



# Economics of Hightunnels

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GPGC 2017



# About Me

- First generation farmer
- Owner of Juniper Hill Farms
- 2014 graduate of ISU
  - Agricultural Business
  - Agronomy
  - Agricultural Entrepreneurship
- Agricultural entrepreneur
- Interests in post harvest handling, marketing, storage, and distribution of local and regional foods.



# Background

- Raised in Lawrence, Kansas.
- Moved with family to rural Douglas County, Kansas in 1999.
- Became interested in agriculture as a kid.
- Began working at different agricultural operations in my area as a teenager
  - Sweet corn, vegetables, cattle, row crop





# Background

- Decided I wanted to do something for myself.
- Purchased some old hay equipment with savings from summer jobs.
- Baled 20 acres of hay in 2006, and sold it quickly.
- Saw my opportunity to enter into farming!





# Background

- Expanded hay operations throughout high school.
- Graduated high school in 2009, and produced 10,000 small square bales that summer.
- Entered into vegetable operations in 2010 with the construction of our first high tunnel.
- Started schooling at Iowa State in the fall of 2010.



# Background

- Constructed second high tunnel in 2011, and grew on one acre.
  - Primarily marketed crops at farmers market's.
- Expanded to two acres of vegetables in 2012, and focused on direct sale to grocers and restaurants.
- Partial USDA Organic Certification of farm in 2012.
- Increased hay production to 500 acres.





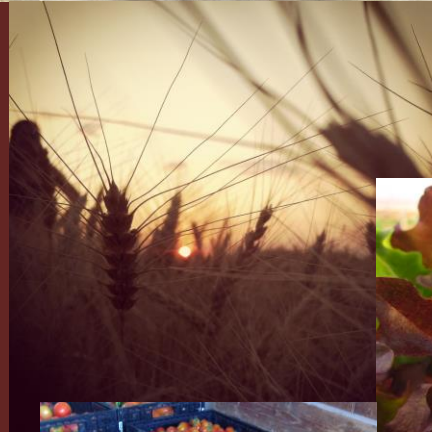
# Today we...

- Produce 1000 acres hay and alfalfa, small grains and row crops.
  - 2,400 round bales and 4,000 square bales in 2017.
- Grow 60 acres speciality crops
  - 30 acres USDA Certified Organic
  - 30 acres conventional
  - Serving grocery stores, restaurants, CSA's, wholesale grocers, food manufacturers, school districts, and others.
    - Harvested over half a million lbs of produce for fresh market distribution in 2017.
- Provide agricultural consulting services, hay and vegetable brokering services, and custom hire services to over 100 customers around the region.



# Crops We Grow

- Hay and alfalfa
- Small grains and soybeans
- Hops
- Vegetables
  - Lettuce (head and leaf), Greens, Kale, Bok Choi, Napa Cabbage, Sweet Corn, Watermelons, Pumpkins, Winter Squash, Zucchini, Beets, Radishes, Carrots, Cherry Tomatoes, Turnips, Popcorn, and many more!





**201**

**1**

**1/4  
Acre**

**2012**

**1 Acre**

**2013**

**2 Acres**

**2015**

**15 Acres**

**2014**

**5 Acres**

**2016-2018**

**60 Acres**



# High Tunnels!





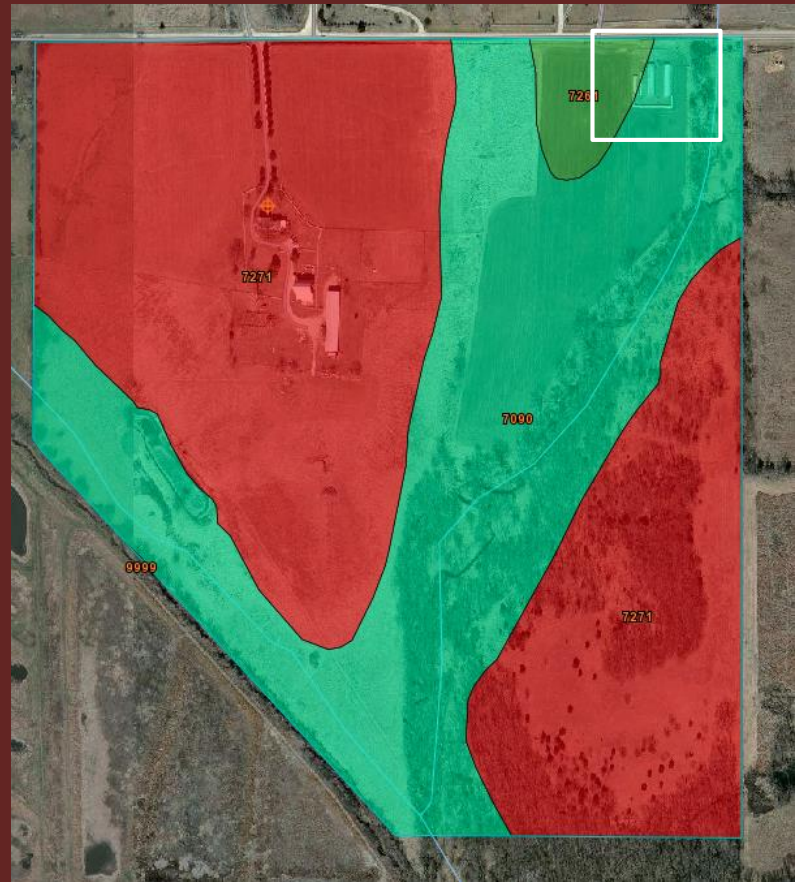
# Entry into the Unknown

- Applied and received Organic EQIP grant for high tunnels available through the NRCS.
- Had NO experience or education in vegetable production, but saw an opportunity to diversify and expand the farm.
- Constructed first high tunnel and began to grow on a small scale to determine crops that would work well in the area.



# Construction of Our High Tunnel

- First step was site selection.
  - Limited to commodity crop production area.
- Selected level area in creek bottom with high quality soil.
- Wabash silty clay loam soils with good drainage and high organic matter.







































































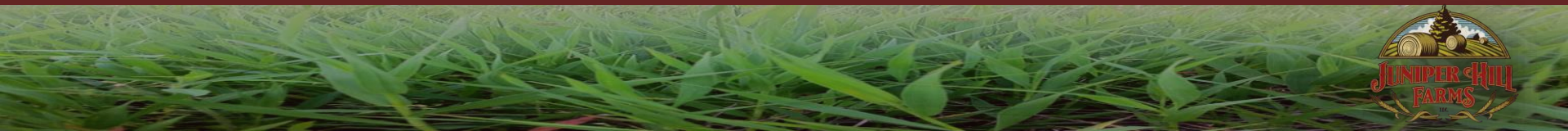






























# Construction Costs

| Item                             | Cost           |
|----------------------------------|----------------|
| <b>Hummert Intl. High Tunnel</b> | <b>\$5,200</b> |
| <b>End Walls</b>                 | <b>\$750</b>   |
| <b>Baseboards</b>                | <b>\$260</b>   |
| <b>Other</b>                     | <b>\$200</b>   |
| <b>Total</b>                     | <b>\$6,410</b> |

- Do not forget the labor costs!!
  - 80+ hours of labor... Not included in costs as much of it was considered 'sweat equity' for the farm.







Growing





# Making Your Plan

- Form a 12 month plan
  - Down to the week!
- Things to consider
  - Crop rotations
  - Fertility needs of crop
  - Seasonal weather
  - Market demand
  - Sequential planting requirements
  - Opportunity costs of space
  - Labor involved
- High tunnels need high value crops, and quick turn around to be economically feasible!





# Crop Rotations

- Use common agronomic sense.
- Overplanting/double-cropping can increase pest and disease presence, and can decrease quality and yields of crops.
- Spring, Summer Fall rotations with uses of cover crops if not overwintering crops.





# Fertility Needs

- Take annual soil samples.
- Apply compost or manure during off season.
  - Be aware of food safety regulations.
- Regular application of fertilizers at proper times in growth cycle.
  - Fertigation or foliar application methods.



• Plant beneficial cover crops when possible.





# Weather

- Seasons change!
- Be ready for whatever could come your way.
  - Row Covers
  - Ventilation
  - Opening/closing sides
- It IS possible to grow year round without heat if you have the right cropping system and the right tools.







December 20<sup>th</sup>







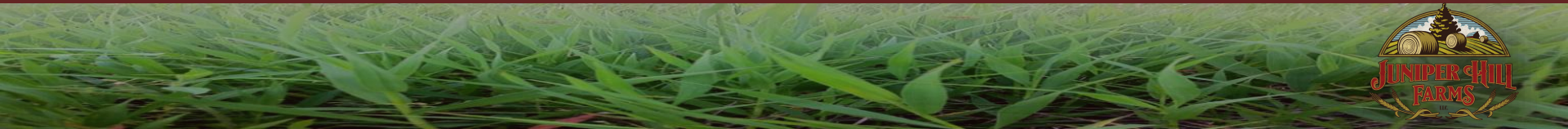
January 6<sup>th</sup>







January 6<sup>th</sup>







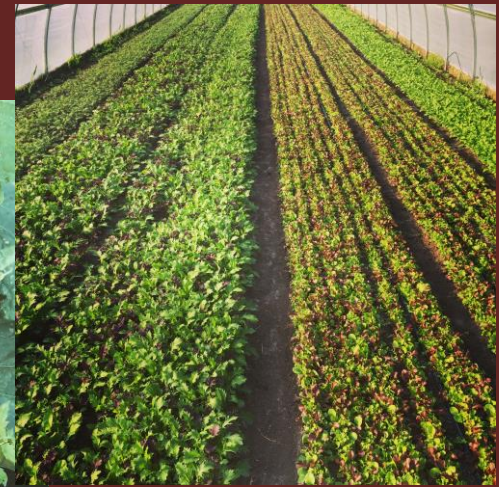
February 28<sup>th</sup>





# Maximize your Output

- High tunnels give you an advantage to season extend.
- But, be ready take move your inventory.
- Hightunnels create a premium in price product.
- However, you need to get to the market early to make it profitable!
- Keep up on consumer trends and industry changes.





# Sequential Plantings

- Key to keeping your customers supplied and satisfied.
- Requires detailed planning in high tunnels.
- Remember to account for day length changes.





# Opportunity Costs of a High Tunnel

- Make enterprise budgets of each crop to determine economic profitability and feasibility.
  - Remember to account for labor involved in season extending/winter growing conditions.
- Cost of production is much higher per square foot in a high tunnel. Make sure you plant high value crops!

|  |
|--|
| 2008   |
| 100  |
| Grading and Packing                            |
| Boxes Labor                                    |
| Steel frame gothic 2400 (20x120')              |
| see notes 840 1/2 pints                        |
| retail, Farmers Market, price \$2.50 to \$3.50 |





# Following Your Plan

- Plans will change
- Be ready to react.
- It is key to inform customers of changes to availability as soon as possible to avoid problems and confusion.
- Always record when plans change, and use it in your future plans.





# Keep Good Records

- Record keeping in the field, and in the office is key to your success!
- Without history, you cannot see the future.
- Yields of crops, sales, quantities available, peak harvests all are key items to track.

|    | A                           | B       | C                 | D               | E              | F              | G          | H              | I           | J           | K                | L             | M      | N            | O                    | P    | Q    | R    | S    | T       | U    | V    | W   | X   | Y    | Z    | AA | AB |
|----|-----------------------------|---------|-------------------|-----------------|----------------|----------------|------------|----------------|-------------|-------------|------------------|---------------|--------|--------------|----------------------|------|------|------|------|---------|------|------|-----|-----|------|------|----|----|
| 1  | JHF 2013 Tomato Yield Data: |         |                   |                 |                |                |            |                |             |             |                  |               |        |              |                      |      |      |      |      |         |      |      |     |     |      |      |    |    |
| 2  |                             |         |                   |                 |                |                |            |                |             |             |                  |               |        |              |                      |      |      |      |      |         |      |      |     |     |      |      |    |    |
| 3  |                             |         |                   |                 |                |                |            |                |             |             |                  |               |        |              |                      |      |      |      |      |         |      |      |     |     |      |      |    |    |
| 4  | Date:                       | Harvest | Martha Washington | Cherokee Purple | Japanese Black | Striped German | Brandywine | German Johnson | Jasper (F1) | Yellow Mini | Defiant PHR (F1) | Oregon Spring | Monica | Total Weight | Total Yield To Date: |      |      |      |      |         |      |      |     |     |      |      |    |    |
| 5  | 6/27/13                     |         | 1.6               | 1.12            | 1.3            | 2.3            |            |                | 1.15        | 1.25        | 1.15             |               |        | 1.5          | 2.9                  | 5    | 2.9  | 1.5  | 1    | 0.25    |      |      |     |     |      |      |    |    |
| 6  | 7/1/13                      |         | 2                 | 1.5             |                |                |            |                | 0.25        | 0.75        |                  |               |        | 2.5          | 2.5                  | 2.5  | 2.5  | 2.5  | 2.5  | 2.5     |      |      |     |     |      |      |    |    |
| 7  | 7/5/13                      |         | 3.25              | 1.8             |                | 0.75           | 1.05       |                | 0.7         | 2.4         |                  |               |        | 3            | 3.75                 | 3.8  | 3.2  | 1.8  | 1.0  | 2.75    |      |      |     |     |      |      |    |    |
| 8  | 7/9/13                      |         | 2                 | 1.1             |                | 0.8            | 0.2        | 0.5            |             | 0.8         | 2.85             |               |        | 4.85         | 21.1                 | 5.4  | 3.4  | 0.3  | 2.3  | 0.7     |      |      |     |     |      |      |    |    |
| 9  | 7/11/13                     |         | 5.1               | 29.5            | 1.7            | 4.65           | 2.9        | 2.1            |             | 2.8         | 12.1             | 4.2           |        | 4.6          | 25.2                 | 45.6 | 11.1 | 21   | 11   | 3.75    |      |      |     |     |      |      |    |    |
| 10 | 7/15/13                     |         | 7.25              | 18.1            | 6.58           | 6.5            | 8.2        |                | 7.5         |             |                  |               |        | 5.8          | 46.5                 | 66.8 | 28.4 | 10.2 | 7    | 37.4    |      |      |     |     |      |      |    |    |
| 11 | 7/18/13                     |         | 33.1              | 49.8            | 10.3           | 7.1            | 9.9        |                |             |             |                  |               |        | 5.32         | 12.9                 | 35.1 | 17.3 | 7.5  | 10   | 38.5    |      |      |     |     |      |      |    |    |
| 12 | 7/22/13                     |         | 25.8              | 16              | 12.4           | 3              | 3          | 9.7            | 8.75        | 6           | 6.5              |               |        | 7.3          | 198                  | 22.5 | 40   | 10   | 30   | 116.6   |      |      |     |     |      |      |    |    |
| 13 | 7/25/13                     |         | 20                | 4               |                | 3.25           | 11         | 5.75           |             |             |                  |               |        | 0            | 4                    | 127  | 41.4 | 25.3 | 40   | 41.8    |      |      |     |     |      |      |    |    |
| 14 | 7/28/13                     |         | 19.8              | 33.8            | 28.5           | 4.13           | 5.55       | 3.25           |             |             |                  |               |        | 4.11         | 11.5                 | 30   | 10   | 9.33 | 4.9  | 17.5    | 5.7  |      |     |     |      |      |    |    |
| 15 | 8/1/13                      |         | 15.1              | 20              |                | 2.1            | 2.5        | 2.8            |             |             |                  |               |        | 10.5         | 41                   | 10.5 | 10   | 5    | 40   | 11.4    |      |      |     |     |      |      |    |    |
| 16 | 8/5/13                      |         | 4.5               | 8.5             | 0.5            | 24.2           | 2.68       | 2.2            | 2.31        | 8.5         | 1                | 5.66          | 1.56   | 10           | 2.95                 | 11.4 | 199  | 58   | 7.1  | 10      | 12   |      |     |     |      |      |    |    |
| 17 | 8/9/13                      |         | 16.1              | 39              |                | 78             | 5.1        | 12             | 7.35        | 10          |                  |               |        | 5.1          | 13.2                 | 196  | 77   | 3    | 14   | 25.1    |      |      |     |     |      |      |    |    |
| 18 | 8/12/13                     |         | 25                | 69.5            | 2              | 21.5           | 14.3       | 21             | 1.3         |             |                  |               |        | 7.12         | 8.35                 | 84.3 | 58.3 |      | 20.8 | 37.4    | 28   |      |     |     |      |      |    |    |
| 19 | 8/15/13                     |         | 13                | 45              |                | 8              | 32         | 4              | 8           |             |                  |               |        | 5.8          | 17.8                 | 59   | 43   |      | 5    | 70      |      |      |     |     |      |      |    |    |
| 20 | 8/19/13                     |         | 12                | 12              | 2.25           |                | 3.3        | 3              | 0.3         | 2.6         |                  |               |        | 6.3          | 18.1                 | 32   | 32   |      | 8.15 | 4       | 60   |      |     |     |      |      |    |    |
| 21 | 8/22/13                     |         | 11.9              | 25.5            | 1.6            | 18.2           | 1.8        | 12.9           |             |             |                  |               |        | 4            | 7.95                 | 19.6 | 21.5 | 21.5 | 3.3  | 8.1     | 23   | 3.8  |     |     |      |      |    |    |
| 22 | 8/26/13                     |         | 12                | 14.5            | 7.15           | 11.5           |            | 6              | 8.55        | 1.08        | 2.98             | 0.95          |        | 1.98         | 5.7                  | 12.8 | 10.9 | 10.5 |      | 6.02    | 33   |      |     |     |      |      |    |    |
| 23 | 8/29/13                     |         | 17                | 25.7            | 18.8           | 2.25           | 25.4       | 4.3            | 4.63        | 3.12        | 6.72             |               |        | 5.7          | 2.95                 | 15.7 | 9.4  |      |      |         |      |      |     |     |      |      |    |    |
| 24 | 9/2/13                      |         | 18                | 18.9            | 18.8           | 26.4           | 12.8       | 5.87           | 7.07        | 4.52        | 7.69             | 1.40          | 10.4   | 6.98         | 20.2                 | 10   |      |      |      |         |      |      |     |     |      |      |    |    |
| 25 | 9/9/13                      |         | 19                | 20.8            | 8.02           | 17.5           | 12.8       | 2.75           | 3.74        | 2.25        | 3.97             |               |        | 11           | 10.2                 | 11.6 |      |      |      |         |      |      |     |     |      |      |    |    |
| 26 | 9/9/13                      |         | 20                | 44.8            | 3              | 5.5            | 27.5       | 5.06           | 4.95        | 7.16        | 2.1              | 7.31          | 4.05   | 10.4         | 9.35                 | 11.2 | 25.2 | 44.8 |      | 7.45    | 29   | 12.4 |     |     |      |      |    |    |
| 27 | 9/12/13                     |         | 20                | 31.1            | 8.3            | 6.58           | 16.8       | 4.36           | 4.56        | 1.27        | 2.11             | 7.1           |        | 6.0          | 10.6                 | 8.83 | 21.4 | 23.8 |      | 0.46    | 7.25 |      |     |     |      |      |    |    |
| 28 | 9/16/13                     |         | 21                | 33.1            | 18.2           | 6.58           | 16.8       | 4.36           | 4.56        | 1.27        | 2.11             | 7.1           |        | 6.0          | 10.6                 | 8.83 | 21.4 | 23.8 |      | 0.46    | 7.25 |      |     |     |      |      |    |    |
| 29 | 9/19/13                     |         | 22                | 5.2             | 5.95           | 14.1           | 8.08       | 2.74           | 1.56        | 1.01        | 0.48             | 1.40          | 2.08   | 0.52         | 5.4                  | 2.21 |      |      |      |         |      |      |     |     |      |      |    |    |
| 30 | 9/23/13                     |         | 23                | 12              | 8.6            | 4.47           | 27.5       | 3.20           | 4.65        | 4.55        | 10.9             | 8.91          | 10     | 9.96         |                      | 11   | 15.6 | 15.2 |      | 4.67    |      |      |     |     |      |      |    |    |
| 31 | 9/26/13                     |         | 24                | 3.65            | 5.22           | 4.3            | 27.1       | 3.13           | 4.71        | 3           | 6.26             | 1.81          | 16.1   | 10.1         | 12.3                 | 12.4 | 22.4 | 25.4 |      | 0.8     | 8.8  |      |     |     |      |      |    |    |
| 32 | 9/30/13                     |         | 25                | 26              | 12             | 11             | 10.1       | 29             | 10          | 14          | 1                | 21            | 6      | 43           | 35.8                 | 6.37 |      | 23   | 41   |         |      |      |     |     |      |      |    |    |
| 33 | 10/4/13                     |         | 26                | 29.7            | 48.5           | 5              | 61.3       | 17.2           | 16.6        | 2.06        | 22.2             | 7.58          | 27.6   | 9.6          | 33                   | 10.6 | 18.4 | 28.7 | 18.1 |         | 4.29 | 19.3 | 1.7 |     |      |      |    |    |
| 34 | 10/9/13                     |         | 27 & 28*          | 99              | 72             | 127            | 41         | 56             | 20          | 14          | 44               | 15            | 35     | 15           | 16                   | 21.3 | 29.8 | 31   | 38   | 3       | 5    | 11   |     |     |      |      |    |    |
| 35 | 10/16/13                    |         | 29                | 23.9            | 21.7           | 14.8           | 19.5       | 17.5           |             | 4.43        |                  |               |        |              |                      | 18.4 | 28.5 |      |      |         |      |      |     |     |      |      |    |    |
| 36 | 10/21/13                    |         | 30                | 2.42            | 3.66           |                | 1.13       | 0.9            |             |             |                  |               |        |              |                      | 9.7  | 2.15 |      |      |         |      |      |     |     |      |      |    |    |
| 37 | 10/28/13                    |         | 31**              | 8               | 6              | 4              | 4          | 8              |             |             |                  |               |        |              |                      |      | 14   |      |      |         |      |      |     |     |      |      |    |    |
| 38 | 10/28/13                    |         | 31**              | 135             | 60             |                | 86         | 126            |             |             |                  |               |        |              |                      |      | 75   |      |      |         |      |      |     |     |      |      |    |    |
| 39 | 11/4/13                     |         | 32                |                 |                |                |            |                |             |             |                  |               |        |              |                      | 27   | 14   |      |      |         |      |      |     |     |      |      |    |    |
| 40 | 11/8/13                     |         | 33                |                 |                |                |            |                |             |             |                  |               |        |              |                      | 35   |      |      |      |         |      |      |     |     |      |      |    |    |
| 41 |                             |         | 720               | 781             | 362            | 674            | 303        | 241            | 168         | 187         | 34.1             | 200           | 77.7   | 216          | 281                  | 0    | 328  | 0    | 1744 | 808     | 156  | 228  | 583 | 326 | 4317 | 3660 |    |    |
| 42 |                             |         | none              | 836             | 547            | 354            | 234        | 293            | 281         |             |                  |               |        |              |                      | 328  |      |      |      | 2552.05 | 303  | 909  |     |     |      |      |    |    |

| 2013 JHF Tomato Plant Count |       |       |       | As of 5/27/13 |    |
|-----------------------------|-------|-------|-------|---------------|----|
| Variety                     | # GA1 | # GA3 | # HH1 | Total Plants  |    |
| Martha Washington           |       | 62    | 0     | 15            | 77 |
| Cherokee Purple             |       | 31    | 31    | 15            | 77 |
| Japanese Black              |       | 15    | 0     | 10            | 25 |
| Striped German              |       | 16    | 0     | 9             | 25 |
| Brandywine                  |       | 0     | 16    | 10            | 26 |
| German Johnson              |       | 0     | 15    | 0             | 15 |
| Jasper (F1)                 |       | 15    | 0     | 27            | 42 |
| Yellow Mini                 |       | 16    | 0     | 17            | 33 |
| Defiant PHR (F1)            |       | 0     | 41    | 14            | 55 |
| Monica                      |       | 0     | 31    | 0             | 31 |
| Oregon Spring               |       | 0     | 31    | 0             | 31 |
| TOTAL PLANTS                |       |       |       | 437           |    |





## 2012 Tomato Price Data:

| Variety:          | #1 Tomatoes Sold (lbs): | #2 Tomatoes Sold (lbs): | Total Sold (lbs): | % of Total Tomatoes: | % #1:  | % #2: | #1 Avg \$/lb: | #2 Avg \$/lb: | Avg \$/lb: | # of Plants: | Yield (lbs)/Pla |
|-------------------|-------------------------|-------------------------|-------------------|----------------------|--------|-------|---------------|---------------|------------|--------------|-----------------|
| Martha Washington | 418.00                  | 148.00                  | 566.00            | 36.30%               | 73.9%  | 26.1% | \$2.66        | \$1.25        | \$2.29     | 30           | 18.87           |
| Cherokee Purple   | 200.00                  | 170.25                  | 370.25            | 23.75%               | 54.0%  | 46.0% | \$2.66        | \$1.25        | \$2.01     | 30           | 12.34           |
| Japanese Black    | 153.00                  | 105.25                  | 258.25            | 16.56%               | 59.2%  | 40.8% | \$2.66        | \$1.25        | \$2.09     | 15           | 17.22           |
| Striped German    | 69.30                   | 47.00                   | 116.30            | 7.46%                | 59.6%  | 40.4% | \$2.66        | \$1.25        | \$2.09     | 8            | 14.54           |
| Green Zebra       | 10.50                   | 6.00                    | 16.50             | 1.06%                | 63.6%  | 36.4% | \$2.66        | \$1.25        | \$2.15     | 8            | 2.06            |
| Cherry Tomato     | 223.50                  | 0.00                    | 223.50            | 14.34%               | 100.0% | 0.0%  | \$2.67        | \$0.00        | \$2.67     | 16           | 13.97           |
| Tomatillo         | 8.25                    | 0.00                    | 8.25              | 0.53%                | 100.0% | 0.0%  | \$2.33        | \$0.00        | \$2.33     | 8            | 1.03            |
| Totals:           | 1082.55                 | 476.50                  | 1559.05           |                      | 69.4%  | 30.6% |               |               |            | 115          | 13.56           |

| Variety:          | #1 Tomato Revenues: | #2 Tomato Revenues: | Total Revenues: | % of Revenue: | % #1:  | % #2:  | # of Plants: | Enocomic Yield per Plant (\$): |
|-------------------|---------------------|---------------------|-----------------|---------------|--------|--------|--------------|--------------------------------|
| Martha Washington | \$1,111.88          | \$185.00            | \$1,296.88      | 37.3%         | 85.73% | 14.27% | 30           | \$43.23                        |
| Cherokee Purple   | \$532.00            | \$212.81            | \$744.81        | 21.4%         | 41.02% | 16.41% | 30           | \$24.83                        |
| Janapese Black    | \$406.98            | \$131.56            | \$538.54        | 15.5%         | 31.38% | 10.14% | 15           | \$35.90                        |
| Striped German    | \$184.34            | \$58.75             | \$243.09        | 7.0%          | 14.21% | 4.53%  | 8            | \$30.39                        |
| Green Zebra       | \$27.93             | \$7.50              | \$35.43         | 1.0%          | 2.15%  | 0.58%  | 8            | \$4.43                         |
| Cherry Tomatoes   | \$596.75            | \$0.00              | \$596.75        | 17.2%         | 46.01% | 0.00%  | 16           | \$37.30                        |
| Tomatillo         | \$19.22             | \$0.00              | \$19.22         | 0.6%          | 1.48%  | 0.00%  | 8            | \$2.40                         |
| Totals:           | \$2,879.10          | \$595.63            | \$3,474.72      |               | 82.86% | 17.14% | 115          | \$30.21                        |





# Budgeting!





# Budgeting

- None of us want to do it, but it is the most important part of what we do!
- “Without the proper preparations, you will more than likely not meet your annual projections or make a meaningful return off of your investment.”





June 14<sup>th</sup>, 2011





High Tunnel Size (sq. ft.) (20x96)  
 Utilization  
 Approximate Original High Tunnel Cost

|            |     |
|------------|-----|
| 1,920      | ft. |
| 84%        |     |
| \$6,400.00 |     |

#### Receipts

|                        |
|------------------------|
| Spring Leaf Lettuce    |
| Spring Radishes        |
| Cherry Tomatoes        |
| Fall Leaf Lettuce      |
| Fall Radishes          |
| Late Fall Lettuce/misc |
|                        |
|                        |

| Yield (lb.) | Sq. Ft. | \$/Lb. |
|-------------|---------|--------|
| 600.0       | 1080.0  | \$6.05 |
| 510.0       | 600.0   | \$1.00 |
| 2250.0      | 1760.0  | \$2.50 |
| 550.0       | 1080.0  | \$6.05 |
| 175.0       | 600.0   | \$1.00 |
| 300.0       | 1080.0  | \$6.00 |
|             |         |        |
|             |         |        |
|             | 6200.0  |        |

| Total       | Yield Per Sq. Ft. | Gross Per Sq. Ft. |
|-------------|-------------------|-------------------|
| \$3,630.00  | 0.56              | \$3.36            |
| \$510.00    | 0.85              | \$0.85            |
| \$5,625.00  | 1.28              | \$3.20            |
| \$3,327.50  | 0.51              | \$3.08            |
| \$175.00    | 0.29              | \$0.29            |
| \$1,800.00  | 0.28              | \$1.67            |
| \$0.00      | 0.00              | \$0.00            |
| \$0.00      | 0.00              | \$0.00            |
| \$15,067.50 |                   | \$2.43            |

Total Receipts

#### Annual Expenses

Seeds/Transplants  
 Fertilizers  
 Miscellaneous Supplies  
 Water  
 Water Test  
 Irrigation Supplies  
 Total Annual Expenses

| Total      |
|------------|
| \$750.00   |
| \$350.00   |
| \$250.00   |
| \$225.00   |
| \$0.00     |
| \$200.00   |
| \$1,775.00 |

#### February - December

##### Labor Costs

Bed Preparation  
 General Maintenance  
 Planting  
 Pest Management  
 Harvest  
 Total Annual Expenses

| Hours  | \$/Unit | Total      |
|--------|---------|------------|
| 30.00  | \$20.00 | \$600.00   |
| 80.00  | \$20.00 | \$1,600.00 |
| 30.00  | \$20.00 | \$600.00   |
| 15.00  | \$20.00 | \$300.00   |
| 120.00 | \$20.00 | \$2,400.00 |
| 275.00 |         | \$5,500.00 |

#### Ownership Costs

Depreciation - Tunnel  
 Depreciation - Plastic Cover  
 Total Ownership

| Annual   |
|----------|
| \$374.00 |
| \$75.00  |
| \$449.00 |

#### Total Costs

Tunnel \$7,724.00  
 Per Square Foot \$4.02

#### Annual Returns Over Total Costs

Tunnel \$7,343.50  
 Per Square Foot \$3.82





| Cherry Tomato Enterprise Budget: Hightunnel (does not include determinate plants) |                                      |                           |                   |                      |                    |
|---|--------------------------------------|---------------------------|-------------------|----------------------|--------------------|
| <b>Income:</b>  |                                      |                           |                   |                      |                    |
| 180 Plants @ 14lbs/plant =  | <b>2,520 lbs</b>                     | = 3,360 pts x \$2.25/pt = | <b>\$7,560</b>    |                      |                    |
|   | 0.75 lbs/pint                        |                           |                   |                      |                    |
| <b>Variable Expenses:</b>   |                                      |                           |                   | <b>Income</b>        |                    |
| <b>Inputs</b>   |                                      |                           |                   | Revenue              | \$7,560            |
| Seed  | \$115.80/300 = \$0.386 x 180 =       |                           | \$69              |                      | <b>\$7,560</b>     |
| Cover Crop Seed   | 15 lb @ \$1.50/lb                    |                           | \$23              | <b>Expenses:</b>     |                    |
| Soil Start  | \$4.25/bag / 5 flats/bag x 8 flats = |                           | \$7               | Inputs (V)           | \$581              |
| Greenhouse Lease  | \$100 x .2                           |                           | \$20              | Labor (V)            | \$960              |
| Flats   | 8 flats @ \$1.00/flat                |                           | \$8               | Harvest (V)          | \$2,305            |
| Dripline  | 720' x \$0.0072/ft                   |                           | \$6               | Fixed Exp            | \$488              |
| Irrigation (layflat, fittings)  |                                      |                           | \$30              |                      | <b>\$4,334</b>     |
| Fertilizer  | Organic GEM, HEB, Microplex, et      |                           | \$250             |                      |                    |
| Pesticide (OG)  | Pyganic, TKO                         |                           | \$75              | Variable \$/pt       | \$1.145            |
| Twine   | 1 Role @ \$18/role                   |                           | \$18              | Fixed \$/pt          | \$0.15             |
| Water   | \$75.00                              |                           | \$75              | <b>Total \$ / pt</b> | <b>\$1.290</b>     |
|   | <b>Total Inputs Cost</b>             |                           | <b>\$581</b>      |                      |                    |
| <b>Labor</b>  |                                      |                           |                   | <b>Gross Margin</b>  | <b>42.68%</b>      |
| Starts  | 2 hr @ \$20.00/hr                    |                           | \$40              |                      |                    |
| Bed Prep  | 1 hr @ \$20.00/hr                    |                           | \$20              |                      |                    |
| Irrigation  | 1 hr @ \$20.00/hr                    |                           | \$20              |                      |                    |
| Transplanting   | 5 hr @ \$20.00/hr                    |                           | \$100             |                      |                    |
| Weaving   | 6 hr @ \$20.00/hr                    |                           | \$120             | <b>Proj. Profit</b>  | <b>\$3,227</b>     |
| Weeding   | 4 hr @ \$20.00/hr                    |                           | \$80              | <b>Proj / sqft</b>   | <b>\$1.83/sqft</b> |
| Other Labor   | 20 hr @ \$20.00/hr                   |                           | \$400             |                      |                    |
| Removal   | 6 hr @ \$20.00/hr                    |                           | \$120             |                      |                    |
| Cover Crop  | 3 hr @ \$20.00/hr                    |                           | \$60              |                      |                    |
|   | <b>Total Labor Costs</b>             |                           | <b>\$960</b>      |                      |                    |
| <b>Harvest</b>  |                                      |                           |                   |                      |                    |
| Harvest Labor (50#/hr)  | 50 hr @ \$20.00/hr                   |                           | \$1,000           |                      |                    |
| Packing Labor (80#/hr)  | 30 hr @ \$20.00/hr                   |                           | \$600             |                      |                    |
| Packaging   | \$0.15 x 3,360 pts                   |                           | \$504             |                      |                    |
| Storage   | \$0.02/pt x 3,360 pts                |                           | \$67              |                      |                    |
| Transport   | \$0.04/pt x 3,360 pts                |                           | \$134             |                      |                    |
|   | <b>Total Harvest Costs</b>           |                           | <b>\$2,305</b>    |                      |                    |
|   |                                      |                           |                   |                      |                    |
|   | <b>Total Variable Costs</b>          |                           | <b>\$3,846</b>    |                      |                    |
| <b>Fixed Expenses:</b>  |                                      |                           |                   |                      |                    |
| Land  | 1,920 sqft @ \$300/acre              |                           | \$13              |                      |                    |
| Depreciation  | \$449/yr / 12 mo = 37.41/mo x 7mo    |                           | \$262             |                      |                    |
| Interest Exp  | \$3,000 @ 5% @ 6 mo                  |                           | \$12.50           |                      |                    |
| Other   | \$200                                |                           | \$200             |                      |                    |
|   | <b>Total Fixed Costs</b>             |                           | <b>\$487.50</b>   |                      |                    |
|   |                                      |                           |                   |                      |                    |
|   | <b>Total Costs</b>                   |                           | <b>\$4,333.50</b> |                      |                    |

- Be liberal in your budgeting
- Think about every aspect of the crop.
- Remember that it is only a budget.
- Knowing your breakeven price will help you market your crops profitably.



# Budgeting Example Time





# Budgeting Resources

- Iowa State University Ag Decision Maker (AGDM) –
  - Templates for all types of crops, including vegetables and high-tunnel templates.
  - <http://www.extension.iastate.edu/agdm/>
- Kansas State University Enterprise Budgets
- Excel (easy to make)
- 'The Organic Farmer's Business Handbook' – Richard Wiswall
- 'Wholesale Success' (4<sup>th</sup> edition) – Jim Slama & Atina Diffley





# Thank you!



## Questions?

