GROWERTALKS

Features

5/1/2022

Guide to High Tunnel Production

Patrick Mahoney

Outdoor cultivation has been the standard for agriculture since the beginning of time and it certainly remains an effective method of crop production. Still, with each passing year, growing strategies improve and new technology allows growers to produce on scales that may have never been possible by simply growing in soil.

Pictured: Vitruvian Farms in McFarland, Wisconsin, extends the growing seasons for organic produce with high tunnel growing structures.

This doesn't mean growers have to acquire a state-of-the-art greenhouse or grow room, though, as there are a number of ways to increase production outdoors. One way is to implement a high tunnel, which offers a convenient middle ground between greenhouse and outdoor cultivation.

Growers obviously want to minimize their expenses, but at the same time want to maximize crop growth and boost their profitability. This can be a tough balance to achieve, as newer growing practices can often come with a hefty price tag.

However, with a high tunnel, growers can start to obtain some of the benefits of greenhouse growing, without having to make a large investment or overcomplicating their grow. A high tunnel hoophouse offers a cost-effective solution that can significantly improve an operation's efficiency, while providing a number of other benefits along the way.

A key advantage is the potential for a high tunnel grant, which is offered through a Natural Resources Conservation Service (NRCS) program. This grant allows growers who qualify government funding that alleviates some of their production expenses.

For growers who want to stick to soil, a high tunnel is the perfect way to enhance in-ground crop production, solve general outdoor issues and increase profits.

High tunnel, high profitability

By optimizing crop growth and providing growers with the opportunity for a high tunnel grant, a high tunnel hoophouse can subsequently boost an operation's value. Growers can use this opportunity to sell more crops in the spring and fall, some of which may fetch a better price premium because they're more difficult to find at certain

times. This gives growers the potential for additional income, providing more stability than an operation that's inhibited by the weather during colder parts of the year.

Crops grown inside a high tunnel hoophouse also tend to be higher quality than those grown while exposed to the elements and yields are commonly larger. Since the temperatures in a high tunnel are more consistent, crops that grow best in predictable temperatures can thrive and often be sold for a higher price on the market because of their quality. Some crops that are known to perform well in a high tunnel include tomatoes, cucumbers, corn and peppers.

Most growers will still want to use the rest of their land to maximize crop production and a high tunnel hoophouse's benefits can impact these plots of outdoor crops as well. Growers can use their structure for seed propagation to get a head start on crops that will be produced outside the high tunnel. The high tunnel hoophouse will protect the seedlings before they can be moved to outdoor rows, so growers will be ready to plant their seedlings as soon as the weather allows.

Getting the grant

One of the major advantages of acquiring a high tunnel is that growers can potentially qualify for funding through the NRCS. The initiative, known as the Environmental Quality Incentives Program (EQIP), aims to aid agricultural producers.

This high tunnel grant can be an invaluable resource for outdoor cultivators, as it allows them to reinvest savings back into their operation and possibly increase their profit margins. To qualify, there are a few stipulations that growers will need to meet.

According to the NRCS, individuals, organic producers, legal entities, joint operations and Indian Tribes who produce in the agricultural space can qualify for the high tunnel grant, so long as they grow on eligible land and have concerns about their natural resources, which a high tunnel hoophouse could help rectify.

Pictured: Operations can start growing earlier and harvest later into the year, even if they're located in colder northern climates.

Eligible growers can then submit an application for EQIP to the NRCS, where they'll have to meet several other requirements before being accepted for financial aid. Certain growers who have their application accepted may qualify for advance payments.

Under the 2018 Farm Bill, these growers are classified as "Historically Underserved Producers" and can be considered for advance funding because they're limited in their resources, socially disadvantaged, a beginner in agriculture or have a veteran status.

The EQIP high tunnel grant covers a wide range of outdoor growers and makes a high tunnel hoophouse an even more attractive option for improving cultivation. Since there's an opportunity for operations to gain financial support, more growers can access the benefits of a high tunnel and increase their productivity.

How does it work?

A high tunnel is a passively vented structure that's erected over a plot of soil where crops are then grown directly in the ground below. A GrowSpan high tunnel utilizes a sturdy metal frame and is typically covered with a single-layer

film, although growers have the option to utilize two-layer film as well. A high tunnel hoophouse acts as a line of defense between crops and the outside world, particularly with harsh weather, common pests and disease.

By absorbing sunlight and trapping heat, a high tunnel hoophouse creates more consistent temperatures for crops to thrive in, keeping them warm during colder hours of the day. There's generally no permanent heating or automated ventilation systems, so growers can use the natural environment to improve their crop growth, rather than having to spend more money on new tech and raise their utility bills.

This makes a high tunnel hoophouse the perfect tool for extending the growing season. Operations can start growing earlier and harvest later into the year, even if they're located in colder northern climates. A high tunnel creates a unique balance between newer practices and more traditional approaches that can provide outdoor growers huge advantages over their competitors.

Solving common problems

In outdoor cultivation, growers are at the complete mercy of the weather and their surrounding environment. This means operations have less control over the outcome of their harvest, which can present a number of issues that debilitates both the size and quality of crops.

One of the biggest variables a high tunnel can help mitigate is severe weather. Weather can be extremely unpredictable and create difficult conditions for plants to grow in, like when hail, frost, strong winds or excessive precipitation are present.

The film covering on a high tunnel prevents plants from getting damaged and gives growers peace of mind when storms occur, ensuring their crops will still be healthy after bad weather passes. Keeping severe weather out also makes tending to crops easier by allowing growers to stay dry and protected if they need to work during a storm.

In a high tunnel hoophouse, growers may also have an easier time keeping pests and disease away from their crops. Not only is it more difficult for pests to find their way into the structure, but the ones that do are easier to eradicate because they're confined to the space within the high tunnel, rather than being scattered across the outdoors. Fewer pests can also translate to a reduction of pesticide use, further benefiting the crops being grown.

Moisture buildup on crops is a common issue that typically aids disease development, but because a high tunnel hoophouse keeps out rainfall and is still easy to ventilate, crops stay dry and it's far more difficult for disease to proliferate. This gives outdoor growers one of the most notable benefits of indoor growing, providing them with a line of defense against common crop diseases.

Additionally, a high tunnel hoophouse creates the opportunity for more efficient watering. Growers can implement new systems, like drip irrigation, a common method of water delivery in a high tunnel. Through this technique, water is delivered efficiently and precisely to crops at their root zone, minimizing waste while ensuring they get water where it's most effective. Drip irrigation has also proven to be effective when used in a high tunnel because it further diminishes the presence of disease and weeds.

Adding versatility

Arguably the biggest advantage growers gain from a high tunnel hoophouse is the versatility it adds to their operation. With a high tunnel, growers expand the possibilities of what they can achieve in outdoor crop production.

Since they're more mobile, high tunnels can occasionally be relocated around a property as a grower's needs change. An example of this is Grow-Span's Rolling Premium High Tunnel, a portable high tunnel hoophouse that can be easily moved. It's placed on high-quality, durable pipe track rollers that allow the structure to be placed where it's needed most.

Having a moveable high tunnel is a valuable tool for crop rotation, which can provide a number of benefits to a grower's plot of land. Crop rotation is defined as the practice of growing different crops in succession on the same land to preserve the productive capacity of the soil. This can reduce nutrient depletion within the soil, interrupt pest and disease cycles, and increase soil organic matter, among other advantages.

Growers with unique requirements will find that a high tunnel hoophouse can usually meet most of their needs. For an area with heavy snow, a high tunnel can include support kits and rafter kits to provide additional strength. In regions with high temperatures, roll-up or drop-down sides allow for full ventilation to keep plants from succumbing to heat stress.

No matter the region or purpose, a high tunnel can provide growers with a valuable tool for improving outdoor cultivation. Operations can stick to soil production and potentially gain funding through a high tunnel grant, increasing their profitability while eliminating a substantial amount of risk. **IG**

Patrick Mahoney works for GrowSpan Greenhouse Structures. For over 40 years, GrowSpan has been providing the horticulture industry with high-quality growing structures. For more information visit www.GrowSpan.com.