

# COST OF PRODUCTION And PROFITABILITY

www.onfarmfoodsafety.org  
www.familyfarmed.org

**FAMILYFARMED**



USDA is an equal opportunity provider.

Trainer: Atina Diffley  
[www.atinadiffley.com](http://www.atinadiffley.com)

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## Profit Modifications

1. Raise Prices
  - Value / Services
2. Sell More Units
3. Lower Cost of Production

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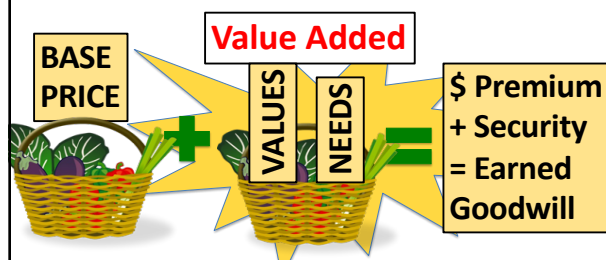
## 1. PRICE: What Are You Marketing?

- Identify customer or class of customers
- Determine the basket of goods and services  
Product – in what form – to what market.  
Each is a different basket of goods and services.
- Define the parameters of value.  
Is it certified organic, local?  
What services and quality is provided?
- How your business differentiates from competitors  
Make a list of how your product differs from others they can buy.  
Include how you produce this “basket of goods”



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## Sell More Than Just Fresh Produce



**Values:** One's judgment of what is important in life

**Needs:** Something that a person must have in order to live or succeed or be happy

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## 2. PRICE: Determine the Price Range

There is now a market price for most of these products based on competition. (Local and national)

**This forms a “cloud of price.”**

- If you wander much above it you will affect your sales.

Strawberries (Product Category Cost)				
Quality	Qty	Certified	Conv	
Seattle, WA				
PQ	8/18	\$24.50	\$18.00	
Los Angeles, CA				
PQ	8/18	\$19.75	\$9.00	
Philadelphia, PA				
PQ	8/18	\$24.50	\$17.00	
San Francisco, CA				
PQ	8/18	\$23.00	\$12.00	
Seattle, WA				
PQ	8/18	\$26.95	na	

- Talk to your buyer
- Talk to other farmers

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Customers want to know they are getting **the BEST**.  
Best price point, best quality . . .

	Skim	Match	Surround	Undercut	Penetrate
Highest	\$99				
Higher	\$89	\$89	\$89		
Equal		\$79		\$79	
Lower			\$69	\$69	\$69
Lowest					\$59

### Price Affects

Your farm identify  
The markets you serve

What is your niche/reputation?

- Artesian food
- Affordable and quality
- Bargain low quality

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**Price Perception**

*How consumers perceive a price is as important to them as the price itself.*

Price has **roles** in a consumer's mind.

The first is negative, the monetary sacrifice one has to make in exchange for a product/service.

On the positive side, price is a cue of high quality.

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# Charm Pricing

## \$12.99

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# Odd Pricing

5 6  
7 8  
9 10

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**SHORTER PRICES SEEM LESS EXPENSIVE**

- Use smaller, unbold font
- Leave off added zeroes at the end
- Take off the \$ sign

5      \$5.00



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Center Stage & Price Perception: People build price reference through exposure to different prices. When they see a price, they compare it to the reference price and form an opinion.

Low -> High		High -> Low	
Item 1	\$4	Item 1	\$10
Item 2	\$4	Item 2	\$9
Item 3	\$5	Item 3	\$8
Item 4	\$5	Item 4	\$8
Item 5	\$6	Item 5	\$7
Item 6	\$6	Item 6	\$6
Item 7	\$7	Item 7	\$5
Item 8	\$9	Item 8	\$4
Item 9	\$10	Item 9	\$4



Nerf  
Fortnite Surprised Pistol  
\$13.49 (Now \$6.50)  
In Stock  
★★★★★ (4.7)

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**Sell More Units – Special Units!**

*Taste the Driftless difference!*  
eat  
fresh, local potatoes.  
Roasting: Toss potatoes with olive oil and season with fresh herbs and olive oil. Roast at 400° F for 25-30 minutes.  
Just roasted. Perfect for everything you desire.

**Gardens of Eagan**  
210. Certified Organic by O.G.B.A.  
NEW ROASTING POTATOES  
Atina and Martin Duffley  
2100 N. Highway  
Eagan, MN 55121  
612-401-1881



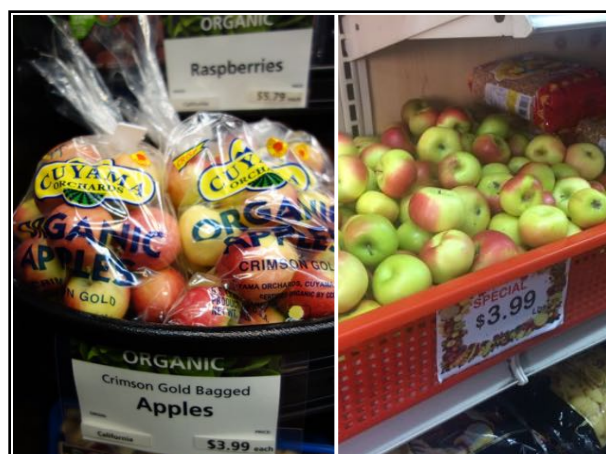
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**SOUP MIX**  
**3# - \$9.99**

Ingredients: Contains five or more of the following - seasonal variations of carrots, (red, yellow or orange), turnips, (purple, or sweet scarlet), parsnips, rutabagas, celeriac, and sunchokes.

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**Sell More Units**

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**Time Restraints**

*Flash Sale!*  
*today only*



Consider how it impacts other farmers in your market.

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Branded, recognizable products **build a sense of pride** in those associated with the production, promotion, and sale. **& Tradition**

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### 3. PRICE: Cost of Production

- Determine the cost of creating “the basket” with the value parameters.

- Compare your cost to price: can you make money.

If you can't, try again with modifications

#### Modifications: Cost of Production

#### Modifications: Price

- Develop strong relationships with your buyers; they can give suggestions on how best to price your product.
- Work backward from end price
- Share Buyer's Risk: Higher price on consignment

- If you still can't, decide if you want to do it as a hobby (IRS) or adjunct to a profitable business.

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## Cost of Production

Profitability Calculation Example							
Step 1: Level of Production	Crop: Organic Potatoes		CURRENT PRODUCTION		EXPANDED PRODUCTION		
	Units produced (lb):		1,600		320,000		
	Current acres of crop:		0.1		20		
	Total acres in production:		100		100		
	Percentage of acres in this crop:		0.10%		20.00%		
Step 2: Income			CURRENT PRODUCTION		EXPANDED PRODUCTION		
	Sales Method	Unit	\$/Unit	Quantity	Item total	Quantity	Item total
	Direct-Wholesale	Pound	\$0.45	0	\$0.00	320,000	\$144,000.00
	Farmer's Market	Pound	\$2.00	1,600	\$3,200.00	0	\$0.00
	TOTAL INCOME				\$3,200.00		\$144,000.00
Step 4: ROI			CURRENT PRODUCTION		EXPANDED PRODUCTION		
	Return after costs:		\$2,434.00		\$66,052.00		
	Units produced (lb):		1,600		320,000		
	Return per unit produced:		\$1.52		\$0.21		

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**Manage for best profit  
versus maximum gross income per acre**



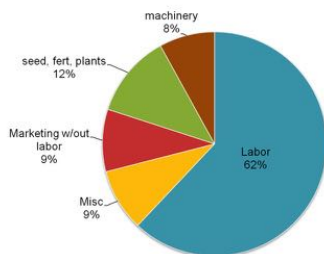
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**Manage for best profit  
versus maximum gross income per acre**



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### Components of Production Cost on Successful Midwest Mixed Vegetable Farms



Farm Credit East Ag Retail  
Benchmarking Group

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### Profit Modifications

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## FUNDAMENTAL RULE

### MINIMIZE LIFTING

- As early in the process as possible
- How many times
- Distance
- Height

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How is labor minimized? How is cleaning, cooling, and crisping accomplished quickly. Where are the supplies? How does the product move through the system?

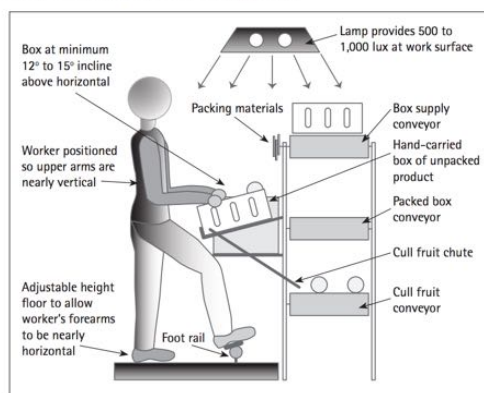
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How is labor minimized? How is cleaning, cooling, and crisping accomplished quickly. Where are the supplies? How does the product move through the system?

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Figure 10.1. Components of a hand-pack operation.




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[http://bse.wisc.edu/HFHP/tipsheets\\_html/cart.htm](http://bse.wisc.edu/HFHP/tipsheets_html/cart.htm)



Cost to build  
\$150

Harvest Speed and Posture Analysis	Without Cart	With Cart
Avg Harvest Speed (3lb crate)	7.8 min	4.6
% time in unacceptable postures	46%	0%
% time in marginal postures	48%	93%

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### TRAINING IS CRITICAL!

#### Harvest Training – Efficiency

- Always use both hands
- Move product toward the dominant hand
- Fill hands or harvest bag before moving to container
- Move hands quickly from crop to container, and back to crop
- Use your eyes—focus on the next product you'll be picking, not the one you're currently picking.
- Keep harvest container nearby
- Use easy access system for rubber bands/twist ties

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**4<sup>th</sup> Strategy:  
Scale Appropriate  
Cost-Effective**

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Mechanized Harvester 653# per hour per person



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**5th Strategy:**

**Understand and manage the costs of bunching and arranging, trimming and packing . . .**

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**WORK WITHIN YOUR PROFIT CENTER**

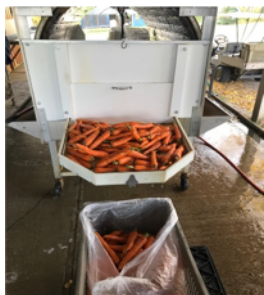
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**EFFICIENCY GAINS**

**100 bunches/hr vs. 500+ lb/hr**



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Bunch in field or packingshed?

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Bunch in field or packingshed?

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6<sup>th</sup> Strategy: Capture scale of economy by consolidating similar tasks / crops

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Increase Market Share With Multiple Types of An Item

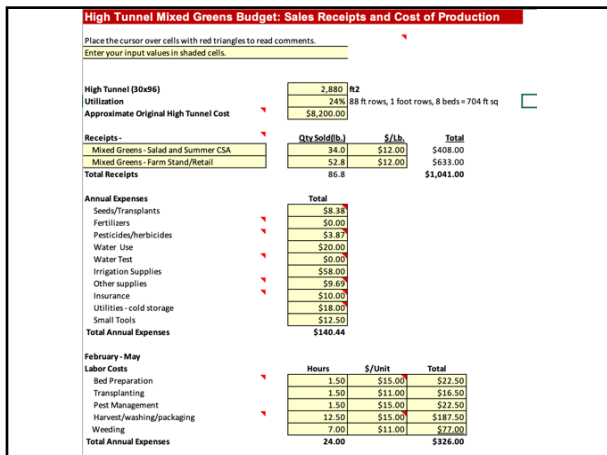
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Enterprise Budget: Profit = Income - Expenses		
FIND YOUR PROFIT CENTER	Net Profit Per Acre Budget Richard Wiswall	GOE Whole Sale Prprofit 2000-2007
Beans, bush, hand pick	-2,700	
Cabbage	5,806	5,500 x 6
Carrots, root	14,046	-
Celeriac	13,659	-
Sweet Corn	-1,922	3,800 x 12 acres
Cucumbers	1,531	8,500
Kale, bunched	24,630	28,900 x 2
Lettuce, head	7,905	7,500
Onions	6,110	6,500
Parsley, bunches	47,435	-1500
Peppers, bell	15,556	1,500 – 12,000
Tomatoes, field	869	2,800 – 38,000
Tomatoes, greenhouse	18,724	-

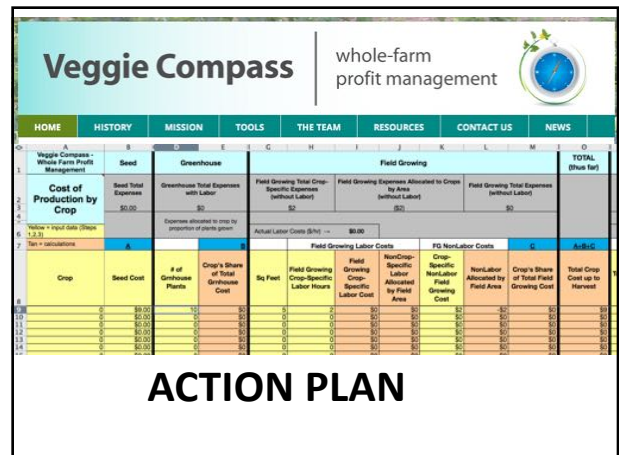
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Enterprise Budget: Profit = Income - Expenses	
Start Small – Top 1 – 5 Sellers	
<ul style="list-style-type: none"> <li>- Practice With A Projected Budget</li> </ul>	
Write down the tasks of the enterprise in chronological order from beginning to end.	
<ul style="list-style-type: none"> <li>- Establish Rates When Possible: Bedfeet weeded per hour, bushels harvested per hour (or bedfeet, or both). 2 or 3 variables should be written down.</li> </ul>	
<ul style="list-style-type: none"> <li>- Determine An Hourly Rate For Your Labor</li> </ul>	
- Labor + Investment	
<ul style="list-style-type: none"> <li>- Don't Get Hung Up On One Item For Too Long.</li> </ul>	
Forge ahead and revisit it later after more pieces are in place. Use your best estimates.	

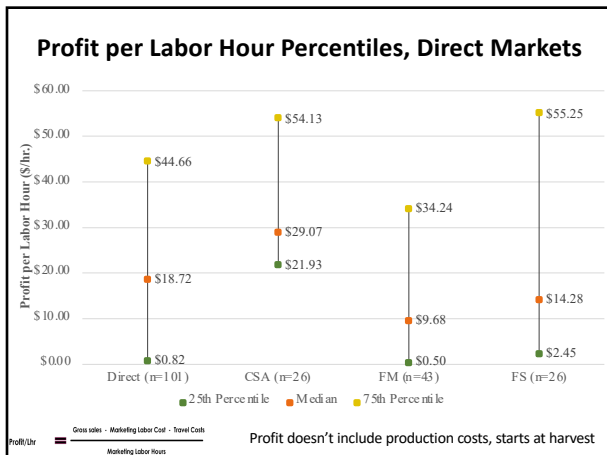
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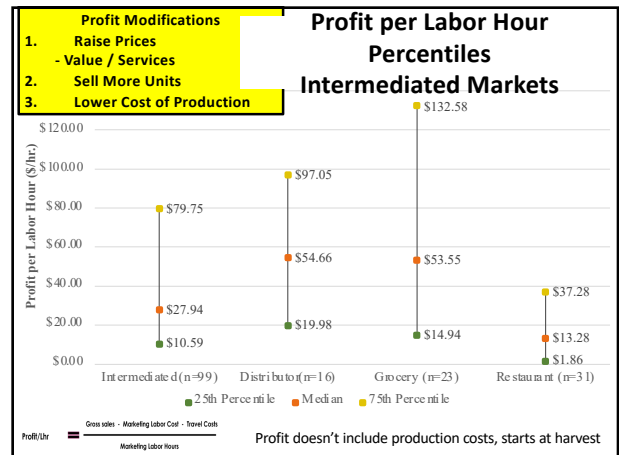
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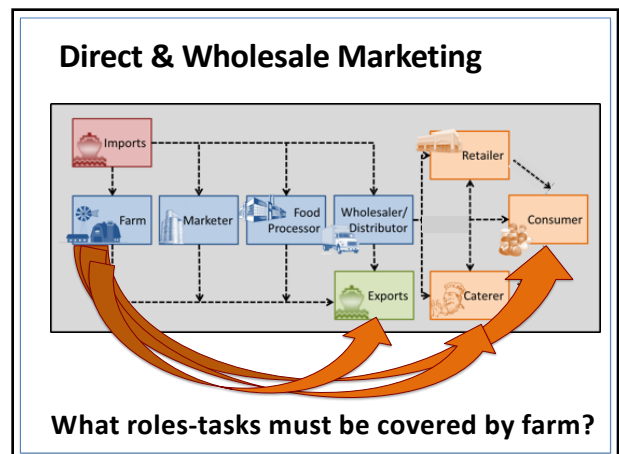
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<b><u>Cost of Production</u></b>				<b>Pg 20</b>			
<b>Wholesale Success Manual</b>							
<b>Iowa State Ag Marketing Resource Center</b>							
<b>Profitability Calculation Example</b>							
<b>Step 1: Units Produced</b>	<b>Crop: Organic Potatoes</b>			<b>CURRENT PRODUCTION</b>	<b>EXPANDED PRODUCTION</b>		
	Units produced (lb):			1,600	320,000		
	Current acres of crop:			0.1	20		
	Total acres in production:			1	100		
	Percentage of acres in this crop:			0.10%	20.00%		
<b>Step 2: Income</b>	<b>Sales Method</b>	<b>Unit</b>	<b>\$/Unit</b>	<b>CURRENT PRODUCTION</b>	<b>EXPANDED PRODUCTION</b>		
	Direct-Wholesale	Pound	\$2.45	0	\$0.00		
	Farmers Market	Pound	\$2.00	1,600	\$3,200.00		
	<b>TOTAL INCOME</b>			<b>\$3,200.00</b>	<b>\$144,000.00</b>		
<b>Step 4: ROI</b>				<b>CURRENT PRODUCTION</b>	<b>EXPANDED PRODUCTION</b>		
	Return after costs:			\$2,434.00	\$66,952.00		
	Units produced (lb):			1,600	320,000		
	Return per unit produced:			\$1.52	\$0.21		

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### WORK WITHIN YOUR PROFIT CENTER



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### Build Your Farm On Your Competitive Advantages *What can you do different and better?*



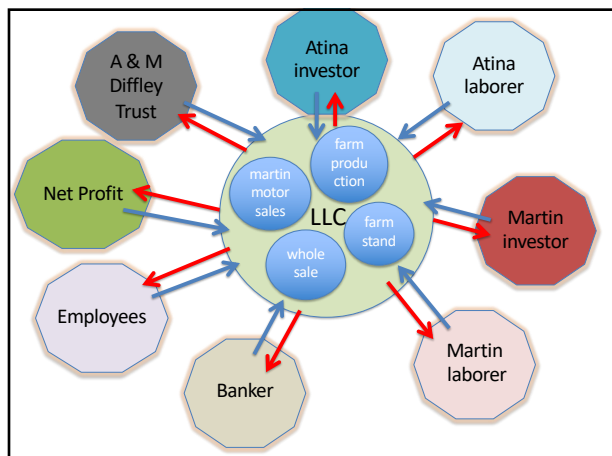
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<b>Broccoli 2007</b>	1.25 per lb	Fertility	- \$6,506
10 acres @250	- \$2,500	Transplants	- \$4,815
T. Labor 19%	- \$24,940	Planting	- \$6,369
T. Equip 3%	- \$4,087	Weeds	- \$1,710
Gross income	\$134,026	Irrigation	- \$6,400
# of plants	115,500	Pests	- 2,787
Net per acre	\$6,037	Harvest/Packing	- 22,681
Gross per acre	\$13,400	Overhead/Fixed	- \$9,000
Gross per pl	\$1.16	Total Cost Product	- \$54,462
Gross per #	\$1.18	Ship & Marketing	- 10,185
Product cost #	.48	Gross Income	\$134,026
Market cost #	.09	<b>NET PROFIT</b>	<b>\$60,379</b>
Profit margin	45%		

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Soil building	10 x 210	-2100
Compost	3 T per/acre Turkey \$50 T	-1500
C. application	Hired	-320
Labor:Incorp	2 hrs x \$18	-36
Equip&Fuel	2 hrs x \$25 100 hp tractor	-50
Side dress	1/2 ton per/acre \$500T	-2500
		- \$6,506


Soil building is our primary management strategy for fertility, weeds, irrigation, disease, pests, and associated labor

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Greenhouse Plants .08 each	-1920	24,000
SB:Land	-125	
SB:Seed (4 times)	-1280	
SB:Fertility	-140	
SB:Remay	-150	
SB:Labor:Seeding	-432	
SB:Labor:Weeds	-0	
SB:Labor:Equip	-216	
SB:Labor:Prep	-552	
Total 91,500 pl	-2,895	
Bare root cost	.025 ea	



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How will maturation differ for these?  
How will yield differ?  
What information do you need to record?




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### Planting

Labor: Planting	-4,632
Equip/fuel	-1,737
+ Transplants	-4,815
Our system	-11,184

Should we switch to direct seeding?



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Labor: Cultivation - 3 x 10 ac x 1.25 hr x 18\$	- 675
Equip/fuel - 37.5 hr \$18	- 675
Labor:Hand weed – 1.5 hr x 2 p x 10 ac x \$12	- 360
Total weed system	- 1710

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8 Hr x 2 times x 10 acres x \$40 - 6400

What is the crop vulnerable to? Can we manage that?

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Equip/Fuel	- 504
Labor:Spraying	- 504
BT	-1259
Row Cover	- 440
Labor:Row Cover	- 80
Total Pest Management	- 2,787

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### RESEARCH: Cupping Is The Time To Reduce Pest Levels, Not Before.

- From six leaves up to 15/16 leaves (just prior to cupping), broccoli can withstand up to 50 percent defoliation without a decrease in yield.
- In fact, moderate defoliation of the plants - 20 to 30% - actually increases yield.
- Defoliation causes plant chemicals to be emitted that beckon parasitic wasps and predatory insects to the plants to establish a foothold in the system.
- As the plants cup, you want the least pests around and the most beneficials.

<http://www.drmmcbug.com/organic.htm>

90

Labor:Harvest	\$2.50 a box x 5361	- 13,405
Labor:Packing	\$.75 a box x 5361	- 4,020
Packaging	\$.85 a box (used 3x w/liner)	- 4,556
Ice	10 year + cost of operating	- 700
Total	Total	- 22,681

Labor costs are figured at \$12 /\$18



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Build Other Product Lines Into The Scale Of Economy

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Wholesale Ship & Market    \$1.90 per box    - 10,185

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### Marketing, Delivery, And Overhead Costs

*How you allocate the overhead expenses is up to you; it could be by acre, by enterprise, by sales % of total sales.*

Gross per pl	\$1.16	Total Cost Product	- \$54,462
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### What Does It Cost To Sell At Farmers Market?

- Labor to drive and sell at market
- Mileage and vehicle cost
- Bags and other supplies
- Market fee
- Value of unsold product?

### INCOME

- Sale price of product
- Gross Sales

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Retail Business: Our roadside stand "bought and sold" Gardens of Eagan (and other) produce.

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