

“Extending the Market Season with High Tunnels—The Rookie Season”

Presented by David Heidebrink
The Heide-Way Farm
Wakefield, Kansas

- Welcome!
- Name, location.
- Been gardening all of my life all over the U.S. and abroad.
- Transitioned out of the Army, wanting to do something enjoyable that would pay the bills. So of course, farming was the first thing that came to mind! We bought a small farm and wanted to develop income from the farm.
- Decided to “test the waters” at a local farmers’ market and the following season I was officially a market farmer.
- I get part time help from my very supportive and tolerant wife, Jamie, and my 17-year old daughter, Brittany.
- I dearly enjoy what I do, and I’m thankful that it also supports my family.
- For those of you who’ve ever worked in the corporate world and made a good living but came home stressed out and worn out everyday and had to drag yourself out of bed each morning, you may agree with me that “There is no wealth like mental health”! I’m much happier, enjoy a very low level of stress, and have a new set of challenges to occupy my mind each season of the year.
- So, that’s a little about me and how I got here. (Slide) So now lets talk about the how I got into high tunnel production.

Why Grow with High Tunnels?

- Higher quality produce
- Higher net production
- Earlier and later harvest/marketability
- Higher price for produce out-of-season
- Semi-controlled growing environment
- Increased financial return and lower risk

•There is a long list of reasons to incorporate high tunnels into your production model. Besides the ones I've listed above, can anyone think of other benefits to growing in a high tunnel?

•We're going to discuss these benefits and more, but first lets take a look the content of this presentation, so you'll kinda have a roadmap of where we're going. (Slide)

Content Overview

- Why high tunnels?
- My first-year experiences
- Getting started
- Financial advantages
- Production advantages
- Marketing advantages
- What worked well
- What didn't work well
- Lessons learned

•(Review Slide) As I cover these issues, if you have a question or need clarification, go ahead and stop me. I'll also have some time at the end of the presentation for questions. If it's something unrelated to the topic or is really in-depth, please get with me off-line after the presentation and we can discuss your question. Any questions so far?

•How many of you attended the high tunnel workshop on Thursday? (Slide)

Getting Started

- 2007 GPRVGC High Tunnel Workshop
- Uncommitted and leery of commercial prices
- Started with 12' x 20'
- Too small, but saw definite benefits
- Recovered investment in 3 weeks



•Well, that's how I got started, too! That was my first year attending this conference, and what I always tell people that are interested in market farming is that, besides the wealth of information that you'll gain here, probably the most important intangible benefit is the inspiration that comes from being around like-minded folks who all started where you might be right now, and how excited they are to share their success stories with you! There are very few industries where trade secrets are shared so freely and openly, and with such enthusiasm!

•So, after the conference I went straight home and told my wife what I was planning to do and she kinda rolled her eyes and looked at me suspiciously and asked, "who are you and what have you done with my husband"! We kinda laugh about it now, but that conference was a very defining moment for me.

•Now, don't get me wrong, I still had a lot of apprehension, but after seeing how many other folks had started out where I was then and how successful they'd become, I just knew I could make it work.

•I was excited about the possibilities of high tunnel production, but one thing that concerned me was the initial cost of putting one up. I was being quoted prices starting in the \$6-7K range for one tunnel all the way up to the \$30-40K for an acre of tunnels!

•Well, not having actually earned any money farming, I didn't want to over-extend myself in case this thing didn't work, so I put together a few hundred dollars and built a little 12 x 20 out of 2x6s, pvc pipe and cheap plastic.

•I started growing in it in March and by the middle of June I had taped the plastic together a couple of times and finally one night the wind just ripped in half and it was lying on the ground. But, it had done it's job and I got stuff to the market pretty quick that first spring. Not a lot of stuff, but what I had was absolutely beautiful!

•Saw benefits

•Recovered my investment in the first 3 weeks at the market and it paid for itself 2 fold the first season

•So, I replaced the plastic that fall with g.h. film and I still use it for herbs and other starts...it's very easy to heat if need be!

•So, I knew I was onto something and knew that I had to have a big tunnel in order to really make any money at it, so (slide) I built a bigger tunnel. This time a 16 x 48.

Getting Started

- Moved up to 16' x 48'
- Built with reclaimed iron rafters, pressure treated lumber/4' x 4'
- Added “time-savers” and made more efficient
- Used for early farmers’ market, summer tomatoes, and fall CSA
- Recovered investment in 3 weeks



- Designed and built it myself using reclaimed materials. Added roll up sides and ends, drip irrigation, electricity for the blower fan that inflates the double-poly ceiling, installed a thermometer to monitor high and low temps...both air temps and soil temps, and installed above-ground growing trays made from sections of bale elevators.
- Used for early season crops for the market, summer tomatoes, and fall CSA.
- Again, I was surprised that I recovered my investment in only 3 weeks, and this one paid for itself 5 fold in one season! (Slide)

Getting Started



- Raised beds, large doors, all sides roll up for ventilation, header line, growing trays (slide)

Getting Started



- Drip lines, sides/ends rolled up, large volume and variety of plants. Scallions, radishes, salad mix, spinach, arugula, carrots, turnips, napa cabbage, tomatoes.
- Early crops came out to allow space for tomatoes. (Slide)

Getting Started



- I eventually had to prune these vines back when they grew above the rafters. About 7' tall...

Getting Started

- Moved up to 26' x 76'
- Commercial package bought on Craigslist
- Made conversions and improvements
- Plan to recover investment in 3-4 weeks and quadruple ROI during first year



•Partially assembled, plastic still in the boxes, had never been erected. A basic 26 x 76, but I converted it to roll-up sides for ventilation, framed the ends and enclosed with plastic, had double poly layer but added blower fan, electricity, drip irrigation, raised beds, and swinging double doors.

•Recover investment and quadruple ROI first season.

•You might be asking yourself, “can you really make that money back so quickly”? (Slide)

How Can the ROI Be So Quick?

- Why are high tunnels so profitable?
- Why should you consider investing in one?

Financial Advantages— Reduced Risk

- Relatively small upfront investment with first-year return on investment!
- Can double, even triple ROI in first season
- High tunnel is “crop insurance”—protects against wind, hail, drought, floods, insects
- The ideal climate virtually guarantees a marketable crop

- Compare the upfront investment of a high tunnel to that of a tractor. If they each cost the same to buy, would the tractor pay for itself in three weeks? Or pay for itself 3 or 4 times over in one season?
- Think of the investment as “crop insurance” for the small, market farmer. Protects against...
- And, the controlled environment practically guarantees a marketable crop.
- How are these financial advantages realized? (slide)

Production Advantages

- Higher Quality
 - More number one's and less seconds
 - Near-perfect growing conditions
 - More marketable and more valuable results
- Higher Production
 - Faster, stronger growth
 - Out produces field crops
 - More and longer harvests

- With higher quality crops and higher volume of production!
- Larger, picture-perfect veggies, fewer blemishes, more marketable product that will demand a higher price, especially early in the season!
- The crop grows stronger and faster and significantly out produces field crops. Example, 50 high tunnel early tomatoes out produced 100 of the same variety of early field tomatoes by double! That's twice the production from half the plants! Also, our high tunnel salad mix was harvested 4 times compared to 2 times in the field. Again, increasing profit margin with less expense, labor, and plantings. Questions?
- In addition to the production advantages, there are even more important marketing advantages. What do you think some of those would be? (slide)

Marketing Advantages—Early Season

- First to offer product with early season production
- Little competition
- Low supply + high demand = higher prices
- Develop early customer loyalty



•If your market starts at the end of April like mine does, what types of products do most of the vendors come to market with? (Plant starts, potted flowers, herbs, crafts, baked goods, prepared foods, jams and jellies, etc.) If you're the only vendor until the middle or end of May who has any sizeable amount of fresh veggies, what do you think is going to happen? If folks want to buy fresh veggies, they're going to buy them from you!

•Now, what drives prices and sales at the farmers' market? Supply, Demand, and competition. If you have less supply than there is a demand for, the product fetches a higher price...it's more valuable! So again, if no one else brings veggies for the first several weeks of the market, you can count on selling out, and making more per unit than you might later in the season when everyone has that product. This is a clear marketing advantage resulting from your high tunnel production. In my case, those first three weeks while I was the only vendor with veggies I generated enough in sales to pay for the tunnel, and still used it for another 9 months, earning profit off of it each week.

•Another important and often overlooked advantage to early season production is that you develop and maintain an early rapport with your new-season customers and, whether through salesmanship, friendship, or a belief in the same growing philosophy, they become "your" customer. And if you continue to treat them well they'll be "your" customer the rest of the season or until someone else treats them better. But, you got the first shot at it by having that early production. I heard a statistic recently that stated "90% of your profit comes from 10% of your customers". It's that 10% that I'm constantly looking for, getting to know, finding something in common with, and treating like VIPs. I have very little difficulty establishing a regular customer base this way. (slide)

Marketing Advantages—Late Season

- Can extend **Sales** season well past **Growing** season
- Crops mature and “hold” with a little added frost protection
- Again, little competition
- Consider winter marketing—CSA, Food Co-ops, restaurants



- As farmers in this zone, you probably know that besides cold weather, another main reason crops don't grow well in the winter is due to short day length. So, if you can get your crops in the ground or high tunnel with enough time to mature before about 15 November, you can extend your marketing season by months.
- And, again, at this time of the year, most market farmers are not growing past the end of the farmers' market season, so there is little competition.
- My winter marketing consists of a small CSA in November and December and then the remaining produce I have I sell to food co-ops. You could also consider many other direct marketing options in your area.
- Our CSA worked well for us since the majority of our labor was already put in by late September with the exception of weekly harvesting, but we were able to start on other farm related projects that went neglected during the busy summer and still have a significant monthly income in the winter months. Granted, that leaves a pretty short “off-season”, but time off is over rated anyway, right?
- Any questions? (slide)

What Worked Well?

- Low initial investment with each new tunnel (with strong ROI first year)
- Gained confidence and experience
- Developed a larger market AS tunnel production increased
- Experimented with cold-heartiness
- Added “time savers” and increased efficiency with each new tunnel

• What worked well...I was pleased with the relatively low initial investment each time I expanded. One of the reasons I hesitated with high tunnels in the first place was the high initial investment of commercial size tunnels. So, building them for much less was key for me.

• I also gained two seasons worth of experience on a small scale that involved little risk. I gained confidence and learned the variations of growing in a tunnel compared to the field. When I made a mistake, it was a small one that wasn't disastrous to the entire enterprise. Once I became aware of what to grow in a tunnel and how to grow it, I could then apply it on a larger scale in the bigger tunnels.

• Another benefit to starting small is that I was able to build my market as my production grew. I've never had a problem with an excess supply! Everything I grow, I sell.

• I also saw first hand which of my crops were the most cold hearty, and to what temperature they were cold hearty. I recorded temps in my tunnel last spring down to 15 degrees in March and the spinach, arugula, salad mix, turnips, and carrots that I had started in there went untouched by the cold. This prompted me to plant a larger volume of these crops outdoors under low tunnels for early fall harvest and reserve the space in the high tunnels for late winter harvest where additional frost protection would be needed.

• And, of course, with each new tunnel I built, I was able to make improvements to the design and structure of the larger ones. You know, there's nothing like doing something the hard way for a while to teach you knew ways to save time and reduce labor! Something as simple as adding irrigation, a larger door, above ground growing trays makes a big difference if it saves you an hour a day for the duration of the growing season!

• Now, although I cited many advantages of starting small and building slowly (slide), in retrospect, I probably started too small.

What Didn't Work Well?

- Started **too** small (?) and quickly outgrew capacity
- Located 16' x 48' tunnel near house, but away from the rest of the production facilities
- Didn't plan well for "time-savers" early on, i.e., venting, irrigation, proximity to facilities, etc.

- In each case, I very quickly outgrew the growing capacity of the first two tunnels. Now, again, in my case that was also because I was increasing my sales and marketing efforts, but if I knew then what I know now, I would have started bigger and sooner.
- I also should have built the second tunnel nearer my field production, where all of my other production facilities are located. It's just not as efficient as it could be.
- This goes for my planning process, too. Although I gained in efficiency each time I built a bigger tunnel, those timesavers would have been nice to have in the smaller tunnels as well. Of course, when I started out, I had a lot more time and wasn't as concerned with running out of day light!

Lessons Learned

- Don't be afraid!
- Start with a high tunnel you can grow into
- Plan ahead
- Shop around for “deals” or “going-out-of-business” opportunities
- Be confident that you'll earn your investment back!

•Farming in high tunnels is still farming! Its not rocket science or something completely removed from what you're doing already. In fact, its much simpler growing in tunnels since the plants seem to thrive without much effort from the farmer. There's less stress on the plants from weather extremes, less pest and insect pressure, and therefore stronger healthier plants that take care of themselves!

•As far as what size tunnel to start with, I would recommend starting small, but not too small. I guess that pretty subjective, but I think it really depends on what your planning to grow in the tunnel and how large your existing business is now. I would say it's like buying shoes for kids, you want to get something they'll grow into instead of buying shoes every couple months.

•Along with that, try to picture your business in a year or two down the road and what types of things you might want to incorporate into the tunnel when you buy and build it instead of retrofitting it later. This is where your five-year business plan comes into play.

•If you want to try to save some upfront costs and can design and build your own you can save quite a bit of money that way. You can also look for going out of business deals or put want ads in papers for used packages. They'll still require your ability to assemble them but as long as the package is in good shape, it'll cut costs for you.

•And, lastly, regardless of what you end up paying for your tunnel, you can be very confident that you'll earn your investment back relatively quickly. Probably within a season or two depending on your marketing and sales. But, there is definitely money to be made in high tunnels of any size and I would encourage you to try one yourself! It could be one of the most profitable additions you make to your farming operation!

Conclusion

- Why high tunnels?
- My first-year experiences
- Getting started
- Financial returns
- Production advantages
- Marketing advantages
- What worked well?
- What didn't work well?
- Lessons learned

•So, in conclusion, we're talked about...

Questions?

