



**Record Keeping and
Economics of Winter
Production & Marketing
at Pleasant Valley Farm**

February 2019

Paul & Sandy Arnold

Simple Record Keeping



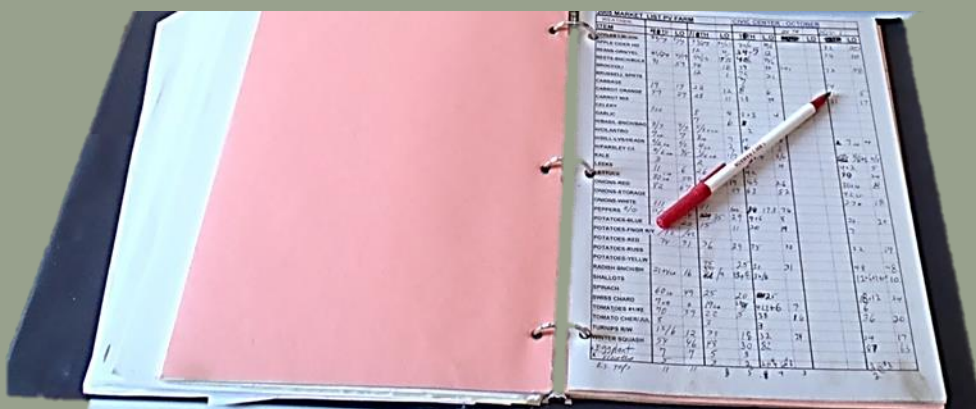


SMALL ACREAGE

We value our land by the square foot and want to farm as few acres as

possible & vi Photo taken h \$

- We put the value on one level (per acre)
- Can only tell the value if we have records



VALUE OF CROPS

WHY is RECORD

Keeping important?

- Validation of improvements
- Which crops are valuable
- Business decisions
- Crop decisions
- Reduces production waste
- Crop plans accurate

OUT RECORD

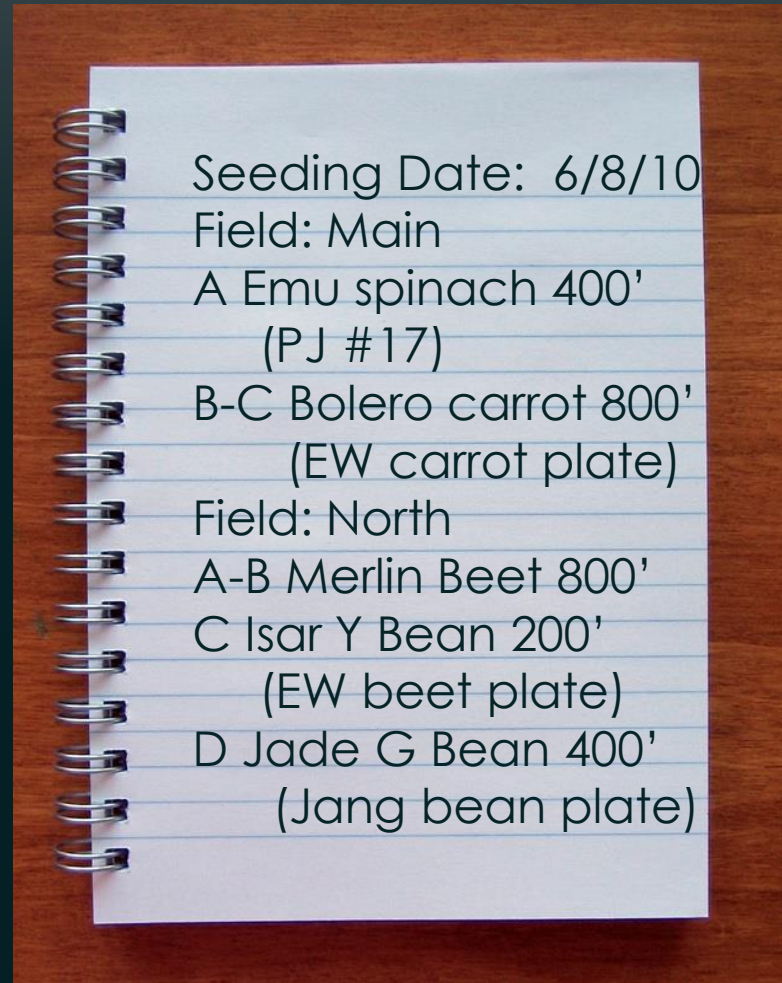
KEEPING

Simple spreadsheets
or Ipad or Iphone:

- Seeding Records – Field space/rows
- Harvest Records – Total Crops Sold
- Timing Records for Preparation

RECORDS

- Very Important
- Simple notebook
- Note date, where seeded, what was seeded, how much, and seeder/plate #
- Experiment with trial varieties every year



SEEDING RECORDS

SEEDING RECORDS

- SPECIFIC FOR EACH FARM
- FIELD LAYOUTS

- CROP ROTATION RECORDS
- EFFICIENCY OF SEEDING



CROP/SEEDING PLAN		2003						
Bean, Green	Provider	North Fld A- May 1st 800ft then 400ft every other week til Aug 1						
Bean, Yellow	Indy Gold	North Fld A-May 1st 800ft then 400ft every other week til Aug 1						
Beet, Red	Kestrel	StrodeA-April 1st 1200ft then 800ft every other week til July 15						
Peas, Sugar Snap	Sugar Ann	Main A-April 1st 800ft then 800ft every other week total 3 plantings						
Radish	Easter Egg	Main A-April 1st 800ft then 800ft April 15						
Spinach	Space	Main B-April 15th 400ft then 400ft EOW til 1200ft on 8-1						
SEEDING RECORDS		2003						
FIELD SEEDINGS & TRANSPLANTS		DATE:	1-May	DATE:	15-May	DATE:	2-Jun	
		Place	Quantity	Place	Quantity	Place	Quantity	
Bean, Green	Provider					NO-A1	800ft	
Bean, Yellow	Indy Gold					NO-A1	800ft	
Beet, Red	Kestrel	ST-A1	1200ft	ST-A2	800ft	ST-A3	800ft	
Peas, Sugar Snap	Sugar Ann	MN-A1	800ft	MN-A2	800ft	MN-A3	800ft	
Radish	Easter Egg	MN-A8	800ft	MN-A7	800ft			
Spinach	Space			MN-B1	400ft	MN-B2	400ft	

SEEDING TOTALS – LINEAL FEET/YEAR

CROP	VARIETY	4/1	4/ 14	4/ 28	5/ 12	5/ 28	6/ 11	6/ 25	7/9	7/2 3	8/7	TOTAL
Bean, Green	Provider			800	400	400	400	400	400	400	400	3600
Yellow Bean	Indy Gold			800	400	400	400	400	400	400	400	3600
Beet, Red	Kestrel	1200	800	800	800	800	800	800	800			6400
Pea, Sugar Snap	Sugar Ann	800	800	800								2400
Radish	Easter Egg	800	800									1600
Spinach	Space		400	400	400	400	400	400	400	400	1200	4400

CALCULATING SQUARE FOOTAGE

BED SYSTEMS

The standard bed size for us is 4 rows 14" apart with 2' paths. Each bed is 70" wide (using ½ paths) or 5.5 ft by 100' = 550 square feet



NON-BED AREAS

Calculate area by measuring
length times width

EX: Strawberries, Squash, Garlic



CALCULATING SQUARE FOOTAGE

CROP	VARIETY	Dimensions	TOTAL SQUARE FEET
Garlic	Music	125 x 50	6,250
Strawberries	Chandler	125 x 60	7,500
Rhubarb	Canada Red	27 x 30	810
Blueberries	4 Types	40 x 80	3,200
Celery	Conquistador	30 x 100	3,000

SQUARE FOOTAGE OF NON-BED CROPS

HARVEST RECORDS = SIMPLE NOTEBOOK

HARVEST LIST FOR DECEMBER 2009								
ITEM	SAR		GF		SAR		GF	
	12TH	LO	12TH	LO	19TH	LO	19TH	LO
APPLE CIDER								
ARUGULA								
ASIAN GREENS								
BEETS-BULK	47	9						
BROCCOLI	24							
BROCCOLI RAAB								
BRUS SPROUTS/TOPS	42	40	8	20				
CABBAGE-RED	15							
CABBAGE-WHITE	20	15						
CARROT-ORANGE	3	1						
CARROT-ORANGE/PURP	1/1		1/1					
CAUL-CHED/WHITE								
CELERIAC	1		1					
GARLIC	150		100					
HCILANTRO/MINT								
HPARSLEY CI								
HPARSEMARY								
KALE	30		10					
KOHLRABI	1		10					
LEEKS	25		25					
LETTUCE/SCAROLE	300/20		100/5					
MESCLUN	20		15					
POTATO-ADK RED								
POTATO-BLUE	1		1/2					
POTATO-FNG RED/YEL	1		1					
POTATO-RED	2		1					
POTATO-RUSSETT	1		1/2					
POTATO-YELLW	2		1					
RADISH	1		1					
RUTABAGA								
SCALLION			0					
SHALLOT	20		15					
SPINACH	1		1					
SWEET POTATO	100		25					
SWISS CHARD	2		1					
TURNIP RD-BCH/BLK	25		5-10					
TURNIP WH-BCH/BLK	1		1					
WINTER SQUASH								

2009 MARKET LIST PV FARM				SARATOGA SAT. -DEC			
	5TH		12TH		19TH		LO
	LO		LO		LO		
APPLE CIDER							
ARUGULA							
ASIAN GREENS							
BEETS-BULK	32	7	52	40			
BROCCOLI	20						
BROCCOLI RAAB							
BRUS SPROUTS/TOPS	40	8	10				
CABBAGE-RED	27		26				
CABBAGE-WHITE	27		26				
CARROT-ORANGE	62		30				
CARROT-ORANGE/PURP	30/20	20	29/27	10/30			
CAUL-CHED/WHITE	48		23				
CELERIAC	100	25	150	15			
GARLIC	100		150				
HCILANTRO/MINT	12/6	26	216				
HPARSLEY CI	10/2						
HPARSEMARY	6						
KALE	15		20				
KOHLRABI	20	12	20	5			
LEEKS	25	8	25				
LETTUCE/SCAROLE	25/10		10/10				
MESCLUN	20		17				
POTATO-ADK RED							
POTATO-BLUE	20		35				
POTATO-FNG RED/YEL	20	24	27				
POTATO-RED	25		25				
POTATO-RUSSETT	23	12	27				
POTATO-YELLW	20		20				
RADISH	22	5	20				
RUTABAGA	21	8	20				
SCALLION	25		20				
SHALLOT	20	12	20				
SPINACH	20		10				
SWEET POTATO	100	20	27				
SWISS CHARD	20		27				
TURNIP RD-BCH/BLK	25		27				
TURNIP WH-BCH/BLK	20		27				
WINTER SQUASH	20	63	208				
X							
X							
X							
X							

Columns:

- What you want to harvest
- What you harvested
- What was Leftover

9:16 PM 98%

Harvest Market Harvest Market

January - 2017

Saratoga SAT - 21 Glens Falls SAT - 21

ITEM	Prev	Sent/Sold	Sent	LO	Prev	Sent/Sold	Sent	LO
ARUGULA - Small	30	10 10	30	25	20	6 6	20	15
ASIAN GREENS	35	36 36	40	40	30	35 35	40	42
BEETS - Bulk (#)	2	56 33	2	45	34	1	27 15	1
BRASSING GREENS	10	15 15	20	11	5	10 10	15	10
BRUSSELS SPROUTS (#)	12	9 9	12	14	5	12	8 6	12
CABBAGE - (#)	20	65 37	20	54	30	20	67 33	20
CARROTS - Mix (#)								
CARROTS - Orange (#)	3	92 82	4	123	49	3	94 41	3
CARROTS - Purple (#)	1	20 7	1	13	6			
CARROTS - Yellow (#)	1	35 14	1	33	15	1	35 13	1
GARLIC	140	140 140	140	140	97	140	140 140	140
H-BASIL								
H-BASIL - Bags								
H-CHIVES								
H-CILANTRO	5	5 5	10	10	3	3 3	5	5
H-DILL								
H-DILL Heads								
H-MINT								
H-Oregano								
H-PARSLEY - Curley			2	2				
H-PARSLEY - Italian			3	3			2	2
H-Rosemary	12	12 10	12	12	4	5	5 5	6
H-Sage	2		2			1	2 2	1
H-Tarragon								
H-Thyme	2	1 1	2	2	1	1 1	2	2
KALE - Bag				25	2			25
KALE - Bunch	50	55 55	60	40	8	40	40 40	50
KOHLRABI	30	30 19	30	30	12	20	20 9	20
KOHLRABI (#)								
LEEKs	120	120 75	120	120	69	80	90 90	90
LEEKs (#)								
LETTUCE - ESCAROLE								
LETTUCE - Heads								
LETTUCE - Mini Heads								
MICRO GREENS				6				
MICRO GREENS - Peas	30	13 13	30	21		25	13 13	25

fx Enter text or formula

Google Sheets on Ipad!

- Weigh as we go
- Keep records!



WINTER HARVESTING



FROM THE IPAD:

- CALCULATES THE TOTAL QUANTITY SOLD
- CALCULATE THE TOTAL DOLLAR VALUE SOLD
- THEN....USE THAT DATA TO SEE IF IT FITS OUR BASIC FARM RULE FOR CROP VIABILITY....

\$30,000 per acre rule++



EXTRAPOLATING OUT THE GROSS VALUE PER ACRE:

Example: SALAD MIX

Income = 4621 bags@\$4/bag = \$18,484

Tunnel Space = 1,980 square feet

Acres planted = 1,980/43,560 = .045 acre

Extrapolation:

\$18,484/.045 = \$406,648 per acre

\$30,000 per acre rule++

SPREADSHEET FOR EFFICIENCY!

	A	B	C	D	E	F
CROP	SQU FT GROWN	ACRES	QUANTITY SOLD	PRICE	TOTAL VALUE	\$ VALUE PER ACRE
		A/43560			CXD	E/B
Arug.	660	.015	1616	2.50	\$4040	\$266,64
Kale	660	.015	1097	3.00	\$3291	\$217,20
Swiss Chard	1320	.030	2480	3.00	\$7440	\$245,52



COULD ALSO PUT VALUES ON SQUARE FOOT BASIS IF WANTED:

Field Space = 1980 square feet

Value per square foot = $\$18,484 / 1980 =$
 $\$9.36$

With this type of calculation, to make our
minimum of \$30,000 per acre, the crop
must gross at least \$.69 per square foot

So, Does production & Labor matter?

\$30,000 per acre rule++

Market Prep is Our Biggest Expense

- TO MANAGE IT, WE USE A SYSTEM TO EVALUATE THE WORKERS AND OUR TECHNIQUES TO SEE HOW WE CAN IMPROVE PROFIT
- WE WANT TO KNOW THE TOTAL TIME IT TAKES THE EMPLOYEES TO HARVEST, WASH, AND PACK AN ITEM TO BE SOLD AT THE MARKET.
- WE USE A SIMPLE TIMING RECORD SHEET TO FIGURE THIS OUT...DONE ONLY A FEW TIMES EACH YEAR.

- We want each worker to be earning us a minimum of \$40 per hour while working on the harvest days!
- EXAMPLE: BEANS
- AN AVERAGE PICKER CAN PICK, WASH & PACK 25 POUNDS PER HOUR.
- AT **\$3.50** PER POUND, THE VALUE IS **\$87.50** PER HOUR AND FALLS WITHIN OUR LIMITS FOR PROFITABILITY.

Data gathered only 2 or 3 times each year during harvest day to get data on all crops

ITEM	START	END	QUANTITY	JOB DESCRIPTION	TOTAL	TOTAL
				INITIALS	VALUE	TIME
BASIL-BAG @\$7	3:15	3:45	12 bags	pick/bag SH & TJ	\$84	1
BEANS @ \$4/#	10:00	11:15	30#	pick TJ		
	10:00	11:15	38#	pick PA		
	11:15	11:30	68# total	wash,crate HR	\$272	2.75
LETTUCE @ \$2.50	7:00	8:30	150 Heads	Pick, wash,crate-PA	\$375	1.5
BLUEBERRY @ 3.50	9:10 AM	10:40 AM	30 (1/2pts)	Picking & to cooler TJ	\$105	1.5
RASPBERRY @3.50	9:30	11:00	19 (1/2 pts)	Picking & to cooler PJ	\$66.50	1.5

All times for picking, washing,crating, bunching, etc. would be totalled then divided into total

Example: Basil @\$7=\$84 worth readied in 1 hour (2 workers 1/2 hour each), therefore \$84/hour

Example: Beans Total of 68# readied in 2.75 hours; Value @\$4/pound=\$272; 272/2.75=\$99

Example: Blueberries @ \$3.50 =\$105 worth picked in 1 1/2 hours, therefore \$70/hour

Example: Raspberries @ \$3.50 =\$66.50 worth picked in 1 1/2 hours, therefore \$66.50/1.5=\$44/hour

Example: Lettuce Total was 150 heads readied in 1.5 hours by Paul only=\$375; \$375/1.5hr=\$250/hour

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WHAT WE LEARN FROM THIS

- Who are the best workers for the task
- What crop is costing us the most to prepare

THEN:

- What can we change
- Who is chosen for future jobs
- What equipment is needed to improve

- **Keep simple records or hire a worker to keep them if necessary!**
- **Review your records and make educated decisions based on them**
- **Know what crops make you money but...**
- **Grow one just for yourself!**
- **Don't be afraid to change systems to make a crop profitable**
- **Make the farm profitable, then it will be enjoyable**

RECORD KEEPING SUMMARY



Value=\$100,000 per
acre or \$2.30 per

Worksheet



Which crop makes you
the most money on YOUR
farm per acre???

Use your records to
improve



YIELD DATA



**DECEMBER
TO APRIL**

- Kale
- Swiss chard
- Spinach
- Asian Greens
- Lettuce Mix
- Arugula
- Turnips
- Herbs

**Increased weekly
sales by \$450 in
08-09**

SPINACH



FIRST WINTER 2007
Plastic on in January
11 Rows of Spinach
Gross over \$10,000
Just one crop!



2009-10 Gross
\$16,000 and
\$150,000 per acre
2010-11 Winter
9 Variety Trial

**Winter Tunnels
increased Sales
\$1200 per week
'09-10**





SWISS CHARD: 800 square feet yielded \$4998 for one winter season

- Perfecting the systems
- More per square foot
- Yielded \$1630 per week
- Markets building every year



2010-11

Highest Winter Market Sales

April 4=\$5345 and Tunnel Greens=\$2866

Lowest Winter Market Sales

Feb 4=\$3864 and Tunnel Greens=\$1970

Average Tunnel
Sales

Per week from
Nov 12 to June 1
is \$1732



TOTALS 2011-12

- Asian Greens 11/12 to 5/19 \$4,116
- Arugula 11/19 to 4/28 \$4,039
- Spinach 11/25 to 4/3 \$12,858
- Swiss Chard 12/17 to 6/20 \$7,440
- Salad Mix 1/1 to 6/1 \$18,484
- Kale 1/28 to 5/12 \$3,291

TOTAL: \$50,228 Gross
2 Tunnels-6 Crops!



TOTALS 2011-12

Averaged approximately 120 pounds of greens weekly out of the three tunnels



TOTALS 2012-13

Timing critical...Cloudiness Eliot Coleman-Frozen Ground



**Lower Yields but
still profitable**



2013-14 CHALLENGES

More sun....Warm fall & early winter
Changeable weather

January 5th
Network

FB: 4 Season Farming
& Winter Production



2015-16 NEW CHALLENGES

One week harvested 272# of greens

Total value: \$2088

3 Tunnels-7 Crops



2015-16 HARVESTS

Fairly sunny, moderate temperatures, some swings, and the star producers were salad mix, Asian greens & kale.

- Average greens production has been about 210# per week with ave value \$2000
- Sales have been 50% greens and 50% storage crops



2016-17 SEASON

Very cold, lots of salad mix loss, low on chard, but star producers were salad mix, Asian greens & kale. Learned that the heaters are valuable.

- **Spinach—**
Harvested 882# of spinach Dec 23 to April 28. Value was \$11,962 so \$630 per week.



2017-18 SEASON

Very cold in late Oct,
Nov, Dec, and very
cloudy. Spinach
minimal growth, cut
salad mix earliest ever
but regrowth amazingly
good, Kale and Asian
Greens, star producers.

- Spinach—Worse
ever
- Always learning &
challenged



2018-19 SEASON

MARKETING – THE FUN PART!



Must be a Better Marketer than Grower

What Farmers Markets Mean to Us

- Year-round income for stability
- Year-round workers
- Providing year-round local produce to our customers
- Work less in the summer-Vacations!
- Have fun farming in all seasons—what we enjoy!



FARMERS MARKET BUILDINGS

1998 Saratoga building went up

2005 Glens Falls building went up



FEEDING FOLKS EVERY WEEK OF THE YEAR





Lots to learn!

22 years ago!



- Silver Tarps
- White Tarp

Red and White
Awning so we
stand out





Diversity
Is Our Key for
Marketing...
One stop shopping!



DRESS UP THE TABLE!



**WHAT IT TAKES.....
4 TO 6 MAN-HOURS!**

**Enclosed Vehicle
Necessary for Winter
Markets**

**Load just before
market**





Back-stock available...and lots of trials!



CRISP
FRESH
CELERY
\$3.00

CRISP
FRESH
CELERY
\$2.50

JUMBO
GARLIC
2 FOR
\$5.00
OR
\$3.00 EACH

BROCCOLI
\$3.00

Robust
Purple
Cauliflower
\$3.00

DISPLAYS ARE EVERYTHING!



Front & Center to move out!

Change and move displays!



Color catches their eye....

Flavor brings them back....



**Build shelves for
multiple levels**

**More display
space**

**Go up rather than out
More visual**





**Customers Buy with Their Eyes!
Diversity of Lettuce...mini and full size heads.**

WINTER MARKETS NOVEMBER 1ST TO MAY 1ST



Can be inside or
outside after
November 1st...
weather
dependent





**SATURDAY
BEFORE
THANKSGIVING**

**HIGHEST
SALES DAY OF
THE YEAR!!!**





NOVEMBER 22ND 37 DIFFERENT ITEMS FOR SALE!



Special events and press releases
Cooking demos with market products

2 Winter Markets: Range \$3000-\$4500/Week



DIVERSITY AND BIG DISPLAYS!

TAKEN IN MID - JANUARY!



Feel good about serving customers abundant, healthy produce all winter!



EMPLOYEE HANDBOOK FOR FARMERS' MARKET

Customers are always right & everything is guaranteed 100%

LAMINATE THE SIGNS



SIGNS AND INFORMATION IMPORTANT
Homemade wooden bins fit in our Buckhorn crates

Winter Fall

Winter Squash

\$1.50 / Pound

All Varieties, All Sweet



Winter Spring Fall

Fingerling Potatoes

\$4.50 / Basket

Rich, Buttery
Gourmet Flavor, a
Farm Favorite



Spring Fall

Bok Choi

\$3.00 / Bunch

Mild green for
Sautéing & Soups



Winter Summer Fall

Red Garlic



Sweet when cooked;
Very potent raw



NEW DESIGN.....FINALLY 2019

- Seasons on top
- Logo
- Give information



Winter Spring Fall
Pea Shoots
\$2.50 / Bag
Fresh on a Salad or
Sautéed with
Butter!



All Seasons
**Carrot
Medley**
\$4.00 - / Basket

All Seasons
**Yellow
Carro**



High Quality and Good Preparation



Give recipes for unusual items
Cut up samples to try like Kohlrabi



“Large-Leafed Salad Mix” not Asian Greens



Mixed Kale Bunches Very Popular



Adding new products to keep customers HAPPY!

WIC, FOOD STAMPS (EBT) & TOKENS For Extra Income



CUSTOMER EMAIL NEWSLETTER

USE IPAD AT MARKETS (SQUARE)

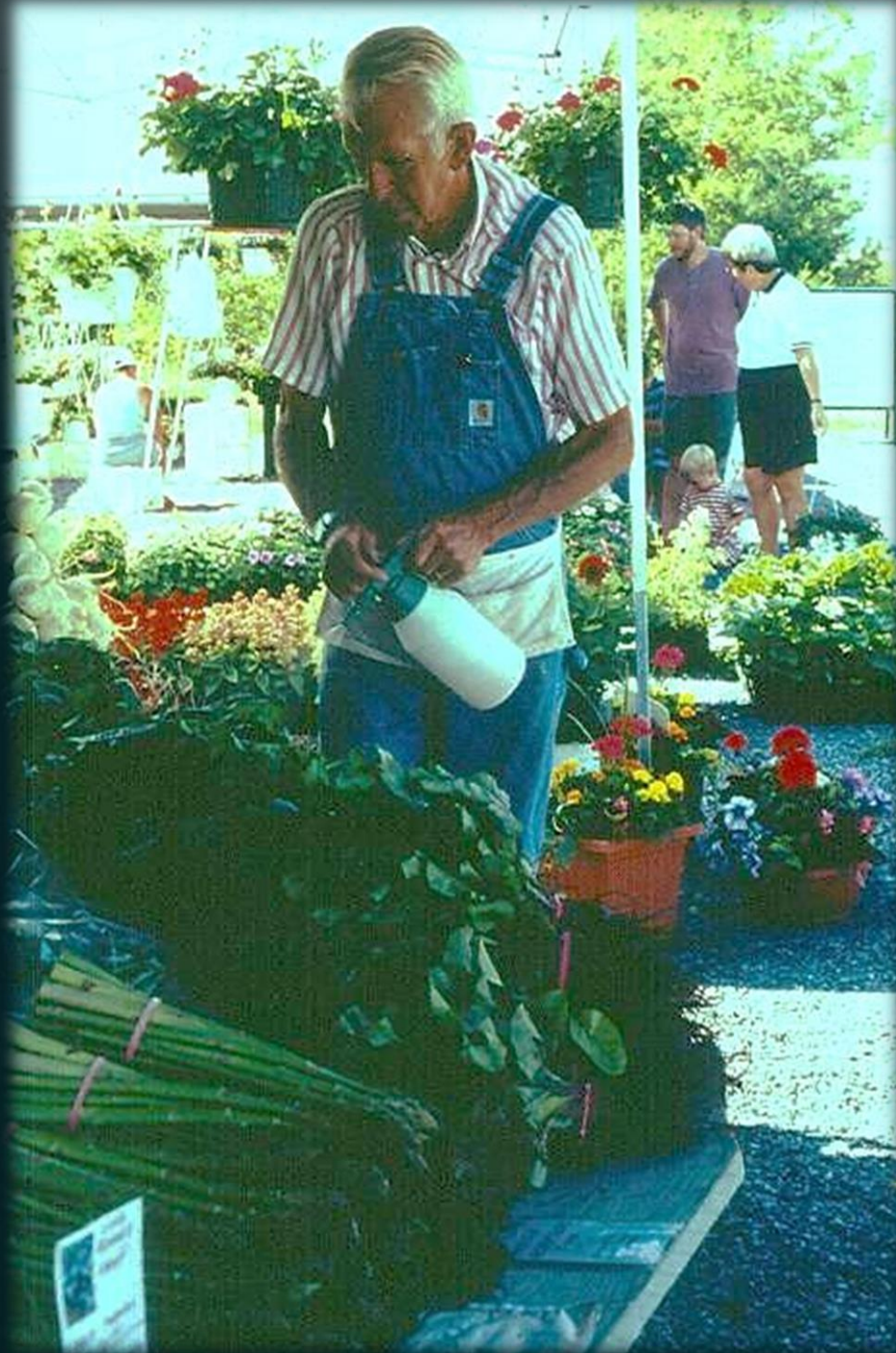


Benefit: Tells sales during/right after, ave sales, # cust

USE SQUARE FOR CREDIT CARD SALES



- **Cost of doing business**
 - **Give extra money**
- **No fees to customers**



Summary for marketing essentials:

- Misting
- Quality control
- Pile High
- Color coordinate
- Diversity
- Back stock
- Smile
- 110%
- Guarantee
- Learn names
- Take orders
- Tarp
- Signage
- Recipes
- Knowledge



Family member present



Serving our friends every week and enjoying the farming lifestyle!

SUMMARY OF TIPS & TRICKS FOR PROFIT

- LEARN HOW TO KEEP THE GOBS
 - VISIT FARMS
 - GO TO CONFERENCES
 - READ....READ.....READ
 - TRY NEW THINGS
 - NETWORK
-

HOW WE GET OUR ELECTRICITY FOR OUR WHOLE FARM....

**SOLAR, SOLAR
& MORE SOLAR!**

2007-10kW

2012-19kW

NETMETERED

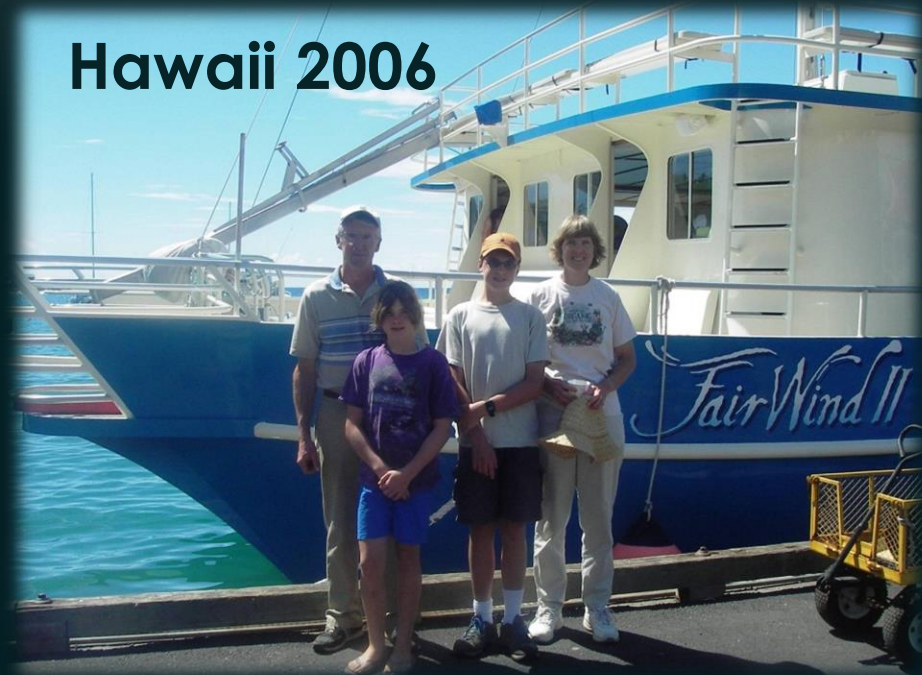


**NO BETTER WAY OF LIFE: RAISING FOOD YEAR-ROUND
AND RAISING CHILDREN ON THE GREATEST PLACE ON
GOD'S EARTH: A FARM!!**



THANKS AND HAVE A GREAT WINTER & 2019 SEASON!

Hawaii 2006



Alaska, Glacier 2011



- Questions? Email us at : arnold.pvf@gmail.com
- Call us! 518-638-6501
- Come visit anytime! Food and beds available always!
- Come be an intern or work on our farm for any time frame!