

# Can You Grow Lettuce, Kale, and Thin-Skinned Cucumbers in the South During the Summer?

Presenters: Alan & Ricky Seiler





2003



2009



2023

BETTER  
**TOGETHER**  
FARM



BETTER  
**TOGETHER**  
FARM

...Farmers should not think that agriculture is a business that is not elevated enough for their sons. Agriculture should be advanced by scientific knowledge. Farming has been pronounced unprofitable.

People say that the soil does not pay for the labor expended upon it, and they bemoan the hard fate of those who till the soil. In this country (Australia) many have given up the idea that the land will pay for working it, and thousands of acres lie unimproved.

But should persons of proper ability take hold of this line of employment, and make a study of the soil, and learn how to plant, to cultivate, and to gather in the harvest, more encouraging results might be seen.



Many say, “We have tried agriculture, and know what its results are,” and yet these very ones need to know how to cultivate the soil, and to bring science into their work.... (ST August 13, 1896, par. 8)

Success



what people think  
it looks like

Success



what it really  
looks like

**Cool  
Loving  
Crops**  
(45°-75°)

**Beets**  
**Broccolini**  
**Cabbage**  
**Carrots**  
**Swiss Chard**  
**Kale**  
**Lettuce**  
**Onions**  
**Radishes**  
**Spinach**  
**Turnips**

**Warm  
Loving  
Crops**  
(55° - 85°)

**Bell Peppers**  
**Eggplant**  
**Corn**  
**Tomatoes**  
**Cucumbers**  
(Thin Skin)

**Hot  
Loving  
Crops**  
(65° - 100°)

**Okra**  
**Squash**  
**Zucchini**  
**Sweet Potatoes**  
**Green Beans**  
**Hot Peppers**  
**Cantaloupe**  
**Watermelon**  
**Winter Squash**  
**Black-eye Peas**

# **Cool Loving Crops** (45°-75°)

**Beets  
Broccoli  
Cabbage  
Carrots  
Swiss Chard  
Kale  
Lettuce  
Onions  
Radishes  
Spinach  
Turnips**

# **Warm Loving Crops** (55° - 85°)

**Bell Peppers  
Eggplant  
Corn  
Tomatoes  
Cucumbers  
(Thin Skin)**

# **Hot Loving Crops** (65° - 100°)

**Okra  
Squash  
Zucchini  
Sweet Potatoes  
Green Beans  
Hot Peppers  
Cantaloupe  
Watermelon  
Winter Squash  
Black-eye Peas**



**What was the outside temperature the day this photo was taken?**



**Socrates Cucumbers**  
**July 8, 2022**



Temp 102°  
RH 24%

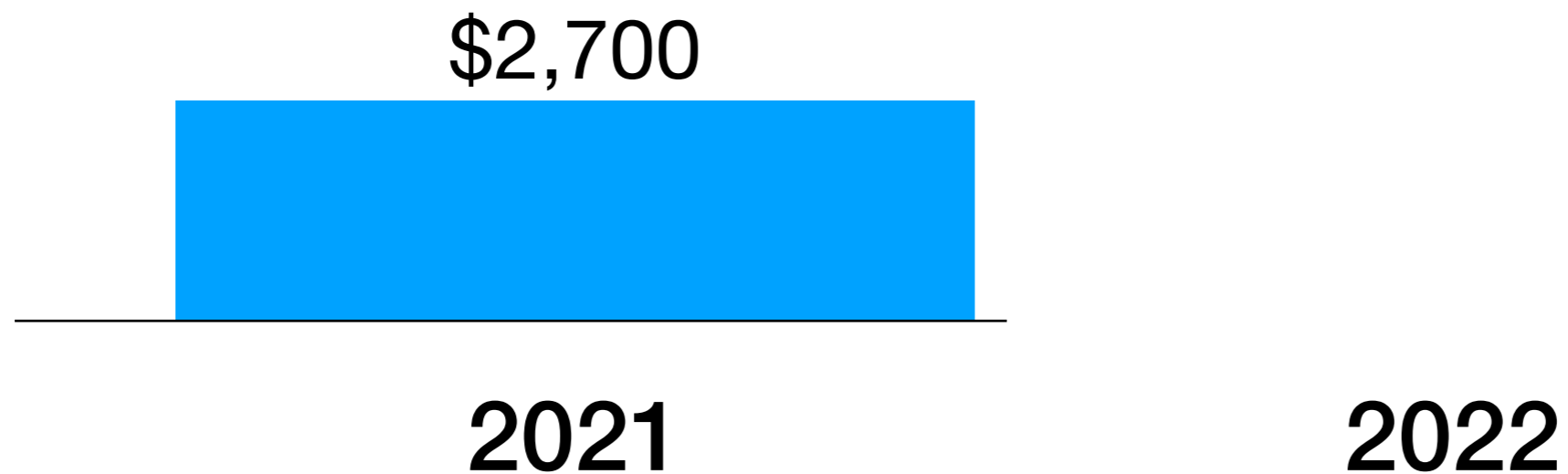
Socrates Cucumbers  
July 8, 2022



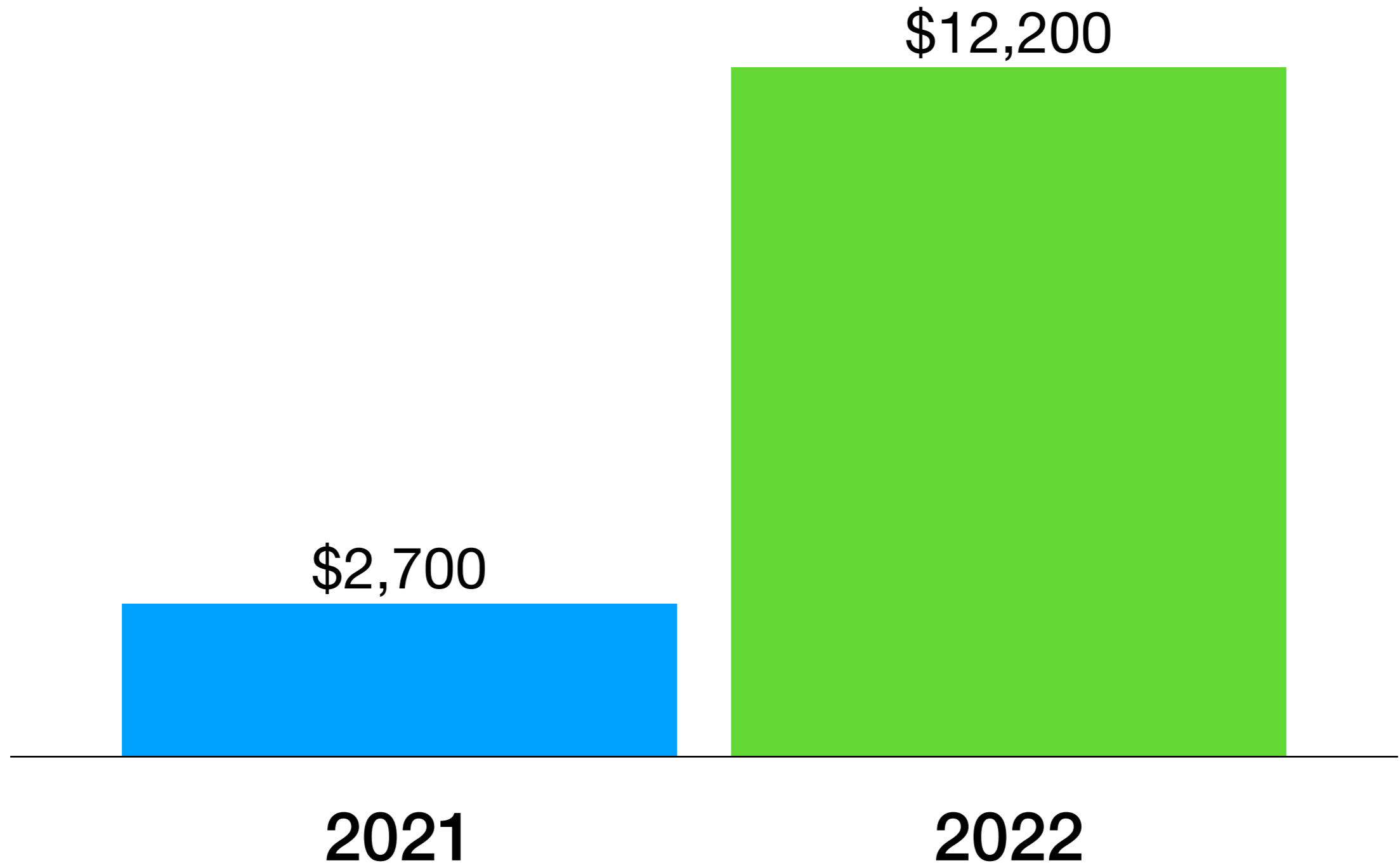
2  
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# Thin-Skin Cucumber Sales (4 Successions)



# Thin-Skin Cucumber Sales 4 Successions



**LVPD**

# **LVPD**

**Leaf Vapor Pressure Deficit**

# **Leaf Vapor Pressure Deficit (LVPD)**

Measures the amount of drying power the air has upon the plant. Basically, it's how much moisture is being sucked out of the plant by the atmosphere.

# How is LVPD Calculated?

LVPD is calculated using:

- Air Temperature
- Relative Humidity
- Leaf Temperature/Stress

# What To Do:

1. When temperature exceeds 75°-85° (depending on the crop) leaf temperature needs to be reduced.

# What To Do:

1. When temperature exceeds 75°-85° (depending on the crop) leaf temperature needs to be reduced.
2. As the temperature goes up, humidity needs to go up to maintain ideal LVPD levels.



# Socrates Cucumbers 2022

**Succession #1      6/3      77 °F      RH% 70**

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**Succession #2      7/15      104 °F      RH% 35**

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**Succession #3      8/6      102 °F      RH%30**

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**Succession #4      9/24      97 °F      RH%27**

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Temp 77°  
RH 70%

Socrates Cucumbers  
June 3, 2022

**Succession #1**



Temp 104°  
RH 35%

Socrates Cucumbers  
July 15, 2022

## Succession #2



Temp 102°  
RH 30%

Socrates Cucumbers  
August 6, 2022

**Succession #3**



Temp 97°  
RH 27%

Socrates Cucumbers  
Sep 24, 2022

Succession #4

Cancel

Add

# Bar Harbor

# 73°

Mostly Sunny

H:74° L:59°

July 8, 2022

Partly cloudy conditions from 6PM–7PM, with showers expected at 7PM.

Now

3PM

4PM

5PM

6PM



73°

73°

73°

73°

64°

Wi-Fi Calling

1:51 PM



# Davis

# 102°

Sunny

H:105° L:76°

## ⚠ Heat Advisory

National Weather Service:  
Heat Advisory in Murray  
County.

See More



🕒 HOURLY FORECAST



Portable Weather Station  
Ambient Weather

June 24, 2022

Davis

100°

Sunny

H:102° L:75°

RH 27%

Sunny conditions will continue for the rest of the day.

Now	5PM	6PM	7PM
100°	100°	99°	97°

OUTDOOR

04.9 °F

78 %

INDOOR





Temp 104°  
RH 28%

Salanova Lettuce Mix  
July 25, 2022

Cherokee Head Lettuce  
Sep 6. 2022






**Magenta Head Lettuce**  
**Sep. 6, 2022**

Muir Head Lettuce  
Sep 6. 2022



A photograph of a field of Salvinus Romaine Head Lettuce plants. The plants are arranged in rows, with dark soil visible between them. The leaves are large, green, and have a distinct ribbed texture. A red text box is overlaid on the upper right portion of the image.

**Salvinus Romaine Head Lettuce**  
**Sep. 6, 2022**

A photograph of several rows of Monte Carlo Romaine head lettuce plants growing in a field. The plants are vibrant green with large, rounded leaves. The soil is dark brown and appears to be recently tilled, with some roots visible on the surface. The lighting is bright, suggesting a sunny day.

**Monte Carlo Romaine  
Head Lettuce  
Sep 6. 2022**

# Our 2 Step LVPD Plan

1: We reduced Leaf Temp with moveable White Reflective Cover when temperature exceeded 85°.

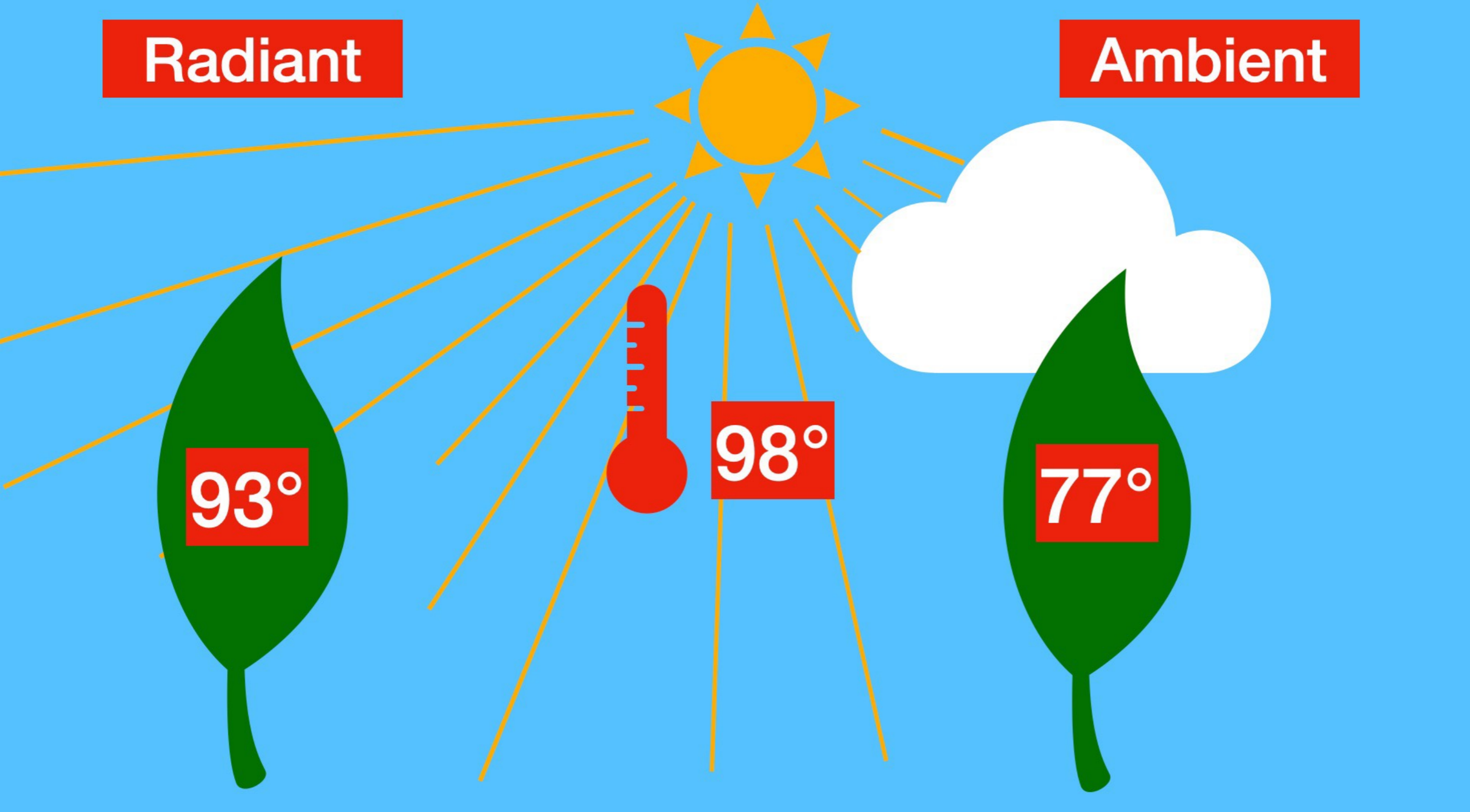
**Radiant**

**Ambient**

**93°**

**98°**

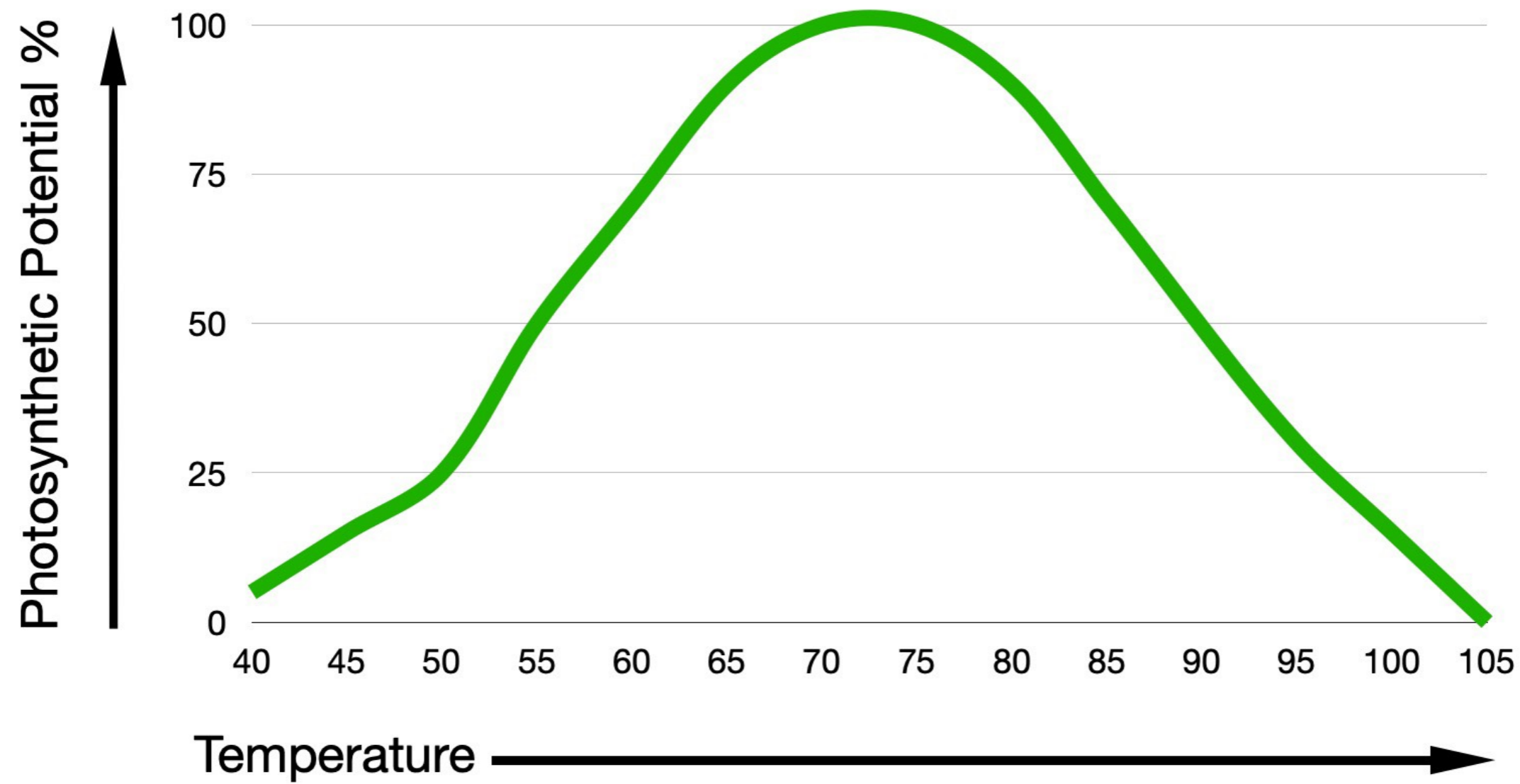
**77°**





# Ideal Leaf Temperature for Photosynthesis

Varies By Plant Variety



## Cool Loving Crops



**Dewitt White Ground Cover**















# **Ideal LVPD Levels**

## **For Cool and Warm Crops**

**60°F → 30-40% RH**

**80°F → 60-70% RH**

# Our 2 Step LVPD Plan

1: We reduced Leaf Temp with moveable White Reflective Cover when temperature exceeded 85°.

2. We grew inside hoop houses (with sides down) to reduce drying wind on crop and used foggers and timer to pulsate humidity into house during the hottest parts of the day.



A close-up photograph of a white plastic fogger hanging from a white pipe in a greenhouse. The fogger has a cylindrical, ribbed top section and a lower section with a spherical cap and a multi-directional nozzle assembly. The background shows the greenhouse structure with a translucent covering and rows of green plants supported by a trellis system.

**Netafim Cool/Net Pro Fogger**





**DIG Timer**

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**The End**