

DEMaND

Developing and Educating Managers and New Decision-makers



The DEMaND series helps individuals grow in their capacity to meet the complex needs and challenges of managing a successful farm business. Whether individuals represent the transition of generations, from an employee to owner, or are new to farming, the DEMaND series offers a fresh look at farm management.

Turn Soil into Profit (Vegetable Edition)

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As you start your farming journey you may ask yourself: What type of land do I need to produce the crops I want to grow? Consider shifting your mindset to ask the real-world question: what can I grow on the land I can get or already have? The answer isn't as straightforward as you may suspect.

When discussing this topic, it is important to remember that farming does not exist in ideals. Soil, location, climate and weather, and property are often far from ideal for new farmers, especially early in their career. Land access for beginning farmers has become increasingly difficult and more expensive, since capital is scarce, and production goals vary from producer to producer. Therefore, producers need to be prepared to make the best of their situation. This means executing their season as best as they can considering factors outside their control that will inevitably affect their farming season.

Let's further discuss this topic in terms of matching land with intended vegetable production.

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Soil and Land Considerations in Michigan

For vegetable crops, you will often hear ideal soil conditions described as “crop prefers rich, well-drained soil.” To which you may respond, “Well, wouldn’t that be nice!” This is another instance where farmers have to make the best of their situation, and in this case, soil quality.

In Michigan, this is why you will often see a high concentration of vegetable production in certain areas. For example, West Michigan has high concentrations of fruit, vegetables and other specialty crops being produced. The reason is because the climate in this area is milder in shoulder seasons due to lake effect weather, and the soils – often sandy loams- are well-drained but offer enough nutrition to support specialty crops. Markets in this area are rich for both direct and wholesale marketing. In this same region, Hudsonville, MI is known as “Michigan’s Salad Bowl” due to rich muck soils in the lake effect area, making it an ideal area for the production of lettuce and other vegetables.

Land in regions with ideal climates, soil, and markets often require paying a premium in order to own it. If the cost of land with ideal conditions is too high, it will mean looking for property that has less than ideal conditions for crops you intend to produce. Another option is to lease land in these ideal growing areas. Leasing can be a good option if you are unable to afford ideal land and will lower your fixed costs of land ownership.

When beginning your search for land, avoid waiting for the most ideal piece of ground for your intended production. Chances are that you might be waiting a while to find it. Instead, focus on achieving a balance of important components needed to produce quality produce, including decent soils to support your planned crops. Start with workable land, having an intent on improving the production system over time.

Keep in mind that land is an asset that can also be improved over time. Building your soil’s organic matter with cover crops or compost can improve any soil type – from pure sand to heavy clay. Soil can also be amended over time to build quality soil suitable for vegetable production. A nutrient plan based on soil testing, incorporating rich compost and other inputs and practicing soil-building production techniques will also add value to your land and vegetable cropping system. In addition, irrigation, tiling, and infrastructure are all improvements to increase the value of farm property and your ability to produce and sell your crops.

If climate is less suitable for vegetable production, investments like greenhouses, hoopouses and season extension techniques can create a buffer from volatile climates. Sometimes, markets in volatile climate regions are underserved which creates opportunities in farm business. Recognizing these opportunities can improve the equity you have invested in your business and improve the quality of produce that you grow over time.

As a beginning farmer, you may be able to allocate more time and energy into improving property than other farms. This could give you an advantage, a unique land value proposition/ business plan when combined with a reasonable budget for soil improvements. Sharing your efforts with your customers as you improve the land in production is just one of many ways to promote your farm business.

See Table 1 for more specific information on soil and land considerations for vegetable crops in Michigan.

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Table 1. Soil and Land Considerations for Vegetable Crops in Michigan

Crop	Climate Zones	Water Requirements (Crop dependent)	Soil Type	Soil Heath/pH	Soil Conditions
Vegetables: Summer Fruiting Crops <i>(Tomatoes, Peppers, Eggplant etc.)</i>	Warm season zones (58-85 degrees F°)	1-2 inches of water per week	Sandy Coarse-textured soils	6.0 thru 6.5	Well-drained, loose soil
<i>Important Considerations:</i>	<i>Doesn't do well with dried-out soils. The crops are long season crops that produce multiple fruits and thus require good soil fertility throughout the growing season. Fruiting crops are also susceptible to a multitude of diseases throughout the season</i>				
Vegetables: Roots <i>(Carrots, parsnips, radishes. Celeriac etc.)</i>	Warm and cool season zones	1/2 - 2 inches of water per week	Sandy Coarse-textured soils to fine textured soils, like clay	6.0-6.8	Well-drained, loose soil
<i>Important Considerations:</i>	<i>Root vegetables like carrots and parsnips need good soil tilth. Good soil tilth is characterized by well-aggregated soils with adequate pore spaces for air and water movement, which supports healthy root growth. Onions and carrots also need consistent moisture to germinate and require intense weeding programs due to their slow early growth and smaller leaf canopies.</i>				
Vegetables: Roots <i>(Potatoes)</i>	Warm season zones (58-85 degrees F°)	1-2 inches of water per week	Sandy, Coarse-textured soils	6.0-6.5	well-drained, loose soil
<i>Important Considerations:</i>	<i>In Michigan, potatoes are grouped into two main categories of table stock and chipping varieties. Commercial producers will often contract with chipping companies and will produce commercial potatoes in field settings. Smaller, direct-market growers will often produce table stock or "new potatoes" for availability at local markets.</i>				

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Crop	Climate Zones	Water Requirements (Crop dependent)	Soil Type	Soil Heath/pH	Soil Conditions
Vegetable: Greens <i>(Spinach, Head lettuce, Salad mixes, etc.)</i>	<i>Prefer cool season. Summer heat stresses plants and can cause bitter flavors with early bolting.</i>	<i>1-3 inches of water per week</i>	<i>Loamy soil with a mix of sand, silt and clay or clay and fine textured soils</i>	<i>6.0-6.5</i>	<i>Rich soils with high nutrient levels</i>
<i>Important Considerations:</i>	<i>Greens are heavier nitrogen feeders because of the green, leafy crop type, so rich soil will produce the best crops. Weeds will often compete with the greens product, and it will take extra time to ensure greens mixes are kept weed-free. Greens are highly perishable which makes it a challenge to ensure the product is kept fresh, and safe until sold at markets.</i>				
Vegetable: Brassicas <i>(Cabbage, Broccoli, Cauliflower, Kale, Brussel Sprouts, etc.)</i>	<i>Warm and cool season zones. Brassicas can tolerate colder temperatures where they excel in should season production.</i>	<i>1-2 inches of water per week</i>	<i>Sandy, Course soils to fine-textured soil like clay</i>	<i>6.0-6.7</i>	<i>Well-drained but moist soil</i>
<i>Important Considerations:</i>	<i>Brassicas encompass a wide variety of crop types, but are all susceptible to various pests and diseases like flea beetles, cabbage looper, earworms, cabbage worm etc. Brassicas are also heavy feeders, so they require rich soils.</i>				
Vegetable: Asparagus	<i>Warm season zones (58-85 degrees F°)</i>	<i>First 2 years: 1 to 2 inches every other week in one application. After year 3: 1 to 2 inches every three weeks</i>	<i>Sandy, well-drained soils</i>	<i>6.5-7.0</i>	<i>Can grow in most soil types as long as it is well drained</i>
<i>Important Considerations:</i>	<i>In Michigan, Asparagus is largely grown in field settings as a perennial crop producing for 10 or more years. A larger space to get adequate yields for markets are required. New establishments of asparagus require trenching with initial yields for harvest occurring in the 3rd or 4th year following new plantings.</i>				

Marketing

When we talk about vegetables on any scale, it is helpful to start with the end in mind. Where do you plan to sell and make money for your business?

Marketing is a very important component of owning and operating a farm business. The perishable nature of produce is another important factor when considering whether to enter vegetable production. The storage you have available will affect the markets you can supply. If you store garlic or winter squash well, you can sell it six months after harvesting it. But most vegetables need to be sold within a week. While crops like cherry tomatoes should be harvested and sold a few times per week.

Beginning farmers who are considering vegetable production should think about who they will be marketing their crops to, how saturated the market is in their region, and the value proposition they have for the marketplace. Important questions to consider are:

- What markets are available?
- What products do those markets want?
- Are we interested in raising products for those markets?
- Are consumers looking for unique features about products that we could provide?
- What separates us from other competitors in our available markets?
- How can we distribute products to those markets?
- What will we charge for our products?
- How do we promote our products within those markets?
- Is the distance/cost of delivering wholesale produce realistic?
- Do we plan to incorporate value-added products for sale as well?
- If direct marketing, do we plan to let customers pick their own produce on the farm?

There are two main ways to market vegetables: wholesale and direct marketing. Examples of direct marketing include CSA's (Community Supported Agriculture), farmstands, farmers' markets, and direct to consumer sales. Examples of wholesale markets include grocery stores, wholesale buyers, cooperatives, and some restaurants.

Direct markets often have greater costs in labor and marketing but allow you to set your own price for produce sold and offers a direct link to the consumer for possible feedback. Direct marketing also offers the possibility of incorporating agritourism, such as having people on the farm where they can purchase value-added products, pick their own crops or participate in farm tours at a set price.

Wholesale markets offer lower prices per unit sold but may also have strict requirements on produce they can accept (i.e., aesthetic requirements). It can be expensive to get set up with the equipment needed to make wholesale markets work, and sufficient volumes need to be produced to work with retailers.

A key consideration is generally whether to move larger volumes through wholesale or seek higher prices in direct markets. In many instances, farms use a combination of both to achieve sales goals.

To assist with identifying which market works for your farm, consider using matrix tools that help to evaluate potential options. An example of a market channel matrix can be found in "Evaluating farm marketing channels helps farmers build strong strategies," an article from Vegetable Grower News (<https://vegetablegrowersnews.com/article/choosing-the-right-market-channel/>).

For more information on market options, also review the Marketing section of the Beginning Farmer Resource & Decision-Making Guide: <https://www.canr.msu.edu/beginning-farmer>.

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Considering how you will market and sell produce is extremely important. Beginning with your market in mind will help you select which products to grow. Your best options are products based on demand and where potential farmland is suitable for that production. Identifying your buyers and markets is equally important as the land and location for your vegetable crops.

Conclusions

While available land is often not entirely ideal, it will have a balance of pros and cons important to vegetable production systems. Instead of searching for an ideal situation, seek a balance of various components that are important for the intended crop production and important to you. A competitively priced property with a balance of decent soil, land features, climate, structures and market outlets can be just as valuable as an ideal, highly priced property.

Checklist of Additional Considerations

Soil and Site Characteristics *(Note: the first 3 are related to some degree and are site properties):*

- Access to water
- Drainage
- Soil type (textbooks say “sandy loam” is ideal)
- Slope
- Access to electricity
- Buildings and cold storage

Geographic proximity of other potential factors:

- Access to storage
- Proximity to markets
- Proximity to labor source? (e.g., college kids)
- Proximity to conflicting land uses (e.g., suburbs)
- Proximity to possible pesticide drift

Legal/financial:

- Property taxes
- Customers picking their own produce
- Zoning and township ordinances
- State regulations for food storage (MDARD)
- Capital investments and input costs (equipment, planting, harvesting, in-house storage)