

# Seasonal High Tunnels for Food and other Specialty Crop Production

## High Tunnels Overview

### **Why Seasonal High Tunnels**

A seasonal high tunnel is a greenhouse-like structure, 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 beneath it. There is anecdotal evidence which suggests there are conservation benefits associated with these structures, though scientific research is very scarce. This pilot will test the validity of potential conservation benefits.

### **Potential Resource Benefits of High Tunnels**

Potential natural resource benefits from using tunnel structures include: (1) improve plant quality, (2) improve soil quality, and (3) improve water quality through methods such as reduced nutrient and pesticide transport.

### **Market Availability of High Tunnels**

There are many commercially available high tunnel structures on the market 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. Alternately, materials may be purchased for individual construction rather than a prefabricated structure for considerably less cost (e.g., \$3,500 for a prefabricated 20' x96' structure compared with \$1,330 for the individual materials for a 17' x100' structure).

### **Interim Conservation Practice Standard**

NRCS will use an interim conservation practice standard to field test this new technology. NRCS will ask states to volunteer for the field test and all states that volunteer will be selected. The participating states will prepare annual reports to discuss the strengths and weaknesses, and to provide recommendations about whether to develop a national conservation practice standard or to discontinue the use of the conservation standard. A final report from the participating states will be required at the end of the 3-year pilot. Annual and final reports will be submitted to the National Conservation Practice Subcommittee Chair.

### **Applicability of High Tunnels**

High tunnels have applicability to all farms, but may offer particular advantages to small, limited resource, and organic farmers by extending the growing season, producing higher quality crops, and improved yields, and addressing soil and water quality concerns.

### **Systems Approach**

Water runoff from the high tunnels can cause ponding and runoff issues that will require the application of several other practices such as underground outlets, grassed waterways, structures, critical area plantings, and access roads. These additional practices will need to 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.

Other requirements for operation and management: (1) requires management to control internal temperatures, especially in the early season, (2) plastic covers need to be removed before snowfall, and (3) producers should account for costs associated with the high tunnel lifespan, including replacement covers and disposal of removed covers.

### **Financial Assistance for High Tunnels**

High tunnel systems can be eligible for financial assistance through the Environmental Quality Incentives Program (EQIP), and the Agriculture Management Assistance (AMA) Program. They will also be included in practices available for funding through the EQIP Organic Initiative. Financial assistance will be available for tunnels up to 5% of one acre in size per farming operation. Payment schedule cost data will be developed as dollars per square foot (rather than dollars per structure) to ensure cost efficiency.