Micro & Small Scale Farming Session

Planning Your Small Business Right From the Start Ariel Agenbroad, Area Educator, Community Food Systems and Small Farms, University of Idaho
Tips for Selecting the Ideal Crops for Your Site Sheriden Hansen, USU Extension
Urban, Small Farm, & Home Garden Irrigation Dale Allred, AES International PLLC
Downtown Farmer's Market - Keys to Being a Successful Market Vendor Alison Einerson, Executive Director Urban Food Connections of Utah/Downtown Farmers Market
<u>Local Producers</u> **Urban Farmer/Mom -** Delaney Nalder, Haystack Farm **Romance and Realities Of Starting a Small Farm-** Ryan Tippets, Sunshine Family Farms

Planning Your Small Farm Business Right from the Start

What are your small farm dreams? What will it take to make those dreams a reality? Join Extension Educator Ariel Agenbroad as she guides participants through the basics of exploring options, identifying resources, setting goals, evaluating assets and planning for small farm sustainability and success.

Ariel Agenbroad
Area Educator, Community Food Systems and Small Farms
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Ariel Agenbroad serves southwest Idaho as a University of Idaho (UI) Area Extension Educator in community food systems and small farms. She has spent the last decade committed to helping individuals and communities grow. As an Area Extension Educator, her focus is on community food systems in the greater Boise metropolitan area, particularly working around issues related to urban agriculture, food safety, hunger relief, Farmers' Markets, small scale food processing, farm to school programs and community gardening.

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Getting to know you.

What your personal set of skills, strengths & inclinations can tell you about your future in farming.

- ☐ I am new to farming
- ☐ I have worked on someone else's farm
- ☐ I have experience farming on my own
- ☐ I enjoy working with plants
- ☐ I enjoy working with animals
- ☐ I enjoy foods and cooking
- ☐ I enjoy crafts and making things
- ☐ I like working with machinery and tools
- ☐ I like variety in my day-to-day
- ☐ I like predictability
- ☐ I enjoy being around people
- ☐ I am comfortable supervising workers
- ☐ I have supervisory experience
- ☐ I prefer to work alone
- ☐ I would welcome farm visitors
- ☐ I would prefer not to have farm visitors
- ☐ I enjoy customer service
- ☐ I have experience in retail or sales situations
- ☐ I am open to new ideas
- ☐ I welcome challenges in life
- ☐ I am content with the way things currently are
- ☐ I need to get off the farm sometimes
- ☐ I need to get off the farm often
- ☐ I rarely want to leave the farm
- ☐ Farm profitability is extremely important to me
- ☐ I want my farm to pay for itself
- ☐ Farming is my hobby, the farm doesn't need to turn a profit
- ☐ I want to continue to work off farm
- ☐ I would like to farm full time
- ☐ Family time is very important to me
- ☐ My family is supportive of farming
- ☐ My family is committed to working on the farm with me
- ☐ My family has diverse interests/activities off the farm
- ☐ My family values vacation time
- ☐ My farm is perfect just as it is
- ☐ My farm has room to grow
- ☐ I'm ready to re-evaluate my farming enterprises

Taking Stock.

Evaluate the resources available to you when considering the possibilities.
Check or make a notation in each square if you have access to this resource.

PHYSICAL RESOURCES	MARKET RESOURCES	MANAGEMENT AND LABOR	FINANCIAL RESOURCES
Available Acres	Nearest City	Management	Cash
Irrigation	Nearest Town	On Farm Labor	Savings
Cropland	Road Frontage	Labor Pool	Personal Credit
Pasture	On Site Retail	Employee Benefits	Commercial Credit
Fencing	Dry Storage	**MENTORING & TRAINING RESOURCES** University of Idaho Extension	
Buildings	Cold Storage	Farmer Mentor	
Machinery & Equipment	Processing or Slaughter	Other Training & Education	

Dream Analysis.

Take an honest look at the new or existing enterprises you are considering.

ENTERPRISE IDEA 1:

Local Example:

Resource Fit 1———2———3———4———5

Profitability 1———2———3———4———5

Quality of Life 1———2———3———4———5

My Readiness 1———2———3———4———5

ENTERPRISE IDEA 2:

Local Example:

Resource Fit 1———2———3———4———5

Profitability 1———2———3———4———5

Quality of Life 1———2———3———4———5

My Readiness 1———2———3———4———5

ENTERPRISE IDEA 3:

Local Example:

Resource Fit 1———2———3———4———5

Profitability 1———2———3———4———5

Quality of Life 1———2———3———4———5

My Readiness 1———2———3———4———5

ENTERPRISE IDEA 4:

Local Example:

Resource Fit 1———2———3———4———5

Profitability 1———2———3———4———5

Quality of Life 1———2———3———4———5

My Readiness 1———2———3———4———5

HIGHEST RANKING ENTERPRISE IDEA: 1 2 3 4

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CULTIVATING SUCCESS™ sustainable small farms education

RURAL roots healthy food healthy communities

What's next.

Small steps toward your goals can lead you to your small farm dreams.

The first thing I will do after this workshop is...

The person I really need to call is...

The most important piece of information I need to find is...

The biggest question I still have is...

Tips for Selecting the Ideal Crops for Your Site

We will explore site selection, how to select an ideal site and crops for that site.

Sheriden Hansen

Assistant Professor, Horticulture

Utah State University

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I run the horticulture programs in Davis County, Utah which includes the Master Gardener program. I previously ran a micro-farm in East Layton which included a CSA that served Davis and Salt Lake Counties.

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Building Your Micro-scale Operation

Tips for Selecting the Ideal Crops for Your Site

Sheriden Hansen

Assistant Professor, Horticulture

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CHANGING DYNAMICS

- Increase in micro- and small-scale farms
- Micro-scale < 3 acres
- Part-time hobby farms to full-time businesses
- Varied crops, vegetables and fruits to pasture

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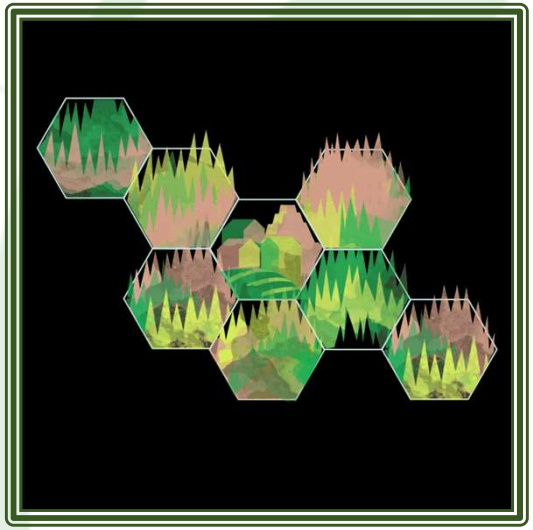
WHAT CROPS DO I GROW?

Determining the best crop(s) for your site depends on a number of factors



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PRODUCTION CONSIDERATIONS

- It depends on:
  - Climate
  - Site
  - Soil
  - Water
  - Labor
  - Economics

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CLIMATE CONSIDERATIONS

- Mid-winter cold
- Mid-summer heat
- Light
- Wind
- Temperature fluctuations
- Length of growing season (FFD)
  - Airport – 175 ffd
  - Downtown SLC – 205 ffd

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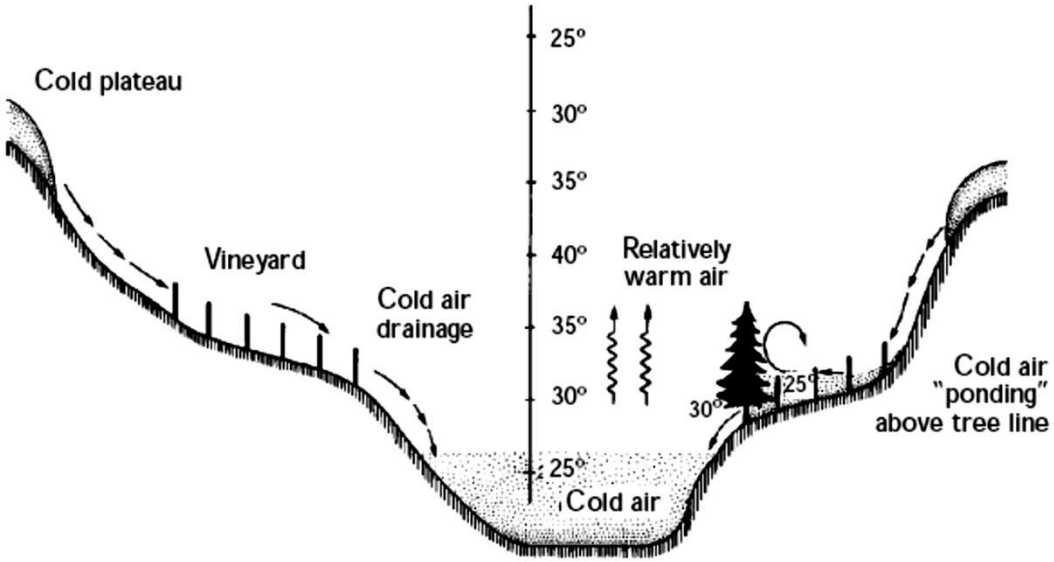
MICROCLIMATE



What is a microclimate?

- The climate of a small area, when this differs from the climate around it

Impacted by:

- ✓Elevation
- ✓Slope
- ✓Aspect

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ELEVATION

Height above sea level – has an effect on temperature

SALT LAKE CITY

- Elevation 4226 ft.
- January
  Avg. Temps: 37° High, 21° Low
- July
  Avg. Temps: 91° High, 63° Low

PARK CITY

- Elevation 7000 ft.
- January
  Avg. Temps: 27° High, 7° Low
- July
  Avg. Temps: 79° High, 48° Low

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SLOPE

- Air drainage
- Often used in orchards and vineyards

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ASPECT

- North vs. South side of a slope
- Can be used to speed up or slow down growth processes

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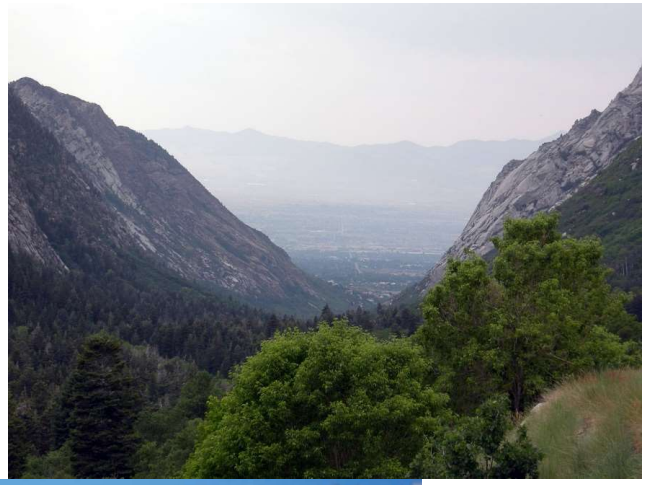
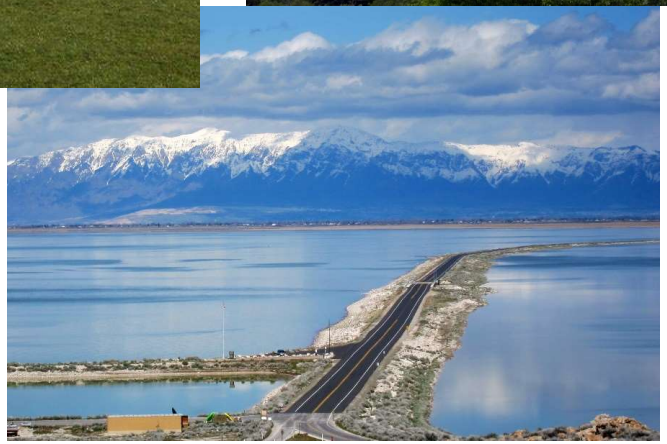
MICROCLIMATE

- Moderating Conditions
  - ✓Canyons
  - ✓Lakes
  - ✓Windbreaks





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DETERMINING YOUR FREEZE DATES

- Determining your freeze dates:
- Utah Climate Center http://climate.usu.edu
- Find station nearest to you
- “Loose” Rule of thumb for Wasatch Front:

  5/10 to 10/5

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ON-SITE MEASUREMENTS

Small electronic minimum-maximum thermometers

$30 $200 $250 $330 $600 +

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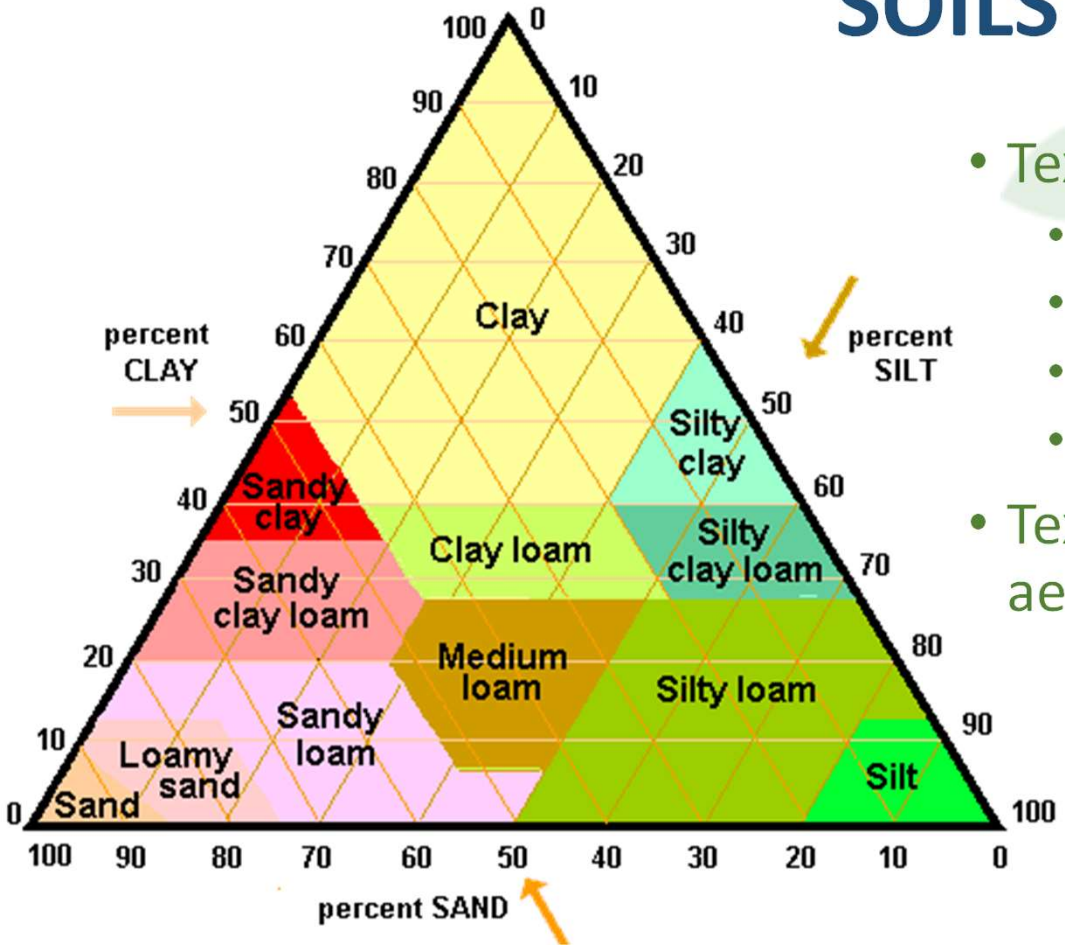
SOILS



- Texture
  - Sand
  - Silt
  - Clay
  - Rocky
- Texture affects drainage and aeration

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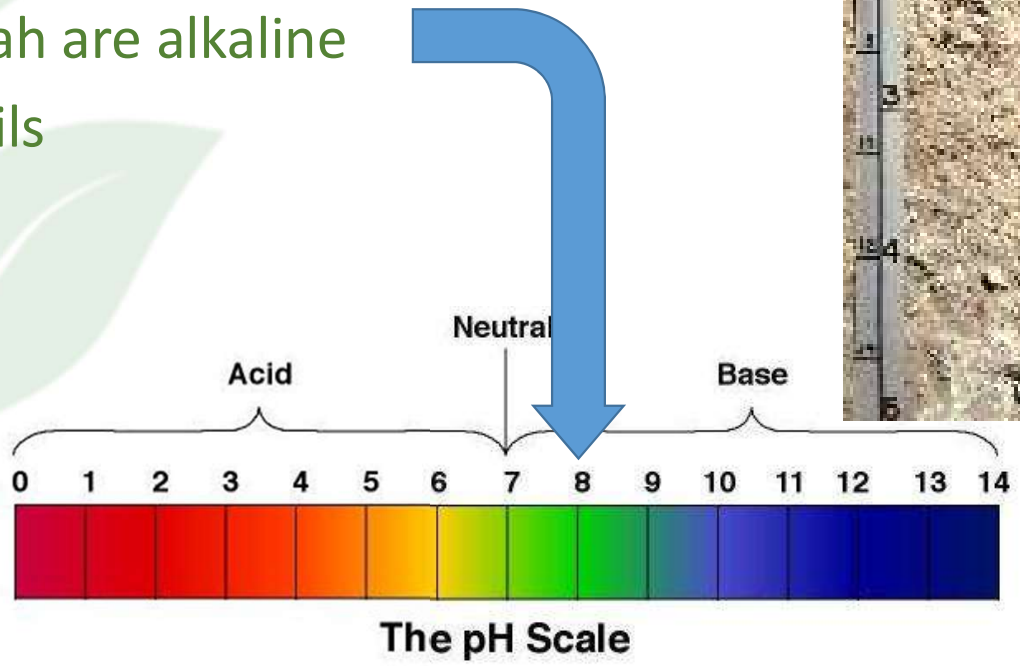
SOIL pH

- Measure of acidity or alkalinity
- 0-14 scale
- Most soils in Utah are alkaline
- “Calcareous” soils



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SALINITY

Table 5. Salinity tolerance of common fruit and nut crops grown in Utah.

Crop	Threshold value	10% yield loss	25% yield loss	50% yield loss
	EC_e (dS/m)	EC_e (dS/m)	EC_e (dS/m)	EC_e (dS/m)
Apple	1.7	2.3	3.3	4.8
Almond	1.5	2.0	2.8	4.1
Apricot	1.5	2.0	2.6	3.7
Blackberry	1.0	2.0	2.6	3.8
Boysenberry	1.3	2.0	3.0	4.0
Cherries, Sweet and Tart	0.9	1.9	2.2	3.1
Grape	1.5	2.5	4.1	6.7
Nectarines	1.6	2.0	2.6	3.7
Peach	1.7	2.2	2.9	4.1
Pear	1.7	2.3	3.3	4.8
Pecan	1.9	2.5	3.5	4.9
Plum	1.5	2.1	2.9	4.3
Raspberry	1.0	1.4	2.1	3.2
Strawberry	1.0	1.3	1.8	2.5
Walnut	1.7	2.3	3.3	4.8

- How much salt is in my soil?
- Some crops can tolerate higher levels, others are very sensitive
- Some of Utah's soils can be highly saline

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ORGANIC MATTER

- Good indicator of soil health
- Improves nutrient and water holding capacity
- Reduces compaction
- Can take a long time to build in the soil
- Manures should be added ***CAREFULLY***!

Organic Matter Sources and Approximate Nutrient Analysis

Organic Matter Source	% Nitrogen (N)	% Phosphorus (P)	% Potassium (K)
Compost (Kitchen Scraps)	1-3	1-2	1-2
Grass Clippings	1-2	0-0.5	1-2
Leaves	1	0-0.5	0-0.5
Legumes	2-4	0-0.5	2-3
Cattle Manure	2-3	0.5-1	1-2
Horse Manure	1-2	0.5-1	1-2
Swine Manure	2-3	0.5-1	1-2
Poultry Manure	3-4	1-2	1-2
Sheep Manure	3-4	0.5-1	2-3
Bat Guano	3	10	1
Pine Needles	0.5	0	1
Sawdust	0-1	0-0.5	0-1

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MANURES AS ORGANIC MATTER

- Manures should be **CURED** before being added to soil with plants or seedlings
- Poultry manure is especially “HOT”
- Can be a source of weed seed
- Can increase the salinity of the soil

Organic Matter Sources and Approximate Nutrient Analysis

Organic Matter Source	% Nitrogen (N)	% Phosphorus (P)	% Potassium (K)
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Leaves	1	0-0.5	0-0.5
Legumes	2-4	0-0.5	2-3
Cattle Manure	2-3	0.5-1	1-2
Horse Manure	1-2	0.5-1	1-2
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Poultry Manure	3-4	1-2	1-2
Sheep Manure	3-4	0.5-1	2-3
Bat Guano	3	10	1
Pine Needles	0.5	0	1
Sawdust	0-1	0-0.5	0-1

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ORGANIC MATTER

December 2012 Horticulture/Soil/2012-01pr

Preparing and Improving Garden Soil

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Larry Sagers, Horticulture Specialist USU Extension

Knowledgeable gardeners know that a great garden starts with quality garden soil. Utah has unique garden soil quality challenges. Native Utah soils are relatively low in organic matter content compared with areas of the country that receive more rainfall. Furthermore the pH of Utah soils averages 8.0, which is ten times more alkaline than a neutral pH of 7.

Alkaline soils cause certain micronutrients to become less available leading to nutrient deficiencies in garden plants. Iron chlorosis is a deficiency of plant available iron and is one of Utah's most troublesome nutrient deficiencies. Iron chlorosis is greatly affected by soil pH. Despite these challenges, time and organic matter can transform most garden soils from brutal to beautiful!

Organic Matter

Organic matter is the best amendment for any soil type. It increases soil moisture retention, improves soil structure and decreases soil compaction. It also improves soil drainage and soil tilth and makes some soil-supplied nutrients more available. Even if these terms are not familiar they are important garden soil improvements.

Organic matter provides essential nutrients and also provides food and habitat to many soil macro- and micro-organisms. This soil flora and fauna creates important soil quality benefits such as improved aeration and soil structure. Hence, organic matter is often referred to as "black gold." Many Utah soils have poor soil structure. Soil structure is the aggregation of the mineral portion of the soil with organic matter. Adding organic matter helps form secondary particles that allow air and water movement into the soil. In addition to improved aeration, good structure improves the tilth or workability of the soil which ultimately improves plant growth.

Types of Organic Matter

Sometimes gardeners are confused by differences between types of organic matter. What differentiates compost from mulch? Organic matter

Mulch applied to the soil surface can help retain moisture for plant roots.

Compost is mixed into the soil and improves many soil qualities.

paper. Compost is organic material that has decomposed to a state where the original parent material is no longer recognizable. It looks and smells like rich garden soil and is typically incorporated to improve soil quality.

Mulch is material that is applied to the soil surface to smother out weeds, protect trees and shrubs, reduce evaporation or beautify the landscape. It is usually not fully decomposed. The names mulch and compost are often used interchangeably but there are differences. Do not be confused by differences in names as all organic matter improves garden soil. Not all mulches or amendments are organic; some inorganic mulch options include rocks or glass. Inorganic amendments include perlite, pumice, vermiculite, Utelite and other products. These products improve the drainage and aeration of garden mixes.

Soil Testing

It is important to have soil tested before incorporating amendments that are high in nutrients such as phosphorus (P) and potassium (K). Some organic matter sources (including animal manures like bat guano) are naturally high in certain nutrients. Over-application of soil nutrients, especially nitrogen and phosphorus, may contaminate nearby water sources including lakes and streams or leach into groundwater. For more information on the impacts of nutrient loading on surface water supplies, access 'Understanding Your Watershed' https://extension.usu.edu/waterquality/htm/watershedinformation/uyw/.

Learn more about adding organic matter at:

https://digitalcommons.usu.edu/cgi/viewcontent.cgi?referer=https://www.bing.com/&httpsredir=1&article=2067&context=extension_curall

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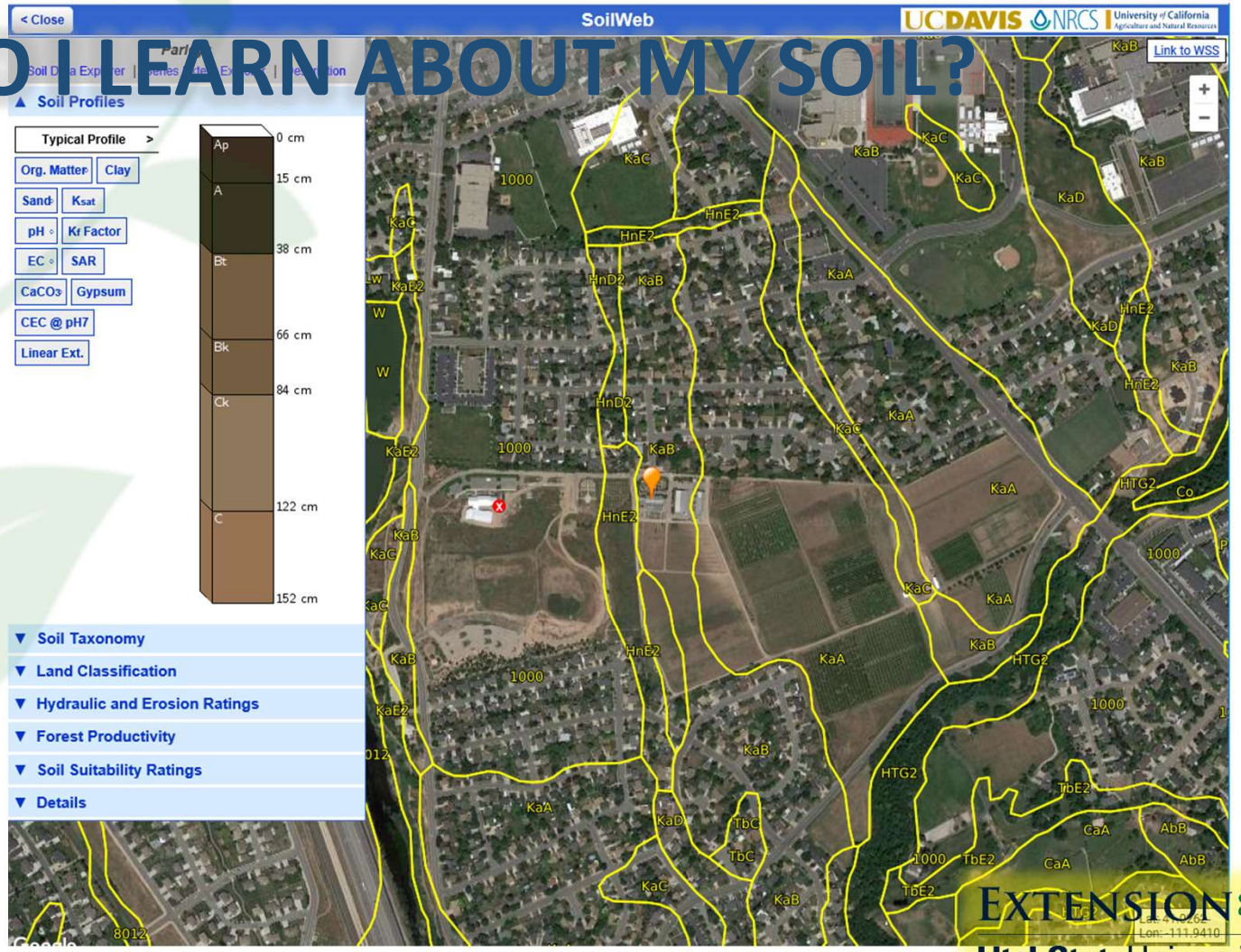
HOW DO I LEARN ABOUT MY SOIL?

Soil Web: https://casoilresource.lawr.ucdavis.edu/gmap/



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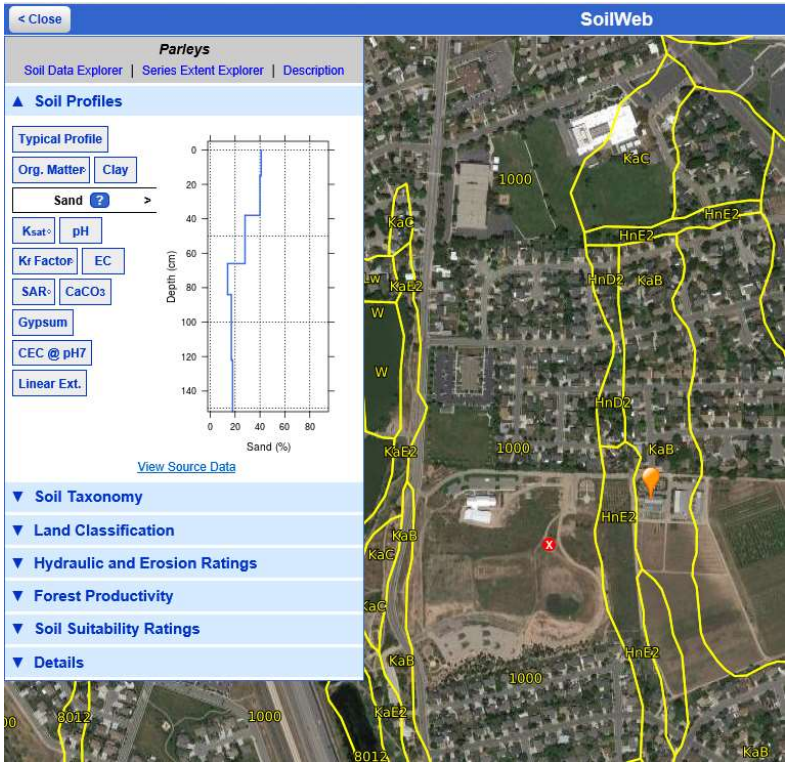
HOW DO I LEARN ABOUT MY SOIL?



- Will tell you:
  - Percent organic matter
  - Percent sand and clay (calculate the silt)
  - pH
  - Salinity
  - Calcium carbonate levels
  - And more…

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SOIL SAMPLES

Send a soil sample:

- USU Analytical Laboratory
  - FORMS – Soil (PDF)
    - Has needed form and instructions
    - Send sample to address on form
    - Call 435-797-2217 with questions
    - You can also call your county extension office with questions

SOIL SAMPLING PROCEDURE

Good samples are required to derive useful information from soil tests.

WHEN: Any time of the year; early fall is often preferred. Allow two weeks to get results before buying fertilizer. For special nitrate tests, sample in the spring (see instructions below).

TOOLS: (a) A clean plastic container for each depth to be sampled. (b) Sampling auger or tube (USU Extension Office) or a shovel will serve for plow-layer samples.

AREA: Select an area having uniform color, texture, drainage, and the same cropping and fertilizer treatment last year. Leave out non-typical spots or sample them separately. For each area to be sampled, take separate samples from 8 to 10 locations in a pattern that will represent the entire area.

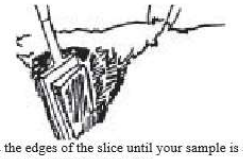
DEPTH: (a) Standard topsoil sample: from surface down to 12 inches; (b) Turf samples: surface down to 6 inches (4 inches for golf greens); (c) For special nitrate tests, see instructions below.

TAKING THE SAMPLE: Scrape away surface litter. Avoid manure spots. If previous fertilizer was banded, take special care to get a representative sample.

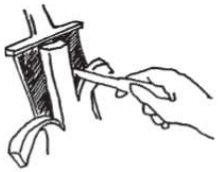
(a) Using a soil tube or auger: follow the instructions given with the tool.

(b) Using shovel:

1. Dig a V-shaped hole to plow depth. Remove a 1-inch slice of soil from one side.



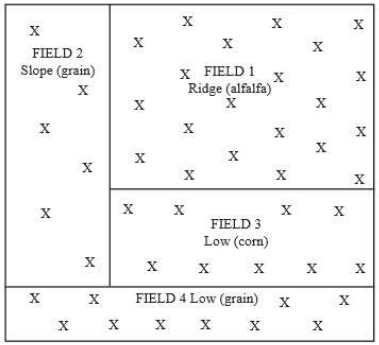
2. Discard the edges of the slice until your sample is about 1 or 2 inches wide. Put it in a clean bucket.



3. Repeat 1 and 2 for other samples for the sampling areas.

should match both the form and the sample container sent to the lab) and record details in your files.

SHIPPING:Send samples prepaid by mail or express, accompanied by this description form and a check payable to USU Analytical Laboratories, Logan, UT 84322-9400. Retain a copy for your files.



SPECIAL SAMPLING for nitrate-N when applying manure.

b. Take samples 0 to 12 inches deep as described above. Put these in one container.

c. Starting at the bottom of the hole in (b), sample the 12 to 24-inch (or 12 to 36-inch) depth. Put these subsoil samples into a separate container. Mix and label the combined subsoil sample as above. This sample will be analyzed for Nitrate-N only, and is not included in the cost of the analysis for the 0-12 inch deep sample.

d. Spread samples out on a clean surface and air-dry them before mailing (or deliver them to the lab within 24 hours).

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WATER

- Three main sources of water:
  1. City
  2. Secondary
  3. Well

- You may need one or multiple sources of water depending on your situation

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WATER

Four basic points to consider:

1. Quantity
2. Availability
3. Quality
4. Cost

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WATER QUANTITY

Table 1. Salinity tolerance and seasonal water use of common crops grown in Utah.

Crop	Damage Threshold EC[a]	10% yield loss	Toler-ance rating[b]	Seasonal water use (inches)
Bean	1	1.5	S	16
Strawberry	1	1.3	S	30
Raspberry	1	1.4	S	28
Onion	1.2	1.8	S	24
Lettuce	1.3	2.1	S	13
Grape	1.5	2.5	S	15
Corn	1.7	2.5	S	22
Potato	1.7	2.5	S	17
Peach	1.7	2.3	S	38
Apple	1.7	2.3	S	33
Alfalfa	2	3.4	MS	28
Tomato	2.5	3.5	MS	22
Spinach	3.7	5.5	MT	12
Squash	3.9	4.9	MT	28
Trefoil	4	6	MT	23
Wheat	4.7	6	MT	18
Oats	5.2	6.7	MT	18
Barley	8	9.6	T	22

[a]Electrical Conductivity in dS/m.
[b]T = Tolerant, MT = Moderately Tolerant, MS = Moderately Sensitive, S = Sensitive

- Plants vary in water requirements
- Requirements can also vary based on temperature
- Requirements will peak during the hottest months of the year

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WATER QUANTITY

- Requirements can also vary based on soil type
  - Sandy soils should be watered for shorter times more frequently
  - Clay soils tend to hold water and have poor drainage
- Organic matter
  - Increases water holding capacity in sandy soils
  - Increases drainage in clay soils

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WATER AVAILABILITY

- What sources of water are available to you?
  - City
  - Secondary
  - Well
- You need at least one source
- Availability will vary by location
- Is the water pressurized or do you need a pump?

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WATER AVAILABILITY

- What time of the year are your sources available?
  - City/culinary is typically available throughout the year
  - Secondary is typically available April to October, but may vary

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WATER AVAILIBILITY

- What time of the year are your sources available?
  - Well water varies
    - Some wells dry up at the end of the season
    - Others are available year round
    - Well water rights may not allow for extensive crop irrigation

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WATER AVAILIBILITY

Determine the number of weeks you need water for the crops you intend to grow

Season extension

- Do you have a water source at that time of year?

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WATER QUALITY

- City/culinary water
  - Very high quality
- Well and secondary water
  - Quality can vary
- Check water quality tests
  - City
  - Secondary

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WATER QUALITY

Water salinity

- Amount of salt in the water
- As salinity increases, quality of water for plant growth decreases
- Measured by Electrical Conductivity (EC)
  - Measured in units of deci-siemens per meter (dS/m)
  - The higher the EC, the higher the salt in the water

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WATER QUALITY

Water salinity

- Very variable in Utah
- Downstream typically more saline

Water testing

- USU Analytical Laboratories tests secondary and well water
- Does not test drinking water
- http://usual.usu.edu/forms/waterform.pdf

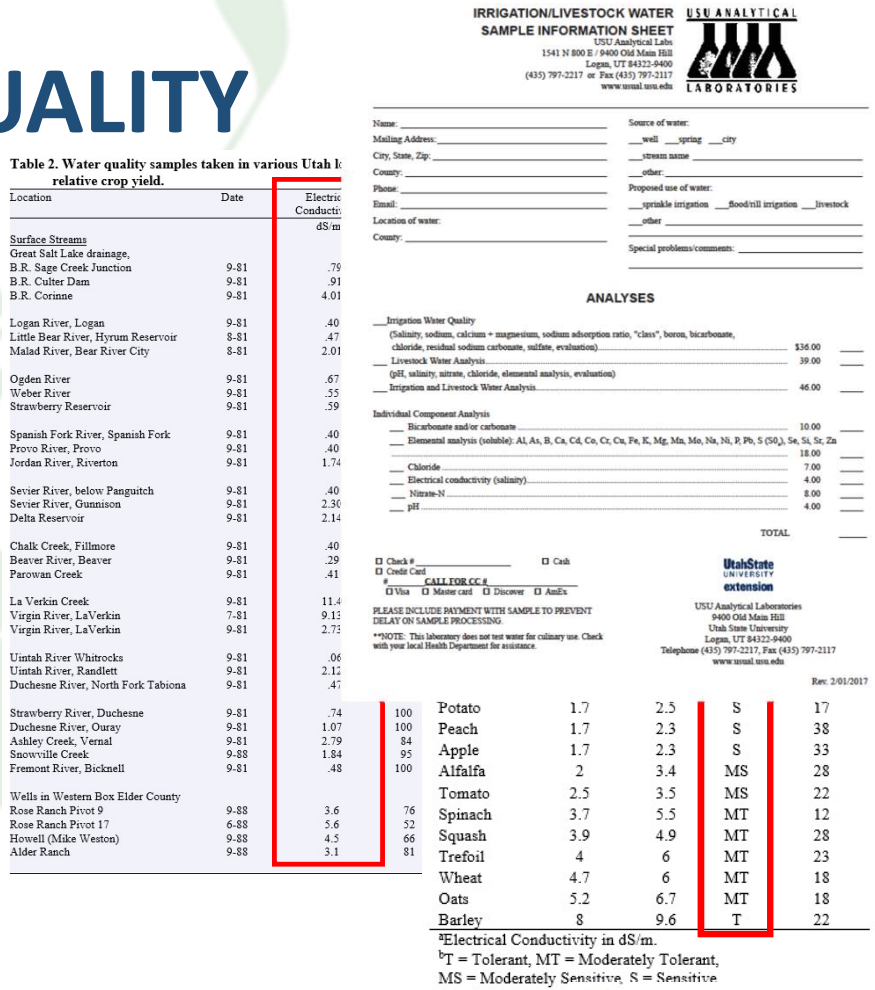

Table 2. Water quality samples taken in various Utah l relative crop yield.

Location	Date	Electric Conducti dS/m	
Surface Streams			
Great Salt Lake drainage,			
B.R. Sage Creek Junction	9-81	.79	
B.R. Culter Dam	9-81	.91	
B.R. Corinne	9-81	4.01	
Logan River, Logan	9-81	.40	
Little Bear River, Hyrum Reservoir	8-81	.47	
Malad River, Bear River City	8-81	2.01	
Ogden River	9-81	.67	
Weber River	9-81	.55	
Strawberry Reservoir	9-81	.59	
Spanish Fork River, Spanish Fork	9-81	.40	
Provo River, Provo	9-81	.40	
Jordan River, Riverton	9-81	1.74	
Sevier River, below Panguitch	9-81	.40	
Sevier River, Gunnison	9-81	2.30	
Delta Reservoir	9-81	2.14	
Chalk Creek, Fillmore	9-81	.40	
Beaver River, Beaver	9-81	.29	
Parowan Creek	9-81	.41	
La Verkin Creek	9-81	11.4	
Virgin River, LaVerkin	7-81	9.13	
Virgin River, LaVerkin	9-81	2.75	
Uintah River Whitrocks	9-81	.06	
Uintah River, Randlett	9-81	2.12	
Duchesne River, North Fork Tabiona	9-81	.47	
Strawberry River, Duchesne	9-81	.74	100
Duchesne River, Ouray	9-81	1.07	100
Ashley Creek, Vernal	9-81	2.79	84
Snowville Creek	9-88	1.84	95
Fremont River, Bicknell	9-81	.48	100
Wells in Western Box Elder County			
Rose Ranch Pivot 9	9-88	3.6	76
Rose Ranch Pivot 17	6-88	5.6	52
Howell (Mike Weston)	9-88	4.5	66
Alder Ranch	9-88	3.1	81

IRRIGATION/LIVESTOCK WATER SAMPLE INFORMATION SHEET

USU ANALYTICAL LABORATORIES

USU Analytical Labs
1541 N 800 E / 9400 Old Main Hill
Logan, UT 84322-9400
(435) 797-2217 or Fax (435) 797-2117
www.usual.usu.edu

Name:
Mailing Address:
City, State, Zip:
County:
Phone:
Email:
Location of water:
County:

Source of water:
__well __spring __city
__stream name
__other:
Proposed use of water:
__sprinkle irrigation __flood/rill irrigation __livestock
__other
Special problems/comments:

ANALYSES

__Irrigation Water Quality
(Salinity, sodium, calcium + magnesium, sodium adsorption ratio, "class", boron, bicarbonate, chloride, residual sodium carbonate, sulfate, evaluation) $36.00 ____
__ Livestock Water Analysis 39.00 ____
(pH, salinity, nitrate, chloride, elemental analysis, evaluation)
__ Irrigation and Livestock Water Analysis 46.00 ____

Individual Component Analysis
__ Bicarbonate and/or carbonate 10.00 ____
__ Elemental analysis (soluble): Al, As, B, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, P, Pb, S (SO_4), Se, Si, Sr, Zn 18.00 ____
__ Chloride 7.00 ____
__ Electrical conductivity (salinity) 4.00 ____
__ Nitrate-N 8.00 ____
__ pH 4.00 ____

TOTAL ____

☐ Check # ☐ Cash
☐ Credit Card
CALL FOR CC
☐ Visa ☐ Master card ☐ Discover ☐ AmEx

PLEASE INCLUDE PAYMENT WITH SAMPLE TO PREVENT DELAY ON SAMPLE PROCESSING.

**NOTE: This laboratory does not test water for culinary use. Check with your local Health Department for assistance.

UtahState UNIVERSITY extension

USU Analytical Laboratories
9400 Old Main Hill
Utah State University
Logan, UT 84322-9400
Telephone (435) 797-2217, Fax (435) 797-2117
www.usual.usu.edu

Rev. 2/01/2017

Potato	1.7	2.5	S	17
Peach	1.7	2.3	S	38
Apple	1.7	2.3	S	33
Alfalfa	2	3.4	MS	28
Tomato	2.5	3.5	MS	22
Spinach	3.7	5.5	MT	12
Squash	3.9	4.9	MT	28
Trefoil	4	6	MT	23
Wheat	4.7	6	MT	18
Oats	5.2	6.7	MT	18
Barley	8	9.6	T	22

[a]Electrical Conductivity in dS/m.
[b]T = Tolerant, MT = Moderately Tolerant, MS = Moderately Sensitive, S = Sensitive

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WATER QUALITY

Water pH

- Impacted by Calcium carbonate, pollution, and other factors
- As water percolates through the soil it picks up calcium carbonate
- Increases the pH of the water, making it alkaline

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WATER QUALITY

Impact on irrigation systems

- Poor quality
- High levels of calcium carbonate
- High levels of silt

- May not work well with drip and micro-sprinklers

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UtahStateUniversity

LABOR AVAILIBILITY

Where will labor come from?

How much time do you have to spend on the operation?

- Part-time or full-time grower
- Current employment
- Health
- Family obligations

BE REALISTIC!

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LABOR - CONSIDERATIONS

High-value crops = high labor costs

Cyclical

- Seasonal
- Concentrated at harvest
- Growing many crops harvested throughout the season?

Sample Red Raspberry for Retail Fresh-Market Production (Penn State Univ.)

Summary of income and expenses for a mature planting for retail marketing.

Item	Quantity	Your Quantity	Unit	Price	Your Price	Total	Calculated Estimate
Receipts							
Raspberries - retail	10,000		1/2 pints	$ 2.50		$ 25,000.00	$ 0.00
Raspberries - wholesale	10,000		1/2 pints	$ 1.50		$ 15,000.00	$ 0.00
Variable costs							
Custom operations							
Fertilizer spreading	1		acre	$ 10.70		$ 10.70	$ 0.00
Plant analysis kit	1		acre	$ 25.00		$ 25.00	$ 0.00
Fertilizer and lime	1		acre	$ 42.00		$ 42.00	$ 0.00
Herbicides	1		acre	$ 183.05		$ 183.05	$ 0.00
Insecticides	1		acre	$ 102.91		$ 102.91	$ 0.00
Fungicides	1		acre	$ 394.75		$ 394.75	$ 0.00
Trellis maintenance	1		acre	$ 82.00		$ 82.00	$ 0.00
Labor							
Operator labor	4.3		hour	$ 15.00		$ 64.50	$ 0.00
Seasonal labor	46		hour	$ 12.00		$ 552.00	$ 0.00
Harvest labor	10,000		1/2 pint	$ 0.70		$ 7,000.00	$ 0.00
Packaging							
Clamshells	10,000		1/2 pint	$ 0.11		$ 1,100.00	$ 0.00
Clamshell flats	834		1/2 pint	$ 0.65		$ 542.10	$ 0.00
Marketing	15%	0.00%	total income	$ 25,000.00		$ 3,750.00	$ 0.00
Fuel	14.4		gal	$ 3.50		$ 50.40	$ 0.00
Repairs and maintenance	1		acre	$ 25.14		$ 25.14	$ 0.00
Additional inputs							$ 0.00
Additional inputs							$ 0.00
Interest on operating capital	1		acre	$ 254.91		$ 254.91	$ 0.00
Total variable costs						$ 14,179.46	$ 0.00
Fixed costs							
Equipment	1		acre	$ 47.94		$ 47.94	$ 0.00
Land	1		acre	$ 200.00		$ 200.00	$ 0.00
Irrigation	1		acre	$ 240.00		$ 240.00	$ 0.00
Additional inputs	1		acre				$ 0.00
Total fixed costs						$ 487.94	$ 0.00
Total costs						$ 14,667.40	$ 0.00
Income - Retail							
Returns over variable costs						$ 10,820.54	$ 0.00
Returns over total costs						$ 10,332.60	$ 0.00
Income - Wholesale							
Returns over variable costs						$ 820.54	$ 0.00
Returns over total costs						$ 332.60	$ 0.00

You should monitor local markets and contact suppliers to determine current prices for all items contained in this sample budget.

LABOR AVAILIBILITY

Labor sources

- Owner-operator
- Family members
- Volunteers
- Apprentices
- Interns
- Employees
- Migrants
  - Housing
  - Legal fees
  - Minimum hours
- U-pick?

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OWNER-OPERATOR

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MANAGING WORKERS

- Clear written job descriptions
- Good communication
- Create job goals

- Understand and follow labor laws
- More information here:

https://jobs.utah.gov/employer/legal.html

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MARKET

Determine your target market early on

- Farmer's markets
- Roadside stands
- Community supported agriculture (CSA)
- Pick-your-own

Make your business unique!

EXTENSION
UtahStateUniversity

References

Hill, R. and Koenig, R.T. 1999. Water salinity and crop yield. Utah State University Extension, Logan, UT. AG-425.3.

Maughan, T. and Black, B. 2014. Small acreage site inventory factors to consider in planning a small scale agricultural enterprise. Utah State University Extension, Logan, UT. AG/Small Acreage/2014-01pr.

Mesner, N. and Geiger, J. 2005. Understanding your watershed, pH. Utah State University Extension, Logan, UT. NR/WQ/2005-19pr.

Wagner, K. and L. Sagers. 2012. Preparing and Improving Garden Soil. Utah State University Extension, Logan, UT. Horticulture/Soil/2012-01pr.

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Irrigation Basics for Small Farms

Highlighting the benefits of drip irrigation and proper irrigation equipment alternatives for urban, small farms, & home gardens and a demonstration of how to install and operate a drip system.

Dale Allred
Global Water and Land Use Specialist
AES International PLLC
dale5790@gmail.com

Dale Allred is a Professional Civil & Environmental Water Engineer with a Master's Degree in Irrigation Engineering from Utah State University. Mr. Allred has 40 years of experience in irrigation and agricultural development in the United States, Latin America, and Europe.

After installing the first ever drip system for vegetables in Central Mexico in 1982, Allred's ingenuity and understanding of drip irrigation's role in integrated farming transformed Mexico's vegetable industry into the most productive in the world.

Mr. Allred currently works with Bennett & Bennett Irrigation in Lemoore, CA on strategic agricultural initiatives. Mr. Allred also consults with growers and sells drip equipment locally and internationally. Mr. Allred is also a farmer, growing vegetables for local restaurants and families in Utah.

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Urban, Small Farm and Home Garden Irrigation

Producer Guidelines

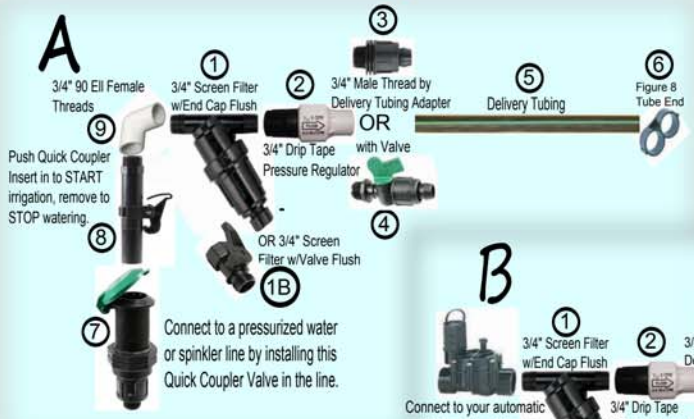
- **Small Urban or Rural Farming Operations and Home Gardens**
  - The layout and design of the system is simple and does not require the services of an Engineer or Professional Irrigation Designer IF the following guidelines are followed:
    - The water pressure at its source is a minimum of 20 psi
    - Irrigation sections have a maximum Total Length of Drip Tape:
      1000 feet for 5/8" (0.633" ID) delivery tubing – 6.7 gpm capacity
      2000 feet for 3/4" (0.819" ID) delivery tubing – 13.4 gpm capacity
  - At maximum water demand, 70 minutes of watering per day is required. At 16 hours per day, this will allow for up to 13 changes or sets. (Please note that these 13 sets can be scheduled over 3 or 4 days or more depending on conditions.)
    13,000 maximum total feet of tape for 5/8" (0.633" ID) delivery tubing
    26,000 maximum total feet of tape for 3/4" (0.819" ID) delivery tubing
  - If there is sufficient water available, this sectioning layout can be multiplied.
  - Examine the 2 Schematics on the following 2 pages and the Order Form which is the last sheet. The first sheet is the Hook-up Schematic. The second sheet is the Layout Schematic. The third sheet is the Order Form. They will guide the small producer or gardener:
    - To understand each part and component in the system and how they go together
    - To understand how to lay out their system to meet the needs of their particular production area
    - Each part is numbered and corresponds to the numbers in the Order Form
- **Anything larger with more sophistication requires Engineering to design the system**

Home Garden Irrigation - Water Hook-up Options

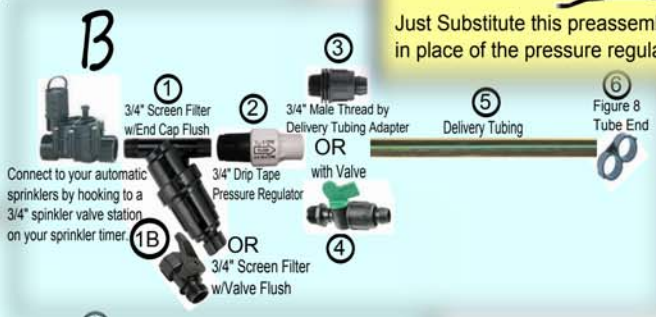
*** Note: The circled number by each part corresponds to the part # in the first column of the Home Garden Irrigation Worksheet and Order Form.**

For irrigation water *needing filtration*

A



B



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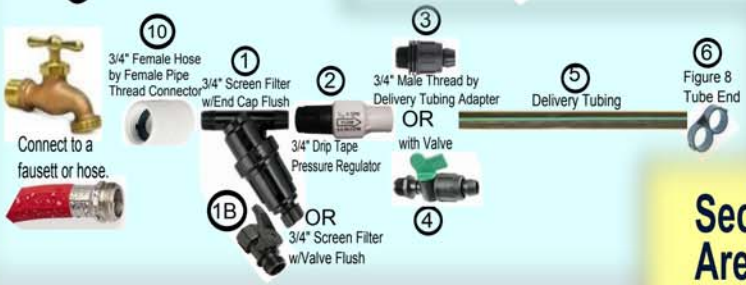
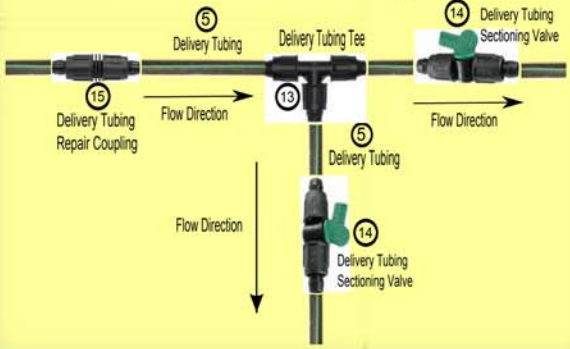


Add a Garden Feeder - Part # 2A

You can easily apply fertilizer or other soluble root or soil treatments at over 95% efficiency using your system with a Garden Feeder!

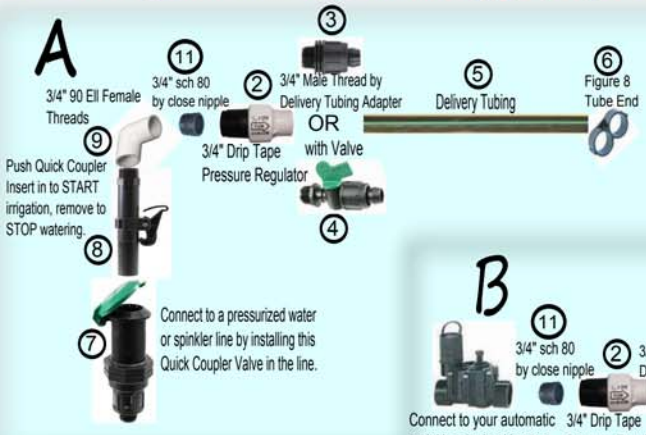
Just Substitute this preassembled garden feeder (2A) in place of the pressure regulator (2) on the order form.

Section-off or Divide Watering Areas with these Fittings.



For clean irrigation water *not needing filtration*

A



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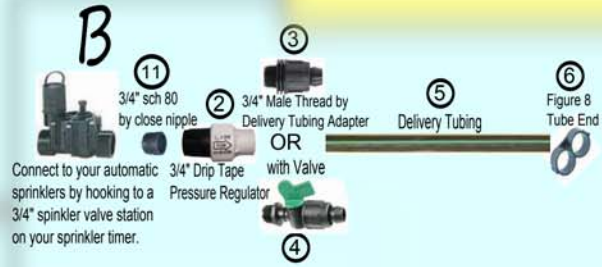

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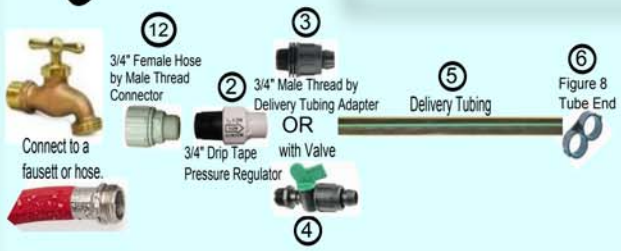


For more information or to order

www.HomeGardenIrrigation.com
or call: 801-787-4830

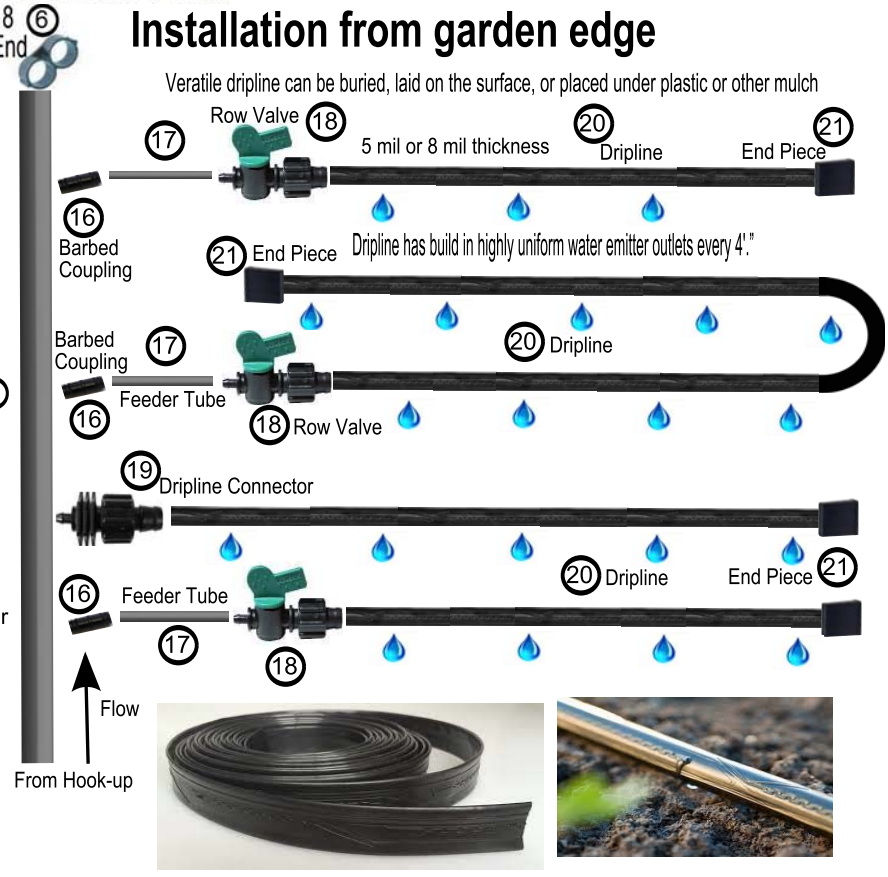
Home Garden Irrigation - Garden Layout Schematic

*** Note: The circled number by each part corresponds to the part # in the first column of the Home Garden Irrigation Worksheet and Order Form.**

Instructions to install

1. Rows should run North-South if at all possible for the most uniform light distribution.
2. The main delivery tubing (5) runs across the rows. A hole is punched in the delivery tubing using the hole punch (22) at the desired row takeoff point.
3. A barbed coupling (16) is pushed into the hole and one end of the feeder tubing (17) is slipped over the protruding barb
4. The barbed end of the dripline row valve (18) is then pushed into the other end of feeder tubing (17).
5. The dripline (20) is inserted over the barb in the ring end of the dripline row valve (18) and the ring is then turned back over the barb and dripline, sandwiching the dripline between the barb and ring. Hand tighten and then tighten with plyers an additional 1/4 to ½ turn for a driptight seal.
6. Install the End Piece for dripline (21) in like manner at the end of the row sandwiching the dripline between the barb and ring of the end cap fitting (21).

Installation from garden edge

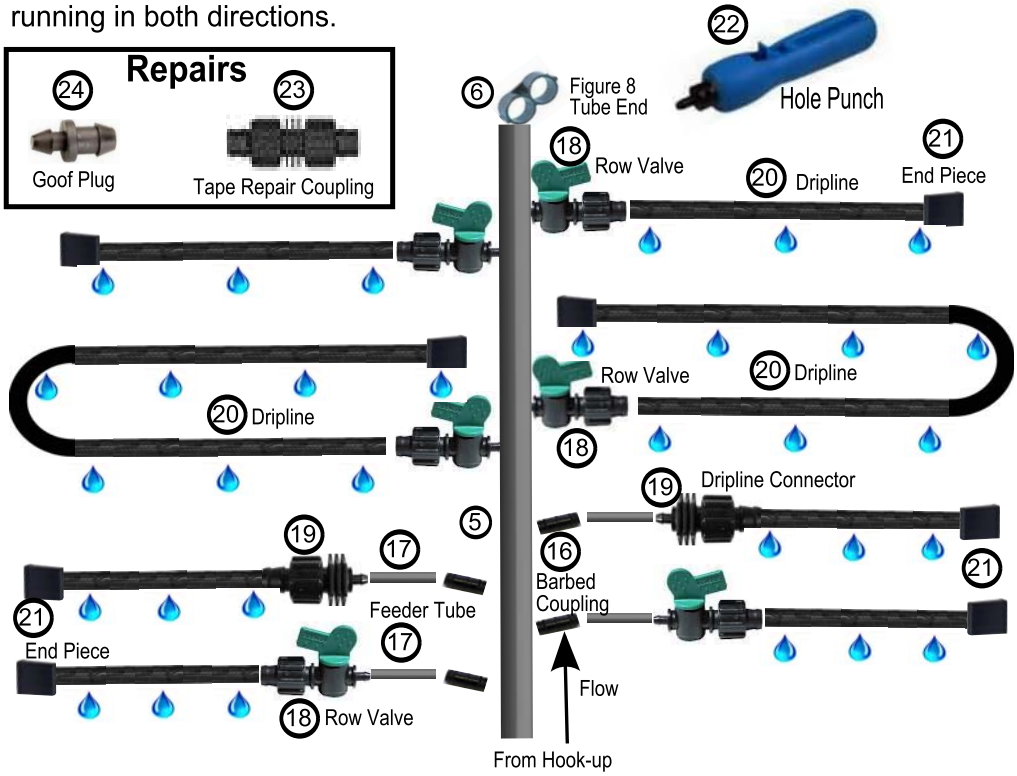


Emitter Channel Opens up. Hard to Plug.

The Dripline (20) consists of built-in precision emitters every 4" of 0.134 gallon per hour (0.40 gph/ft of length)

Installation down through the garden

For shorter row lengths to accommodate more plants of differing water needs, the delivery tubing can be run down the middle of the garden with driplines running in both directions.



****Important note:**

Double the dripline (20) on a row to incorporate more soil volume! Simply turn the dripline back down the row as shown here in the graphic. Don't cut the dripline at the end, but rather turn it in a "U" back down the row to its origin and put the end cap on there.

Place this second dripline from 10-15" from the first one. This easily facilitates a greater wetted soil volume to accommodate more root mass and deliver more water for large vigorous plants with fast growth and large leaf areas such as squash, melons, & etc.

For more information or to order
www.HomeGardenIrrigation.com
or call: 801-787-4830

Home Garden Irrigation Worksheet and Order Form

Sold to:	**Ship to:**
Name	Name
Address	Address
City, State, ZIP	City, State, ZIP
Phone	Phone
Email	

Note: Use Size 6 to service up to 1000 ft of Tape. Use Size 8 to service up to 2100 ft of Tape.

Water Source Hook-up Parts (see schematic)

#	Description	Unit	Price	Quantity	Cost
1	3/4" Screen Filter w/End Cap for Flushing	each	8.15		0.00
1B	3/4" Screen Filter w/Flushing Valve	each	10.17		0.00
2	3/4" Drip Tape Pressure Regulator	each	8.20		0.00
2A	Garden Feeder System (w/Drip Tape Regulator)	each	57.50		0.00
3	3/4" Male Thread by Size 6 Delivery Tubing Adapter	each	0.59		0.00
3A	3/4" Male Thread by Size 8 Delivery Tubing Adapter	each	1.21		0.00
4	3/4" Male Thread by Size 6 Delivery Tubing Adapter w/Valve	each	1.63		0.00
4A	3/4" Male Thread by Size 8 Delivery Tubing Adapter w/Valve	each	3.19		0.00
5	Size 6 Delivery Tubing (flexible black irrigation hose)	foot	0.10		0.00
	Size 8 Delivery Tubing (flexible black irrigation hose)	foot	0.18		
6	Size 6 Figure 8 Tube End	each	0.18		0.00
	Size 8 Figure 8 Tube End	each	0.22		
7	3/4” Quick Coupler Valve	each	14.83		0.00
8	3/4” Quick Coupler Insert	each	5.85		0.00
9	3/4” 90 Ell Female Threads	each	1.21		0.00
10	Female Hose by 3/4" Female Thread Connector	each	2.10		0.00
11	3/4” Sch 80 by Close Nipple	each	0.75		0.00
12	3/4” Female Hose by Male Thread Connector	each	2.10		0.00
13	Size 6 Delivery Tubing Tee	each	1.62		0.00
13A	Size 8 Delivery Tubing Tee	each	4.47		0.00
14	Size 6 Delivery Tubing Sectioning Valve	each	1.73		0.00
14A	Size 8 Delivery Tubing Sectioning Valve	each	4.00		0.00
15	Size 6 Delivery tubing Repair Coupling	each	0.64		0.00
15A	Size 8 Delivery tubing Repair Coupling	each	1.85		0.00
Garden Layout Parts (see schematic)					
16	Barbed Coupling	each	0.18		0.00
17	Feeder Tubing	foot	0.12		0.00
18	Dripline Row Valve	each	1.73		0.00
19	Dripline Connector	each	0.43		0.00
20	Dripline – 5 mil	foot	0.08		0.00
	Dripline – 8 mil	foot	0.12		0.00
	Dripline – 15 mil	foot	0.22		0.00
21	End Cap for Dripline	each	0.18		0.00
22	Hole Punch	each	10.54		0.00
23	Dripline Repair Coupling	each	0.48		0.00
24	Goof Plugs	each	0.04		0.00
25	Tomato Clips	each	0.03		0.00

Subtotal	0.00
Sales Tax @ 6.75%	0
Total	0.00

www.HomeGardenIrrigation.com
Call: 801-787-4830

Downtown Farmer's Market - Keys to Being a Successful Market Vendor

Learn how to create a compelling market booth, work with market management, negotiate permits, payments and processes, and have a successful overall market experience.

Alison Einerson

Executive Director

Urban Food Connections of Utah

alison@downtownslc.org

Alison Einerson is the Executive Director of Urban Food Connections of Utah, the food-centric non-profit that manages the Downtown Farmers Market, Rio Grande Winter Market, Tuesday Market, and the ongoing development of the planned year-round Public Market in Salt Lake City. Einerson has been involved in the local food community for many years, as former Executive Director of Local First Utah, as a writer and editor for local publications, and as a food preservation instructor. The Downtown Farmers Market at Pioneer Park will kick off its 27th season on June 9, 2018.

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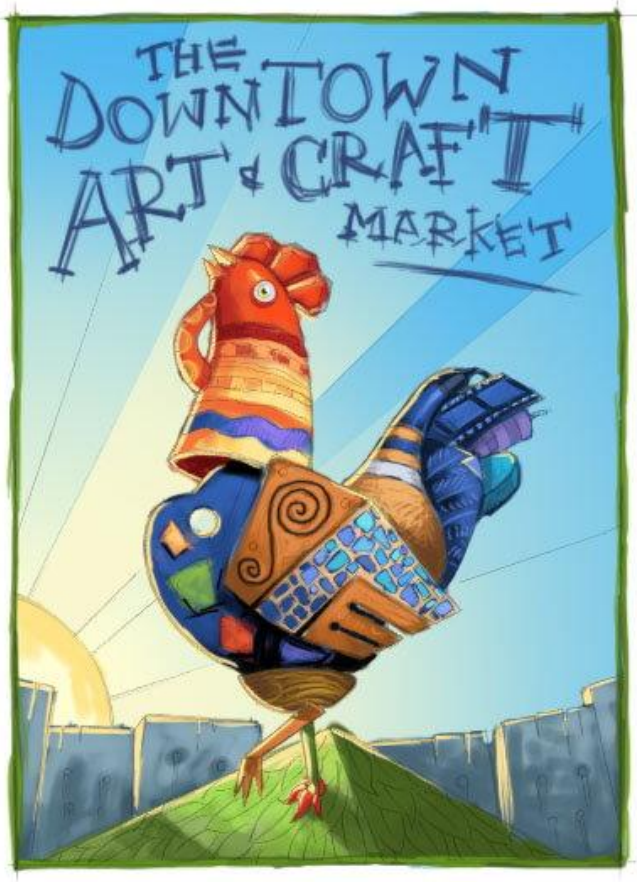
Keys to Being a Successful Market Vendor

Alison Einerson, Executive Director Urban Food Connections of Utah Downtown Farmers Market February 21, 2018

- 27 Year Old Award Winning Market
- Community celebration & gathering place
- Salt Lake's finest source of local produce

- 190+ vendors selling produce, meats, dairy, honey, spreads, dips, and more



- Art & Craft Market
- Locally made crafts, art, and body care products

- Rio Grande Winter Market
- Saturdays, November through April

Rio Grande
2017 WINTER MARKET 2018

- Tuesday Farmers Market, August & September

• How can a vendor ensure success at a farmers market?

•Understand the market you are applying for
•Understand the customer base
•Other markets
•Read the Policies & Guidelines BEFORE you apply
•Licenses and permits, GAP certification, etc.
•Call Market Management if you have questions

SUGAR HOUSE Farmer's Market

LIBERTY PARK MARKET

WHEELER SUNDAY MARKET

- Visit the Markets, know what is already available
- Grow different vegetables, fruits, and flora
- Differentiate yourself from other growers

Anatomy of a Farmers' Market Booth

- Tell your story
- Signage

- Make it easy for your patrons
- Veggie Valet
- Understand and utilize the benefits of the market

•Sampling will increase your sales

•Engage your customer
•Professional (farmer) apperance

- Pay on time
- Follow the rules
- Listen to market management and staff
- Respect other vendors
- Don’t speak ill of other vendors or their products

- SNAP/EBT
- Market Kids Club
- Other promotions and opportunities to get involved with the market
- Social media and media ops

- Local Food Microgrant program
- Partnerships with USU, State, SLCO, SLC GREEN

For more information, visit slcfarmersmarket.org
or email alison@downtownslc.org

Thank you!

The Why's and How's of Haystack Farm

How I got started farming; positive aspects and the challenges that go with it.

Delaney Nalder

Urban Farmer/Mom

Haystack Farm

nalderhouse@gmail.com

I am an Urban Farmer in Layton, Utah. I grew up on a small farm in Ogden Valley, Utah. I graduated with a degree in Food Science from Utah State. One of the reasons I choose this field is because food will never go out of style. I worked for quite a few years in quality and research development and quit when I had kids. I have a 12 year old son and twin 10 year olds.

I started my urban farm about 7 years ago when an older farmer offered me use of some of his land in Layton, UT. He has become my mentor and one of my best friends. I live in the city now, but farming has always been in my blood. I also love that I can take my kids to the field with me and they learn to work.

I grow tomatoes, potatoes, cucumbers, pumpkins, beet, squash and whatever else I can think of. I sell at the USU Kaysville Farmers Market and a lot out of my house to home canners. It works for me because I can work around my schedule. I love teaching my kids how to work hard and where our food comes from. I also really enjoy being around people who understand this way of life and are not afraid to get dirty.

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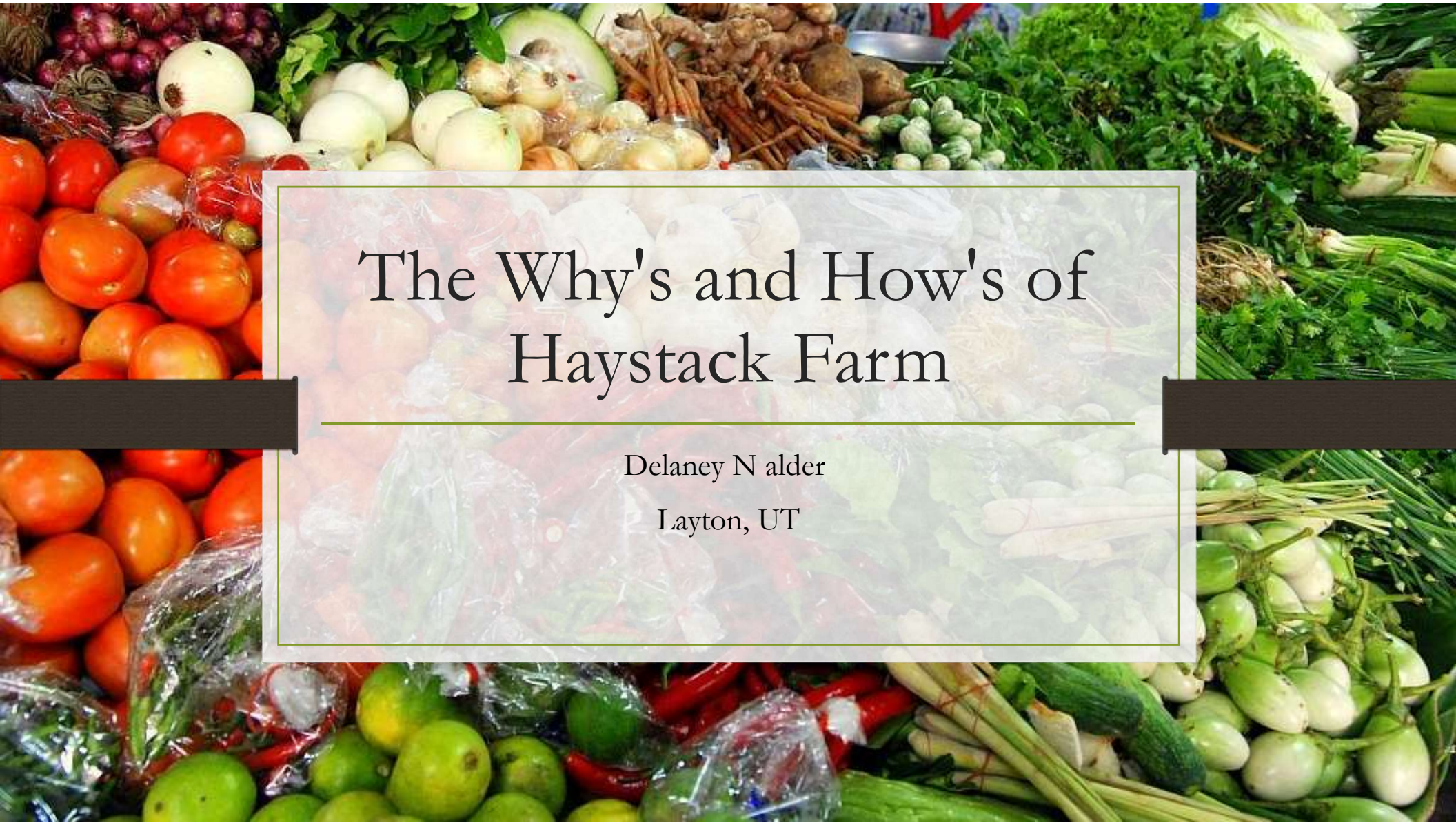


The Why's and How's of Haystack Farm

Delaney N alder

Layton, UT

Into the field,
I go to lose
my mind and
find my soul.

How Haystack Farm Started

- Oportunity happened
- There are opportunites everyone if you work hard.
- More opportunties have come

Why

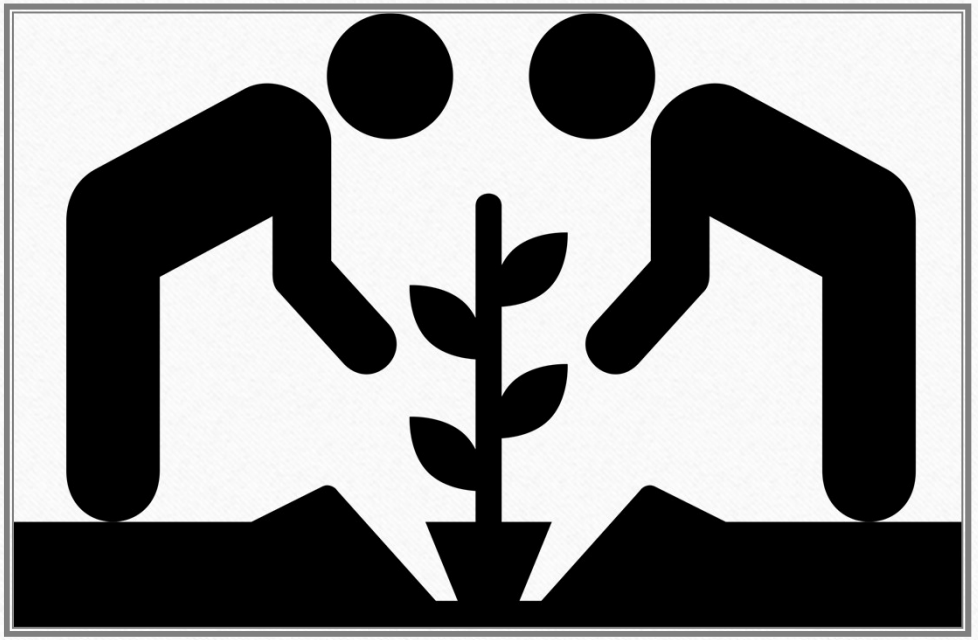
My Kids

Why

- Farming is in my blood

Why

People



Why

- Betterment of the world
  - We are stewards of this land.
  - We need people willing to work.

Why

- Extra money

What I Do

- I don't have a tractor, but I have friends who do
- Hand tools
- Work hard

What I Grow
Find your niche

- Beets
- Tomatoes
- Cucumbers
- Squash
- Pumpkins
- Greens
- Beans
- Potatoes
- Sweet Potatoes
- Orchard
- Whatever else

More will come

Trades and working for other farmers

Markets/

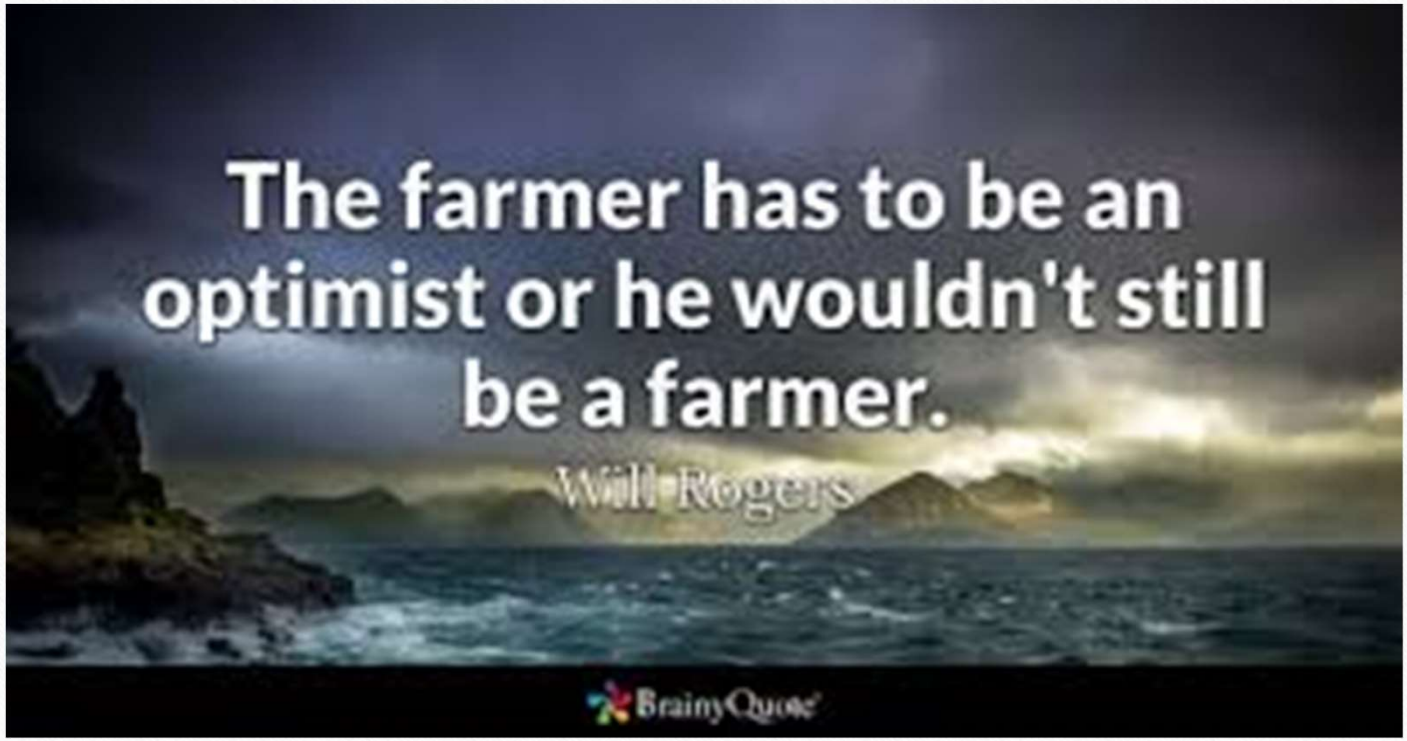
- Farmers Market
- Out of my house to canners
- Restaurants/ corporations

Challenges

- Weather Problems
- Crop Failures
- Hard Work
- Hard on your body
- Loss of land
- Expenses
- Time!
- Current opinions

If something is important enough, even if the odds are against you, you should still do it.

—*Elon Musk*


The farmer has to be an optimist or he wouldn't still be a farmer.
Will Rogers
BrainyQuote

Reap what you sow

Romance and Realities of Starting a Small Farm

We will share the Romance and Realities of starting a small farm. From the joys, successes, and freedoms to the challenges, learning experiences, and commitment.

Ryan Tippetts and Daniel Jenkins

Farm Managers

Sunshine Family Farms

Daniel Jenkins has been passionate from a young age about nature and watching things grow. He knew he didn't want a desk job. He grew up eating fresh produce, helping his family run orchards, vineyards, helping out neighborhood farmers, and digging in the soil. He apprenticed on a semi-conventional organic farm in Oregon. Wanting to make a difference in the world, he and his wife started Sunshine Family Farms hoping to strengthen communities and provide quality food for families. He enjoys working on the farm with his family, eating the fruits of his labor and watching his two little girls get excited about nature and good food.

Raised on a conventional farm in Star Valley, Wyoming, **Ryan Tippetts** became disenchanted with many aspects of farming and chose a more “sensible” career in education; salaried, benefits, holidays, and “freedom”. After teaching elementary school, Jr. High, becoming a Vice-Principal, and being a husband and father his perspective changed. He quit his “prestigious” career to become a “lowly” farmer...and he’s not looking back!

Ryan and Daniel manage a three season CSA, run a Farm Club, sell to restaurants, teach Beyond Organic classes, and more. Sunshine Family Farms is in its second season.
They will share the "Romance and Realities Of Starting a Small Farm".

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Daniel Jenkins and Ryan Tippetts. Farm Managers.

Who We Are

- Family Owned and Operated
- Wet behind the ears
- Located in Pleasant View, Utah
- On 5 acres- borrowed land. Market Garden on 1.5 acres.
- Passionate about Education, nutrient-dense food, diversity, and building community

What We Do

- Sell to Restaurants in Ogden
- 3 Season CSA
- Classes
- Tours and Field Trips
- Continually striving toward Sustainability and Permaculture/Regenerative practices

Sunshine family farms

Bringing the Best to You


Sign Up For
Our Fall CSA!
Local Organic
Sunshine
family farms

arms

ing the Best to You


Pesticide-Free Area
This area is safe for children, pets, and all living creatures.
mountain rose herbs .com
Made from 95% recycled aluminum

Bio

Daniel Jenkins has been passionate from a young age about nature and watching things grow. He grew up eating fresh produce, helping his family run orchards, vineyards, helping out neighborhood farmers, and digging in the soil. He apprenticed for six months on a semi-conventional organic farm in Oregon. Wanting to make a difference in the world, he and his wife started Sunshine Family Farms hoping to strengthen communities and provide quality food for families.

Raised on a conventional farm in Star Valley, Wyoming, Ryan Tippetts became disenchanted with many aspects of farming and chose a more “sensible” career in education; salaried, benefits, holidays, and “freedom”. After teaching elementary school, Jr. High, becoming a Vice-Principal, and being a husband and father his perspective changed. He quit his “prestigious” career to become a “lowly” farmer...and he’s not looking back!

Inspirations

Local Farmers doing the work!

Toby Hemenway- Gaia’s Garden

Eliot Coleman- Four Season Farm

Curtis Stone- The Urban Farmer

J.M. Fortier- The Market Gardener

Matt Powers- The Permaculture Student

Diego Footer- Permaculture Podcast

Salatins- Polyface Farms

Kaisers- Singing Frogs Farm

And many more!

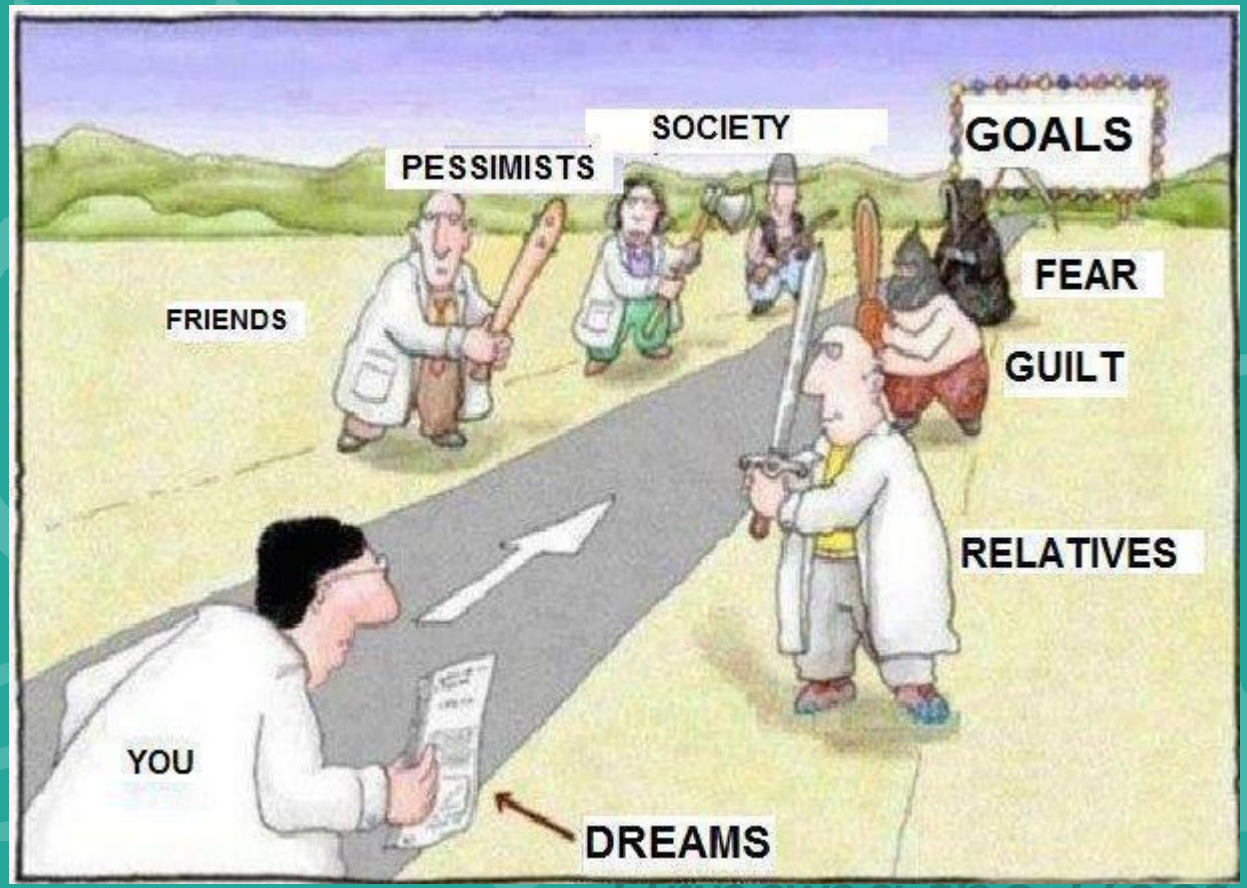

family

ROMANCE AND REALITIES OF STARTING A SMALL FARM

FARMING: THE DREAM JOB!

- Fresh air all day long!
- Therapeutic!
- Working with Nature- It's Spiritual!
- It's Seasonal. Winter Vacation Anyone?
- It's Family Friendly!

- IT'S HARD WORK! No really.
- It's grounding.
- It's beautiful.
- It's therapeutic (microbes from soil and trees are antidepressants).
- It's health promoting (exercise/good food/fresh air).



I'M MY OWN MAN!

- No one is telling me what to do!
- I choose my own hours and I decided how much I make!
- I'm only limited by my imagination!
- I'll be drama free!

- IT'S HARD WORK!
- No one is telling me what to do.
- Quality of Life
- Less Drama...maybe

PARTNERSHIP

- Friendship!
- Two heads are better than one!
- They'll keep me motivated!
- Time management!
- Accountability!
- Different Strengths and Talents!

- IT'S HARD WORK!
- Married to them- spouse
- Define roles! Define roles! Define roles! We had too many cooks.
- Frustration! You may want to choke them. They have ideas, and thoughts, and opinions.
- Best and hardest part of our venture. I couldn't do it without them.

Communication is the key to success!

REALLY? IT CAN'T BE THAT HARD

- If you plant it, it will grow!
- If you build it, they will come!
- Green side up, brown side down!
- Everyone will want to buy my goods! People love CSAs and Farmers Markets. Restaurants will be knocking down my door.

- IT'S HARD WORK!
- Marketing and Advertising
- Not everyone knows they want it...many have no desire to even try it.
- Lots of time
- People in our area have never heard of a CSA.
- Regulations and standards. GAP, Organic, USDA, etc.


Ziploc
BIG BAGS
GRANDS SACS

Giveaway!

$100 Gift Certificate and Farm Club Membership

$140 Value!

Follow, Like, and Tag!



Come Visit Us!

sunshinefamilyfarms.com