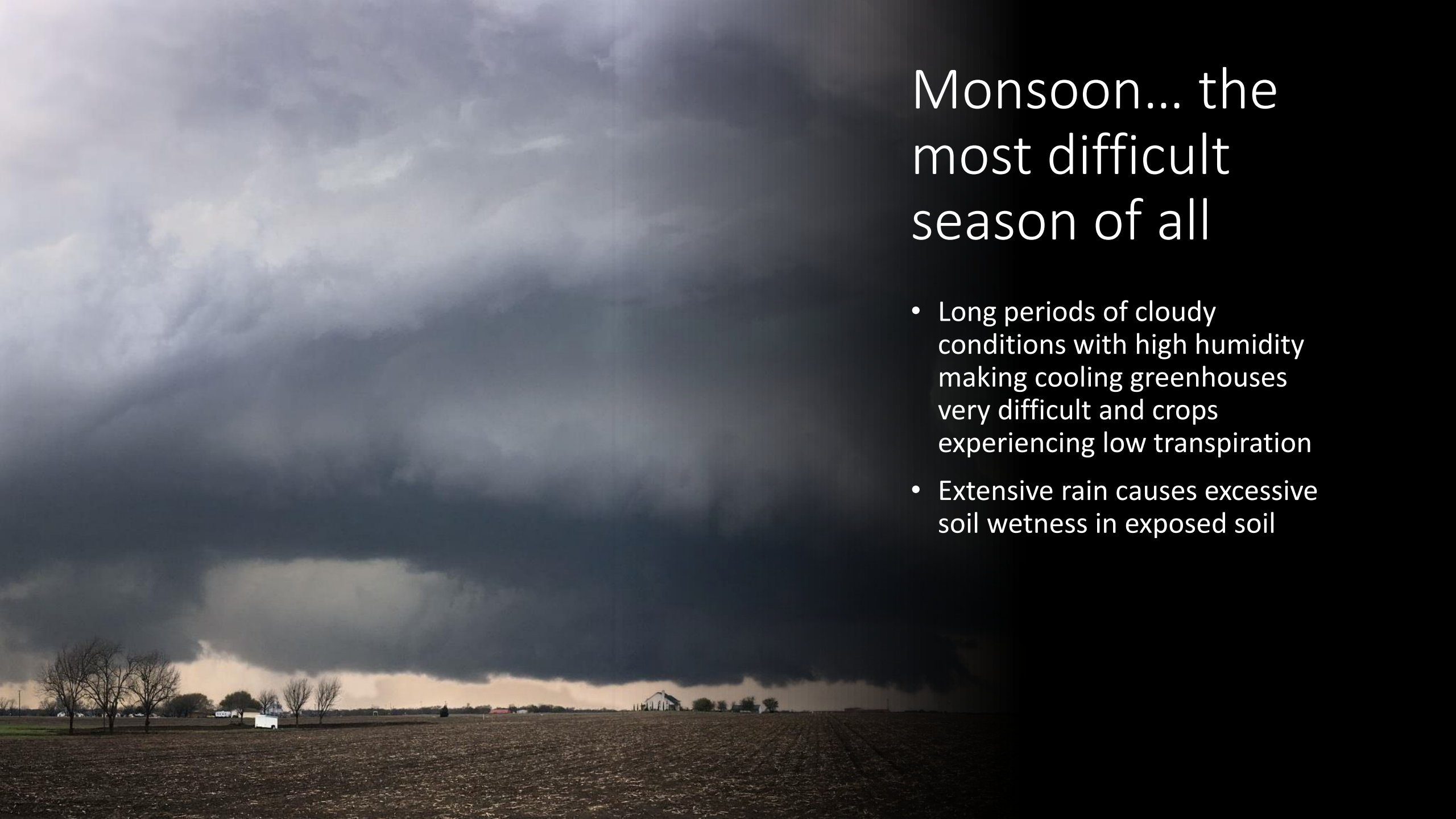
Summer

Nethouses cannot optimize plant temperatures or transpiration



Poly houses are difficult and expensive to cool especially when outside RH is high.

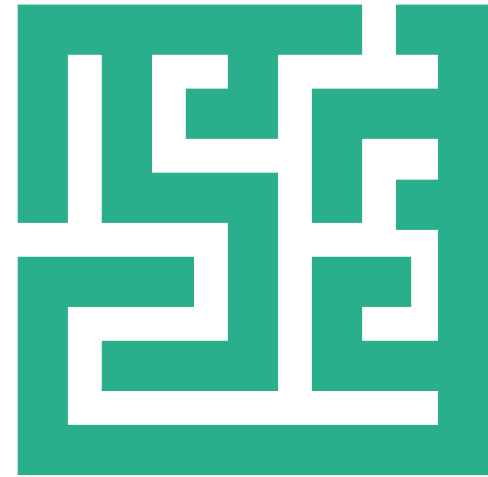


A dramatic landscape photograph showing a vast, flat field in the foreground, likely a plowed agricultural field. In the middle ground, there are several bare trees on the left and a small white building, possibly a barn or farmhouse, in the center. The sky is filled with heavy, dark, and textured clouds, suggesting an approaching storm or a monsoon. The overall mood is somber and powerful.

Monsoon... the most difficult season of all

- Long periods of cloudy conditions with high humidity making cooling greenhouses very difficult and crops experiencing low transpiration
- Extensive rain causes excessive soil wetness in exposed soil

Every environment has advantages and disadvantage, so the key is to exploit the advantages of each...and avoid the disadvantages!





There are now over 75 different retractable solutions
that have been developed over the last 40 years!

Which of the
75 models is
appropriate
for your
situation
depends on:



Type of crop



Insect protection required?



Is protection from rain required?

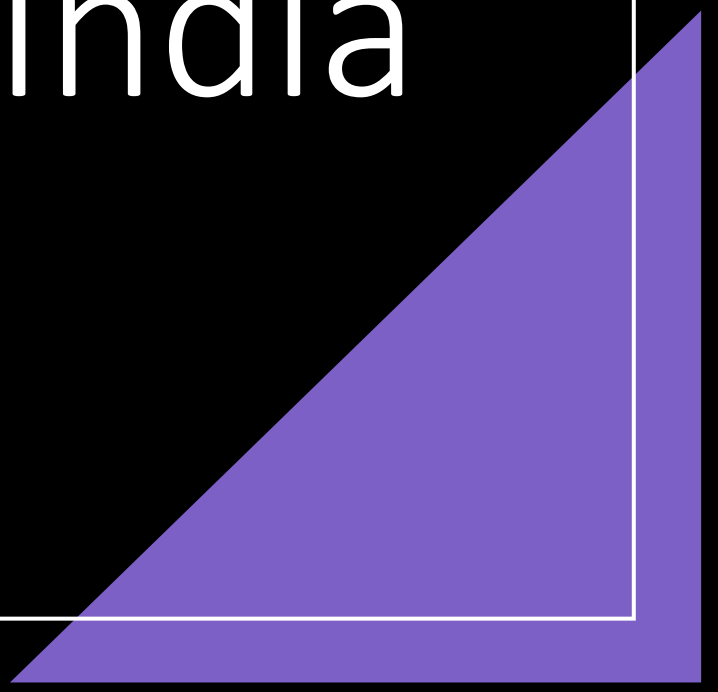


Amount of capital available

One motor can close almost
1 hectare of roofs in 5 minutes



Top 6 models for India

A solid purple right-angled triangle is positioned in the bottom right corner of the slide, with its hypotenuse running diagonally from the bottom left towards the top right.

1. Motorized Retractable Nethouse

Insect Net is closed when insect or sun protection is required



Net is retracted during monsoon to help dry out the soil, when insect protection is not required during the growing cycle or when it is critical to break the disease cycle.



2. Retractable Flat Roof cooling house

(for crops not requiring insect protection)

Exposes plants to full sunlight, lower humidity and higher transpiration rates



Reduces plant temperatures and transpiration when roof is closed partway midday



Protect plants from cold temperatures, frost, dew when closed 100%



3. Retractable Flat Roof Cooling house with **stationary** insect net

Retractable Cooling roof manages the climate



Insect net protects against insects and help create a stable environment



4. Retractable Flat Roof Cooling house with retractable insect net

- Cooling roof manages the climate and insect net is closed only when it is creating a positive impact on the environment



5. Retractable Peaked roof for rain protection with stationary or retractable insect net



6. Automatic retractable rain shelter





The difference between
protected cultivation
and
climate optimization...

Extreme weather protection helps prevent sudden losses



Climate optimization increases yield and quality!

Culiacan Mexico, (latitude 24) April 26, 2008

Open field



Nethouse



Retractable cooling roof

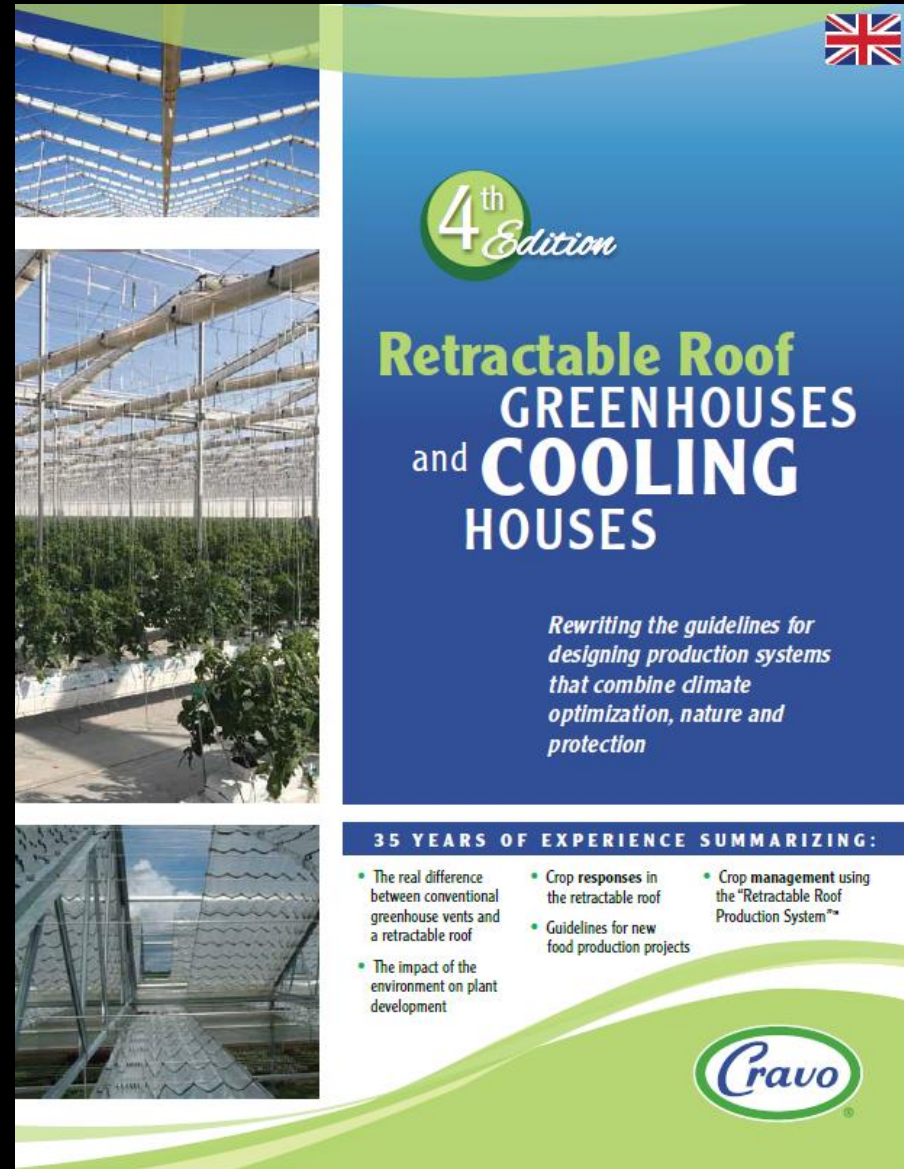


The impact of optimizing transpiration and plant temperatures

- DeRuitter 2180 roma
- Open field- right
- Nethouse- center
- Retractable Cooling Roof- left



This discovery in 2008 led me to write a book on how to use nature and a roof covering to manipulate plant development.



35 YEARS OF EXPERIENCE SUMMARIZING:

- The real difference between conventional greenhouse vents and a retractable roof
- Crop responses in the retractable roof
- Crop management using the "Retractable Roof Production System™"
- Guidelines for new food production projects
- The impact of the environment on plant development



10 steps

3rd EDITION 

...to customizing your "Retractable Roof Production System"TM

create over 75 different solutions
- using -
4 house models
11 different coverings
and 1-3 layers

RIGID FRAME STRUCTURES
for smaller installations
or where maximum strength is required

A-Frame
Use: house must withstand heavy snow, wind,
heavy crop or equipment loads, or for crops requiring
many zones or blackout

Rafter
Use: tropical and arid climates where the land is flat

LOWER COST TENSION STRUCTURES
for covering large fields or orchards

X-Frame
Use: crops needing protection from rain, hail, heat and cold

Flat Roof
Use: protection from cold and heat but where complete rain
protection is not required or not cost effective



And then create a 10 step protocol for determining which of the 75 retractable options would be best to suit the climate and crop requirements.

Thanks for
your
attention!

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