

What is a High Tunnel?

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Quick Answer

A high tunnel (or hoop house) is a plastic-covered structure used to protect crops and extend the growing season. High tunnels let in the heat coming from the sun and trap it, extending the warming into the cooler night. Heat in a high tunnel is controlled by opening the walls and doors to release it or by using shade cloth.

What Is the Purpose of a High Tunnel?

The purpose of a high tunnel is to give crops a protected space where you can control conditions and extend the growing season. High tunnels allow you to plant earlier and harvest later. They can also shield plants from pests (when closed), hail, and sun (with shade cloth).

How Do High Tunnels Extend the Season?

High tunnels let you plant about a month earlier in spring and harvest about a month longer in fall. Tomatoes, for example, can go in a month earlier than outside. In Logan, USU has even grown cool-season crops in a high tunnel with feet of snow outside. A bad cold snap, though, may call for added heat. In fall, you can also keep ripening crops or fit in one more planting before winter.

How Do High Tunnels Protect Crops?

Besides protecting crops from cold and frost, a high tunnel can shield them from hail, heat, sunburn, and some pests. For example, near Willard Bay, shade cloth is used to protect crops from hail. Swapping out the plastic for shade cloth can also help keep things like tomatoes and peppers from getting sunburned. Covering the tunnel helps keep out leafhoppers, the insects that spread curly top virus. However, if doors and other openings are kept open, pests from the outside can get in.

How Do You Manage Heat in a High Tunnel?

Manage heat in a high tunnel by opening it up in steps as temperatures rise. As the weather warms, open the vents at the top of the doors to release the hottest air. Later in the season, open the doors, then pull up the sides, which are only held down by rope. If it gets too hot, take off the plastic. If it gets even hotter, replace the plastic with shade cloth to protect crops from sunburn. As the weather cools, do those steps backward.

Monitor your high tunnel with a simple temperature sensor placed at plant level, since what you feel standing up is different from what plants feel near the ground. Too much heat can cause problems like cool-season plants bolting, or starting to flower.

What Kinds of Vegetables and Fruits Are Best to Grow in High Tunnels?

The best crops for a high tunnel are high-value crops that make the most of the money and time spent on its construction, crops with pest or disease problems the tunnel can help prevent (like curly top virus spread by leafhoppers), and the crops you're most focused on (like tomatoes for canning or peppers for freezing), since the tunnel's controlled setting can improve your odds of a bigger, better harvest.

What Are the Biggest Challenges With High Tunnels?

Besides managing heat, the biggest challenges in a high tunnel are soil, pests, and watering. Many people try to build up super rich soil, but that can throw nutrients out of balance and make the soil salty. Pests also wake up earlier inside because it's warmer, and the same insects that attack your garden outside will show up inside if the tunnel is open. Soil moisture sensors placed near the roots are the easiest way to make sure plants get enough water. A high tunnel also takes upkeep. The plastic wears out over time and needs to be replaced.

References

- [High Tunnel Initiative - NRCS EQIP](#)
- [High Tunnel System Initiative Frequently Asked Questions - USDA NRCS](#)

- Irrigation Management in High Tunnels - Dan Drost,
USU Extension

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