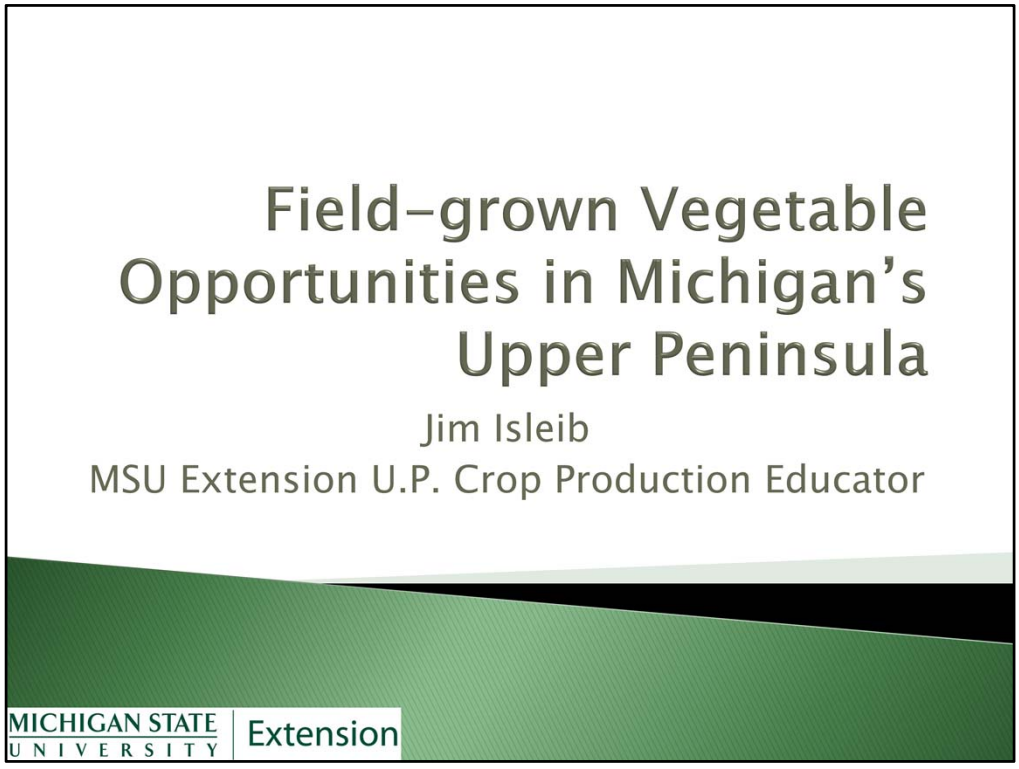
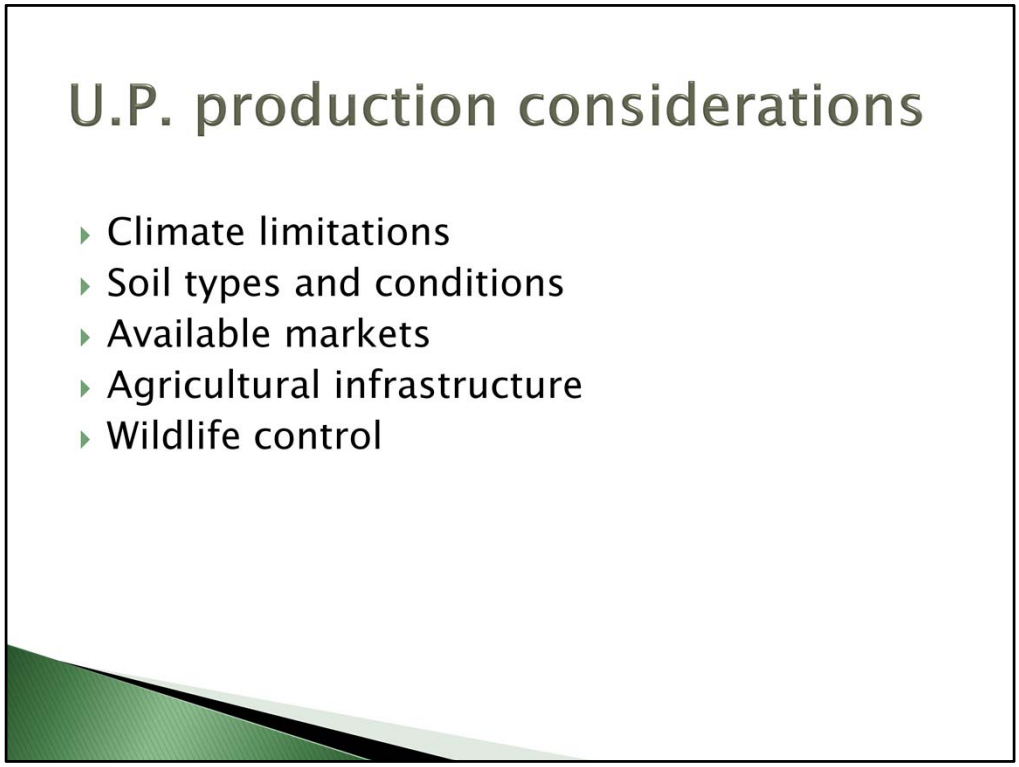


This presentation is meant to provide local, Upper Peninsula insight into the economic opportunities for field-grown vegetables for beginning farmers. It was prepared in February, 2013



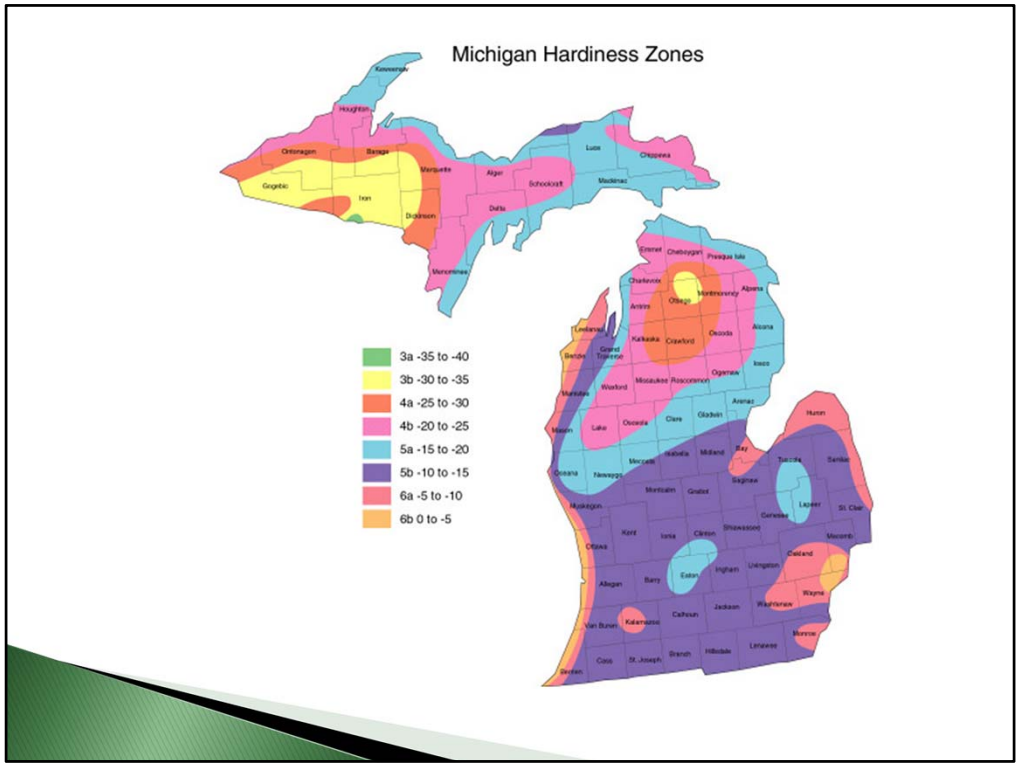
Limitations of climate, soils, available markets and ag infrastructure and wildlife pressure all need consideration when planning and operating a field-grown vegetable enterprise. We'll take a look at these individually.

Climate limitations

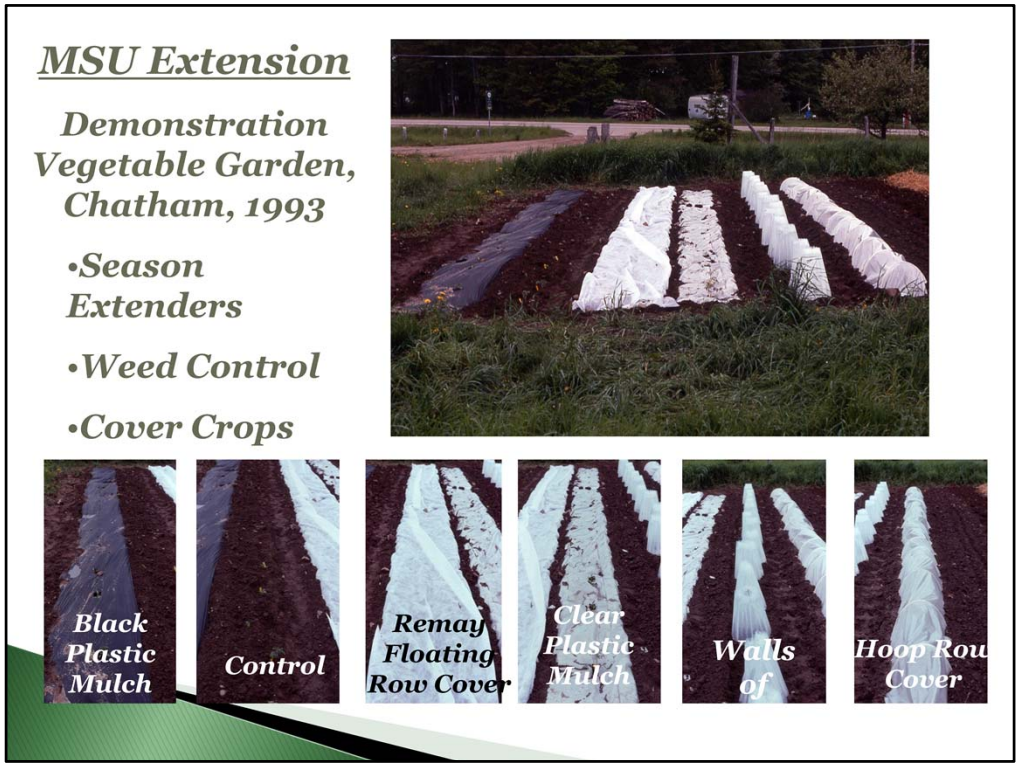
- Pay close attention to frost-free dates, heat unit history, relative maturity ratings of crop varieties
- http://enviroweather.msu.edu

In the northern part of Michigan, and throughout the state, selection of crops and crop varieties should include careful consideration of time needed to reach maturity. Keep in mind that in areas near the lakeshores, there are lower temperatures through the summer which can slow down plant development.

The MSU Enviroweather website can provide you with valuable information on average temperatures, heat unit accumulation, precipitation , soil temperatures and more. "Historic" information from previous years for a site near you can give a good idea about local growing conditions.

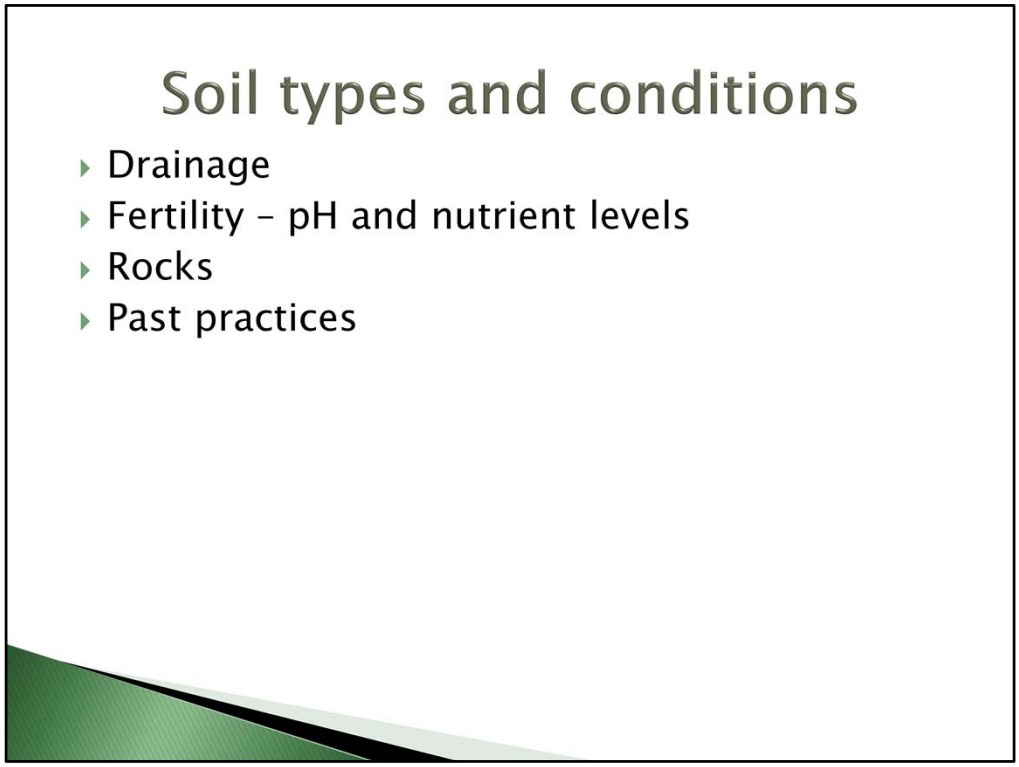


The USDA provides hardiness zone information for Michigan. Selecting crops and crop varieties based on winter hardiness is not very important for annual vegetable crops, but can be useful in selecting appropriate perennials, including fruits and ornamentals. The major perennial vegetables grown in Michigan include asparagus and rhubarb.



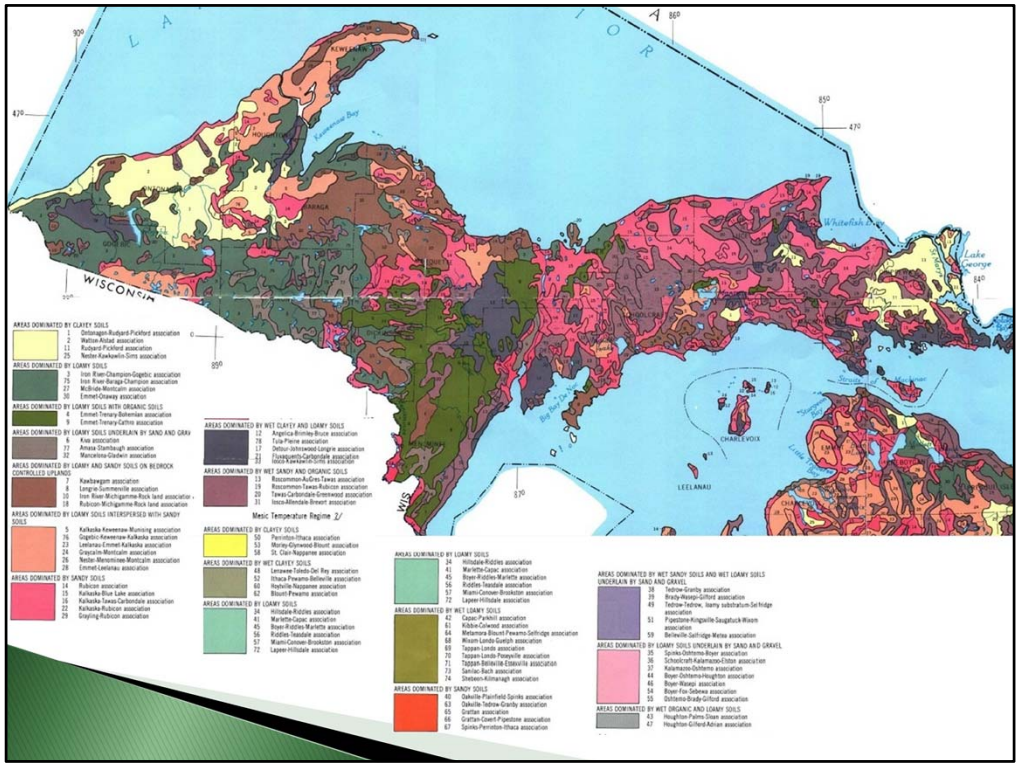
Season extending techniques practical for field grown vegetables include black plastic mulch, floating row cover, and plastic row covers. Black plastic mulch is used most commonly as a weed barrier, however, it also increases soil temperatures a few degrees and creates a somewhat warmer microenvironment for plants. Pairing black plastic mulch with floating row cover creates a significantly warmer environment and can allow production of crops that would otherwise not be likely to mature in cooler areas, such as cantaloupe. The floating row cover also provides a physical barrier for harmful insects. Row cover lets nearly all the light and rain/overhead irrigation through.

Season extenders for individual plants, such as “Walls of Water”, are used mostly in home-scale gardening. Their cost makes them prohibitive for larger scale production.



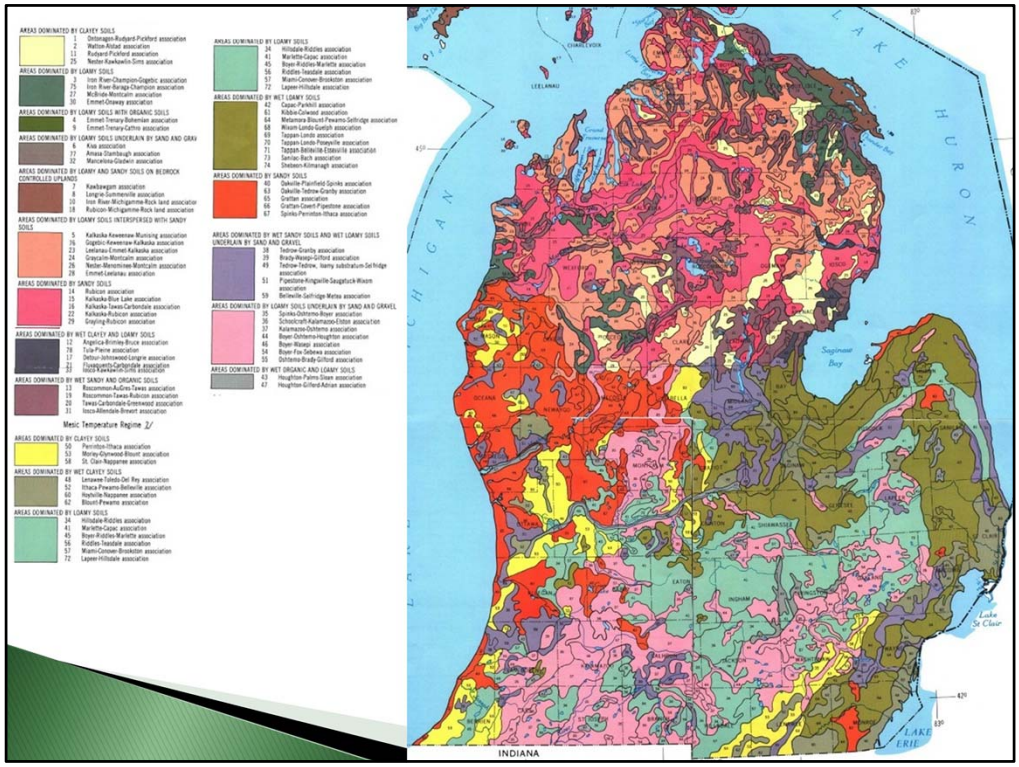
The soil on your vegetable site is critically important. It should be well drained if possible, have adequate fertility for vegetable production, and be relatively free of trouble-sized rocks.

Knowing what practices have been in place on your site can help you make appropriate management decisions about liming, fertilizer selection and application, and weed control. If you're working with a new site and don't have a lot of information, you'll need to find out about the soil's capacity as you go.

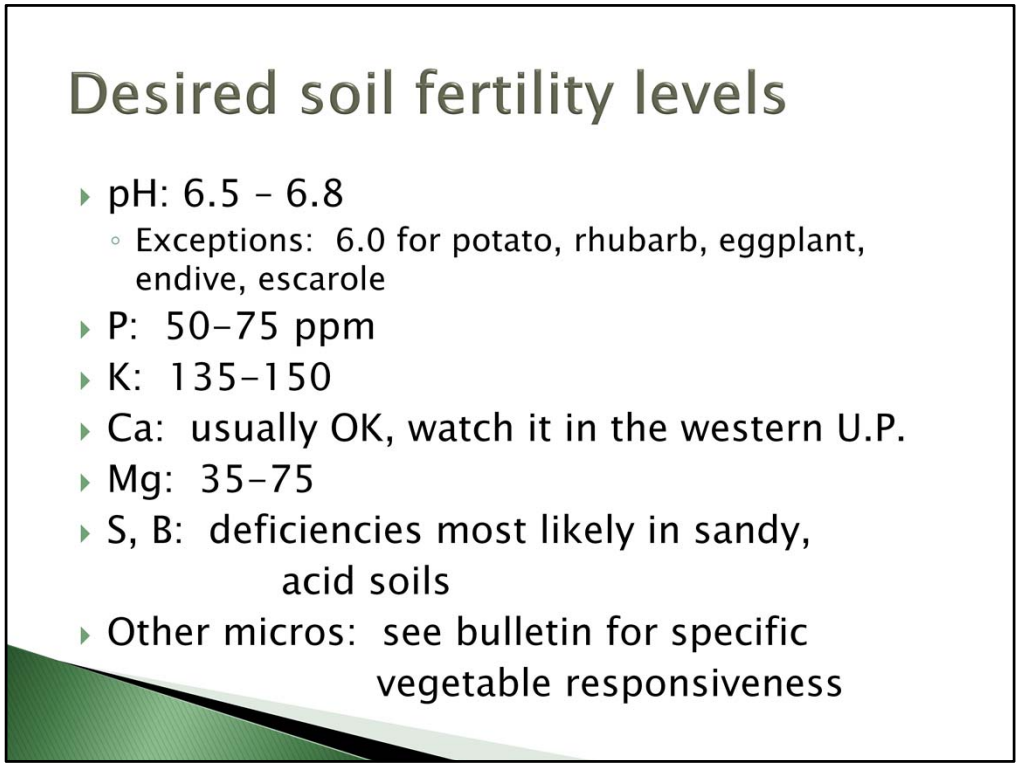


This soil association map give very basic information on soil types across the Upper Peninsula. Specific soil survey maps are avaialable on-line at the USDA/NRCS Web Soil Survey site: http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm

A wealth of information about soil type, drainage, and capacity for agriculture is available from the soil survey.



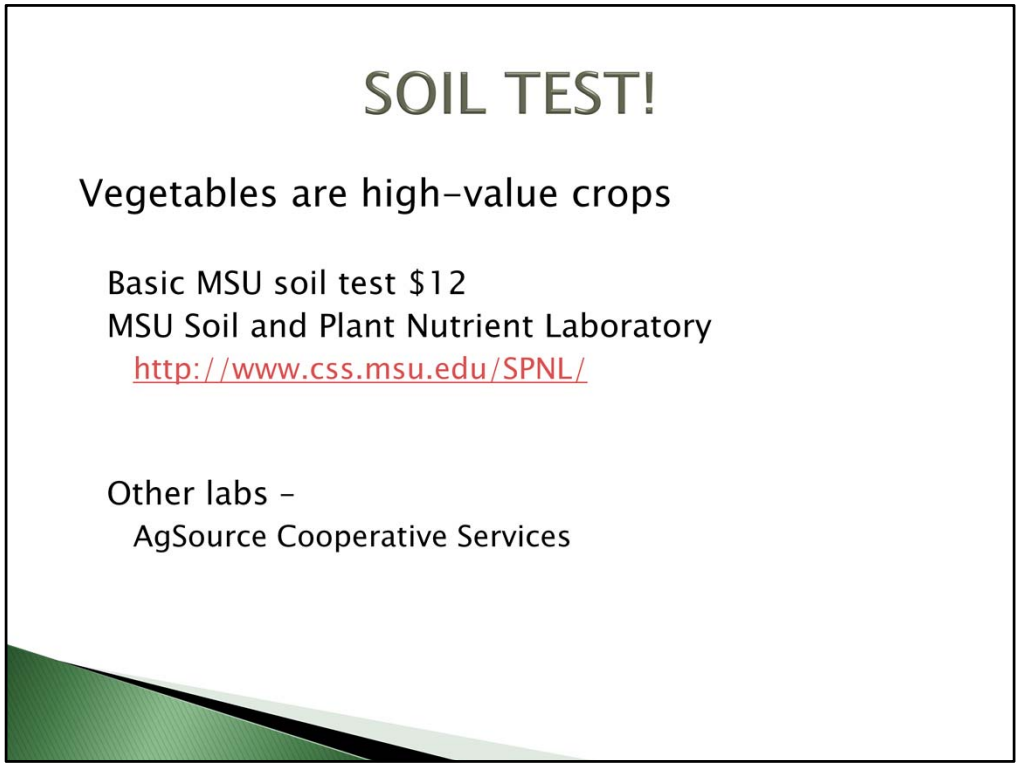
This is the soil association map showing the lower peninsula part of Michigan.



This slide shows desirable soil fertility levels for vegetable production. These levels would indicate a very fertile soil. If your site doesn't compare favorably, you may still get a good vegetable crop by managing plant fertility inputs carefully. Many soils, especially on worse sites, like many in the U.P., need to be 'built up' over a period of years.

The micronutrient bulletin 'Secondary and Micronutrients for Vegetables and Field Crops' E-486, can be found at https://www.msu.edu/~warncke//E0486.pdf

Information on your soils can be obtained by soil testing



Soil testing is definitely worthwhile and should be done every 3 years or so in higher value crops like vegetables. Including a soil organic matter test is a good idea.

MSU has a good soil testing lab. A basic soil test will cost $12, and soil organic matter is an additional $5. The farmer is responsible for sending the sample in to the lab, so postage is an additional small expense. Considering the value of your potential crop, and the time and effort you are expending to grow it, soil testing is a very small investment.

Other quality labs are available in Michigan and throughout the midwest.

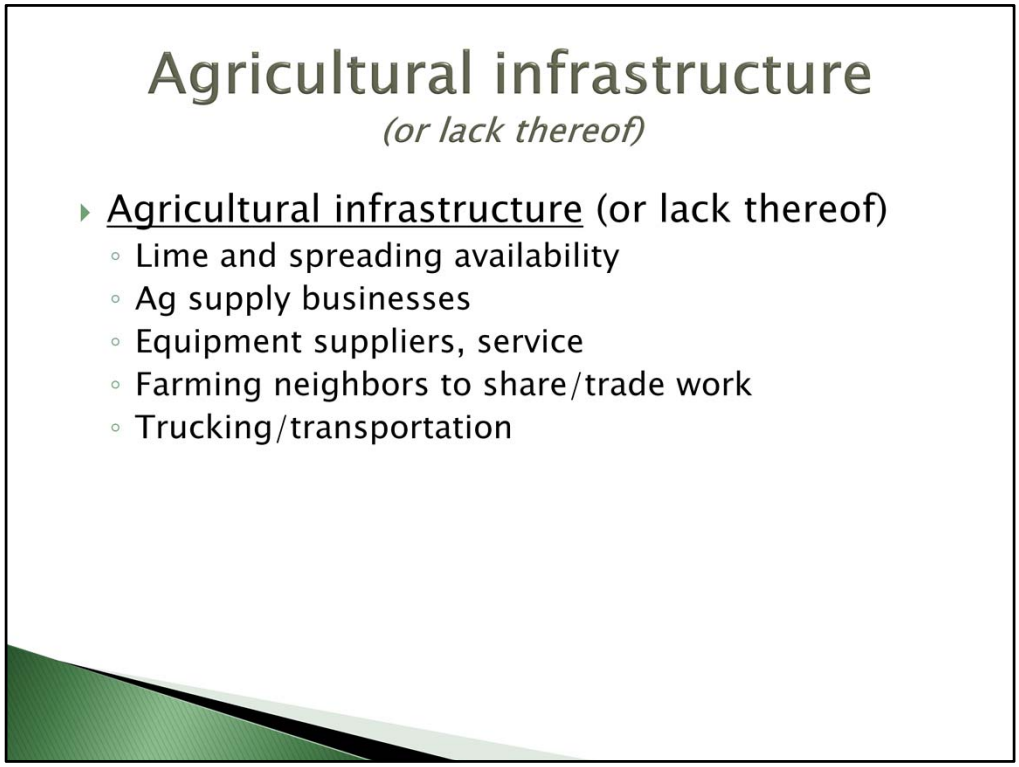
This slide provides suggestions for vegetable marketing. Most new commercial vegetable producers in Michigan are small scale. Wholesaling vegetables may be a possibility in local supermarkets or other retail outlets. However, you could be competing with large suppliers who can provide all manner of other fresh produce. The retailer may be reluctant to bother with a small scale wholesaler with limited products. The desire among Michigan consumers for locally grown food may change this.

Farmers markets and on-farm stands are good ways to sell products direct to consumers. As you enterprise grows, you may want to explore multiple ways to sell products.

Some people are growing vegetables to sell for deer bait. This is a somewhat controversial issue, but for now, hunters are allowed to set out food on a limited basis. There is strong demand for cabbage, pumpkins, ear corn and other food products attractive to deer from September through November.

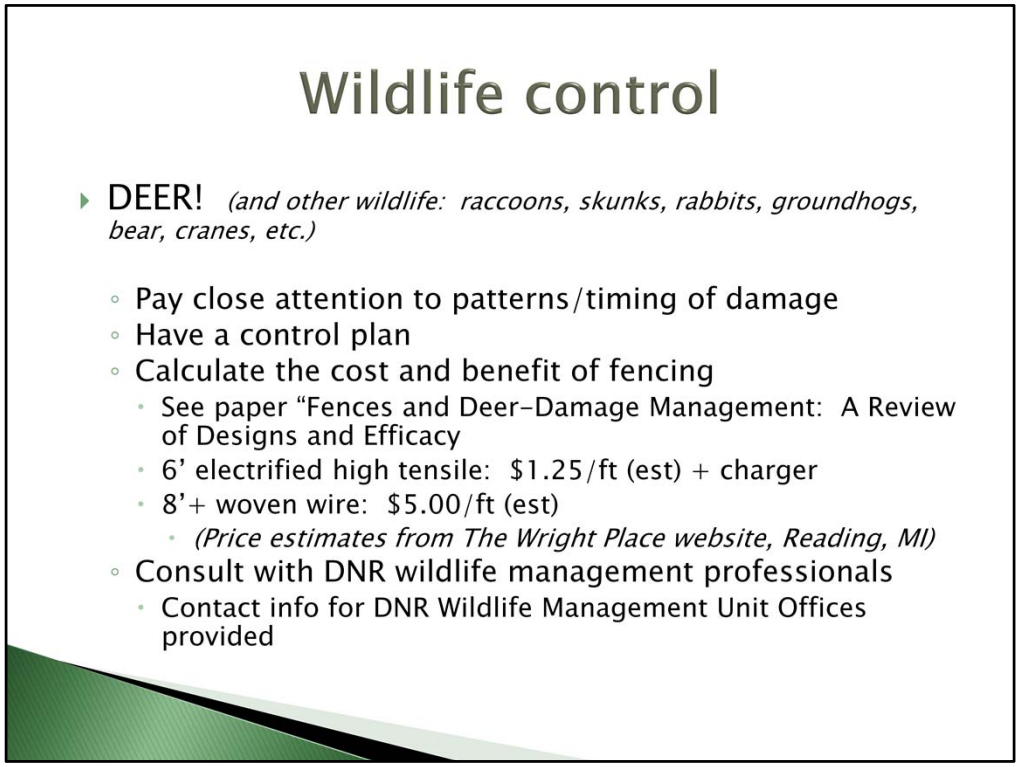
Sales to restaurants can be developed. Keep in mind that restaurants need consistent volumes and consistent quality.

Food hubs, including the Eastern UP Food Hub and the U.P. Food Exchange are currently being developed. These organizations have potential to provide new and exciting marketing opportunities to smaller scale local vegetable producers. - http://upfoodexchange.com/



In the Upper Peninsula, agricultural infrastructure, including places to get lime and ways to get it spread, businesses that sell fertilizers, pest control products, fencing, etc, equipment dealers and repair shops, and even neighbors with know-how and tools/equipment, are often distant. It is a great advantage to be relatively close to ag supply sources, and to have farming neighbors who can trade work, or help you out in a pinch.

Its important to develop a good working relationship with those agricultural businesses you deal with. Equally important to have good relations with your farming neighbors. In many cases, they will have important knowledge and experience to share.



Several wildlife species can cause problems in field-grown vegetables. In the U.P., and across the state of Michigan, white-tailed deer are probably the most serious wildlife pest. Growers should study their habits and develop a control plan. Sacrificial crops, use of dogs, repellant products, etc can be helpful. The most effective method of deer control is putting up a deer exclusion fence. You will need a good idea of the economic loss deer are causing before you can justify the expense of the investment in a good deer fence. A study of Northern lower Michigan, the U.P. and northern Wisconsin in the 1990's revealed that a 6' high, high-tensile electrified fence is a good balance between cost, effectiveness and burden of maintenance. The best fencing for deer is 8'+ high woven wire, electricity is not needed. However, this is a very expensive fence.

Familiarize yourself with current State DNR policies regarding deer control. You may be eligible for crop damage permits to kill problem deer, or for block permits to reduce local deer numbers during hunting season.

Mich DRN wildlife management unit offices:
http://www.michigan.gov/dnr/0,4570,7-153-10370-32867--,00.html

Link to "Fences and Deer-Damage Management":
http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1093&context=icwdm_usdanwrc&sei-redir=1&referer=http%3A%2F%2Fwww.google.com%2Furl%3Fsa%3Dt%26rct%3Dj%26q%3Dfences%2520and%2520deer%2520damage%2520management%26source%3Dweb%26cd%3D1%26ved%3D0CDwQFjAA%26url%3Dhttp%253A%252F%252Fdigitalcommons.unl.edu%252Fcgi%252Fviewcontent.cgi%253Farticle%253D1093%2526context%253Dicwdm_usdanwrc%26ei%3DtuSHUcziHcqAqgGo04CoCA%26usg%3DAFQjCNFRnn0g5po8eQT3BpXxdllF4j_3_A%26bvm%3Dbv.45960087%2Cd.eWU#search=%22fences%20deer%20damage%20management%22

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