



# GROWING MICROGREENS

Paradise Acres Farm ~ James and Lucia Tiffany

# Our Story (short version)

- 2012 - Elder Care brought us to the place that we were looking for something Lucia could do to bring in some income from home.
- We also wanted whatever we did to be some kind of ministry
- The Byron Smith Family presented a seminar at campmeeting that inspired us to try growing microgreens



# Our Story (short version)

- One year ago we moved to a new location.
- We have spent much of our time in transition while doing a remodel to accommodate our microgreens.



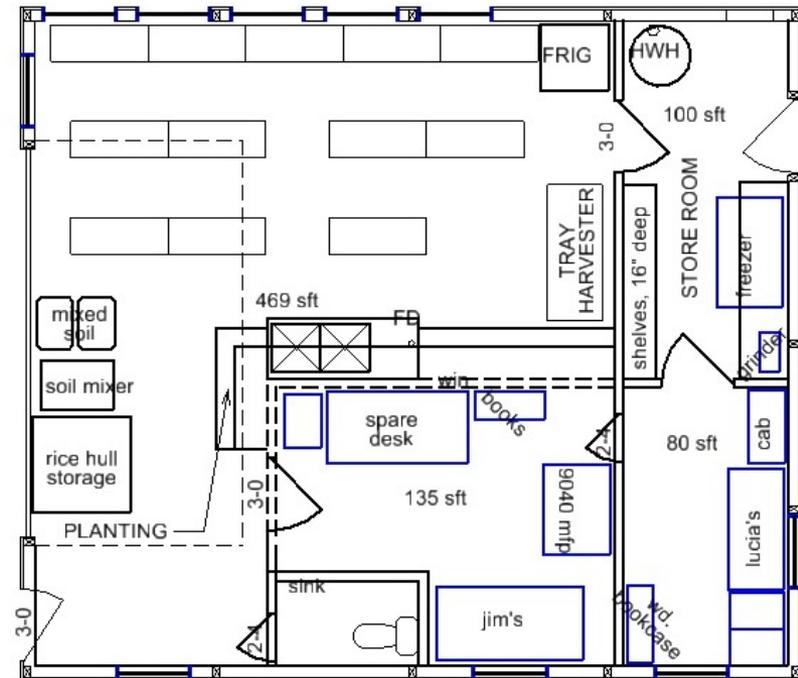
# Our Story (short version)

- Our original location



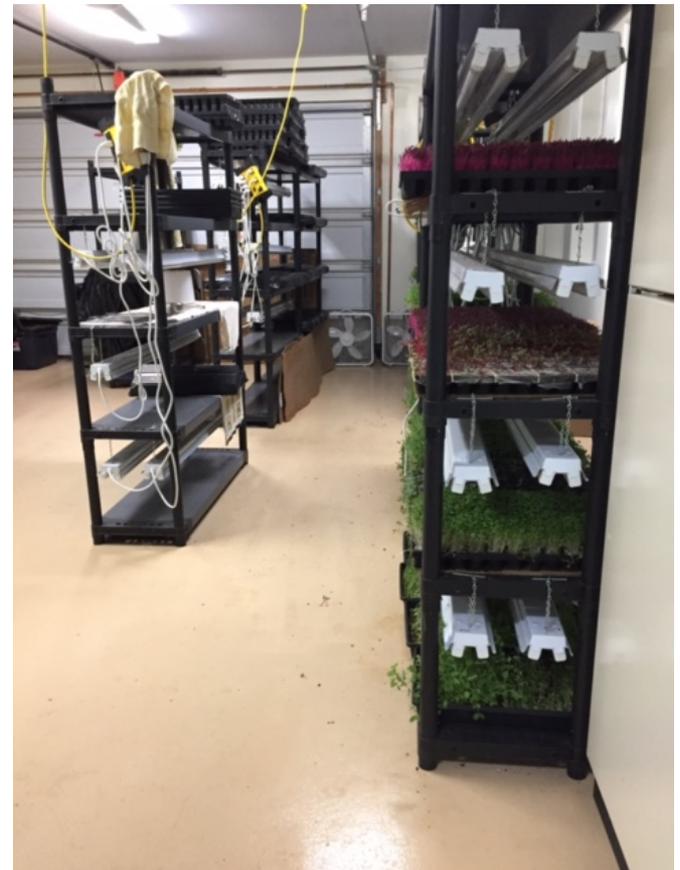
# Our Story (short version)

## □ Our new location



# Our Story (short version)

## □ Our new location



# Our Story (short version)

## □ Our new location



# Blessings Upon Blessings!

- ...And in these days of mammoth trusts and business competition, there are few who enjoy so real an independence and so great certainty of fair return for their labor as does the tiller of the soil. CG 356.3
- ...If people only knew the value of the products of the ground, which the earth brings forth in their season, more diligent efforts would be made to cultivate the soil. All should be acquainted with the special value of fruits and vegetables fresh from the orchard and garden. {CG 357.1}

# Definition of Microgreens

- Vegetable and herb seedlings that are grown in soil to the cotyledon or first true leaf stage when they are harvested by cutting the stems just above the soil.

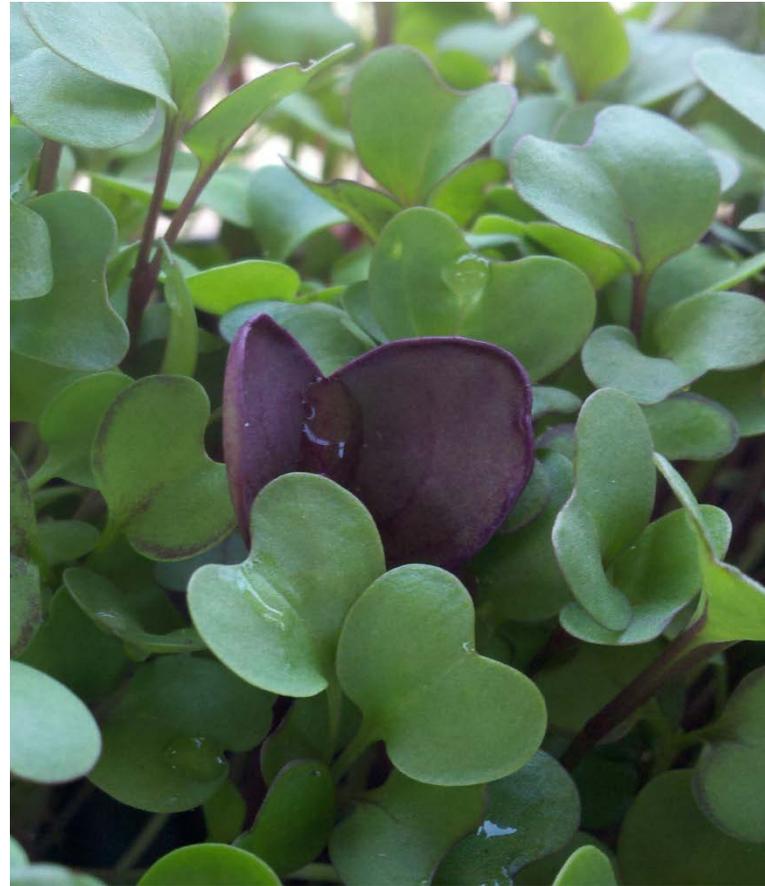


# Benefits of growing your own

Family Nutrition

# Family Nutritional Benefits

- U. of MD study on phytochemical levels in assorted microgreens showed that they tend to have higher levels of these health protective elements than more mature leaves, in some cases as much as 40 times higher.
- J Agric. and Food Chem. 2012, 60, 7644-7651



# Health Benefits

- High anti-oxidant and chlorophyll levels are great immune boosters
- High mineral levels help to keep you well and save on doctor bills



# Many ways to incorporate

- Juicing
- Green smoothies
- Salads
- Sandwiches
- Wraps
- Spring Rolls
- Garnishes



# Family Educational Opportunities

- Great for homeschoolers
- Integrates well with many different academic areas:
  - Math
  - Science
  - Biology
  - Health
  - Practical/vocational skills
  - Character development



# Easiest Crops to start with

- Brassicas
- Mustard
- Sunflowers (popular)
- Radishes
- Corn shoots
- Peas
  
- Moderately easy
  - Basils



# More difficult crops to grow

- Bull's Blood Beet
- Cilantro
- Fennel
- Herbs
- Chards
  
- These take longer (3wks or more), & are more difficult.



# Seed Starting Processes

- Plug Tray Crops
  - Soak seeds (some)
  - Germination
  - Lights
- Flat Tray Crops
  - Soaking seed
  - Stacking trays
  - Indirect or no light
  - Lights

# Benefits of Growing for Profit

And How to Count the Cost

# You can do this even if you -

- Need a very flexible schedule
- Don't have a lot of money to invest
- Don't have a lot of growing space
- Hate weeding
- Don't have a greenhouse
- Have small children
- Are doing eldercare
- Not available for full-time work

# Market considerations

Microgreens  
on a Micro  
Scale



# Characteristics of our market

- Population center 35 miles away with adequate interest in this type of product
  - 75K population in county and about 40K in “urban” area
  - Upper/middle class
  - Local community college
  - Much interest in environmentally friendly, organic, and local produce (quite a number of local farmers’ markets)
- Little Competition for Microgreens
- Our local health food/coop sells about \$5M/month- summertime.



# Characteristics of our market -2

## TRAVERSE CITY TOPS THE LIST!

Top 10 Summer Trips for 2012  
*National Geographic*

Top 5 Foodie Towns in America  
*Bon Appetit*

Top 10 Place to Enjoy Local Wines  
*USA Today*

6 Best Cities for a Bike Vacation  
*Bicycling Magazine*

Top 10 Foliage Destinations  
*TripAdvisor.com*

The Most Beautiful Place in America:  
Sleeping Bear Dunes National Lakeshore  
*Good Morning America Viewers*

Top 3 Emerging Beer Towns in the USA  
*Draft Magazine*

Top 5 Food Towns in the Midwest  
*Midwest Living*

Top 10 Charming Small Towns  
*TripAdvisor.com*

Top 10 Beach Towns in America  
*AOL Travel News*



# Size – We are a MicroEnterprise

- By definition, a business with less than 6 employees
- Labor is an average of 25-30 hours/week
- Hired help covers what we don't - variable
- Growing space was 8' x 24' (192 sft) indoors and now 469 sft.
- Yield of 12 to 18 lbs./week
- Net is about 50% of revenue (before taxes)



# Artisan Mix – Rainbow Mix



# Our Marketing Approach

- Started by checking with local health food store for interest in carrying microgreens.
- Did cold calls to local restaurants and tried to contact manager or executive chef and make appointment to deliver free sample.
- Delivered samples with schedule for ordering (we grow to order only) and availability/price lists
- Followed up within a week or so.
- Customer base has grown to 2-4 grocery stores (depends on season) and 6-8 restaurants (some seasonal)
- Have not explored farmer's markets d/t schedule issues

# Environment



- Our Climate-Northern Michigan
  - We started in small outdoor greenhouse outfitted with shelves
  - Short summer and large temperature variations in the summer.
  - This led to inconsistent size, growing times and yield at harvest.
  - Evenness of temperature and humidity are very important for consistent product

# Environment, cont.

- We wanted to grow year 'round, so we moved the operation into an attached, single car garage that was insulated and heated
- Maintain a temperature of  $69^{\circ}\text{F} \pm 6^{\circ}$
- We run fans/open windows when possible. Excess humidity can lead to problems with fungus/mold. More recently we have added dehumidifier & window A/C.



# Basic Infrastructure Requirements

- Well Insulated Space
- Temperature Control
- Humidity Control
- Ventilation
- Shelving Units
- Lights (We use Fluorescent Fixtures w/LED Bulbs)
- Source of Water
- Decent Electrical System
- Management (Accounting, Planting Schedule, Harvest Schedule, Invoices, etc.)

Experience the benefits!



# Developing to meet a need

- We have worked with people that want to learn how to grow their own microgreens
- Found that there are few resources that take you through the process in a step by step process.
- We had to learn much of what we know through trial and error
- Microgreen Academy is a way for us to share what we have learned with a bigger audience

# How Microgreen Academy helps you

- **If you are growing for yourself**
  - Get instruction on how to do it, step by step
  - Learn how to apply each step of the growing cycle from planting to harvest
  - Get resources on integrating growing into your homeschooling program
  - You gain access to ongoing resources as they are developed
  - Get ideas and recipes for new ways to use what you grow

# How Microgreen Academy helps you

- **If you want to start growing commercially**
  - Save time and \$\$ by step by step guidance covering:
    - Market research
    - The setup process
    - Needed equipment and tools and supplies
    - Resources on suppliers and vendors
    - Variety-specific guidance on growing techniques
    - Specialized software tools for calculating planting and harvesting schedules based on harvest dates
    - Mentoring through the organic certification process if desired
  - Help with troubleshooting

# Support for growing to order

- Variables
  - Order quantities can vary
  - Each crop has a different length of time for growing
  - Mixes have multiple crops
- “Microgreens Automation Spreadsheet”
  - Inputs-
    - Order Quantities by Harvest Date for each Customer
    - Growing Duration by Crop
    - Historical Average Yields by Crop
    - Mix Proportions
  - Outputs
    - When & how much to plant of for each crop
  - Complicated spreadsheet formulas, not user friendly to set up initially, but...
  - Saves 4 or 5 hours of planning time each week.
- Schedule to Avoid Sabbath Work



# “Automation Spreadsheet”

Microgreens Automation 3-13-14.xlsx - Microsoft Excel

Home Insert Page Layout Formulas Data Review View Add-Ins Acrobat QuickBooks

Clipboard Font Alignment Number Styles Cells Editing

PLANTING SCHEDULE

PLANTING SCHEDULE															
	Wednesday *	Thursday	Sunday	Wednesday	Thursday	Sunday	Wednesday	Thursday	Sunday	Wednesday	Thursday	Sunday	Wednesday	Thursday	Sunday
	3/12/2014	3/13/2014	3/16/2014	3/19/2014	3/20/2014	3/23/2014	3/26/2014	3/27/2014	3/30/2014	4/2/2014	4/3/2014	4/6/2014	4/9/2014	4/10/2014	4/13/2014
8	SAVE & SHOW THIS LINE!														
9	SAVE & SHOW THIS LINE!														
11	Total Brassica	8.1			9.1			8.1			9.1			8.1	
15	Bull's Blood Beet	1.6			1.5			1.6			1.5				
17	Garnett Amaranth	1.2			1.1			1.2			1.1				
19	Asian Greens	3.6			4.2			3.6			3.6			4.2	
21	Radish Medley			1.5			1.6			1.5			1.6		
23	Spicy Mustard	1			1.1			1			1.1			1	
25	Pea Shoots		2.8			5.7			2.8			2.8			5.7
27	Sunflower Greens	8.2			8.2			8.2			8.2			8.2	
31	Opal Basil	0.5			0.5			0.5			0.5				
33	Cilantro			0.2			0.2								
37		24.2	2.8	2.9	25.7	5.7	2.9	24.2	2.8	2.7	25.1	2.8	2.7	21.5	5.7
38		* Only need to change this date (has to be a Wednesday) and all the rest change automatically													
43	Orders Up-to-date Through: 2/25	4/29/2014													

Future Grocer\_3 Wendy Rogers Samples Order\_Summary Order\_Summary\_Calcs Planting\_Schedule Pricing Yields Future Work

# Organic Certification



- We are USDA certified organic
- Requires good record keeping, which is very helpful even if you are not certified
  - Planting records by tray with date/crop/qty/lot number/seed supplier
  - Harvest records by tray with date/quantity
  - Soil and Seed Mix logs
  - Binder and file folders
- Cost- About \$1,200 per year. Grant to help cover this was \$721 this year.



# How Microgreen Academy helps you



- **If you are just thinking about growing MG**
  - Signing up for our mailing list is free
  - You will know as new resources become available
  - You can gain inspiration for healthy living

# Contact Us

Sign up for our mailing list at  
our website:

[www.ParadiseAcres.Farm](http://www.ParadiseAcres.Farm)

You can also contact us at:

[PAFarm77@gmail.com](mailto:PAFarm77@gmail.com)



# Questions?

