



Equipment and Land for Your Farm

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Before buying any equipment...new or used

- **Affordability**

“will the purchase price plus cost of operating, maintaining and repairing the item yield a net profit?”

- **Compatibility**

Will the item fit into your present complement of equipment resources...will it serve multiple purposes...will it fit into what you anticipate your operation looking like in a few years?

- **Dependability**

If used equipment...will you have the time and expertise to maintain and repair the item?



Before Investing in Land Resources....

- Do you already have it?
- Are you looking to find it?
- Do you have to own it?



Soil resources

- Understand what you have have to work with...
- Finding great soil resources is not easy
- What else do you need besides good soils?
- Farm infrastructure...your investment may not be worth what you can sell it for...



Soil Survey

- USDA soil surveys characterize soil types
- Provide gross evaluations of “quality” and suitability for certain land based activities.
- Web soil survey USDA/NRCS
- <http://casoilresource.lawr.ucdavis.edu/gmap/>



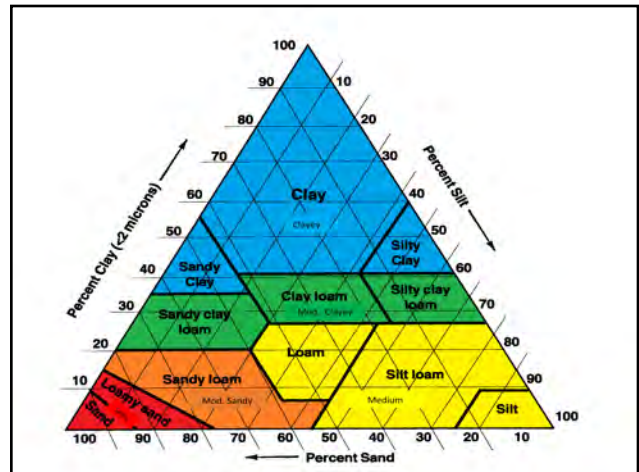
Looking and understanding soil maps

- Web soil survey
- <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>



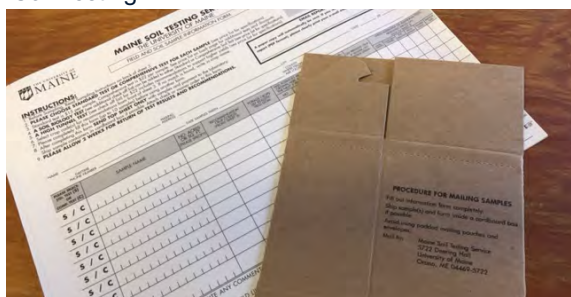
Easy soil maps...

- <https://casoilresource.lawr.ucdavis.edu/gmap/>





Soil Testing



Aspects of Soil Quality

- **Inherent soil quality**
 - Results from natural soil forming processes and factors
- **Dynamic soil quality**
 - Changes due to human use and management

(Pierce and Larson, 1993)



“You can't manage what you don't measure.”


→ Test your soil

- To check pH
- To monitor OM changes
- To keep an eye on P levels
- To correct nutrient deficiencies




Work With the Facts






Look for the Obvious




Did you take a soil test??

It's pH.



Relative Status

	Low	Medium	Optimum
Phosphorus	*****		
Potassium	*****		
Calcium	*****		
Magnesium	*****		
→ Soil pH	*****		
Organic Matter	*****		



Soil test recommendations

THORNDIKE ME 04986

		LOW	MEDIUM	OPTIMUM	ABOVE OPTIMUM
Soil pH	5.3	*****	*****	*****	*****
Organic Matter(%)	5.3	*****	*****	*****	*****
Phosphorus (lb/A)	21	*****	*****	*****	*****
Potassium (% Sat)	1.6	*****	*****	*****	*****
Calcium (% Sat)	89.5	*****	*****	*****	*****
Magnesium (% Sat)	0.9	*****	*****	*****	*****
Sulfur (ppm)	38	*****	*****	*****	*****
Boron (ppm)	0.3	*****	*****	*****	*****
Copper (ppm)	0.66	*****	*****	*****	*****
Zinc (ppm)	5.8	*****	*****	*****	*****
Manganese (ppm)	3.5	*****	*****	*****	*****
Zinc (ppm)	3.9	*****	*****	*****	*****

RECOMMENDED ADDITIONS FOR GRASS HAY TWO CROPS - crop code # 105

No lime recommended. Soil pH is at or above the optimum level for this crop.

To improve the magnesium level, use a magnesium lime when lime is needed again.

Recommended major nutrient application rates as follows:

- 120 pounds nitrogen per acre
- 60 pounds phosphate per acre
- 260 pounds potash per acre

Apply 80 lb nitrogen in early spring.

Apply 40 lb nitrogen before each additional cut or grazing.

P and K requirements can be split or applied all at once.



Equipment....Ask the hard questions..

Do you need it....or just want it?

Is it available in another manner other than a purchase?

Can the resource be used by multiple farmers (shared use equipment)? Does everyone need it at the same time?

Is it something that is available used or must you need to have it as "new"

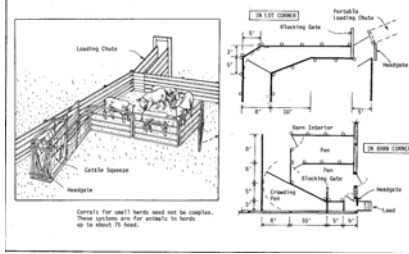






For livestock farmers...some must have equipment
• Handling facilities

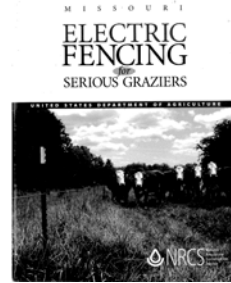
Check resources by Temple Grandin.....Colorado State University



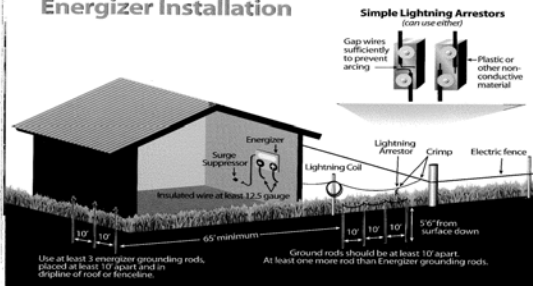
Caution: For small herds, avoid use of chaps. These systems are for animals 150 lbs. up to about 75 head.



Livestock containment....



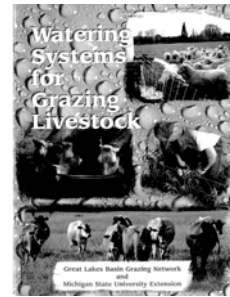
Drawing 1
Energizer Installation



Simple Lightning Arrestors
(can use either)



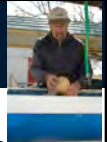
An easy way to provide the cheapest nutrient...





What about livestock shelter...

- Depends on species
- If using minimal shelter, learn Body Condition Scoring (BCS) for evaluating animal well being.
- Wet, muddy animals are the ones under the most stress....

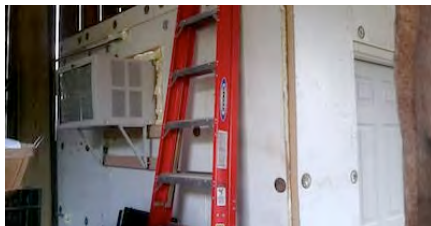


What "must have" vegetable producers...

- Vegetable processing and storage facilities
 - increasingly more important as food safety regulations increase
 - Wash stations...places where you and your produce can get clean and you don't mind being wet
 - Facilities for vegetable handlers to meet sanitary requirements
 - Cooling and storage...



Cooling and storage...one possible solution



Cool Bot <http://www.storeitcold.com/index.html>



Another "almost" necessity for vegetable producers..







A few other decisions for vegetable farmers...how big?



VS



Talk to other growers about what they like or dislike about their equipment, especially if it is a unique item








And for food processors.....

The Maine Department of Agriculture's Division of Quality Assurance & Regulations issues food licenses/permits, provides food inspections before and after you start your food business, and provides information about state food regulations. Inspectors are also available to conduct pre-inspections to look at your kitchen or space and to discuss ideas before you renovate.

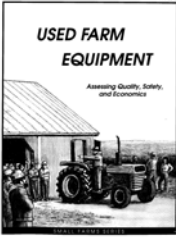
A state food license is required for everyone who sells a food product in Maine. The two common food licenses are: a home food processor or commercial food processor license. If you are interested in selling at the farmers markets, a mobile food vendor license will be required in addition to your other food license. Food license applications can be obtained online from the Maine Department of Agriculture, Food and Rural Resources: [Licenses and Permit Forms](#). If your water source is from a well, the license application requires water test results for coliforms, nitrates and nitrites.

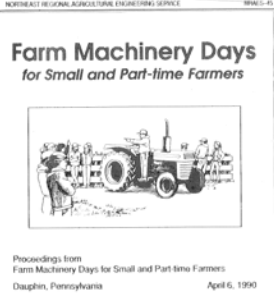
Stainless steel.....





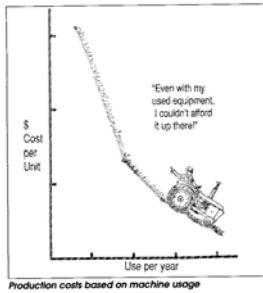
So...some equipment buying resources





Matching the job with the equipment

- important to match the tractor with the implement you will use
 - Engine horsepower rating
 - lift capacity
 - category of 3
 - Point hitch
 - Hydraulic power



Sometimes it may be beneficial to hire some work done instead of buying large equipment that you may only use for short periods of time.

So should you buy, rent or lease equipment?

- Rent ...pros?
 - lots of equipment rental options available to growers for "one time" or short duration use
 - maintenance costs are minimal
 - no worries about lots of investment tied up in iron that sits for long periods of time
- Cons...
 - Transportation to your farm
 - Availability when you need it for small job
 - Not always the "perfect" fit for the job.

Buy or lease?

- Buying
 - what might you need to borrow \$\$\$?
 - lots of new "dealer incentives"
- Lease
 - usually similar to leasing a car
 - little or no down payment
 - terms are usually influenced by the useful life of the equipment and predicted hours of use
 - helps with cash flow for new operations
 - doesn't disturb existing loan agreements

When should you choose to purchase?

- When you need the equipment frequently
- When timing is critical
- When supply for rental units is limited or in poor condition





So you decide to purchase....used or new?

- Used equipment...like a used car
- understand the risks and warning signs
- hours=miles
- parts and service availability
- safety equipment--ROPS (Roll Over Protection Structure)
- learn all the functions...loader, remote hydraulics, 3 Point Hitch (category 1,2,3?), PTO requirements...and more
- who will be operating the equipment?



New or used...

- How important is reliability?
- What is your ability to make repairs?
- Does the used tractor have the features you really need or are you making a compromise for cost savings?
- Sometimes older tractors have features that new ones don't!



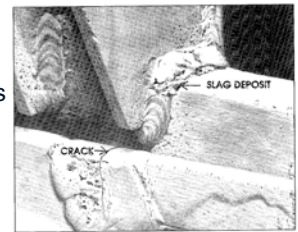
Used tractors and equipment –things to consider

- Look for leaks and welds
- Understand the safety risks with older tractors
- Don't undervalue the need for a good loader
- Private sale vs equipment dealer
- Tractors...gas vs diesel
- Look at the owners manual..are service records available?



Spotting cover-ups

- New paint
- Glitz...why are there lots of new parts?
- Ill fitted components
- "just overhauled"
- Look at the fluids
- Run it and drive it—Have someone else drive it and watch



Excessive slag, spatter, and cracking indicate poor repair



What about specialty equipment?



Other examples...plastic mulch layer
...certain harvest tools (potato digger)

"Shared use equipment"

What is available...MOFGA, Unity Barn Raisers

Coastal Foods, Belfast

Community kitchens



MFT Shared Use Equipment

Maine Farmland Trust (MFT) and Maine Organic Farmers and Gardeners Association (MOFGA) are pleased to announce a new opportunity for farmers to borrow farm equipment through our Shared-Use Farm Equipment club. Farmers can join the club for an annual enrollment fee of \$100, giving them access to equipment owned by MFT, housed and maintained by MOFGA.

This is done by:

- Paying the annual enrollment fee in full
- Attending an equipment training workshop held by MFT/MOFGA (April)
- Scheduling the use of equipment on-line or by contacting MFT or MOFGA
- Picking up the equipment at MOFGA with assistance from MOFGA/MFT staff
- Returning the equipment to MOFGA by the lending deadline

Equipment Currently Available:

- Seedbed Cultivator
- Sub-Soiler (2-Shank)
- Plastic Mulch Layer

To enroll or for more info, contact:
Mike Gold, MFT
948-6575



ROPS + Seat belts saves lives

Tractor Safety is no accident....



PPE—make it a part of your routine!

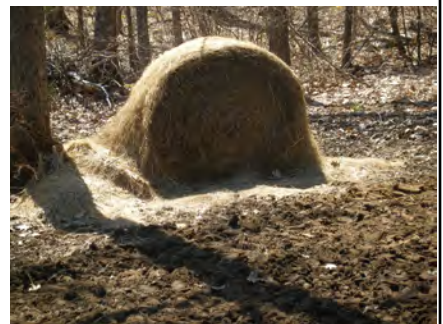


Make sure all attachments match the tractor and are hitched properly

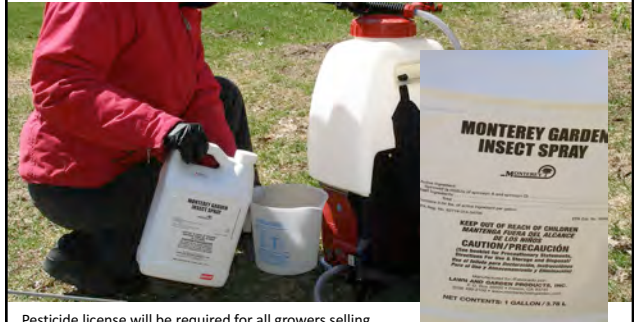
Underpowered...or over powered....both can be a problem



Go slow and keep it low....



Chainsaw use and safety



Pesticide license will be required for all growers selling produce who use pesticides in the near future

"Monterey" vs "Entrust"

How do you calibrate a sprayer?



<http://pubs.ext.vt.edu/456/456-502/456-502.html>

Thank you!

- An evaluation of the course will be coming to you in the next few weeks
- Please watch for emails and take the time to give us your feedback about the course delivery methods and the course content.
- Have a great Spring!