

# High Tunnel, Hoophouse, Passive Solar Greenhouse Internet Information

Compiled by John Biernbaum, Michigan State University, January 2014

Getting started with a high tunnel and looking for information? Here are some helpful sites.

## Michigan State Hoophouse — Adam Montri [www.hoophouse.msu.edu](http://www.hoophouse.msu.edu)

Map of hoophouse farmers and locations

### General Hoophouse Information:

- [High Tunnels.pdf](#) 75 pages – a great overview document to read at the start for an overview
- [Hoophouse Bed Layout](#) – considerations for how to grow crops efficiently in your tunnel
- [Interior Cover Options](#) – for warm season summer or cool season winter – an interior cover is essential.
- [Hoophouse Baseboard Options](#) - construction help for you to consider
- [Hoophouse Endwall Options](#) – several options about materials and doors

### Hoophouse Crop Schedules: - What to Plant When

- [General High Tunnel Planting Schedule.pdf](#)
- [Warm Season Crops Schedule](#)
- [Fall Crops Schedule](#)
- [Winter Crops Schedule](#)

### Hoophouse Business Planning Information:

- [Hoophouse Example Business Plan.pdf](#) MSU Extension bulletin – 28 pages of details
- [Ten Hens High Tunnel Planting Plan & Income Projection \(Spring\).jpg](#)
- [Hoophouse Farming Startup](#) – MSU Extension bulletin – 12 pgs – farmer experiences
- [Sample record-keeping template](#)
- [Cool Season Crops Revenue Estimator](#)
- [Warm Season Crops Revenue Estimator](#)
- [Crop Enterprise Budget Builder](#)

### Michigan Farmer YouTube Videos: - On farm interviews and examples from high tunnel farmers.

- [Tom Rumble, Whitmore Lake, MI](#)
- [Fusilier Family Farm and Greenhouses, Manchester, MI](#)
- [Nine Bean Rows, Nic and Jen Welty, Omena, MI](#)
- [The Moore's, Engadine, MI](#)
- [Pond Hill Farm, The Spencer's, Harbor Springs, MI](#)

### High Tunnel YouTube Videos: - basic steps and tips before you start construction.

- [Construction](#)
- [Construction Continued](#)
- [Temperature and Humidity](#)
- [Crops, Transplants, and Water](#)
- [Production tips, costs, and marketing](#)

## Michigan State Horticulture Biernbaum [www.hrt.msu.edu/john-biernbaum/pg4](http://www.hrt.msu.edu/john-biernbaum/pg4)

Articles and presentations for down load covering a wide range of topics including:

- Organic Transplant Production
- High Tunnels and Hoophouses
  - Crop selection, planning and rotations – examples from MSU-SOF
  - High Tunnel Opportunity and Decisions – site and tunnel selection
  - Irrigation and Soil fertility Management - 10+ years of results from the MSU-SOF
  - Light & Temperature Management - a key to winter harvest scheduling
- Compost and vermicompost - for long term fertility management – how to make and use
- Vegetables and Season Extension, Perpetual Produce, Post harvest

## **Midwest Season Extension** <http://www.midwestseasonextension.org/>

Construction Videos of Eau Claire Wisconsin build led by Adam Montri

Projects and Programs Page: Summaries of many research projects

<http://www.midwestseasonextension.org/programs.html>

Resources Page: list of books, publications and web pages

<http://www.midwestseasonextension.org/resources.html>

## **SARE Season Extension Topic Room**

<http://www.sare.org/Learning-Center/Topic-Rooms/Season-Extension-Topic-Room>

- [An Overview](#)
  - [High Tunnels](#)
  - [Greenhouses](#)
  - [Nurseries](#)
- [Types and Construction](#)
  - [The Basics](#)
  - [Winter Storage](#)
  - [Other Design Considerations](#)
- [Variety Trials and Selection](#)
- [Fertility Management](#)
- [Pest Management](#)
  - [The Basics](#)
  - [Grafting for Plant Resilience](#)
  - [Beneficial Insects](#)
  - [Biofumigation](#)
- [Water Management](#)
- [Energy](#)
  - [Temperature Management](#)
  - [Energy Conservation](#)
  - [Alternative Energy Strategies](#)
- [Marketing and Economics](#)

Thermal Banking Greenhouse

<http://www.sare.org/Learning-Center/Multimedia/Videos-from-the-Field/Thermal-Banking-Greenhouses>

## **High Tunnels Website** - [www.hightunnels.org](http://www.hightunnels.org)

Headings for Educators; Growers; Organic; and additional resources and links.

## **Attra Web Site** <https://attra.ncat.org/> National Center for Appropriate Technology

Many (hundreds) of publications over a wide variety of topics

Season Exten for Market Gard: <https://attra.ncat.org/attra-pub/summaries/summary.php?pub=366>

Recorded Webinar: Hoophouses <http://www.youtube.com/watch?v=VZ-JAGKcup8> 1 hour

## **University of Minnesota High Tunnel** <http://hightunnels.cfans.umn.edu/>

- A detailed 168 page High Tunnel Manual is available for download in approximately 12 files.
- Valuable presentations from 2012 and 2013 Annual High Tunnel Conference

## **Matt Kleinhenz, Professor, vegetable specialist, Ohio State University**

A wide variety of valuable materials including publications, videos, pictures, handouts

<http://hcs.osu.edu/vpslab/crop-environment-resources>

## **Lewis Jett, West Virginia (and Missouri)**

High Tunnel Tomatoes – 2003- 32 pages

<http://extension.missouri.edu/publications/DisplayPub.aspx?P=M170>

High Tunnel Melons and Cucumbers 2006 20 pages

<http://extension.missouri.edu/publications/DisplayPub.aspx?P=M173>

[http://anr.ext.wvu.edu/commercial\\_horticulture/high\\_tunnels](http://anr.ext.wvu.edu/commercial_horticulture/high_tunnels)

- [Design and Construction of High Tunnels in W.Va.](#)
- [High Tunnel Temperature Management](#)
- [Economics of High Tunnel Vegetable and Strawberry Production](#)
- [High Tunnel Winter Cropping Systems](#) – Presented by Lewis Jett at the 2010 West Virginia Small Farm Conference - a 38 minute audio and slide presentation.
- [Parenthocarpic Crops for High Tunnels](#) - short news item about variety options

## **Cornell High Tunnel Information** <http://www.hort.cornell.edu/hightunnel/>

### **Johnny's Selected Seeds** Tool Dude, season extension, training materials and videos

Grower Library [http://www.johnnyseeds.com/t-growers\\_library.aspx](http://www.johnnyseeds.com/t-growers_library.aspx)

Videos <http://www.johnnyseeds.com/t-video.aspx>

Blog of Growing Ideas: <http://growingideas.johnnyseeds.com/>

### **Lost Creek Hoophouse Benders, Videos and accessories**

<http://www.lostcreek.net/home.html>

Both pipe bending for tunnel construction including videos and useful parts for construction of simple high tunnel structures.

### **NRCS Seasonal High Tunnel EQIP Initiative**

<http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/financial/eqip/0>

### **e-Extension – Introduction to High Tunnels**

<http://www.extension.org/pages/18358/introduction-to-high-tunnels#.UtmsUvso6Hs>

### **New Entry Farmer Training Program Resource Library**

<http://nesfp.org/farmer-training/library>

### **Building Solar Greenhouses**

<http://www.builditsolarblog.com/2012/11/solar-greenhouse-research-no-heat-needed.html>

### **Four Season Tools**

<http://www.smallfarmtools.com/>

Information about a variety of systems and tools for four season farming.

Web site and information continues to grow;

Consultation and education also available

## Haygrove Tunnels

<http://www.haygrove.com/>

Also more than a site to purchase high tunnels. Information about growing systems and unique ideas from around the world.

## Growing for Market

Perhaps one of the most important sources for up to date relevant information to save farmers money. An investment in a Growing for Market subscription or past editions, either printed or electronic, will provide a handsome return many times the amount invested.

Home Page: <http://www.growingformarket.com/>

Hoophouse specific: <http://www.growingformarket.com/categories/Hoophouse-production>

Books: Hoophouse Handbook, Hoophouse Update, many more valuable resources

<http://www.growingformarket.com/store>

## ACRES The Voice of Eco-Agriculture

While not high tunnel specific, this monthly publication has been a valuable part of my reading since beginning my subscription two years ago. My regret is not starting the subscription sooner.

Home Page: <http://www.acresusa.com/>

Magazine: <http://www.acresusa.com/magazine>

Books and Videos: <http://www.acresusa.com/store>

## Example Midwest HT Suppliers: Alphabetical Order

Atlas <http://www.atlasgreenhouse.com/>

Farmtek <http://www.farmtek.com/farm/supplies/home>

Four Season Tools <http://www.smallfarmtools.com/>

Haygrove <http://www.haygrove.com/>

Nifty Hoop <http://www.niftyhoops.com/> 30' wide tunnels and 14' wide "side steps"

Rimol <http://www.rimolgreenhouses.com/> great site with additional information

Zimmerman <http://www.zimmermanshightunnels.com/>

## Other useful HT you-tube videos:

Practical Farmers of Iowa

<https://connect.extension.iastate.edu/p66134179/?launcher=false&fcsContent=true&pbMode=normal>

<https://connect.extension.iastate.edu/p9fkzckg9h/?launcher=false&fcsContent=true&pbMode=normal>