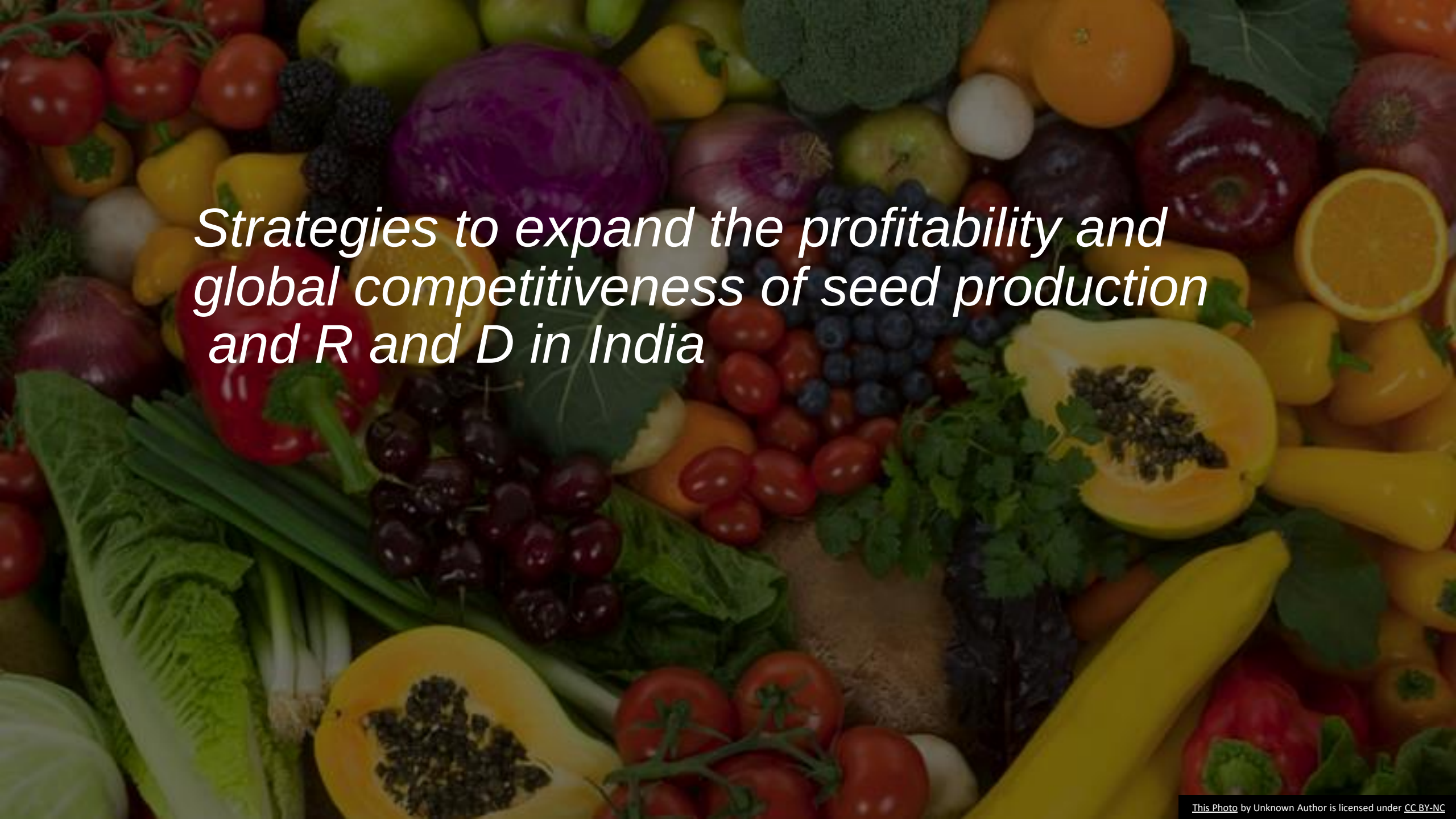
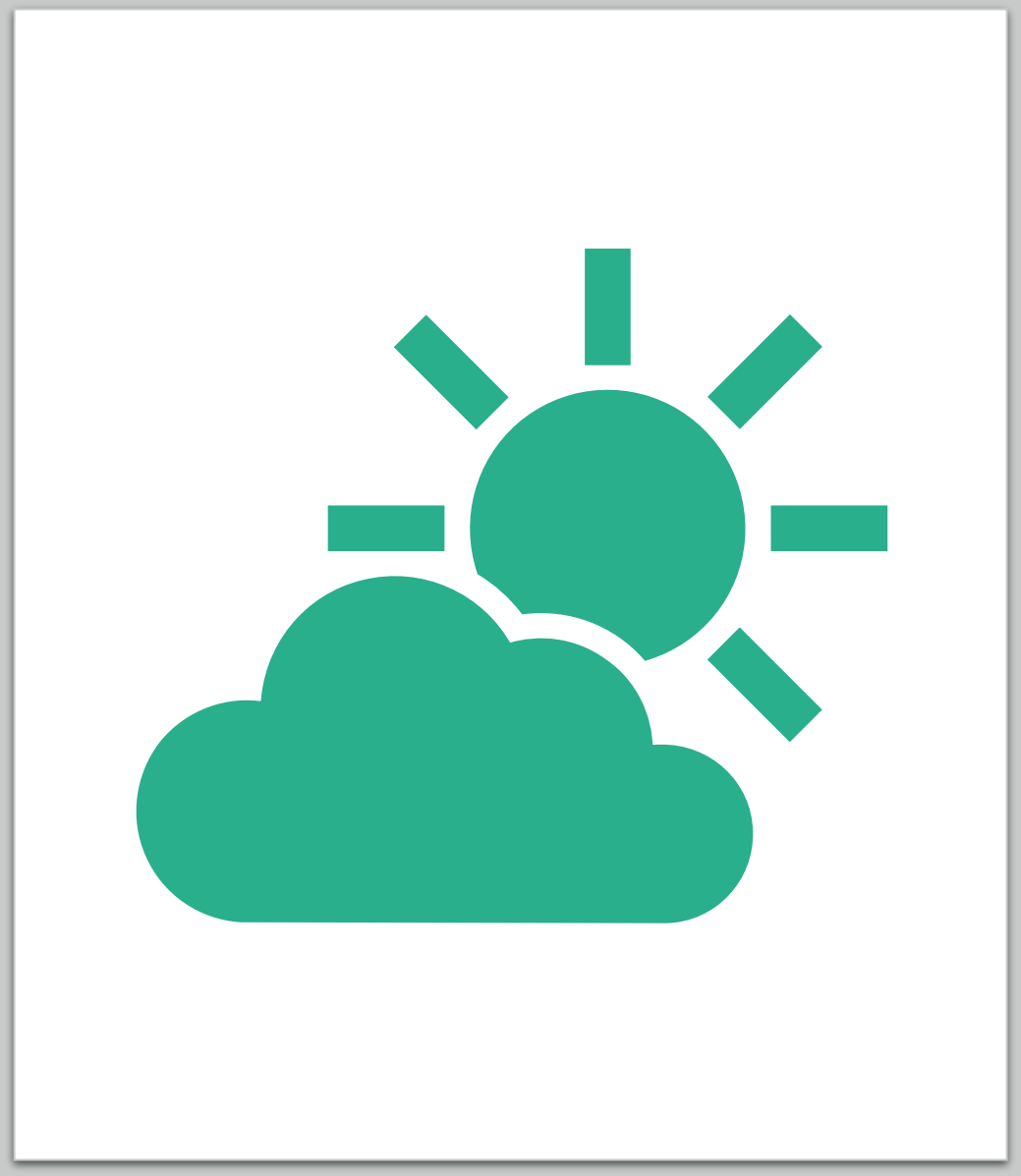


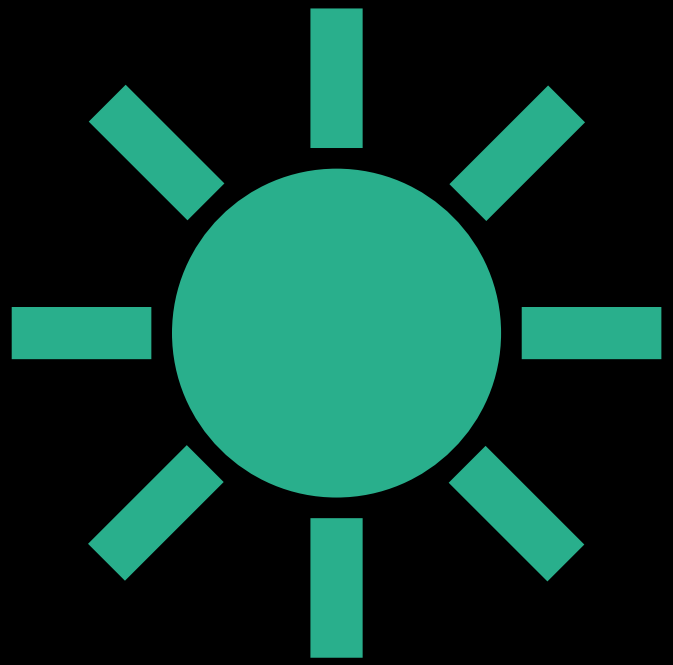
Strategies to expand the profitability and global competitiveness of seed production and R and D in India

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

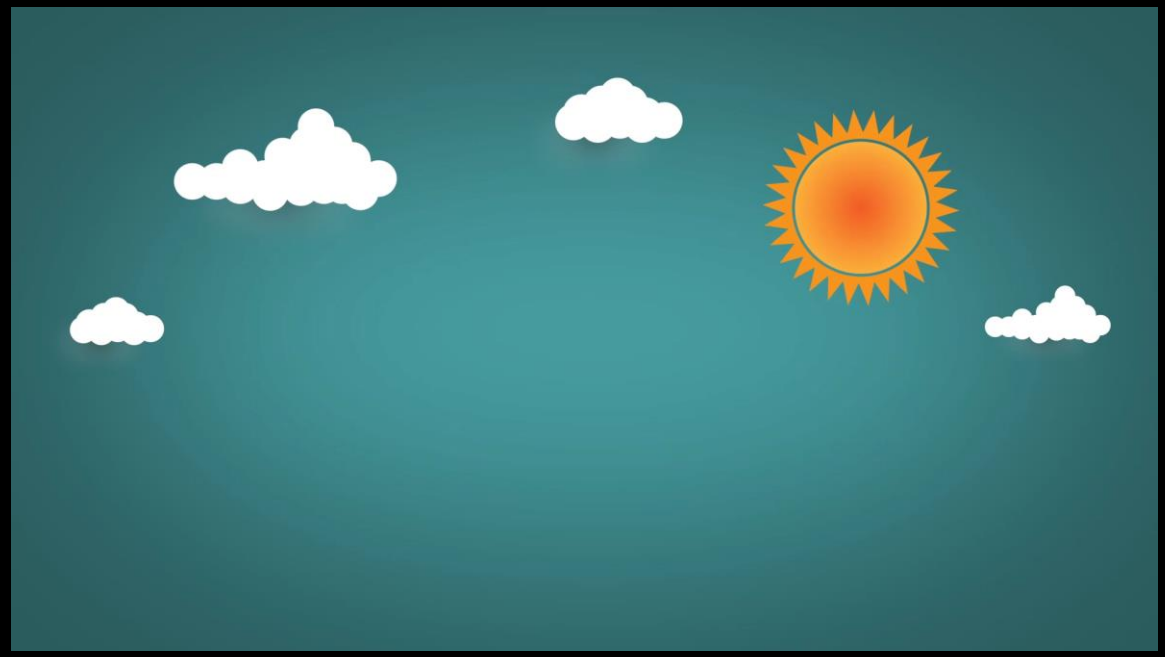
- Late monsoon rains delays transplanting
- Excessive dew accumulation which causes foliar disease
- Cold temperatures which slows down growth
- Frost which kills plants

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

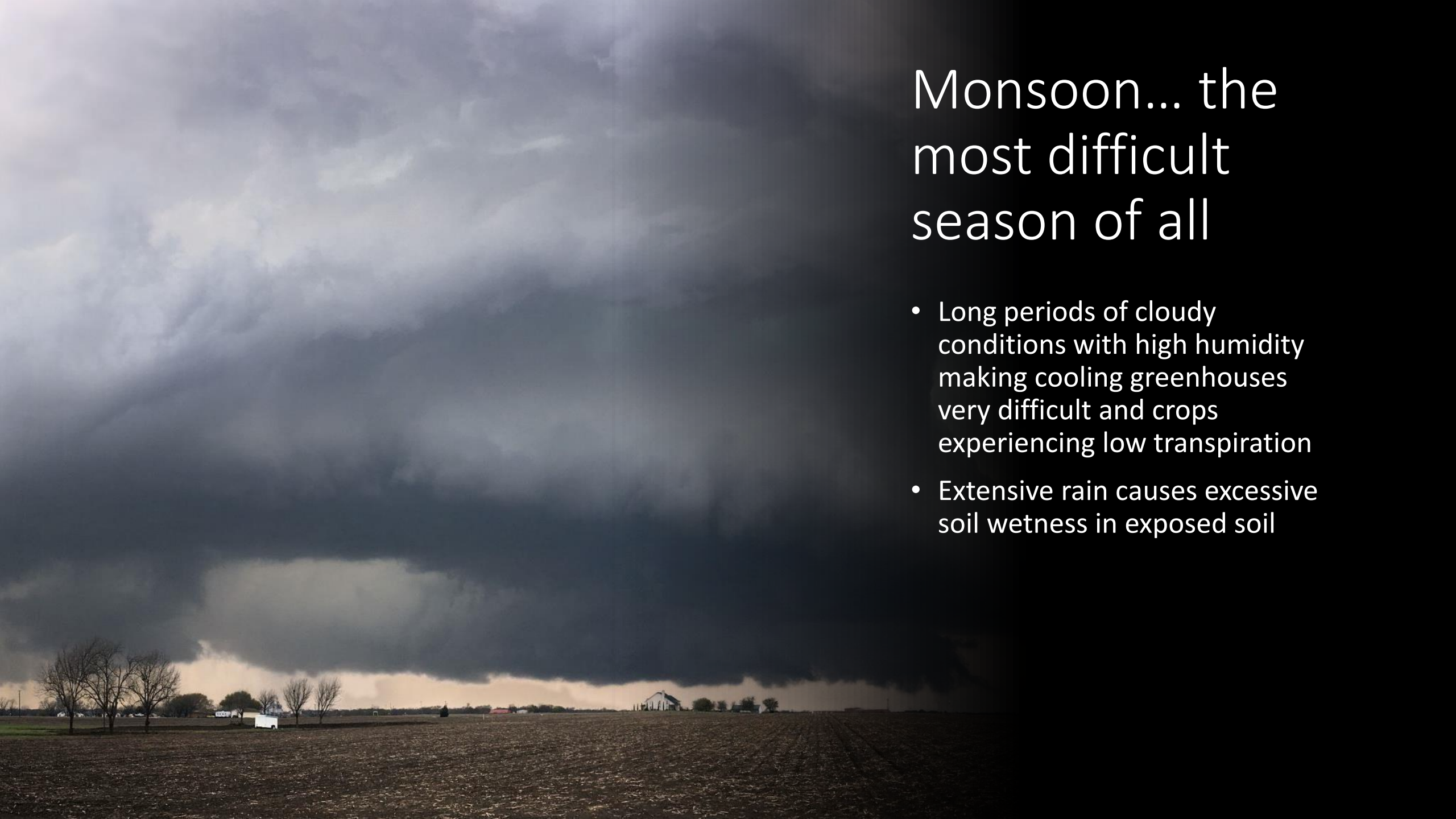
- High radiation and heat causes sunburn
- High radiation, heat and low humidity causes excessive transpiration and water stress
- Excessive water stress causes smaller fruits and increases disease and insect attacks



Summer

Nethouses cannot optimize plant temperatures or transpiration

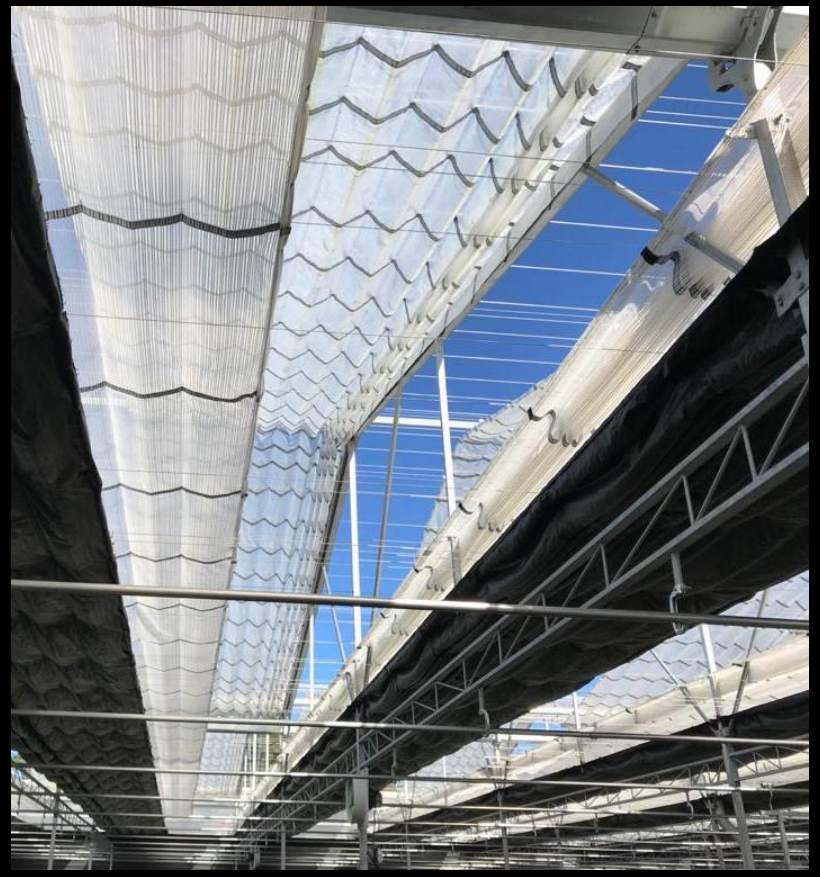
Poly houses are difficult and expensive to cool especially when outside RH is high.



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!



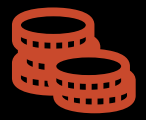
There are now over 75 different retractable solutions that have been developed over the last 40 years!

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

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

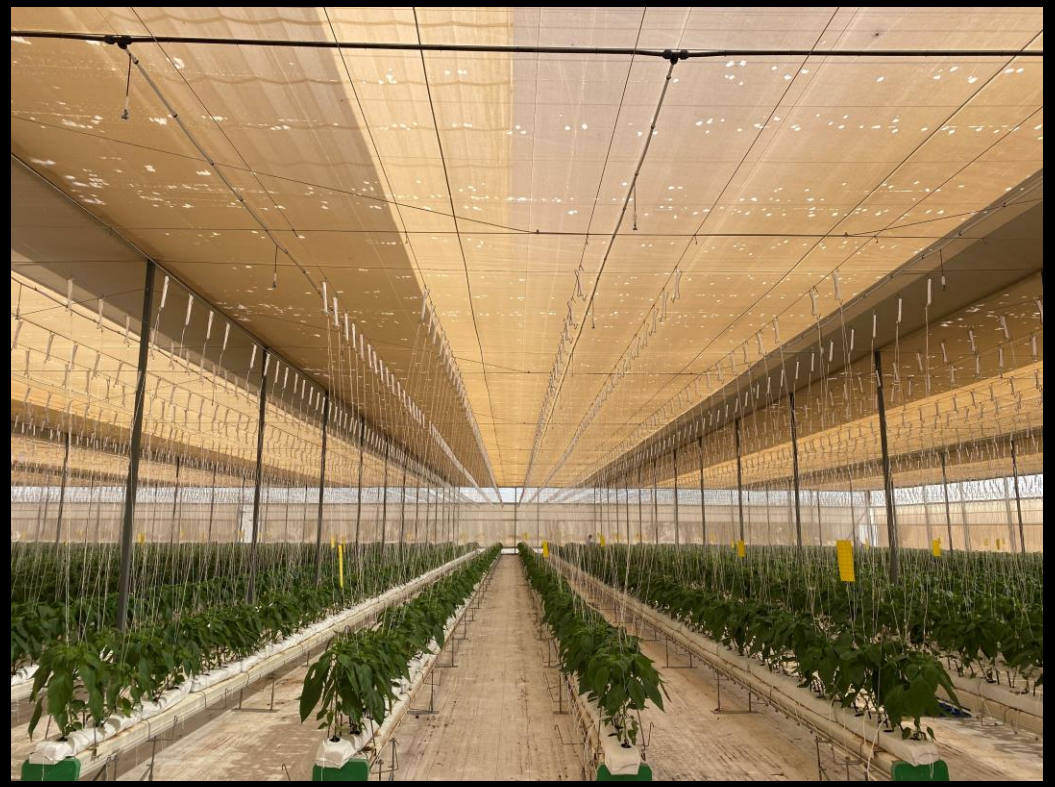
Reduces plant temperatures and transpiration when roof is closed partway midday

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

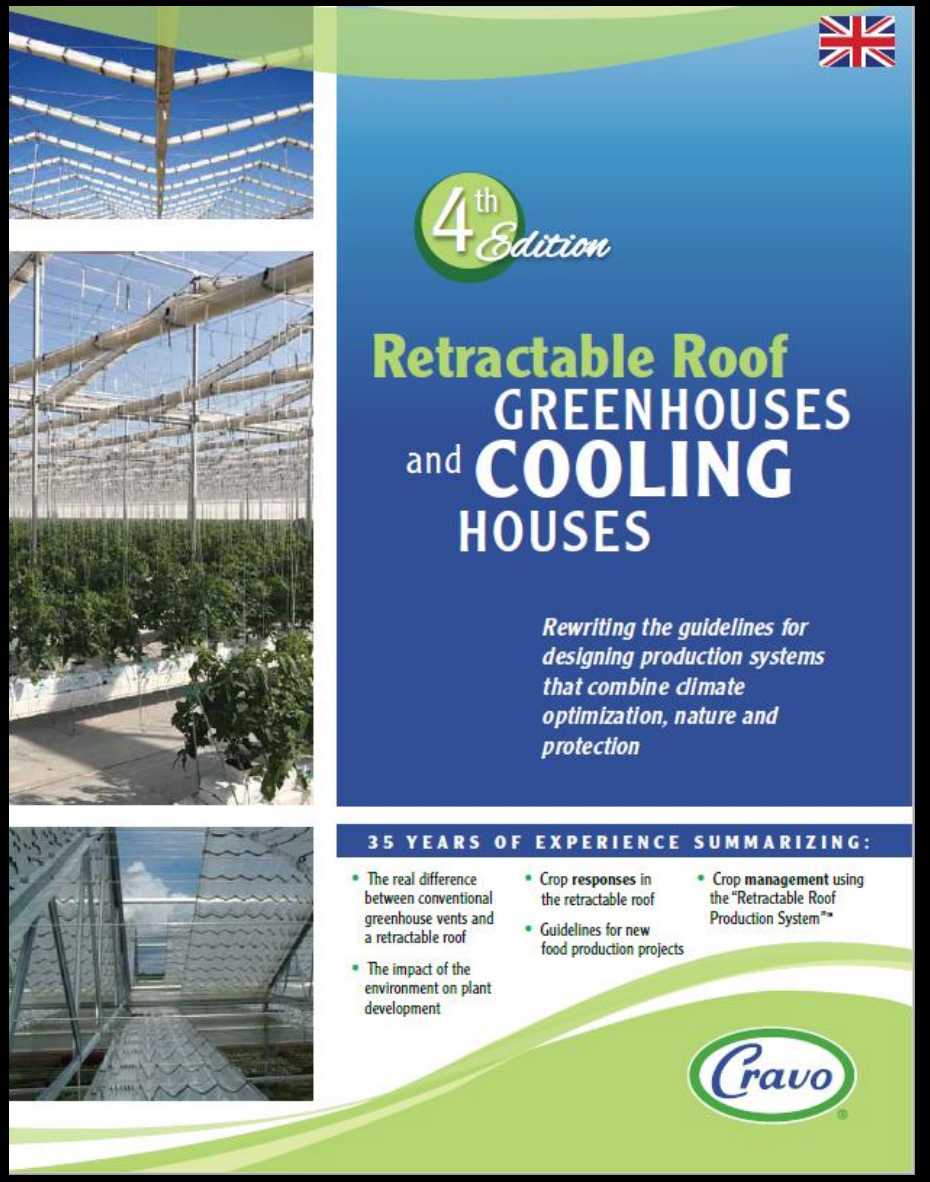
Nethouse

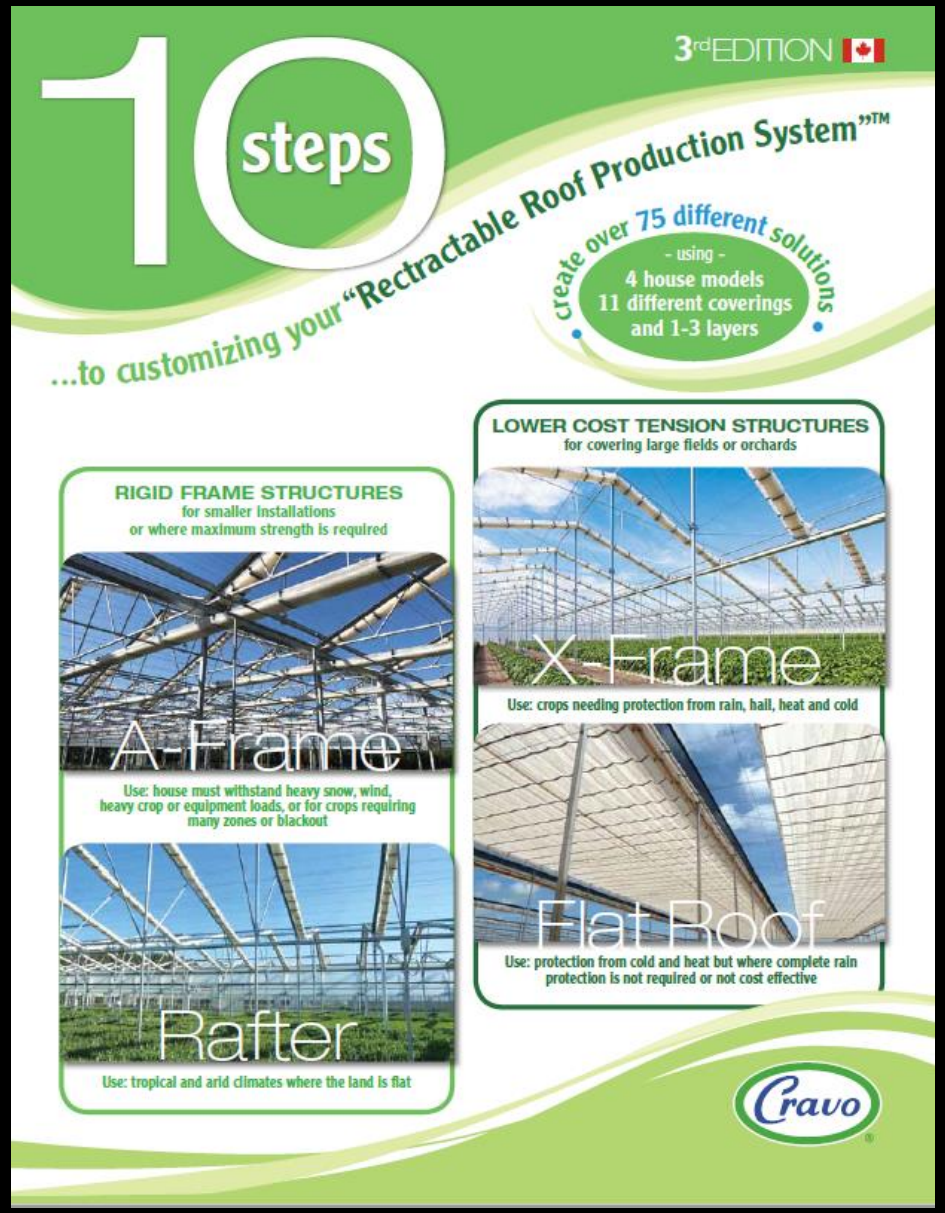
Retractable cooling roof

The impact of optimizing transpiration and plant temperatures

- DeRuiter 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.





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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