

Seasonal High Tunnel System for Crops Conservation Practice Job Sheet 798

Landowner: _____ Date: _____

Tract: _____



INTRODUCTION

A seasonal high tunnel is a structure, at least 6-feet in height, which modifies the interior climate to create more favorable growing conditions for vegetable and other specialty crops grown in the natural soil beneath it. Potential natural resource benefits from using the seasonal high tunnel structures include:

- improving plant quality,
- improving soil quality, reducing nutrient and pesticide transport,
- improving air quality through reduced transportation inputs, and
- reducing energy use through local consumption.

CONSIDERATIONS

Runoff shall be directed away from the structure to prevent standing water within the sheltered crop production area.

Water runoff from the high tunnels can cause ponding and surface water runoff issues. The application of other supporting practices to manage runoff shall be considered as necessary to address runoff from tunnel covers. Supporting practices may include underground outlets, grassed waterways, water control structures, critical area plantings, and access roads. Nutrient management, pest management, cover crops, mulching, and conservation crop rotation may be used to reduce the environmental impact of crop production within the structure.

LOCATION MAP

Attach an aerial photo or diagram showing the location of the structure. The map should identify surface water drainage patterns on the site, the location of environmentally sensitive areas or other locations not suitable for the placement of the practice.

UTILITIES

The owner of the property or the contractor that is hired to complete construction must notify Diggers Hotline of the pending construction. The owner may be liable for damages resulting from construction activities that impact utilities adversely.

CONSTRUCTION SPECIFICATIONS

Runoff created by the construction of the high tunnel system shall be directed to a stable outlet. High tunnel systems shall not be placed in areas where flooding or areas of concentrated flow can be expected to occur.

The high tunnel system shall be planned, designed, and constructed according to the manufacturer's recommendations. The high tunnel frame shall be fabricated by a commercial manufacturer from metal, wood, or durable plastic and shall offer a minimum inside clearance of 6 feet. The cover shall be a minimum of 6-mil greenhouse grade UV resistant polyethylene.

A copy of the manufacturer's assembly manual and operation and maintenance recommendations shall be retained on site for review by NRCS during the four-year lifespan of the practice.

OPERATION AND MAINTENANCE PLAN

The high tunnel cover shall be periodically inspected and shall be reinstalled or repaired as necessary to accomplish the intended purpose for the four-year lifespan of the practice. Tears and punctures to the roof and side walls shall be repaired or the cover replaced as necessary to allow the structure to retain sufficient heat during the early and late growing season period and to maintain the structural integrity necessary to withstand strong winds.

Seasonal High Tunnel Systems funded by NRCS are not intended to bear the weight of snow loads. Follow the manufacturer's instructions related to the seasonal removal of the cover or the winter maintenance requirements for the structure and cover.

Crops shall be planted directly into the natural soil underlying the high tunnel system or into raised beds composed primarily of soil found on site. Plants shall not be grown in pots, on racks, in beds of growing media imported to the site, or utilize hydroponics during the four-year life span of the practice.

Passive ventilation systems (side curtains, ridge vents, etc.) shall be adjusted as necessary to maintain an appropriate growing environment in the high tunnel system.

Irrigation systems shall be installed as needed in the high tunnel system to meet the growth habits and water consumption requirements of the planned crops.

To maintain soil condition within the high tunnel system, the structure may be moved annually to a new location (if designed by manufacturer to allow movement).

Access to the high tunnel system shall be restricted as necessary to prevent children, pets, and animals from entering the production area during hazardous periods such as high heat conditions or when applying pesticides.

The use of shade cloth or other materials shall be applied to the high tunnel structure as necessary to reduce the intensity of mid-summer sunlight.

The following items shall be evaluated and recorded on an annual basis:
High Tunnel Documentation Worksheet

The size and cost to install the seasonal high tunnel system. (first year only).			Size: Length: _____ Width: _____	Cost:
* Annual maintenance activities conducted for the seasonal high tunnel system and estimated cost.		Cost:		
* What conservation planning resource concerns are being addressed with installation of this seasonal high tunnel system?		Resource Concerns:		
* Sheet and rill erosion before and after the seasonal high tunnel using RUSLE2 (NRCS).		Before:	After:	
* Drainage and erosion around the seasonal high tunnel structure. * What additional surface water management practices were installed to address the placement of the structure? (Record on the location map.)		Additional Drainage Features:		
* How effective were the water management practices?		Good	Poor	N/A
How long did the seasonal high tunnel structure extend the growing season?		Date production started: _____ Date production ended: _____		
Did the seasonal high tunnel increase production? If so, how much?		Yield:	Value:	
What rates of nutrients (nitrogen, phosphorus, and potash) were applied before and after the seasonal high tunnel system was installed?		Before N: _____ P: _____ K: _____	After N: _____ P: _____ K: _____	
What rates of pesticides (product and rate) were applied before and after the seasonal high tunnel system was installed?		Before	After	
Product 1:				
Product 2:				
Product 3:				
Product 4:				
Other observations evaluations and recommendations.				

*Statements and questions will not require a response after year 1 when, no changes occurred.