

# What is a Seasonal High Tunnel System?

A crop production system using a plastic covered high tunnel structure that is at least 6 feet in height. High tunnels are used to extend the growing season of vegetable and other specialty crops planted in the natural soil profile within the covered area in a resource-conserving manner. Producers can install heating, ventilation, or electrical systems at their own expense.

## Why use seasonal high tunnels?

A seasonal high tunnel system is used to:

- extend the growing season to increase consumption of locally-grown fresh food,
- reduce dependency on non-renewable energy sources,
- reduce air emissions by decreasing the distance to transport food from producers to consumers,
- improve water quality by reducing nutrient and pesticide transport, and
- improve plant and soil quality.

## Where are high tunnels used?

A seasonal high tunnel system may be used where vegetable or other specialty crops are grown in open field conditions and extension of the growing season is needed to continue providing fresh local crops due to climate conditions. The practice does not apply to greenhouses, low tunnel systems that cover single crop rows, or crops grown on tables, benches, portable pots, etc.

The high tunnel structure covers several crop rows, is wide enough to allow the crop to grow to maturity under the tunnel, and is tall enough to accommodate spraying, cultivating, and harvest within the intact tunnel.

## General Description

High tunnel structures must be planned, designed, and constructed according to manufacturer's recommendations to withstand local climatic conditions for the 4-year lifespan of the practice.

Commercially available structures are made in numerous widths and lengths, typically ranging 14–30 feet wide by 30–96 feet long. They must be constructed of metal, wood, or durable plastic bow frames and covered with (as a minimum) a single or double layer of 6 mil greenhouse-grade, UV-resistant polyethylene. Passive ventilation is achieved through a combination of roll-up side vents, end vents, and occasionally roof vents. Generally, the end walls are framed-in to create door and ventilation areas.



## Resource Conservation

In general, a single layer of plastic on the high tunnel may provide one hardiness zone of protection from cold temperatures. A row cover within the structure or a second layer of plastic can be used to provide another possible zone of protection.

Water runoff from the structure or from other nearby sources can cause erosion and ponding issues that must be addressed by appropriate combinations of other practices such as infiltration trenches, diversions, underground outlets, and critical area plantings. Additional management practices, including irrigation water management, nutrient and pest management, or conservation crop rotation, may be necessary to achieve conservation purposes.



United States  
Department of  
Agriculture

Natural Resources Conservation Service

**For more information  
on Seasonal High Tunnels,  
please visit**

[www.hightunnels.org](http://www.hightunnels.org)

[www.pa.nrcs.usda.gov](http://www.pa.nrcs.usda.gov)



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*February 2017*