Natural Resources Conservation Service

Arkansas

Seasonal High Tunnel System for Crops

Interim Conservation Practice Job Sheet 798

Photo Source: www.hightunnels.org

Definition

A seasonal high tunnel is a polyethylene covered structure with no electrical, ventilation, or heating system, at least 6 feet in height, which modifies the climate to create more favorable growing conditions for vegetable and other specialty crops grown in the natural soil within the covered space.

Purpose

The purpose of the seasonal high tunnel is to extend the crop growing season, improve plant quality, improve soil quality, and improve water quality from reduced nutrient and pesticide transport.

Where used

A seasonal high tunnel may be used where existing specialty commodity crops are grown in open field conditions, and extension of the growing season is needed due to climate conditions.

Commercially available high tunnel structures are made in numerous widths and lengths. The high tunnels are constructed of metal or plastic bow frames that are covered with a single layer of polyethylene. Ventilation is achieved by means of 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. The high tunnel structure covers several crop rows, is wide enough to allow crop growth to full maturity under the tunnel, and is tall enough to allow spraying, cultivation and harvest to occur with the tunnel intact.

Conservation management system

Water runoff from the high tunnels or from other nearby sources can cause erosion and ponding issues that may require the application of other practices such as infiltration trenches, diversions, underground outlets and critical area plantings. These additional practices must be planned and installed as a condition for the installation of a high tunnel. Additional practices should be considered as a part of a conservation plan, such as nutrient and pest management and crop rotation.

Seasonal High Tunnel System – Job Sheet

Producer_____ Location _____

Field Office _____ Conservation Contract _____

Materials List

☐ High Tunnel Structure, size(s) _____

Supporting Practices Required:

☐ Manufactured Gutter System

☐ Critical Area Planting (job sheet attached)

☐ Infiltration Trench along each side (construction plan attached)

☐ Underground Outlets (construction plan attached)

☐ Diversion (construction plan attached)

☐ Other _____

High Tunnel System Construction

- Prepare site according to manufacturer's instructions.
- Lay out building location according to site plan.
- Assemble high tunnel structure according to manufacturer's instructions.
- Install supporting practices as required, according to construction plans provided.

Operation and Maintenance

- Periodically inspect structure and cover for damage. Reinstall or repair promptly.
- Follow manufacturer's instructions for operation and maintenance of the high tunnel structure.
- Avoid damage to structure from equipment operated in and around the seasonal high tunnel.
- Inspect runoff control measures after every significant rainfall event. Repair promptly.
- Remove and store high tunnel cover at the end of each growing season to prevent damage from snow loads. Replace cover prior to use in the spring.

_____

_____

_____

_____

_____

_____

_____

Seasonal High Tunnel System – Layout and Location

Plan view of seasonal high tunnel system site shown below.

Scale 1"=_____ ft. (NA indicates sketch not to scale: grid size=1/2" by 1/2")

Additional Specifications and Notes:

Seasonal High Tunnel System – Construction Checkout

Seasonal High Tunnel Structure – *as-built measurements*	
Length (ft)	Height in Center (ft)
Width (ft)	Structure Manufacturer

Supporting Practices Installed

- ☐ Manufactured Gutter System
- ☐ Critical Area Planting
- ☐ Infiltration Trench along each side
- ☐ Underground Outlets
- ☐ Diversion
- ☐ Other _____

CHECK OUT:

Amount Completed: _____square feet. Mark As-Built location on plan map.

Remarks_____

This practice meets NRCS standards and specifications ☐ Yes ☐ No

Check out by: _____ Date: _____

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Seasonal High Tunnel System – First Year Annual Report **page 1 of 2**

Producer_____ Location _____

Field Office _____ Conservation Contract _____

Report Date _____

Report Due On Or Before September 30, 2010

☐ Actual cost of Seasonal High Tunnel System $_____ *(attach copies of bills)*

☐ First year maintenance requirements : *(add more sheets if necessary)*

Activity or Item *(list)*	Cost
	$

☐ Two years of cropping history before installation of Seasonal High Tunnel: *(add more sheets if necessary)*

Crop (type)	Crop Year	Yield	Nutrients (Fertilizer)			Pesticide(s)		
			Type	Rate	Timing	Type	Rate	Timing

☐ First year's crop in Seasonal High Tunnel:

Crop (type)	Crop Year	Yield	Nutrients (Fertilizer)			Pesticide(s)		
			Type	Rate	Timing	Type	Rate	Timing

Seasonal High Tunnel System – First Year Annual Report **page 2 of 2**

- Growing season (2 past years, plus the first year in the Seasonal High Tunnel):

Crop (type)	Crop Year	Season Dates	Length of Growing Season (Days)

- Benefits for plant quality: _____
- Benefits for soil quality: _____
- Benefits for water quality: _____
- Producer's recommendations and observations:

_____

_____

_____

_____

_____

_____

_____

_____

Seasonal High Tunnel System – Subsequent Year Annual Report

Producer_____ Location _____

Field Office _____ Conservation Contract _____

Report Date _____

Report Due On Or Before September 30, _____

☐ This year's maintenance requirements : *(add more sheets if necessary)*

Activity or Item *(list)*	Cost
	$

☐ This year's crop in Seasonal High Tunnel:

Crop (type)	Crop Year	Yield	Nutrients (Fertilizer)			Pesticide(s)		
			Type	Rate	Timing	Type	Rate	Timing

☐ This year's growing season:

Crop (type)	Crop Year	Season Dates	Length of Growing Season (Days)

☐ Benefits for plant quality: _____

☐ Benefits for soil quality: _____

☐ Benefits for water quality: _____

☐ Producer's recommendations and observations:

_____

_____

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