

Seasonal High Tunnel System for Crops – JS 798

NRCS – KY Job Sheet

Natural Resources Conservation Service (NRCS)
Lexington, Kentucky

Practice Code 798
February 2013



Definition

A seasonal polyethylene covered structure that is used to cover crops to extend the growing season in an environmentally safe manner.

Purposes

- Improve plant quality
- Improve soil health
- Reduce nutrient and pesticide transport
- Improve air quality through reduced transportation inputs
- Reduce energy use through local consumption

Conditions Where Practice Applies

Practice applies to cropland where extension of the growing season is needed due to climate conditions, **and crops will be grown in the natural soil profile.** This practice does not include greenhouses or low tunnel systems that may cover single crop rows (row covers).

Criteria

- The structure must be constructed and installed using manufacturer's pre-fabricated kit.
- Frame must be metal, wood or durable plastic, and at least six (6) feet in height.
- Cover must be a minimum 6-mil, greenhouse-grade, UV resistant polyethylene, capable of remaining functional at least 4 years.
- Runoff shall be diverted away from the high tunnel structure to avoid ponding.
- Seeding and vegetation shall be established on all disturbed surfaces.

Considerations

- Rotate the location of the tunnel to allow rain, wind, sun and cold temperatures to cleanse the soil from salt and disease build up. Rotation allows growing cover crops on the site during the uncovered period.
- Determine the need for associated practices necessary to support the structure and its use.
- Plant pollinator habitat adjacent to the structure.
- Install roll-up side curtains to provide air circulation and temperature regulation.
- Lateral and horizontal rafter bracing is recommended to increase structural design strength for wind and snow loads.
- Concrete ground anchors to increase stability of permanent structures.
- Install framed end walls that include sliding, fold-up or roll-up type entry doors to increase structural stability.
- Gothic style (peaked roof) sheds snow and ice more readily than rounded roofs.
- Structures with rafters on 4 foot spacing offer better stability than ones with wider spacing.

- Locate structure in a well-drained soil in close proximity to a water source for irrigation.
- Install a cover using two layers of 6-mil, greenhouse-grade, UV resistant polyethylene. Use inflation fans to produce air space. This system increases heat retention in the high tunnel and helps protect the cover from wind damage.
- To protect against wind damage, remove polyethylene cover when high tunnel is not in use.
- To protect structure in high wind events, secure doors and close all ventilation openings.



Framed end walls with roll-up, fold-up or sliding doorways are best for accommodating equipment, assisting with ventilation and providing structural stability.



Lateral and horizontal bracing and framed end walls increase structural stability.



Lack of adequate bracing and framed end walls can result in structure failure.

Operation and Maintenance

- The covered area will be periodically inspected and shall be replaced or repaired as needed to accomplish the intended purpose.
- Operation of equipment near or in the structure shall not compromise its intended purpose.
- The structure shall not be used for storage of equipment or other uses not consistent with the intended purpose.
- Maintenance and repair of the high tunnel structure is the sole responsibility of the individual. If cost shared, the contract participant is expected to bear the costs of all repairs for the lifespan of the practice.

Seasonal High Tunnel System Job Specification Sheet

Name: _____ Farm #: _____ Tract #: _____

Assisted by: _____ Field Office: _____ Contract #: _____

Structure Information

Manufacturer: _____ Model: _____

Height (min 6' req'd): _____ Width _____ Length _____ Total Square Feet _____

Cover – 6-mil Yes No

Other Conservation Practices (as required, identify on location or plan map)

Diversion Grassed Waterway Critical Area Seeding Roof Runoff

Other: _____

Irrigation, if checked, identify on location or plan map, and verify the following:

2 out of 5 years irrigation history verified

Irrigation system addresses water quantity resource concern and results in reduced water usage

When seeding recommendations for erosion control on disturbed areas is required:

Species and rate to be planted: _____

Recommended seeding dates: _____ Lime _____#/ac

Fertilizer: _____#/ac

Certification

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.

Participant/Producer

Date