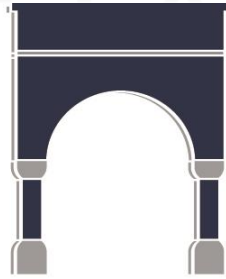


# Winter Vegetable Conference

WELCOME

# SEASON EXTENSION



LINCOLN<sup>TM</sup>

U N I V E R S I T Y  
M I S S O U R I

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COOPERATIVE EXTENSION

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**Small Farm Specialist**

**Southwest Region**

# What we are going to discuss

- ▶ Having the Correct Mindset
- ▶ Where do I put my High Tunnel?
- ▶ Structures Used for Season Extension
- ▶ Building your high tunnel





# The Correct Mindset

- ▶ As a vegetable grower:
  - ▶ We can produce healthy and tasteful fruits and vegetables throughout the growing season
  - ▶ Our purpose today, is discuss simple, low costs external inputs that will allow us to achieve the same results “on the back side of the calendar”

# The Correct Mindset

- ▶ We can achieve this by picking select vegetables and root crops that are “cold hardy”
- ▶ You will not be able to produce tomatoes in February without external heat and supplemental light!

# The Correct Mindset

- ▶ Three key Elements need to be present when approaching four season gardening:
  - ▶ Cold-Hardy Vegetables
  - ▶ Succession Planting
  - ▶ Protected Cultivation
  - ▶ Patience

# The Correct Mindset

- ▶ Cold Hardy Veggies:
  - ▶ These are simply vegetables that tolerate cold temperatures.
  - ▶ These vegetables often have lower light requirements than traditional warm season crops



# The Correct mindset

## ► Succession Planting

- This refers to sowing vegetables more than once during a season so that you can continually harvest throughout the winter
- It helps if you begin to think about this time of year as the 'second spring'

# The Correct Mindset

- ▶ Planting Dates are important in the fall!!
  - ▶ If you miss the planting date of a crop in the spring... not going to hurt you
  - ▶ If you do not sow vegetables at the correct time in the fall, you might not harvest that particular crop!

# The Correct Mindset

- ▶ Protected Cultivation:
  - ▶ This refers to vegetables growing under cover
  - ▶ Traditionally, winter vegetables can survive outdoors under a blanket of snow
  - ▶ You cannot depend on snow
  - ▶ Honestly, who wants to work in the snow?

# What we are going to discuss

- ▶ ~~Having the Correct Mindset~~
- ▶ Where do I put my High Tunnel?
- ▶ Structures Used for Season Extension
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# Where do I put my high tunnel?

- ▶ Choosing a site is extremely important
  - ▶ However, there is no site that is perfect!
  - ▶ Manage your expectations
  - ▶ You can improve almost any location for plant growth!

# Where do I put my high tunnel?

## ► Purpose

- What are you going to use this high tunnel for?
- You should keep some simple things in mind:
  - **Location**- The high tunnel should be easily accessible
  - **Water**- All vegetables are comprised primarily of water... So where is that water going to come from?
  - **Electricity** - Some applications require electric. Example: Automatic Curtains/Lights

# Where do I put my high tunnel?

- ▶ Which way should it face (orientation)?
- ▶ What is around the area (shade)?
- ▶ What condition is the soil profile in (nutrients)?
- ▶ Is the site known to have drainage issues?

# Where do I put my high tunnel?

- ▶ Airflow- Direction of prevailing winds
- ▶ Windbreaks- Can save you time and money!



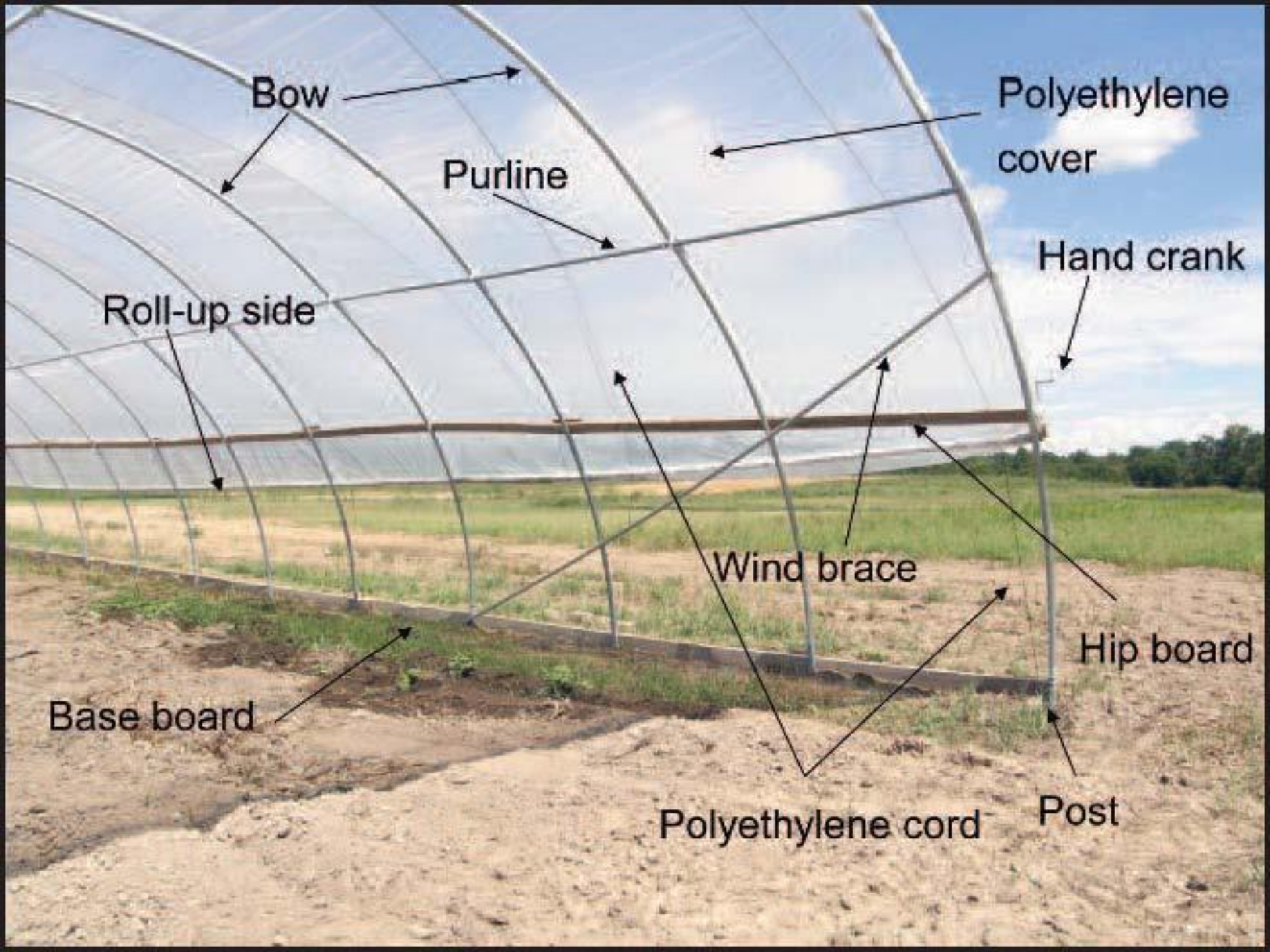
# What we are going to discuss

- ▶ ~~Having the Correct Mindset~~
- ▶ ~~Where do I put my High Tunnel?~~
- ▶ Structures Used for Season Extension
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# Structures Used for Season Extension

## ► High Tunnels

- A structure used to produce edible goods that is un-heated
- You can have power to the structure
- We have several individuals who have supplemental heating to produce certain crops



Bow

Polyethylene  
cover

Purline

Hand crank

Roll-up side

Wind brace

Hip board

Base board

Polyethylene cord

Post

# Structures Used for Season Extension

- ▶ Season Extension
- ▶ Provide Protection from Rain
- ▶ Provide Shade



# Structures Used for Season Extension

## ► Season Extension

- Having an area covered by a sheet or sheets of plastic will produce a warmer environment that is easier for the owner to harvest and work in.
- This will keep plants “growing” longer and allow an individual to transplant or direct seeder earlier in the spring







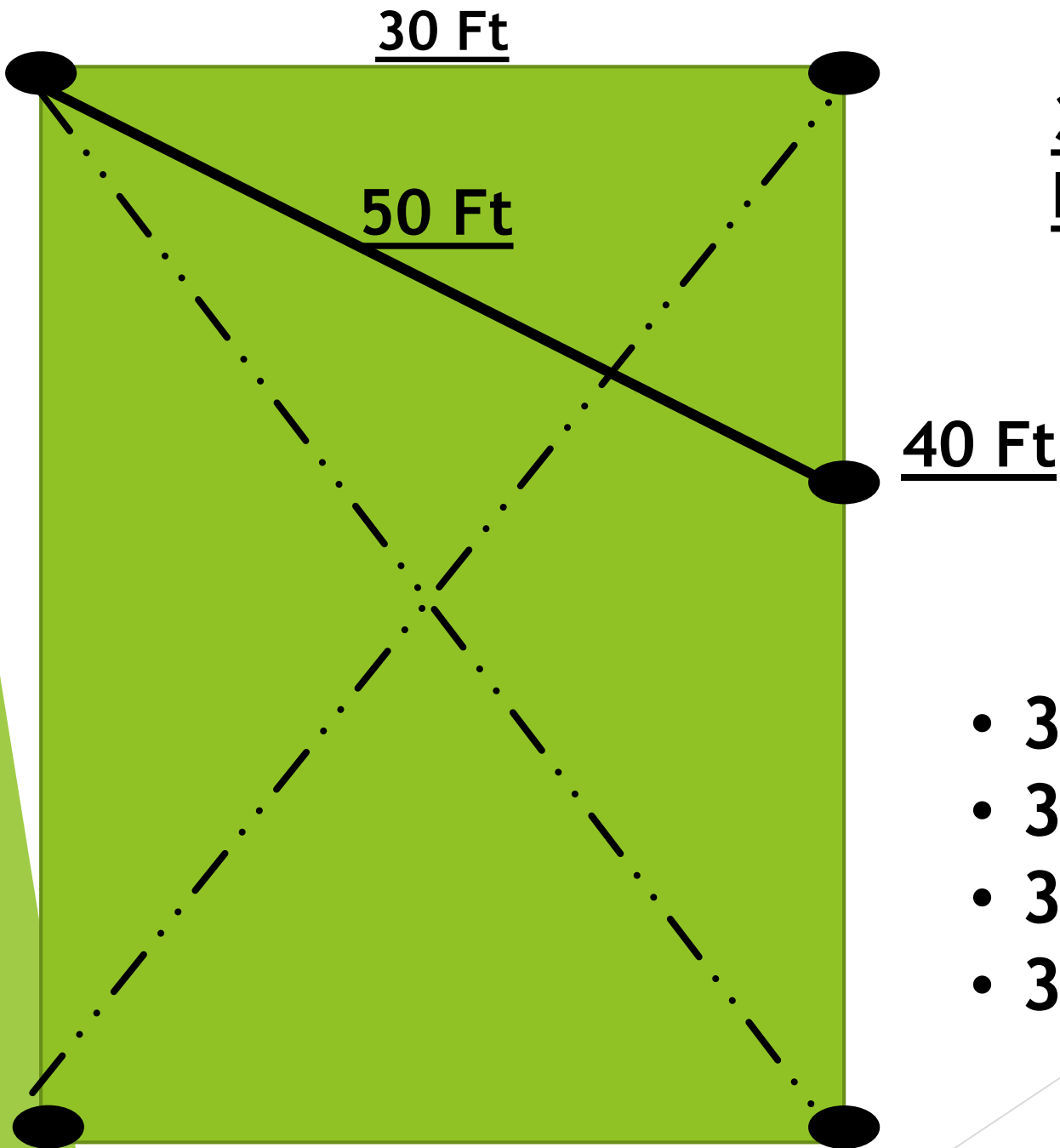
# Structures Used for Season Extension

## ► Provide Shade

- Throughout the summer months, the heating effect produces by the plastic an work against you!
- High tunnels are easy to cover with 'shade cloth' and this can reduce ambient air temperature throughout the greenhouse.

When you finally get the high tunnel





3,4,5  
Rule

- $30 \times 45 = 54.08$
- $30 \times 60 = 67.08$
- $30 \times 72 = 78$
- $30 \times 96 = 100.58$

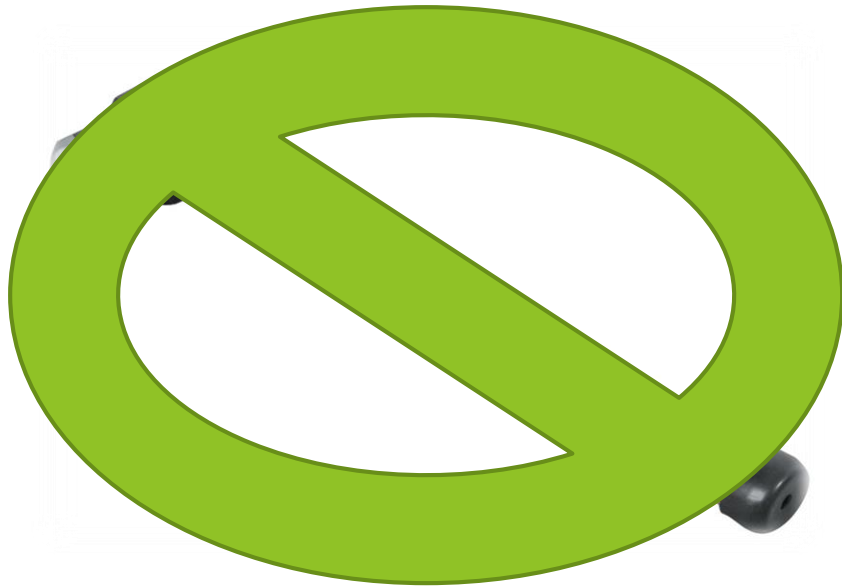


















# High Tunnels































# High Tunnels





# Moveable High Tunnels



# Structures Used for Season Extension

## ► Row Cover

- The general term “row cover” refers to spun bonded fabrics made out of polypropylene or polyester.
- The lightest of these can be loosely laid on top of plants to help with pest pressure or protect young transplants
- The heavier row covers offer additional benefits by adding as much as 8 degrees to the ambient air beneath the cover itself (where your plants are).

# Structures Used for Season Extension

























# Season Extension structures and costs

- ▶ Zimmerman- 30x96 between \$9-\$10,000
  - ▶ Roughly \$3.58 per square foot
- ▶ Caterpillar Tunnels
  - ▶ Roughly \$0.90 per square foot
  - ▶ Locally sourced materials
  - ▶ Need a bender

# Building your high tunnel

- ▶ When you buy a manufactured high tunnel... Think Lincoln log set for adults!!
- ▶ What is required
  - ▶ Patience
  - ▶ Proper Tools
  - ▶ Patience
  - ▶ Good (clear) instructions
  - ▶ Patience

# Contact Info

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