United States Department of Agriculture
Natural Resources Conservation Service

Seasonal High Tunnel Frequently Asked Questions

What is a Seasonal High Tunnel System for Crops?
A seasonal tunnel system is a polyethylene (plastic) covered structure that is used to cover crops to extend the growing season. They are also known as high tunnels or cold tunnels. They are used to extend the growing season for crops by approximately two-three weeks on each end of the season by increasing the temperature surrounding the crop and minimizing the heat loss during the night.

Are Seasonal High Tunnel Systems the same as Greenhouses?
No. Both seasonal high tunnel systems and greenhouses can depend on plastic covering and often heaters to raise temperatures within the structure. However, plants in greenhouses usually grow in containers. Plants in seasonal high tunnels grow directly in the soil. Unlike greenhouses, seasonal high tunnel systems are seasonal and are considered temporary structures. Greenhouses often have concrete floors and glass windows but seasonal high tunnels should not.

How are crops grown in the Seasonal High Tunnel System?
Crops can be grown by either using conventional tillage in the natural soil profile or by installing permanent raised beds under the tunnel. Seasonal high tunnel systems installed under the Environmental Quality Incentives Program (EQIP) are not designed for crops grown on tables/ benches or in portable pots.

Are row covers and/or low tunnels considered a Seasonal High Tunnel System eligible for EQIP?
No. In order to qualify as a seasonal high tunnel system under EQIP the tunnel system must be 6 feet in height; therefore, row covers and/or low tunnels do not qualify under EQIP.

How can the EQIP help me install a Seasonal High Tunnel System?
Persons interested in participating in the EQIP should contact their local NRCS office. Individuals will be asked to submit an application and to show proof of ownership (deed) or control (lease lasting throughout the contract period) of the land on which the system will be installed. To meet land eligibility requirements applicants must have land that is currently in cultivation or presently capable of being planted to a crop (i.e. land in a fallow condition) on which they wish to place their seasonal high tunnel system.

Once individual and land eligibility are determined to meet the program requirements, the EQIP application will be logged into the NRCS system. Individuals will meet with NRCS to evaluate their specific conservation needs and to determine what practices they would like to install on their land. Applications will then be finalized and submitted for ranking and funding consideration. Individuals will be contacted concerning the status of their application. Applications selected for funding will proceed into the contracting phase. Program contracts will be developed that outline practices to be installed, payment rates, time frame schedule for installation and operation and maintenance requirements. EQIP payments cannot be received for practices installed prior to contract approval or for existing conservation practices.

What are the structure requirements for a Seasonal High Tunnel System under EQIP?

Under EQIP, the seasonal high tunnel system must be obtained as a pre-fabricated kit directly from the manufacturer or from a supplier. The frame shall be constructed of metal, wood, or durable plastic and be at least 6 feet in height. The plastic cover must be, at a minimum, a 6-mil greenhouse-grade, UV resistant polyethylene. Bows and rafters must be no more than 4 feet apart. Individuals must work closely with their manufacturer or supplier to plan, design and construct the structure in accordance with the manufacturer's specific recommendations.

When selecting a kit individuals should consider factors such as structure design strength for snow and wind loads, the type of anchoring system required, the strength and thickness of the polyethylene cover provided with the kit, venting method (roll-up or drop-down sides) and any warranties provided on the frame or covering. Reputable manufacturers and suppliers should be able to provide this information for the seasonal high tunnel systems that they sell. Individuals should look for manufacturers that offer kits providing warranties of 4 years for the plastic covering and 10 years for the frame structure. Information regarding snow and wind zones can be obtained from your NRCS office.

How do I find a manufacturer or supplier of Seasonal High Tunnel Systems?

Start local. Many local farm, building or greenhouse suppliers may sell kits.

One of the easiest ways to find a manufacturer or supplier of seasonal high tunnel systems is to use an internet search engine by searching on the key words "High Tunnel". A good website is http://www.hightunnels.org. Look for designs for northern tier states with high snow and wind loads like those in Alaska.

What size Seasonal High Tunnel Systems are available?
Systems are available as "kits" in all sizes and dimensions. Under EQIP regulations, contract payments can be made on systems installed on cropped areas of up to five percent of one acre or 2,178 square feet. Structures can be larger; however, contract payment is limited to 2,178 square feet per producer.

What usually comes in a Seasonal High Tunnel kit?
Basic kits usually include the frame structure and assembly hardware; polyethylene cover with roll-up or drop-down side assemblies and heavy duty ground posts. Optional items include manufactured end panels and/or door assemblies as well as top and bottom baseboard kits. Most kits will require the use of locally purchased lumber to construct baseboards and door frames and some additional anchoring equipment.

Can I build my own Seasonal High Tunnel System under the EQIP?
No. NRCS standards currently allow only for the installation of pre-fabricated, seasonal high tunnel system kits. Participants cannot make their own kit, such as bending pipes purchased from a hardware store.

What factors should I consider when deciding where to place my Seasonal High Tunnel System?
Seasonal high tunnel systems should be placed perpendicular to prevailing winds to insure proper ventilation and if possible, with the long axis oriented in an east-west direction to give maximum exposure to the sun. Systems should be located in areas that are NOT prone to shade. An ideal location would be level, protected from the wind, and south facing.

Look for sites with topography allowing adequate drainage of roof runoff away from structure. Many kits can be modified for installation on areas with a one to two percent grade along one axis (generally the length side) but most cannot be installed on areas with two directional slopes. Consult your manufacturer or supplier for specific guidelines. At sites where roof runoff away from the structure is problematic, a stable outlet should be installed to prevent water ponding. Systems should also be located in areas allowing convenient ingress/egress of plant materials and equipment. Make sure water for irrigation is available.

Is a Seasonal High Tunnel System moveable?
Many systems are movable and can be rotated to different locations depending on the anchoring system used. Please note that while the system can be moved that sometimes moving the structure can negate the manufacturer's warranty on the system. Make sure to check with your manufacturer or supplier if you plan to rotate your high tunnel to a different location.

Contact your closest NRCS office for more information.
All numbers are area code 907

Anchorage	283-8732 x100
Aniak	479-3159 x1012
Bethel	479-3159 x1012
Craig	826-5690
Delta Junction	479-3159 x1010
Dillingham	842-3240
Fairbanks	479-3159 x1010
Glennallen	822-5111
Homer	235-8177 x103
Juneau	586-7220
Kenai	283-8732 x100
Kodiak	235-8177 x107
Mat-Su Valley	373-6492 x101
Nome	443-6096
State Office	761-7760

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What requirements are there for maintaining and operating a Seasonal High Tunnel System?
EQIP regulations require that the system be functional for a minimum of four years. Due to this requirement, individuals should be very careful in selecting the seasonal high tunnel system kit that they purchase to make sure it will remain functional throughout the contract period. Maintenance and repair of the system is the sole responsibility of the contract holder. If damage occurs, contract holders should be prepared to bear the costs of making repairs or replacing the polyethylene cover during the contract period. The EQIP does not provide any additional payment to aid in the repair of structures.

NRCS highly recommends individuals remove the plastic covering from the structure prior to winter to prevent damage from snow loads and wind. Frigid temperatures can make the polyethylene covering very fragile and prone to shattering. Polyethylene life depends on the quality of installation, operation and weather factors. Several ways to help increase the lifespan of the polyethylene covering are to place the rafters close enough to minimize flapping in the wind, cross brace the structure to prevent vibration in the wind, sand the rafters smooth prior to installing polyethylene, wrap rafters with plastic or styrofoam, install the polyethylene cover on a warm day to get plastic tight on cold days, keep farm implements and people off the polyethylene and make sure the structure is well anchored. Contact your specific manufacturer for additional suggestions.

How much does a Seasonal High Tunnel System cost to install?
Seasonal high tunnel system kits vary in price by manufacturer and/or supplier. Using estimates obtained from several vendors it was determined that a high tunnel system kit, shipping expenses, lumber and labor for installation would cost approximately $6.00 per square foot on the road system and approximately $9.56 per square foot off the road system. EQIP program payments for seasonal high tunnel systems are based on a 50 percent flat rate payment schedule; therefore, the payment rate for on road contract holders is $3.00 per square foot and for off road contract holders is $4.78 per square foot

What other conservation practices would be good to use with a Seasonal High Tunnel System?
Additional conservation practices could include nutrient management, pest management, irrigation water management and conservation crop rotation. Your local NRCS office can provide you with additional information about companion practices.