

## Pov Huns



## Winter production

High Tunnel Production



Open Field Production



### Beginner winter production

- Introduction to winter production
- High tunnel building process
- Seasonal extension
- Basic marketing process
- Site and crop selection
  - Weed control method without Chemical
  - High tunnels structure
  - Open field production
- Question and Answer

### Winter Vegetables Production

- Winter production
  - High Tunnel Production
    - Building Process
    - Marketing Process
    - Seasonal extension
  - Open Field Production

### Open field production

- Perennial
- Biannual
- Hardy Annual

### High Tunnel Production

- Tender Annual
- Annual
- Tropical-Perennial

## High Tunnel Production Methods

- Pros
  - It's niches marketing tool where you have control of the micro environment and production rate
  - It is a good investment for long term production
  - High Tunnel is a low-cost, low-tech greenhouse structure that is erected right in the field so plants can be grown in the ground but with some protection from the elements.
  - High Tunnel rely on the sun for heat and natural ventilation for cooling.
  - High Tunnel have many benefits :
    - 1. Crops get an earlier start in spring and can be produced later in fall.
    - 2. Cold-hardy crops can be grown all winter.
    - 3. Crops that can't be grown outside because of wind thrive in a High Tunnel.
    - 4. Yield and quality in most crops are greatly improved. .

## Advantages of High Tunnels

- 1. 4-8 weeks earlier production in the spring
- 2. 2-5 weeks later possible production in the fall
- 3. Grow crops not usually grown in the area
- 4. Higher yield per plant
- 5. Good mix of crop
- 6. Fairly good cost effective if plan well
- 7. Usually no pesticides needed
- 8. Suitable for organic production
- 9. Natural disease control
- 10. Insect control
- 11. Water control
- 12. Guarantee a crop
- 13. Reduce cull fruit

## Disadvantages of High Tunnels

- 1. High startup cost involved may exceed potential profit
- 2. Education-lack of proper training
  - Tunnel get to hot >130+
  - Don't shut roll up sides early enough in the evening-loose growing degree units
  - i.e. 5 GDU a day for a month=5-8 day
  - Weed control inside and out side
  - Monitor water uptake
  - Punning and trellising
  - Planning
  - Management
    - a. Lack of nutrients=deficiencies
    - b. Excessive nutrients=salt build up
  - Time

## Sales

- Where: Which Market
- Who: customer
- What-kind of vegetable to grow
- Reputation, Dependability, Reference prices

## Reputation, Dependability, Reference prices

- Improving Customer experience
- 1. Parking & Access
- 2. Ease of movement within market
- 3. Stall Presentation
  - a. Cleanliness
  - b. Culls & sorting out of sight
- 4. Comfort in all weather
- 5. Offer 5 Sense to your market
  - a. Taste, touch, smell, sight, sound
- 6. Recipes? Exploration

## Price

Keeping perceived value high permits high (fair) prices (Fresh quality at all time)

- 1. we are not afraid to ask a profitable price for all of our produce.
- 2. Customers need to be aware that it costs more to produce early crops and we must remember that highest quality is the only crop you should market.

## Winter Market Size

- Customer (10-25%)
- Production consideration
  - Production technique
  - Crop rotation
  - Volume
  - Price

## High Tunnel Structure

- Basic high tunnel structure
  - Structure shape, size and heat related issue
- Basic knowledge of photosynthesis
  - Short day, long day, day light neutral
- Basic plant growth requirement
  - Specific plant requirement
- Build structure to fit your production
  - Tilling requirement
  - Harvest
  - Crop which intend to grow

## Building High tunnels

- Structure
  - Metal-last longer but harder to work with and cost more
  - Metal and wood-more suitable due to surface area
  - Wood-wood pest and water damage
  - PVC-older pvc are good, but current formulation is not suitable

## Building process Metal and wood method

Cutting Ground post

Cut all ground post



## Building process



## Building process



Building process



Building process



Cut and bend

Cutting rafter into length

Bend and set rafter into ground post



Building process



Building process



Building process



Building process



Building process



Building process



Building Complete



till ground



After tilling



### Heating Sources

Conventional



Solar



### Use Row Cover



### Row cover



### One month later



### Growing process



### Growing process



Growing process



Seeding

Sample #1

Sample #2



Force lilies



Force Lilies



Force Cucumber and Basil



Force Bitter Melons



Growing process



Force Zinnia



Force Zinnia



Force Cucumber



Growing process



Sun Flower





Flower Pak Choi



Yu Choi, Mustard, and Lettuce



Spinach and other green



Season Extension

- Cover up your crop to extending the harvesting season.
- Moveable high tunnels
- 2-5 weeks

Hot pepper production



Egg plant production



### Marketing Tool

- Local Food Expo
- Farm Tour
- Local conferences and expo
- Community exposure by Local Magazine and News papers
- National exposure

### Farm expo in March



### Farm tour in June



### Community exposure



### Conferences



### 2011 Farmer of the year



## Vegetables Display



## Flower Display

front

side



## Other Marketing tools

- Focus on one or two market
  - Reduce overhead. i.e. Fred 10:1 market
  - Wholesales-prefer supply vendor
- Make sure you have plenty to offer
  - Don't short sales yourself
  - Don't under cut your neighbor
- Allow your customer to decide
  - Offer bulk choice (most people are on a fix budgets)
- Safety & Quality produces
  - Clean and Fresh
  - Quality and Taste Speak Volume
- Most profitable crops to grow, including early and heirloom tomatoes, strawberries, raspberries, salad greens
- Prefer Vendor

## Specialty Crops-Seasonal extension

- Lemon Grass-Cold remedy, ADHD
- Bitter Melon-High blood sugar, High blood pressure, Boost immune system, High Cholesterol
- Mylokhia-Chronic fatigue
- Ginger-irritable bowel syndrome
- Pak Choi Flower-Allergy
- Mints-extracting heavy metal, soothing

## Full Scale Open Field Winter production



## Jicama



Broccoli



Cauliflower



Cabbage



Snow peas Production



Chinese Broccoli production





Tulips Fields



Here is a short list of what can be grown over winter in Hardiness Zone 5 and above

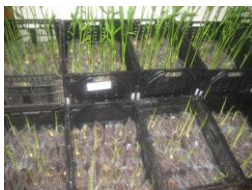
*Spinach	*cabbage
*Lettuce	*endive
*Kale	*carrots
*Bok Choy	*cilantro
*Turnips	*dill
*Arugula	*Mustard
*Radishes	*Broccoli
*Swiss Chard	*Cauliflower
*Green Onions	*Onion
*Napa Cabbage	*Radish
*Parsley	

## Seasonal Extension

<b>Ginger</b>	<b>Bitter Melon</b>
	

### Ginger

Sprouting



Planting



### Ginger Harvest

Checking



Harvest



### Bitter Melons

Seeding



Growing



### Bitter Melons

Growing



Harvest



## Open up for Question

Outside of high tunnel during snow storm January 1, 2013



Inside of high tunnel during snow storm January 1, 2013

