What is a High Tunnel?

High tunnels are plastic-covered, solar greenhouses which are used to lengthen the growing season and protect the crop(s) from stresses such as rain, wind, diseases, insects and wildlife.

1. Uses solar heat. (back-up heaters optional)
2. No electricity (fans, heaters, vents, etc.)
3. Vented through sidewalls or endwalls.
4. Drip irrigated.
5. Ground culture.
6. Single layer of plastic (6-mil.)
Advantages:

- Relatively low-cost
- Highly productive
- Pest exclusion
- Season extension
- Facilitates diverse production
- Complement field production
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### Cost (US $/ft²)

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Dimensions</th>
<th>Cost (US $/ft²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlas Greenhouses</td>
<td>30 ft. x 96 ft.</td>
<td>0.74</td>
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<tr>
<td>Conley Greenhouse Mfg</td>
<td>24 ft. x 96 ft.</td>
<td>0.72</td>
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<tr>
<td>FarmTek</td>
<td>26 ft. x 96 ft.</td>
<td>1.16</td>
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<tr>
<td>Harnois Greenhouses</td>
<td>20 ft. x 96 ft.</td>
<td>0.97</td>
</tr>
<tr>
<td>Haygrove Tunnels</td>
<td>24 ft. x 200 ft.</td>
<td>0.75</td>
</tr>
<tr>
<td>Stuppy Greenhouse</td>
<td>20 ft. x 96 ft.</td>
<td>0.96</td>
</tr>
<tr>
<td>Zimmerman Welding</td>
<td>30 ft. x 96 ft.</td>
<td>1.00</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>25 ft. x 96 ft.</strong></td>
<td><strong>0.94</strong></td>
</tr>
<tr>
<td></td>
<td>(2400 ft²)</td>
<td>($1.50)</td>
</tr>
</tbody>
</table>
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One inch of water per week = 1800 gallons of water for a typical high tunnel structure.
One inch of rainfall = 2300 gallons of water collected per commercial high tunnel.

Large high tunnels
- 10-17 ft. width
- 9-15 ft. height
- 48 ft. length

Season Extension?
- (3 season High Tunnel)
- 1-2 crops/year

Year-round production?
- 3-4 crops/year

Disadvantages:
- Shorter useful life
- Single poly cover
- Less environmental control for crop growth
- More vulnerable to damage from inclement weather

SMALL HIGH TUNNELS
Ridge or peak vent
A. Montri

Free-standing, Single-Bay High Tunnels

"Increase Profits"
"Make More Money"
High Tunnel Design Components:

1. Choose a site
2. Soil test
3. Amend the soil and prepare the site
4. Construct the high tunnel

30 feet width
96 feet length
Cover crops within high tunnels.

Grass/legume mix.
Space the ground posts

Positioning jig

Assemble the bows

Level the ground posts
Mobile High Tunnels
Multiple purlins with no braces
Increasing the height of the high tunnel by 3 feet will increase usable bed space for crops and provide a higher sidewall for air movement.

Marginal returns > Marginal costs
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