

Seasonal High Tunnel Systems are temporary, non-coded structures that are installed in prefabricated kits that may consist of metal, wood, or durable plastic frames with a polyethylene cover. In Florida, the Seasonal High Tunnel System would typically be used for cool season vegetable crops such as broccoli, carrots, cabbage, celery and lettuce.

Fewer pest problems may result when using Seasonal High Tunnel Systems, but if pest problems were to occur within a seasonal high tunnel it may prove to be more severe when compared to a traditional field arrangement, since the population will thrive within the protected environment. However, reduced costs may be realized during chemical applications for pest and weed control since the opportunity for drift is decreased.

The cost of a pre-fabricated seasonal high tunnel and its installation range from \$3,200 to \$7,300, depending on the freight costs. Average annual costs would be approximately \$2,000, which include operation and maintenance costs.

In order to decide if a seasonal high tunnel is appropriate for an operation, the following breakeven analysis may provide some additional information. Below, total costs are provided for a seasonal high tunnel and a traditional row crop operation for green peppers. Total costs include both variable and fixed costs (*i.e., site preparation, mulching, plants, transplanting, fertilizer, pest control, monitoring and harvesting, machinery, management and marketing*).

For a 2,178 square foot seasonal high tunnel, total costs are estimated at \$4,340 and has an average yield of 1,370 lbs. of green peppers. Total costs include the average annual cost of the seasonal high tunnel structure. One acre of a traditional row crop green pepper operation has an average total cost of \$15,300 and an average yield 26,480 lbs. of green peppers. In order to breakeven in the first year of operation, a pepper grown in a seasonal high tunnel must receive a market price of \$3.17 per lb. compared to a traditional row crop operation that will breakeven with \$.57 per lb.

Item	Yield (lb.)	Total Cost	Breakeven Cost – Estimated Price Received (per lb.)
Seasonal High Tunnel	1,370	\$4,340	\$3.17
Traditional Row Crop	26,480	\$15,300	\$.57

The six-year average (2003 – 2008) for a price received for green peppers in Florida is \$0.43 per lb. However, some Seasonal High Tunnel Systems may produce a better grade product and influence where a breakeven occurs because of a higher market value for the product. Also, if the producer extends the projected lifespan of the seasonal high tunnel through proper operation and maintenance, the average annual cost would decrease, thereby decreasing the breakeven cost.

Operation and Maintenance

Seasonal High Tunnels may be considered labor intensive. Strong winds may tear and rip the polyethylene cover if not properly installed and/or maintained. In addition some seasonal high tunnels require additional labor to manually raise and lower the sidewalls for adequate ventilation. Operation and maintenance of the Seasonal High Tunnel System is equivalent to 3% of total installation costs.



Conclusion

High tunnels have the potential to accelerate growth of vegetable crops, but this does not necessarily result in higher yields. However, a Seasonal High Tunnel System has an advantage in allowing earlier planting and longer marketing. In addition, there may be some protection from frost in the fall. Careful consideration has to be taken on whether or not a market has already been established for Seasonal High Tunnel System products and if there is adequate labor and sufficient technical knowledge in making the system function well.

References:

1. Xin Chao, Conversation, University of Florida.
2. Carey, Ted; "Vegetable Production on High Tunnels in the USA – State of the Art," Kansas State University.
3. Cornell University, "Estimated Production Costs for Peppers in an Unheated High Tunnel, 2008"
4. University of Florida, Institute of Food and Agricultural Sciences, "Production Budget for Bell Peppers in Southwest Florida, 2007-2008."
5. University of Florida, Institute of Food and Agricultural Sciences, "Production Budget for Bell Peppers in Palm Beach County, 2007-2008."
6. National Agricultural Statistics Service, Prices Received.

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