

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, mechanical 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) _____
- Polyethylene cover, 6 mil greenhouse grade or better, UV resistant

Supporting Practices Required:

- Manufactured Gutter System (included with high tunnel kit)
- Critical Area Planting (job sheet attached)
- Infiltration Trench along each side (construction plan attached)
- Underground Outlet (construction plan attached)
- Diversion (construction plan attached)
- Other _____

High Tunnel System Construction

- Contact the Missouri One Call System at 1-800-344-7483 at least 2 working days in advance of construction, for location of underground utilities.
- Obtain any required permits.
- 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.

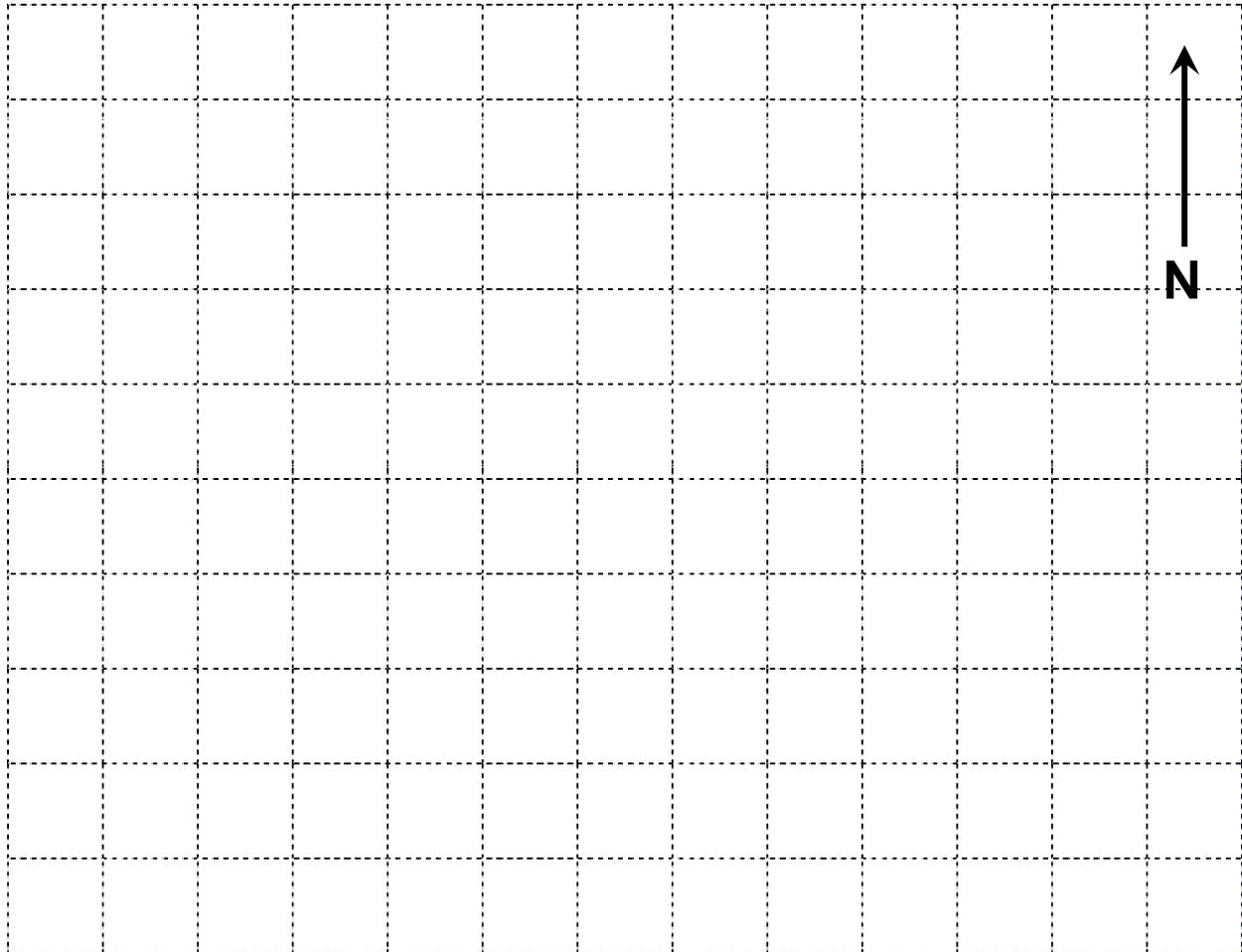
Operation and Maintenance

- 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.
- Lifespan of the high tunnel conservation practice is 4 years. In climate conditions where snow loads may damage the structure, the tunnel cover shall be removed at the end of the growing season.

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:		
Design Certification		
This Seasonal High Tunnel System plan meets the requirements of NRCS Conservation Practice Standard 798.		
_____	_____	_____
Signature	Title	Date

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	
<input type="checkbox"/> Manufactured Gutter System <input type="checkbox"/> Critical Area Planting <input type="checkbox"/> Infiltration Trench along each side <input type="checkbox"/> Underground Outlets <input type="checkbox"/> Diversion <input type="checkbox"/> Other _____	Quantities and detailed checkout information for supporting practices shall be documented separately.

CHECK OUT:	
Amount Completed: _____ square feet.	Mark As-Built location on plan map.
Remarks _____	
This practice as constructed meets NRCS standards and specifications <input type="checkbox"/> Yes <input type="checkbox"/> 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 December 15, _____

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 – Second Year Annual Report

Producer _____ Location _____
 Field Office _____ Conservation Contract _____
 Report Date _____

Report Due On Or Before December 15, _____

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

Activity or Item <i>(list)</i>	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:

Seasonal High Tunnel System – Third Year Annual Report

Producer _____ Location _____

Field Office _____ Conservation Contract _____

Report Date _____

Report Due On Or Before December 15, _____

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

Activity or Item <i>(list)</i>	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:

Manufacturers of High Tunnel Kits

Interim Conservation Practice 798 – Seasonal High Tunnel

February 10, 2010

Subject to update – Manufacturer lists with later dates may supersede this list.

This manufacturer list represents information provided to Missouri NRCS by vendors of seasonal high tunnel products and is not all inclusive. This list is for guidance purposes only and does constitute any endorsement by NRCS.

Source	Manufacturer / Style
Agra Tech, Inc Pittsburg, CA Toll Free: 877-432-3336 Web Site: www.agra-tech.com	Agra Tunnel, Cold Frame
Farm Tek South Windsor, CT Toll Free: 800-327-6835 Web Site: www.FarmTek.com Contact: Chad Pogonelski, ext. 216	ClearSpan Products: Economy Round Style, High-Roller, Premium, Gro-Max, Pro Solar Star, Single Bay, Colossal, Cold Frames
Growers Supply South Windsor, CT Toll Free: 800-476-9715 Web Site: www.growerssupply.com Contact: Chad Pogonelski, ext 216	
Tek Supply Dyerville, IA Toll Free: 800-835-7877 Web Site: www.teksupply.com Contact: Chad Pogonelski, ext. 216	
Haygrove Elizabethtown, PA Toll Free: 866-429-4768 Web Site: www.tunnelbuzz.com Contact: Mike Deitrich	Solo Series
Poly-Tex, Inc. Castle Rock, MN Toll Free: 800-852-3443 Fax: 651-463-2479 E-Mail: info@poly-tex.com Web Site: www.poly-tex.com	FieldPro, PT-30, Kool House
Morgan County Seeds Barnett, MO Telephone: 573-378-2655 Email: mcs@pcfreesmail.com Web Site: www.morgancountyseeds.com Contact: Norman Kilmer	Zimmerman's Welding High Tunnels