

High Tunnel System

Conservation Practice Job Sheet

Code 325

DEFINITION

An enclosed polyethylene, polycarbonate, or plastic covered structure that is used to cover and protect crops to extend the growing season in an environmentally safe manner.

PURPOSE

To improve plant health and vigor

WHERE PRACTICE APPLIES

This practice applies to land capable of producing crops. This practice applies where an extension of the growing season is needed due to climatic conditions. The practice does not apply to crops not grown in the natural soil profile. Raised beds are limited to 12 inches in depth.



- Practice cannot be utilized to provide shelter or housing for any livestock.
- Practice cannot be utilized to store equipment or supplies.
- Practice does not include greenhouses or low tunnel systems.

Minimum Height: 6' clearance in the center of the structure

Cover Material: Minimum of one layer 6 mil Greenhouse grade UV stabilized plastic rated for a 4 year lifespan.

LAYOUT AND LOCATION

- Choose a location with a moderately well-drained or well-drained soil.
- Locate the near a viable water source for irrigation.
- Locate the practice to avoid public utilities.
- Place outside of the 100 year floodplain.
- Plan the high tunnel for convenient ingress/egress of plant materials, equipment, and other operation and maintenance activities.

SITE PREPARATION AND REQUIRED SUPPORTING PRACTICES

- Remove existing vegetation with herbicide, tillage, or a combination of both.
- Plan adequate drainage away from the structure to prevent erosion and ponding in and around the crop area.
- Level area with minimum soil disturbance.
- Check slope. High tunnel should not be installed on slopes greater than 5%.
- Plan supportive conservation practices to address all environmental concerns associated with the installation and use of the high tunnel systems such as erosion, irrigation, and runoff.
- Treat disturbed areas with Critical Area Planting (342) and Mulching (484) practices.

CONSIDERATIONS

- Consider structures with 4 foot spacing of bows because narrow spacing offers better stability than wider spaced bows.
- Set end posts in concrete, use of heavier 12 to 14 gauge steel, and install a double layer of 6 mil plastic to increase integrity of the structure.
- Use concrete ground anchors to increase stability of permanent structures.
- Installation of bracing kits (when available) is highly recommended. Lateral and horizontal bracing can increase structural strength for snow and wind load.
- Install rollup sides for temperature regulation.
- For heat retention and increased strength, install a cover using two layers of 6 - mil, greenhouse-grade, UV resistant polyethylene. Use inflation fans to produce insulated air space. This system increases heat retention in the high tunnel and helps protect the cover from wind damage.
- Plan and install waterline for irrigation. Call 811 to determine and avoid buried utilities.
- Create a minimum clearance of 10 to 20 feet between side by side high tunnel installations for snow removal and cover installation.
- Prevent potential shading of high tunnel structures by other structures or trees and locate at a distance of two times the height of the tree or structure.
- Gothic style (peaked roof) high tunnels shed snow and ice more readily than rounded roof high tunnels.
- Capture and use roof runoff for irrigation purposes though runoff should not be relied on as the only source of irrigation water.
- Rotate the location of the tunnel or remove cover in winter to allow rain, wind, sun, and cold to cleanse soil from possible salt and disease buildup.



OPERATION AND MAINTENANCE

- Operation of equipment near or in the structure shall not compromise its intended purpose.
- To protect high tunnel framework from snow, ice, or wind damage, remove cover when not in use.
- To protect structure in high wind events, secure doors and all ventilation openings prior to inclement weather.
- Control weeds with soil fabrics, covers, or mulches.
- Maintenance and repair of the high tunnel structure is the sole responsibility of the individual. The covered area will be periodically inspected and shall be replaced or repaired as needed to accomplish the intended purpose.
- If cost shared, the contract participant is expected to bear the costs of all repairs for the 4 year lifespan of this practice.

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SPECIFICATIONS

Site-specific requirements and additional provisions are listed on the following pages. Specifications are prepared in accordance with the High Tunnel System (325) practice standard in the NRCS Field Office Technical Guide. This information is considered to be part of the contract and/or conservation plan.

Client:	Farm #:
Field(s):	Tract #:
Assisted By:	Date:
Contract #: (If applicable)	Planned Growing Season: _____ (month) through _____ (month)

STRUCTURE INFORMATION	
MANUFACTURER	STRUCTURE SIZE
Company:	Width:
Model:	Length:
Type:	Total square foot (L x W)
Add. Spec: (optional)	Height: (min 6' required)
If planting is required due to construction disturbance (complete as necessary) :	
Seeding dates: _____	Lime: _____ (lbs./ac)
Fertilizer : _____ (lbs./ac) or (lbs./sq. ft.)	Mulch : _____ (lbs./ac) or (lbs./sq. ft.)

COMPONENT OR FACILITATING FOTG PRACTICES (Check all that apply. Refer to the individual specifications as applicable)	
<input type="checkbox"/> Diversion (362)	<input type="checkbox"/> Roof Runoff Structure (558)
<input type="checkbox"/> Irrigation System, Microirrigation (441)	<input type="checkbox"/> Critical Area Planting (342)
Other Conservation Practice:	
Species Planted:	Seeding Rate:

PRODUCER CERTIFICATION

<p>This structure was constructed and installed using a manufactured kit. All manufacturers' recommendations were followed. I have read and understand the operation and maintenance requirements associated with this practice. I understand that electrical, heating and mechanical ventilation equipment are not eligible for cost-share as part of this practice.</p>	
<p>_____</p> <p>Participant/Producer</p>	<p>_____</p> <p>Date</p>

NRCS CERTIFICATION

Certifications			
Job Sheet	Prepared by:	Title:	Date:
	Approved by:	Title:	Date:
Installation	Meets NRCS Standards and Specifications		
	Certification by:	Title:	Date:

Note: The High Tunnel System will be constructed according to manufacturer's directions. End walls, doors, appropriate cover must be installed prior to certification by NRCS.