



# Resource guide

for beginning small scale organic farmers  
in the Greater Victoria region



**FARMLANDS TRUST**  
(GREATER VICTORIA) SOCIETY  
*Farms Today, Food Tomorrow*



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# Disclaimer

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# Contents

<b>Disclaimer</b> .....	<b>iii</b>
<b>Farm set up and production system</b> .....	<b>1</b>
So you want to be a small scale organic farmer? .....	1
When thinking of becoming a farmer, here are a few questions to ask yourself:.....	1
<b>Steps to starting a successful farm</b> .....	<b>2</b>
<b>Land selection</b> .....	<b>2</b>
Some additional factors to consider when evaluating land include:.....	3
<b>Size of parcel</b> .....	<b>3</b>
Some key decision factors to consider when evaluating a land parcel include:.....	4
<b>Land acquisition</b> .....	<b>5</b>
Land arrangements for non-owners.....	5
Types of land access arrangements .....	5
<b>Farm land assessment</b> .....	<b>6</b>
Mapping information .....	6
Site mapping .....	7
<b>Key production factors</b> .....	<b>8</b>
Boundaries .....	8
Topography .....	8
Soils test .....	11
Natural factors and climate .....	11
Water .....	12
Vegetation management .....	12
Developing a farm production system .....	14
Harvesting systems.....	17
Food health and safety – Hazard Analysis and Critical Control Points (HACCP) ....	19
Soil improvement – Fertility and tilth .....	20
Crop planning .....	22
Seeds.....	25
Production economics .....	25
Human resource management.....	27
<b>Marketing</b> .....	<b>29</b>
Know what you want to sell .....	29
Know your market .....	31
Know your competition .....	31
Markets and niches .....	32
Farmers markets .....	32
Box programs .....	32
Restaurants.....	32

Value-added Christmas markets.....	32
Ideas - stories, recipes, novelties .....	33
Wholesale sales .....	33
Roadside sales.....	33
<b>Organic certification.....</b>	<b>33</b>
Basic certification tips.....	33
Know what makes you happy! .....	35
<b>Bibliography .....</b>	<b>35</b>
<b>Appendix A: Resources .....</b>	<b>36</b>
Fertilizers.....	36
Seeds.....	36
Soils and plant tissue testing.....	36
Supplier lists for everything a farmer may need.....	36
Water testing .....	36
<b>Appendix B: Local Victoria farmer’s markets.....</b>	<b>37</b>



# Farm set up and production system

## So you want to be a small scale organic farmer?

Becoming a small scale organic farmer is a calling. Maybe you have thought about becoming a farmer as a way of being a good steward of the earth, you have farming in your family roots, you are tired of the rat race, or maybe you are just an explorer who is fascinated with the adventure of living on the land, being in harmony with the earth, growing crops and raising animals, while living a rural and simple life.

Although there are many motivations for being a small scale organic farmer, there are many factors to consider when deciding whether farming is a good fit for you. Sitting down and weighing the cost of becoming a farmer takes discipline, wisdom, knowing yourself and some good practical counsel from family and friends, professionals and other farmers.

This Resource Guide was carefully planned and discussed with local farmers in Greater Victoria with the goal of capturing a realistic vision about beginning a small scale organic farming venture. Starting your operation is something that will take time, money, skills and courage. Being honest and being able to determine where you are strong and weak in terms of the skills required to become a successful farmer are critical for your success. It is our hope that this Farmer Resource Guide will be a useful reference that you will come back to again and again to help you build your operation.

Here are a few thoughts about what being a small scale organic farmer is all about from well-known author and poet, Wendell Berry.

*Why do farmers farm, given their economic adversities on top of the many frustrations and difficulties normal to farming? And always the answer is: "Love. They must do it for love." Farmers farm for the love of farming. They love to watch and nurture the growth of plants. They love to live in the presence of animals. They love to work outdoors. They love the weather, maybe even when it is making them miserable. They love to live where they work and to work where they live. If the scale of their farming is small enough, they like to work in the company of their children and with the help of their children. They love the measure of independence that farm life can still provide. I have an idea that a lot of farmers have gone to a lot of trouble merely to be self-employed to live at least a part of their lives without a boss.*

**–Wendell Berry, Bringing it to the table: Writings on farming and food**

## When thinking of becoming a farmer, here are a few questions to ask yourself:

- **What are your motives?** Do you want to farm because it gives you energy, fulfils your life's purpose, nurtures your children's and grandchildren's development and education, provides hands-on work, connects you to the land and food production, builds sustainable skills, reduces your taxes and provides tax write-offs, aligns with your values, makes your family self-sufficient, fosters health and spirituality, continues your family's heritage, makes you feel "rich"?
- **What's your personality type?** Know yourself. Take this test based on Carl Jung's and Isabel Briggs Myers' approach to personality: [www.humanmetrics.com/cgi-win/jtypes2.asp](http://www.humanmetrics.com/cgi-win/jtypes2.asp)
- **Do you have a romance with agriculture?** Real everyday farming may push you out of your comfort zone. Is running a business a priority?
- **Are you willing to be challenged with hands-on learning, gaining your own experience through trial and error?** Farming is full of wins and losses, ups and downs.
- **Are you willing to be flexible?** Farming is a living system and is ever-changing.
- **Are you good at organizing multiple systems and multi-tasking?** Farming is comprised of many systems requiring a variety of tasks. As you begin, start slow and start with a manageable and organized system. A farmer is an entrepreneur, mechanic, agronomist, entomologist, soil scientist, marketing expert, human resource manager and more. Your day may have many hats and to be a good farmer, you need to be able to jump from task to task and keep your focus on getting things done. Might you have an example of this to share with readers?
- **Do you have the skills to develop a realistic farm business plan?** If not, get help.
- **Reality check: Are you on the right track getting your farm off the ground or are you heading for a train wreck?**

# Steps to starting a successful farm

## Land selection

There are many important aspects to choosing the land you intend to farm. The type of farming you choose will determine what aspects of land acquisition are vital to your success.

**Thoughts to consider:** Where do you want to reside and/or work? How long will it take you to commute to your farming space? What is the layout of the land; is it flat, terraced, rocky? Does the land have fences, water, natural buffers, trees, neighbours to consider? What direction does the sun rise and set? How many hours do you have sun in all the areas of your farm space in each season? Do you have environmental factors to consider such as wind, fog, cool ocean air or shade? What are the soil profiles? Are there drainage problems?

### Newman Farm – Westerly portion in Saanichton, BC



Photo courtesy of Ed Johnson

## Some additional factors to consider when evaluating land include:

- **Geographic location:** Consider the benefits or disadvantages of various areas in our region as farming may be challenging for some locations due to neighbours, access, and direct marketing opportunities.
- **Climate:** When exploring the Greater Victoria region, research the micro-climates in the area. For example, the Saanich Peninsula is much warmer than Sooke, BC. Having a farm located close to the ocean can affect micro-climates. It is also advisable to understand weather factors like snow and wind as these factors may also significantly affect growing conditions. The amount of heat units, light and precipitation you receive daily/seasonally is best monitored for a full four seasons prior to growing anything successfully. When evaluating farm lands, consult with local farmers in the immediate area about crops that will not grow well in the area of interest and determine what may be best suited for production or a greenhouse operation.
- **Pests:** There may be quarantines like the Pacific Golden Nematode quarantine area in the Victoria region, which may limit production options and farming goals.
- **Land regulations and zoning:** Are there potential zoning or bylaw changes planned? If there are changes, can the land come under a grandfather clause? Accessibility and Agricultural Land Reserve rules may affect your goals for the farm; for example, farm worker accommodations.
- **Land acquisition:** What is currently available in the target market? Are these lands for land purchase, lease, sharecropping?
- **Decision matrix:** Consider the potential advantages and liabilities (this is what you will be dealing with on the land).
- **Make a table:** Include a ranking system for plus and minus factors for land selection based on the attributes that are critical for your values and decision-making. Use your weighted ranking to determine your final land acquisition decision.
- **Agricultural area plans:** There is much discussion and planning done around supporting agricultural development in the region. To learn more about the community aspects of agricultural planning, see the following websites:
  - Sooke Area Agricultural Plan**  
[www.sooke.ca/wp-content/uploads/plans/Agricultural\\_Plan.pdf](http://www.sooke.ca/wp-content/uploads/plans/Agricultural_Plan.pdf)
  - Central Saanich Area Agricultural Plan**  
[www.centalsaanich.ca/hall/Departments/planning/planning/Agricultural\\_Area\\_Plan\\_\\_AAP\\_.htm](http://www.centalsaanich.ca/hall/Departments/planning/planning/Agricultural_Area_Plan__AAP_.htm)
  - North Saanich Area Agricultural Plan**  
[www.northsaanich.ca/Assets/Reports+and+Publications/Draft+Agricultural+Plan+January+2010.pdf?method=1](http://www.northsaanich.ca/Assets/Reports+and+Publications/Draft+Agricultural+Plan+January+2010.pdf?method=1)

## Size of parcel

One small scale organic farmer can possibly handle a one-acre plot, depending on the crops to be planted. Should additional land be available on the parcel farmed, it is highly likely more workers will be necessary.

The most important question to ask when determining the quantity of land to farm is “how much time do you have to grow which organic products successfully on your land?”

Your energy and time output will vary throughout the growing season depending on what you plant on your land. Some crops are extremely weed sensitive such as lettuce and carrots and therefore require more time to manage. Other crops such as berries will need plenty of time allotted for harvesting during the short window they flourish. Tomatoes will take weekly maintenance pruning suckers to keep the plants manageable and focused to grow more fruit. Many perennial crops will take minimal attention after a quick spring pruning, dividing and mulching. Many farmers enjoy growing crops such as garlic. To grow garlic, the bed is prepared, planted and mulched in the fall, then, generally it will not require time until June when the scapes are snapped off and finally harvested and cleaned at the end of July.

## Newman Farm in Saanichton, BC



Photo courtesy of Ed Johnson

### Some key decision factors to consider when evaluating a land parcel include:

- What is the minimum acreage needed to start creating a financially viable farming business?
- What is the minimum farmable square footage needed and is there room to expand over time?
- What is the full cost of developing the parcel in addition to the lease, purchase or other land agreement?
- What do I want to grow and why? Is this viable based on the land capabilities?
- Have I developed a ranking system? Crops have various complexities and take time to grow, harvest, manage. Will the land be able to meet production goals?
- How much labour is available? This will be key to deciding the size of a parcel that can be farmed.
- Do I have the capital? Whether I am well capitalized or on a shoestring will determine many decisions for land acquisition.
- What works for a beginner versus an advanced grower? Can the land challenges be mitigated for the beginner's scant experience?
- Do I have a calendar of operations? What is realistic to be grown on this land? Is the land capable of producing the crop in the window of time desired?

# Land acquisition

To begin with, you need to evaluate the quality of soils, water, and fencing. If there are any improvements needed to be made on the desired lands, how will the required infrastructure be put in place? Are the improvements affordable? And if so, over what amount of time? If you are purchasing the land, these decisions will be in your control. However, if you are planning to lease or rent the land, these will be significant discussions with the land owner that will need to be negotiated.

## Land arrangements for non-owners

What type of agreement and length will you propose? What are the key components to consider, e.g., farming practices, what crops to farm, aesthetics of the space, privacy concerns, and trade/cash arrangement to be paid? What are the terms of payments, and what do the payments include, e.g., water systems, electricity?

What are the provisions if there are challenges and conflicts? Is there a multi-step process for settling disagreements and will the parties agree to mediation or arbitration?

There are challenges with land leasing under the current *Land Titles Act* as any lease over three years is technically required to be charged on the land title, which could make landowners reluctant to lease their lands. In addition, there may be additional costs with long-term leases due to the lease triggering the Provincial Property Transfer Tax. There are also issues with long-term leases requiring approvals by the Regional District and BC Ministry of Transportation and Infrastructure as this process is akin to going through the steps for approving a subdivision.

With these issues in mind, many farmers in the region who farmed longer than three years on the land typically avoided formal lease agreements and settled for less secure forms of land agreements. Although a lease may be more attractive for a farmer to obtain bank financing for operations, an alternative arrangement for land acquisition such as a Memorandum of Understanding (MoU), a basic rental agreement or license, or a Letter of Understanding (LoU) are all alternatives to formal leases. These alternatives have advantages and disadvantages and may allow the farmer and land owner to have certain rights in terms of court actions.

When developing an agreement, regardless of the type, make the agreement with the worst case scenario in mind. Allow for full disclosure by both parties and make sure there are good mechanisms for communication and reporting. Another important component of an agreement is to include provisions for cancelling the agreement. If a party cancels an agreement, what will the terms be for moving operations after the growing season and how will any land improvements be handled if these expenses are paid for by the farmer?

## Types of land access arrangements

### Owning

The great benefit of owning your own land is the ability to build up long-lasting infrastructure and equity. On the down side, if land challenges and problems occur, then all expenses incurred and all responsibilities are yours.

### Leasing

When considering the leasing option, you will need to know how long each party can commit to. This fact will affect what crops you grow and how much time you devote. For example, berry and perennial patches can take up space for long periods of time and need much more labour in the beginning. Once established, however, they become relatively time efficient and become quite lucrative as the crops come into full production over the years.

What are the available infrastructure and associated details for a lease agreement? Consider water, irrigation, fencing, access, structures, ability and access to additional land space, aesthetic expectations, and privacy. What happens in the event of change or breach of agreement?

Will the lease be an annual fee or a monthly fee that only needs to be paid on productive income earning months or will another arrangement of reduced rent be made in the off-season?

## **Renting**

Renting is suitable for short-term farming when a farmer may want to plant a specific area for a season while looking for a larger parcel to lease or purchase for the long-term. A rental agreement may provide certain legal benefits and liabilities to the farmer.

## **Memorandum of Understanding (MoU)**

This is typically a non-binding agreement that can be used to define a relationship and provide boundaries for two parties to agree to the principles of their working relationship.

A memorandum of understanding (MoU) is a document describing a bilateral or multilateral agreement between two or more parties. It expresses a convergence of will between the parties, indicating an intended common line of action. It is often used in cases where parties either do not imply a legal commitment or in situations where the parties cannot create a legally enforceable agreement. It is a more formal alternative to a gentlemen's agreement. (Wikipedia) [www.en.wikipedia.org/wiki/Memorandum\\_of\\_understanding](http://www.en.wikipedia.org/wiki/Memorandum_of_understanding)

## **Share cropping**

This type of arrangement can be developed when cash payments are not required and the parties will share in the crop proceeds as agreed. The upside to the farmer is that this removes the cash payment obligations for renting or leasing. Share cropping also mitigates the farmer's risk if there is a crop failure as the landowner shares the risk under this agreement.

Some of the factors affecting this type of arrangement include the number of people involved; type, value, and viability of crops; time and labour required for harvest and processing; and consideration of crop percentage paid to land owner.

# **Farm land assessment**

## **Mapping information**

When planning your farming operation, developing good maps is essential. Maps are easily developed today with several mapping tools on the market. These tools can be very specific like Global Positioning System (GPS) mapping and Computer Aided Design (CAD) mapping which is typically used for legal surveys. There are also more general maps like the Capital Regional District (CRD) Atlas for general planning. If you know surveyors who have the maps of the land parcel, you may work with the surveyors using their CAD software. If you send the surveyors your GPS coordinates and shape files, they can map a farm plan layout within a few meter's accuracy at the cost of a few hundred dollars. Here are a few mapping tools and software that can help you start your farm planning:

Google Earth [www.google.com/earth/download/ge/agree.html](http://www.google.com/earth/download/ge/agree.html)

CRD Mapping Utilities [www.crdatlasc.ca](http://www.crdatlasc.ca)

Garmin GPS or other mapping tools [www8.garmin.com/aboutGPS/](http://www8.garmin.com/aboutGPS/)

DNR Garmin Software GPS to provide downloading GPS files for export to be used in GIS and or CAD programs [www.dnr.state.mn.us/mis/gis/tools/arcview/extensions/DNRGarmin/DNRGarmin.html](http://www.dnr.state.mn.us/mis/gis/tools/arcview/extensions/DNRGarmin/DNRGarmin.html)

## Site mapping

The following section provides some mapping essentials for developing your farm plan.

### General farm mapping

These maps should include the parcel boundaries along with natural boundaries such as trees, water systems and roadways, along with any fences, and any permanent structures or infrastructure such as buildings, and electrical power lines.

### Site map of Newman Farm – Westerly portion in Saanichton, BC



### Topographic maps

These maps will provide an overview of slopes and allow the planner to evaluate various methods to prevent erosion and proper cultivation and tillage practices. This knowledge may be critical for crop selection as well.

### Soils maps

These are critical to understanding the soil types for the various locations in the farm boundaries and will assist the planner to evaluate the proper crops to select for a farm area and the proper tillage and drainage for developing a successful cropping plan. These maps are available through the BC Ministry of Environment at [www.env.gov.bc.ca/soils/](http://www.env.gov.bc.ca/soils/)

# Key production factors

## Boundaries

Natural boundaries such as trees, water systems and roadways can have both benefits and disadvantages. It may be that a natural tree boundary or hedge can provide privacy, a wind guard and even act as a deer fence. This same tree boundary can, over time, become a sun deterrent creating too much shade, develop a moss cover on the soil and therefore lead to unwanted moisture retention or even leggy plants stretching to reach light.

A natural water system can be an asset, providing water to draw from, but again a potential challenge if the natural system leads to flooding or could be contaminated upstream from your location. Roadways may provide access but can create both noise and air pollution, and possible cross contamination risks.

## Topography

The lay of the land can have an effect on what types of crops can be grown and what type of work and infrastructure may be required to fully utilize the available land space.

Flat, well-drained land with a full southern exposure is the ultimate. However, most farmers are working with all variations of land. Land that is flat with a clay base and holds water long into the late spring will require drainage. Raised beds and a crop plan that uses this crop area for plants that need a shorter growing window is a way to use this land to its maximum potential.

More challenging to farm are heavier soils on flatter terrain. These can be drained using permanent tile drain systems. For planting perennial crops like strawberries, other berries, and fruit trees, this cost analysis should be evaluated to determine whether the investment makes sense.

Slopes greater than three percent (3%) should have cross field discing and spading to prevent erosion and a winter cover crop should be planted to prevent erosion and build soil throughout the winter months.

Terraced land can be fantastic as it will undoubtedly drain well and heat up more quickly than land holding more moisture and will perhaps be available for earlier season growing and later winter crops. This same land will likely need appropriate irrigation and more water throughout the hotter months to take into account the great drainage. For terraced land, one must consider the time and labour to create the terrace infrastructure and necessary drainage.

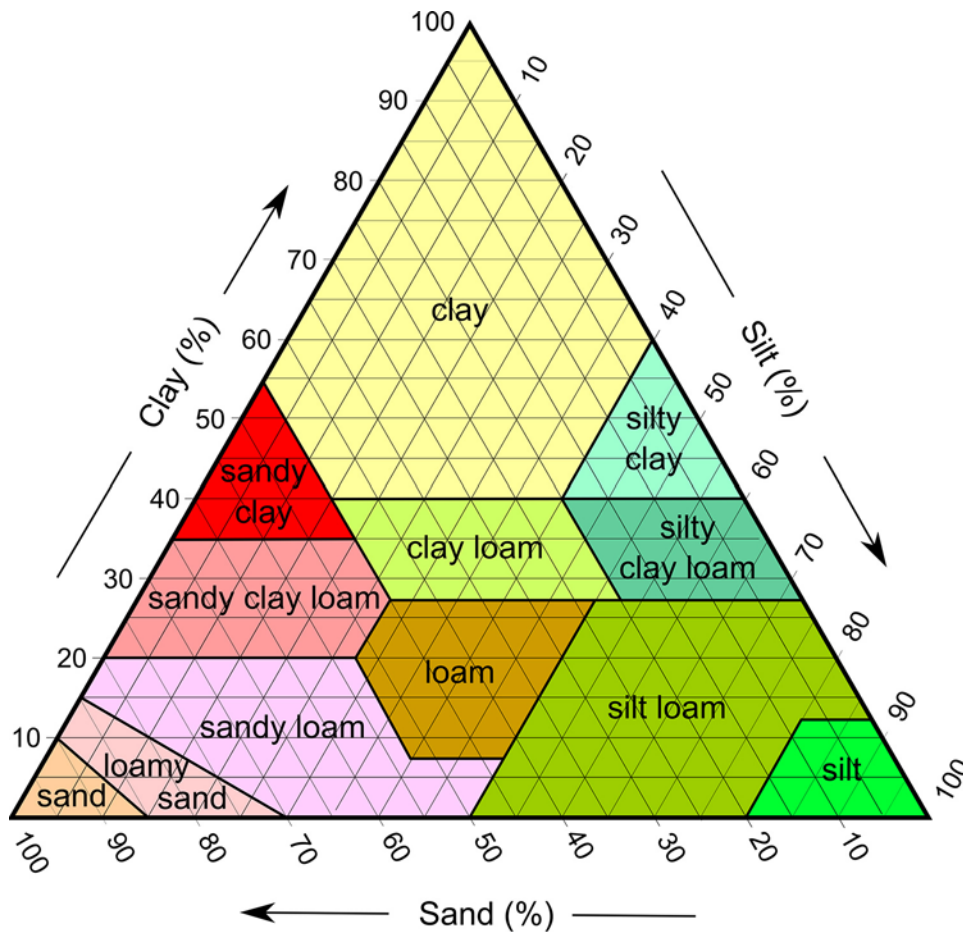
*The physical properties of soils, in order of decreasing importance, are **texture, structure, density, porosity, consistency, temperature, colour and resistivity**. These determine the aeration of the soil and the ability of water to infiltrate and to be held in the soil. Soil texture is determined by the relative proportion of the three kinds of soil particles, called soil “separates”: sand, silt, and clay. Larger soil structures called “peds” are created from the separates when iron oxides, carbonates, clay, and silica with the organic constituent humus, coat particles and cause them to adhere into larger, relatively stable secondary structures. Soil density, particularly bulk density, is a measure of soil compaction. Soil porosity consists of the part of the soil volume occupied by air and water. Consistency is the ability of soil to stick together. Soil temperature and colour are self-defining. Resistivity refers to the resistance to conduction of electric currents and affects the rate of corrosion of metal and concrete structures. The properties of the identifiable layers in a particular soil profile may differ. ~ [www.en.wikipedia.org/wiki/Soil](http://www.en.wikipedia.org/wiki/Soil)*

All soil can be amended according to the needs for improving soil health and fertility; however, the vital question is what are the original soil qualities and how can you amend these soils to suit the crops you want to grow successfully?

Additional questions to consider: Is the soil made up of clay? Is it sandy or loamy? Is the soil moist, waterlogged or does it appear to be well drained? Keep in mind that these soil properties will affect water holding capacity, which will determine the length of the growing season on poorly drained soils and the ability to retain soil moisture on sandy soils, which may cause greater water demands for crop production. The basics for determining soil properties are outlined in detail in the following Figure that shows the soil texture triangle that combines sand, silt and clay. To become an effective soils tester, you can do a simple ribbon test and use a soils texture key to get a quick feel for the soil composition. To walk through the steps of getting a beginner’s understanding of soils texture, you can go to [www.sfec.cfans.umn.edu/prod/groups/cfans/@pub/@cfans/@sfec/documents/article/cfans\\_article\\_360665.pdf](http://www.sfec.cfans.umn.edu/prod/groups/cfans/@pub/@cfans/@sfec/documents/article/cfans_article_360665.pdf) and read the steps for the Soil Texture Key to understand your soils.



## Soil texture triangle



Source: [www.en.wikipedia.org/wiki/Soil](http://www.en.wikipedia.org/wiki/Soil)

Another way to get a basic understanding of soil properties is to look at what is growing on the land already. Weeds are fantastic indicators of the quality and composition of the soil. A remarkably easy to use guide “Soil Indicators” can be found in *Designing and maintaining your edible landscape naturally* by Robert Kouik, pp. 36—38.

Living on the west coast of North America where large conifers and acid loving plants are abundant, we can safely assume that most land spaces are more acidic than alkaline. Therefore, most of our foodstuffs (with the exception of berries) will require amending with lime to increase the pH range that maximizes crop production. The appropriate pH range for most crops is between 6.4—6.8. A helpful thought to consider: Soil is similar to the human body in that an acidic system leads to lack of wellness over time and, in general, an inability to uptake the available nutrients. In order for the CEC (Cation Exchange Capacity), which can be considered the nutrient holding space in soil, to function effectively, the pH of the soil needs to be higher. Higher CEC equals higher soil fertility. This can be scientifically explained by the following:

*As soil acidity increases (pH decreases), more  $H^+$  ions are attached to the colloids and push other cations from the colloids and into the soil solution (CEC decreases). Inversely, when soils become more basic (pH increases), the available cations in solution decreases because there are fewer  $H^+$  ions to push cations into the soil solution from the colloids (CEC increases).* [www.en.wikipedia.org/wiki/Cation\\_exchange\\_capacity](http://www.en.wikipedia.org/wiki/Cation_exchange_capacity)

As noted above, adding lime on an annual basis to our west coast soil is vital to growing food crops successfully. There are several possibilities for liming, such as fall liming with powdered dust lime (Calcium Carbonate), which works itself into the ground during the fall, winter and early spring therefore adjusting the pH for the upcoming growing season. This lime is very strong and alkaline (high pH) and can, if applied during the main growing season, create problems, which may cause possible strong growth reactions. Although more expensive, perillized, slow release limes such as Dolopril and Calpril can be added just before planting with little or no consequence. Following is a description of lime's effects on soil:

The specific effects of agricultural lime on soil are predominately that it increases the pH of acidic soil (the higher the pH the less acidic the soil); in other words, soil acidity is reduced and alkalinity increased. It provides a source of calcium and magnesium for plants. It permits improved water penetration for acidic soils. It improves the uptake of major plant nutrients (nitrogen, phosphorus, and potassium) of plants growing on acid soils. [www.en.wikipedia.org/wiki/Agricultural\\_lime](http://www.en.wikipedia.org/wiki/Agricultural_lime)

### Preparing soil for spring cover crop at Newman Farm in Saanichton, BC



Photo courtesy of Ed Johnson

Adding organic material to the soil is always a benefit. If the soil constitution is sandy, organic material supports the soil holding nutrients and moisture. If the soil is clay-based then the organic matter enables the CEC sites and allows it to break up the heavy clay composition and aids absorption of the available nutrients. Scientifically, this process is described in the following way:

Organic materials in soil increase the CEC through an increase in available negative charges. As such, organic matter build-up in soil usually positively impacts soil fertility. However, organic matter CEC is heavily impacted by soil acidity as acidity causes many organic compounds to release ions to the soil solution.

Organic matter can be added in a variety of ways to the soil. Direct adding in the form of compost, manure, leaves, grass clippings, seaweed, straw, hay, wood chips and sawdust are all excellent biologically active choices that will break down and offer a rich addition of organic matter to your soil.

Adding organic matter in the form of living cover crops is a fantastic plan. There are many cover crops that benefit the soil throughout the seasons. Some of them come up quickly in the warm seasons and provide tasty flowers for the welcoming of beneficial insects. In some cases, nitrogen nodule additions such as legumes, vetch and clovers increase nitrogen in soils. Fall rye and winter wheat provide a thick grassy cover adding a deep body of organic matter when tilled back into the soil in the spring, which can double the original amount of soil organics. Growing soil is a sustainable, highly beneficial organic practice!

On the west coast, it is considered to be advantageous to add leaves, seaweed and grass crop covers onto your land spaces to cover the ground; therefore, reducing nutrient leaching and soil decomposition from the strong winter rains and decreasing winter weed growth.

### Soils test

Soil tests are best done when the soil has warmed (generally late April) so that the soil is biologically active and your reading is therefore more accurate. The soil test is performed by digging six inches (6") deep and taking a small sample at that depth and putting it into a sterilized bag. It is suggested that you do several of these small test sites along a diagonal stretch of land across each field, and then combine all the samples together. Based on a soils survey or map, if there are different soil types, or perhaps have been grown on previously, it is suggested you consider having several tests sampled on the farm using this methodology.

Soils Labs in BC that can perform a soils analysis include:

- Exova – Surrey BC [www.exova.com](http://www.exova.com)
- MB Research and Development, Sidney, BC [www.mblabs.com](http://www.mblabs.com)
- JR Laboratories, Burnaby, BC 604 432-9311

### Natural factors and climate

Other key production factors include quantity of sun and shade, wind, fog, microclimates and temperatures; these are all important for crop success. Understanding the amount of heat and sunlight is critical for successful crop planning. Weather data can be helpful: Local historical meteorological data is available at [www.climate.weatheroffice.gc.ca/Welcome\\_e.html](http://www.climate.weatheroffice.gc.ca/Welcome_e.html).

Getting a sense of how the sun travels over your land in the various seasons will be very helpful when determining what you can or cannot grow in various spaces at different times of the year.

For example: One farmer had a fantastic growing area that, over several years, became so shady with the continual growth of the large conifers on one side of the farm that the sun rich amount of time available severely limited what crops could be grown and the associated growing season. Eventually, this nutrient rich space became limited to growth for a mere 2.5 months of the whole year. On that note, the kinds of trees alongside a growing space can also inhibit growth as in the case of cedars, which can grow quickly towards nutrient rich spaces taking up the available nutrients and stealing not only the nutrients but the ground area with their robust root systems. Cedar continually increases acidity in the soil as the root systems flourish and the rains distribute the natural acidity and tannins of this species, which may need to be managed with lime.

Other factors such as wind, fog and microclimates can hugely affect temperatures, quantity and quality of sunlight and potential issues such as sunburn, mold and fungus growth. For example: When living on the East Sooke Peninsula, there are many summer days where the fog cloud covers the land for the entire morning reducing the amount of light and warmth to such a degree that successful growing of hot crops such as beans, peppers and eggplants is not a viable use of land. One has to consider, "what crops will succeed in such conditions?"

## Water

Availability of water is vital to a successful operation. Some sites might have great natural water sources such as deep wells, ponds, streams and rivers. It is important to know the quality of the water being used for irrigation and its susceptibility to contamination from outside and onsite sources such as road way drain-off, neighbouring property activities or occurrences down or upstream, or on higher ground where natural run-off is possible.

The actual cost of water must also be considered to ensure long-term viability of a farming operation. If the well runs dry mid-season, what is the cost of water hauling and what kind of storage is available for it? What is the supportive infrastructure for water delivery? Is there a need for submersible pumps or pumps that run on gas or alternate sources of energy? What is the cost of these supportive systems? Is city water that is fully pressurized a more cost-effective method of irrigation? Is it available on your site? Can you get an agricultural rate?

## Vegetation management

### Spring clean-up at Newman Farm in Saanichton, BC



Photo courtesy of Ed Johnson

The mild annual temperatures and successful nature of invasive plants in this region must be considered when opening and maintaining new spaces. It is important to consider questions such as how much will invasive species affect the growth of desired plants over time? Will invasives steal nutrients, sun and moisture from cultivated plants? Will some of the vegetation be supportive and perhaps provide nutrient and aid in moisture retention?

Some of the frequently seen and experienced invasive plant species that have great agricultural effects in our area include the following:

- **Ivy (*Hedera helix*)** - Woody evergreen climbing or trailing shrub. Cut down and pull out as soon as possible as the bigger it gets, the stronger the root system becomes and the more stem fragments are available to make soil contact and continue plant production. It is beneficial to prune ivy growing up tree trunks often to avoid their strangling hold.
- **Gorse (*Ulex europaeus*)** - yellow flowered, spiny, evergreen, perennial shrub that line many of our local roadsides destroying and overtaking local habitat and decreasing land values. Keeping the growth of this weed down is vital to limiting its progressive growth pattern. In a perfect world, pulling it out from the root is the best way to keep it at bay, but its seeds can easily germinate in very small amounts of soil on rocky bluffs, giving it a huge growing advantage. At the very least, if we can cut it down at the base to avoid flowering and seed creation as often as possible, we can slow down its proliferation.

- **Creeping Buttercup (*Ranunculus repens*)** - Energetic perennial with fibrous and robust root systems that branch out like a strawberry setting runners for new plants; dark green leaves divided into three leaflets that are hairy and deeply lobed; small yellow flowers divided into five petals contain a toxin that results in pain and inflammation in grazing animals. This perennial grows rapidly, taking over cultivated spaces particularly in wet, clay and acidic soils making the whole root system at times difficult to pull. It is best to pull these plants with the whole root cluster as often as you see them to avoid a bigger task later.
- **Leafy Spurge (*Euphorbia esula*)** - perennial with creeping roots, spirally arranged leaves with greenish-yellow flowers. The plant contains a white milky latex that irritates skin often resulting in a burn-like reaction slowly eating away at the skin. By knowing this weed, which is easily pulled, and being sure to use gloves when eradicating it – is very important.
- **Wild Mustard (*Sinapis arvensis*)** - annual up to one metre tall; hairy underside of leaves; bright yellow flowers. If the plant is allowed to flourish, aphids and flea beetles attracted to it will also flourish; therefore, increasing the populations of these pests can destroy your main leafy crops.
- **Tansy Ragwort (*Senecio jacobaea*)** - yellow, stinky ray-shaped flowers arranged in a cluster; asymmetrical and irregular leaves on stalks up to 1.2 metres tall; biennial. This plant grows abundantly showing itself in full growth late summer. Tansy is toxic to livestock creating liver damage in the animals. Tansy is easy to pull up from the root.
- **Common Chickweed (*Stellaria media*)** - annual with branching robust-growing stems; small pointed or oval leaves; five petalled star-shaped white flowers. Although an annual, Chickweed grows all season long setting seed easily and quickly after flowering, and dropping up to 15,000 seeds/plant. Preventing this easy-to-pull plant from setting seed is vital to avoiding many hours spent weeding it over the years. Mulching planted areas will slow down Chickweed's growth and ability to overtake your main crops.
- **Field Bindweed (*Convolvulus arvensis*)** - perennial with creeping root systems that become stronger the larger the plant grows; arrow-shaped leaves; funnel-shaped white flowers. The tenacious roots can grow deeply into the soil and the seeds can remain viable for up to 50 years making this plant incredibly challenging to terminate. Pull out and dig up whenever you see Bindweed.
- **Lady's Thumb/Smart weed (*Polygonum persicaria*)** - annual with branched stems that grow both erect and in a spreading fashion; lance-shaped leaves; pink, small spike-like clusters atop the branch. Vigorously grows from its many seeds and is said to regrow when pulled if left on open soil (thus "smart" weed). Easy to pull and recommended to pull before flowering starts to avoid seed development.
- **Nightshade (*Solanum species*)** - Several varieties all known to be vigorous growers with abundant seed production capacity and poisonous berries. Climbing nightshade (*Solanum dulcamara*)- long branches trailing or climbing; lance-shaped leaves; bluish-purple flowers; immature green berries turning bright red. Hairy Nightshade (*Solanum sarrachoides*)- annual to 0.6 m tall; white flowers; dense covering of short hairs on leaves and stems; yellowish-brown berries. Black nightshade (*Solanum nigrum*)- annual to 0.9 m tall; white flowers; smooth leaves; black to dark purple berries. Pull out before flowering starts to avoid seed development and strong root systems.

**You can find great photos and more information on these and other local weeds by visiting the following website:** [www.weedsbc.ca](http://www.weedsbc.ca)

## Developing a farm production system

### Water

Water is the basis of life, thus knowing your water source intimately is the cornerstone for determining the viability of your farming operation. There are several water sources and systems that most of us lucky Canadians have at our calling from local city pressurized water, to natural sources such as wells, ponds, lakes, rivers and creeks. It is important that we know the quality of our water regardless of which sources we have and that we build effective water systems and storage facilities for it. Some key steps for developing a water system for your farm include:

- Perform water tests on all sources every three years or more frequently if you suspect changes in your water quality. Some water testing facilities include:

**MB Laboratories Ltd-** 250-656-1334, 2062 Henry Ave. West, Sidney, BC. [www.mblabs.com](http://www.mblabs.com)

**Evergro Canada Inc.-** soil, tissue and water testing, 250-381-2281, 630 Garbally Rd., Victoria, BC. [www.growercentral.com](http://www.growercentral.com)

**Agrichem Analytical-**250-538-1712, 409 Stewart Rd., Salt Spring Island, BC. [www.agrichem.ca](http://www.agrichem.ca)

- Know the price of your water and submit your Farm Status agricultural application so that you can receive a price reduction at an agricultural rate. These rates may be reflected when you reach a certain quantity of water usage.
- Contact: Capital Region District, 479 Island Hwy, Victoria, BC. Tel: 250-474-9600. [www.crd.bc.ca/water/](http://www.crd.bc.ca/water/)
- If you are using natural local sources, you may also want to enquire with the BC Ministry of Forests, Lands, and Natural Resource Operations regarding water stewardship. [www.env.gov.bc.ca/wsd/](http://www.env.gov.bc.ca/wsd/)
- Determine the water flow rate you are receiving from your sources. The easiest method of determining the flow of your water is to conduct a simple test gauging how much water you can produce in one minute from each of your water spouts. When you understand your water flow, you can decide the best crops to grow and what type of irrigation will most suit your crop's needs given the water pressure you have.
- As your farming operation evolves, you may need to look into various filtration options, pumps and storage capability for maximum water and cost efficiency.
- Remember, your water needs will be highly dependent on the natural factors of your location, the season, your soil type and its quantity of organic matter, the crops you grow, the mulches you use and the irrigation you choose.

### Irrigation

The world of irrigation is vast and ever-changing as new efficient systems are constantly being added to the possibilities to develop efficient and effective irrigation. These systems can include automated, manual or part-manual systems as there are a myriad of drip lines, micro-sprays and various feeder hoses and components available for irrigation systems.

Some thoughts to consider when planning an irrigation system:

- How versatile do you want your system to be? Will this system be changing frequently or is the farming area static with a long-term set up?
- What crops do you intend to grow? This answer will determine what watering systems are most effective based on plant needs, cost, space requirements, flexibility and usability of the system for future crops.
- What kind of water pressure and quantity is available to run the various systems?
- What level of efficiency is cost effective and vital to the bottom line of the business? For example, is the value of the system over time a positive net present value investment, or is manual watering more efficient in certain areas at certain times? Perhaps the whole system can be semi-automatic and have some manual features to support a more flexible approach to what can be grown or how much a crop needs to be water tended.

Important note to consider: Irrigation that is flexible and that can be changed and utilized in different ways for different crops over time seems to be the most viable type of investment. In addition, a basic system with manual shut-offs at each main bed or grouping of beds allows for ease of changes and in many cases leads to higher water efficiency. Some districts have more expensive water rates than others. Basic water conservation is important to understand—both from a sustainability outlook and a financial perspective.

## Installing the irrigation system at Newman Farm



Photo courtesy of Barbara Souther

Water monitoring by the use of tensiometers and other methods can ensure that appropriate water management is attained, leading to maximum crop production and good water conservation.

There are many irrigation suppliers in BC and the following is a list of local suppliers who have irrigation materials available and who are very willing and knowledgeable to help beginning farmers plan their irrigation systems.

### Irrigation suppliers

- **John Deere Landscapes:** [www.eljay.com/branches.html](http://www.eljay.com/branches.html) 2065A Keating Cross Road Saanichton, BC V8M 2A5
- **West Tech Irrigation Ltd:** [www.irrigation.ca/index.htm](http://www.irrigation.ca/index.htm) #5 - 625 Alpha St, Victoria BC, V8Z 1B5

### Irrigation Industry Association of BC

This association offers a wealth of information, including members who are irrigation designers, contractors and technicians and can help you set up an efficient and effective system for your operation. [www.irrigationbc.com](http://www.irrigationbc.com)

## Fencing

Issues with wild game including deer, rabbits and geese are becoming increasingly serious economic constraints for small organic farmers. Thus, fencing is vital for successful organic farm operations. The following gives an outline of some of the factors to consider when selecting a fencing solution:

- Heavy solid metal rabbit/poultry/deer fence- staggered fence hole sizing, necessity of height (generally 8’), needs heavy and durable support and corner posts and strong 8-9 gauge wire.
- Lightweight durable plastic deer fencing- easy set-up/take-down with wooden posts, T-posts or rebar for support. Approximately \$.75/linear foot.
- Natural barriers that limit creature access such as hedgerows, waterways and/or buildings can also be helpful to your operation.



Photos courtesy of Ed Johnson

## Hoop houses/Green houses

Your available space, the time you intend on using that space and your financial position will help determine what type of greenhouse structures would best suit your operation.

### *Hoop houses*

Wooden or PVC pipe framed hoop houses are an option to consider. These structures are relatively cost-effective, can be easily created and removed, and can be constructed to suit most spaces. They require basic materials including 2x4 lumber, plastic, rebar, PVC pipe and some basic hardware. The actual height and length are versatile but may be limited by dimensions of available rolls of plastic film. The actual spacing of the framing and height and width of the structure will determine the robustness of the structure in adverse weather conditions.

An average 12’/24’ will cost as little as \$300.00 using new materials and 6 mm UV protected plastic. The structure can last up to 10 years if properly maintained by washing down the plastic, maintaining the wood base and keeping the snow load off the plastic.



### Green houses

When considering your greenhouse purchase, you will need to determine how complex a structure you want and evaluate details such as straight or rounded side walls, roll up sides, air flow, sun and shade possibilities, and heating. The larger structures will generally be rooted into the ground via metal anchors so you want to be certain that you have reviewed your space thoroughly for the best possible site. Some farmers have found moveable greenhouses that they pull on tracks to be a successful practice and allow for nutrient management/crop rotations.

When considering placement of your greenhouse, be aware of the surrounding trees that will continue to grow over time, and therefore increase shade and make part of your greenhouse less usable for all crops. Sometimes this challenge can lead to a choice to use that space for crops that require more protection but less sun.

Some double walled greenhouses lend themselves to more options such as heating. This can undoubtedly increase the growing season at the expense of a heating bill or wood usage. To evaluate the decision, growers would need to determine whether the growing benefits outweigh the cost of heating.

In the end, a strong steel-framed greenhouse is a big purchase and getting the most effective and efficient use is an important economic decision to be made in the planning process. Hoop houses are cheap and easily built and can be a first step into expanding your growing window without putting out a large capital outlay in the early years of your farming operations.

There are many companies that have great greenhouse kits. Some of the most reputable companies include:

- Harnois Industries [www.harnois.com/en](http://www.harnois.com/en)
- B & W Greenhouse Construction [www.bwgreenhouse.com](http://www.bwgreenhouse.com)
- Sliptube Greenhouses & Shelter Inc. [www.sliptube.com](http://www.sliptube.com)
- CY Growers Supplies Ltd. [www.cygrowers.com](http://www.cygrowers.com)

There are many varieties of greenhouse from smaller companies, and handmade models that may suit your needs as well.

### Harvesting systems

After a lot of hard work planning, sowing, preparing the ground, planting, weeding, fertilizing, thinning, there finally comes a day to celebrate the harvest. There are many tools and systems to consider. The following sections provide details about the harvesting system.

### Crop processing – equipment

Here are some resources that you will need to prepare for the harvest season:

- **General harvesting equipment:** bins, baskets, scissors, knives, stainless steel sinks, bath tubs, wash stands, buckets, soap, vinegar, kneepads, forks and shovels.
- **Transportation:** getting the crop from the field to the processing station may require a combination of: wagons, wheelbarrows, vehicles, tractors, quads, trailers, etc.
- **Value-added products will require the acquisition of preserving equipment:** canners, dehydrators, drying room, stove, containers, jars, packaging, labels, plastic bags, freezer bags.

Some of the expenses you may need to set up include:

Barn, outbuildings, pantries, cellars, refrigerators or walk-in coolers, sheds, and shipping containers. You may need to build storage shelves or bins, which may be open or sealed to protect from infestation or rodents.

The key to deciding what storage systems you may need is determined by market timing and supply management. If maintaining cold storage gives you a two-week longer window to sell your crops, then timing harvests with markets can be more evenly managed by having cold storage available and will lead to less produce waste and will allow greater revenues to be attained.

Simple systems can be developed with little expense. However, large systems can cost tens of thousands of dollars and have very elaborate cooling misting systems (i.e., ozone) that maximize shelf life. The simple answer to the cold storage problem is the timing of large harvests and the related market opportunities for fresh commodities such as berries and other highly perishable crops, which have high value but may require well managed cold storage.

## Other storage systems

Besides cold storage, cool cellars to store crops such as onions, garlic, potatoes and squash are important and allow for large harvests to be marketed over a long period of time to maximize crop sales.

## Equipment storage

Most equipment will last a long time if cleaned, regularly serviced, kept dry and protected from the elements. Most larger farm equipment and farm supplies can be housed in barns, outbuildings and even inside greenhouses.

Harvesting and processing supplies such as scales, bags, ties, scissors, knives, bins and brushes are most beneficial being stored where they are readily available for the harvest days in the harvest shed. Some farmers create a make-shift structure for this purpose seasonally; however, when you build a sturdy structure out of direct sunlight for this purpose, you will save time and operate with more ease.

## Seed storage

Keeping your seeds in glass or plastic containers in dark and cool, but not moist, spaces or in a freezer will preserve their freshness and maintain the highest degree of germination.

Note that the allium family seeds such as leeks, onions and shallots significantly lose germination potential after one year.

## Transportation

The quickest way to transport food to market is the best way. Keeping the food out of direct sunlight reduces degradation, and covering crops minimizes the potential for bacteria.

Operations that have cold storage trucks that are fully refrigerated are undoubtedly the best option, but are unlikely to be affordable for most small-scale organic farm operations. In general, it is best to deliver in the cooler hours of the morning or evenings in covered trucks or vans. A basic white tarp can reflect the sun rays as can wooden sided or lighter shaded canopies or insulated vans.

When picking customers or markets for your farm products, it is important to consider their locations and how much time it will take to get to the delivery point in terms of both your own time economy, fuel consumption (for the vehicle) and also the integrity of the foodstuffs you are carrying.

Some helpful details to consider when evaluating your transportation system include the following:

- What are the transportation distances?
- Have you created a reliable time for deliveries that supports both you and the customer?
- What are the temperatures during each season that are best for delivery? This could affect delivery times if a vehicle with cold storage is not used.
- How do you get the produce to where you need it to go efficiently? If you have several stops, what is the most efficient delivery plan for your time and the types of produce you are carrying?
- What crops are fragile and must be in covered bins or need to be transported in refrigerated or covered trucks to avoid direct sun exposure? For example, potatoes and squash are hardy and do not need to be covered in transport.
- Try the following to maximize shelf life of plants: store in a water bath, mist, and avoid crops coming into contact with other crops thereby producing ethylene gasses that accelerate ripening.

The following is a list of items to help you prepare for transportation:

White tarps, coolers, stackable totes, holding net (for holding down the tarps in the back of the truck), a hand truck dolly, bungee cords, ratchet straps or other tie-downs.

Post harvesting procedures are important, as the manner by which newly harvested plants are handled will help maintain quality and product shelf-life. Washing the crop is often essential. If you do not take the proper steps, food can deteriorate prior to selling, which may cause wasted product. Here are some tips for the market:

- Avoid closing bags fully when transporting to sale as condensation can build up in the bags, which reduces the longevity of the food in transport and also under the table at market.
- At market, keep the food fresh by regularly misting it with cool water and move crops around the market table to keep the produce out of direct sunlight as the sun changes position throughout the day.



Photo courtesy of Ed Johnson

## Food health and safety – Hazard Analysis and Critical Control Points (HACCP)

Over recent years, there were several food safety crises publicized in the media. HACCP is an international science-based program that allows producers to provide safe foods in the marketing chain. One of the goals in protecting small organic agriculture is to ensure that good safety practices are being implemented on the farm and throughout the supply chain.

From the Canadian HACCP Manual, the basic purpose of HACCP is to accomplish the following:

Identify hazards, refer to agents in or conditions of food that can cause illness, injury or death of a person. These hazards fall into three categories: biological, chemical and physical.

- **Biological Hazards (B)** Biological hazards are those caused by micro-organisms (bacteria, virus, parasites and moulds) and are often associated with the failure of a process step (e.g., pathogen survival due to improper time/temperature applications during pasteurization)
- **Chemical Hazards (C)** Chemical hazards include those caused by substances/molecules that are naturally derived from plants or animals (e.g., poisonous mushrooms); are intentionally added to the food during growth or during food processing. These substances are considered safe at established levels but are dangerous above these levels (e.g., sodium nitrite, pesticides); contaminate the food accidentally (e.g., cleaning chemicals); cause some individuals to experience an immune system response (food allergens).
- **Physical hazards (P)** Physical hazards include substances not normally found in food that can cause physical injury to the person consuming the food (e.g., wood splinters, glass fragments, metal shavings, bone pieces).

There are programs available to help with developing a HACCP program for your farming operation and they can be reviewed at [www.inspection.gc.ca/food/fsap-haccp/program-manual/eng/1345821469459/1345821716482](http://www.inspection.gc.ca/food/fsap-haccp/program-manual/eng/1345821469459/1345821716482)

## Soil improvement – Fertility and tilth



Photo courtesy of Ed Johnson

### Cover crops

Cover crops are green crops grown to support the soil and crops in a variety of ways. Planting cover crops is a way of naturally building and growing soil. Most importantly, the purpose of planting a cover crop is to grow a vegetative crop that will protect the soil from the winter rains that leach nutrients, prevents weeds, and which adds organic matter to the soil. In some cases, it is a fantastic way of naturally mulching the soil that benefits the main crop with a growing under-story crop. For example, to plant a main crop of squash and then cover the remaining soil surface alongside the crop with Austrian Winter Peas, which has nitrogen nodules naturally growing on the roots, provides a great source of Nitrogen for the main crop. This method is a win-win where the main crop receives increased nutrients for growth while protecting against erosion, weed growth and moisture depletion.

The types of cover crops used depends on what type of soil exists, what has been planted and what one wants to plant in the future. Here are some basic cover crops to consider:

- **Organic matter** - fall rye, winter wheat, oats
- **Nitrogen building** - Austrian winter peas, vetch, clovers
- **Beneficial pollinators** - Calendula, Buckwheat

### Crop rotation

Crop rotation allows for the consistency of variety in a biologically active environment.

A three to four year crop rotation plan supports nutrient and soil development that maintains the vitality of the soil, reduces weeds, pests and potential soil diseases. It is important to avoid planting the same genus of plants in the same soil as they will take up the same nutrients and be affected by the same pests and problems. The mere fact that different crops utilize different nutrients and have different planting and weeding needs can avoid a host of farming challenges. There are a variety of crop rotation ideas and plans that can be very successful and are worth reviewing. Elliot Coleman in his book “*The New Organic Grower*” provides several great examples.

Note that a successful farm plan will always include a crop rotation map. Year after year, the farmer can add to the plan documenting the various growing spaces, the crops planted, details about the annual crops, fertilizers and cover crops used and eventually have a fantastic document to build and learn from. This living document will be more helpful in the futuristic planning than one could have imagined at the onset.

### Composting

What kind of compost is being created and used for fertility and soil building?

There are many great guides and methods for making nutrient dense compost for your operation, but consider a 30:1 Carbon: Nitrogen ratio when building your compost piles. Consider your Nitrogen as the greens: food waste, green weeds (ultimately without seeds), grass clippings, green leaves and seaweed. Carbons are the browns: wood chips, sawdust, brown grass or leaves, straw, newspaper and soil. Each time you add a 2-4" layer of greens, cover it up with at least as much in browns. When creating these layers, think of each layer as extra nutrient adding to the complex goodness of your compost. Maintain air flow by using twigs and thick material such as corn and brassica stalks at the base of your compost and every foot or so throughout. Be sure to water the pile occasionally to support decomposition. Cover your pile in the spring and summer to encourage heat and therefore faster decomposition and then cover it in the winter months so the abundant winter rains will not leach your nutrients away. Be sure to take temperature readings regularly from the center of the compost pile to check that temperatures of 140° for 3—5 days are being reached to ensure that weed seeds, fungus and potential soil diseases are being destroyed.

### Mulching

Mulching is a fantastic practice to avoid weeding, to reduce evaporation and to provide organic nutrients to the soil. Some great mulches are leaves, straw, hay, woodchips, seaweed, grass clippings and living crop covers.

When growing in wet woodland areas more heavily infested with slugs, avoid adding mulch around the crops early in the spring when slugs are most intense. Slugs will find the mulch a comfortable home setting right at the base of your new plants and devastate you when you turn your back. The main exception to this has been when using seaweed and to some degree sawdust, as these will act as a deterrents because slugs seem to avoid moving over scratchy surfaces.

### Soil fertility

As a small-scale organic producer, maintaining healthy and fertile soils is an art as well as a science. Maintaining soil health takes planning and proper timing to be able to meet soil building objectives. In addition to composting and growing cover crops, some of the basic nutrient needs and organic fertilizers for good soil health are outlined as follows:

#### Organic fertilizers, liming, micro nutrients for specific crops.

- **Nitrogen (N)**- alfalfa meal/pellets, compost, manure, ocar
- **Phosphorous (P)**- bone meal, rock phosphate
- **Potassium (K)**- greensand, seaweed
- **Lime**- dolopril, calpril, dolomite lime

### Fertigation

Using fertilizers that are injected into a drip or spray irrigation system is an effective and labour saving way to maintain nutrients through the growing season. There are many organic liquid fertilizers that can be applied to achieve the nutrient requirements needed. There are many BC companies providing these products that use fish processing wastes for the base ingredient for their organic blends.

## Assessing fertility

Sixteen nutrients are essential for plant growth and reproduction. They are **carbon, hydrogen, oxygen, nitrogen, phosphorus, potassium, sulfur, calcium, magnesium, iron, boron, manganese, copper, zinc, molybdenum, and chlorine**. Nearly all plant nutrients are taken up in ionic forms from the soil solution as cations or as anions. Plants release bicarbonate and hydroxyl (OH<sup>-</sup>) anions or hydrogen cations from their roots in an effort to cause nutrient ions to be freed from sequestration on colloids and so forced into the soil solution where they can be picked up. Nitrogen is available in soil organic material but is unusable by plants until it is made available by that material's decomposition by micro-organisms into cation or anion forms. [www.en.wikipedia.org/wiki/Soil](http://www.en.wikipedia.org/wiki/Soil)

What do the weeds that naturally grow in the area indicate about the pH and nutrients of the soil? All weeds will provide you with information about the kind of soil and what is happening in your soil from a nutrient stand point.

For a list of soil testing services, please refer to Appendix A.

## Tillage/spading

How often and how deep does one till the soil? Where is it better to spade instead of till? What crops, planting methods, or mulches can be incorporated to avoid excessive tilling? What methods of growing and variety of crops do not require tilling prior to planting? Many local Greater Victoria farmers have transitioned from using rototilling to a soil spader which reduces compaction deeper in the soil profile; thus, encouraging drainage, tilth and better crop root penetration.

## Drainage

Drainage issues require a watchful eye and a questioning mind. Consider the following: What type of soil are you working with? What type of crops do you want to grow? Do the greenhouses and other structures have good drainage or will the drainage affect nearby crops, and if so, for how long?

Permanent drains can be very useful for crop selection and planning; however, at times, seasonal drains can be most helpful and can be created simply, albeit laboriously, to support water movement during the wet season.

*Case example: A greenhouse was built on what seemed to be well-drained soil and it was not until the winter rains arrived that the farmer noticed the back third of the greenhouse was saturated and flowing with water, complete with soil and nutrients from the space. This problem needed quick amending with a long term solution. The farmer chose to dig two internal two foot deep greenhouse trenches, then added gravel, landscape fabric, drain tile and a final covering of gravel. This is considered to be the most effective method of creating proper drainage. These covered trenches completely removed the excess water from the greenhouse space. The additional problem that came soon after was that the lack of drainage from the initial greenhouse construction led to excess water gathering from this huge greenhouse roof and the newly dug trenches, which flowed and saturated the land below. Being slightly terraced, the land below did not lend itself to easily constructed permanent drainage and after much consideration, the farmer discovered that taking time each fall (when the ground was still dry), to hand-dig two narrow 10" deep trenches that joined from the internal trenches was enough to move the water effectively out of the space during the wet winter season and resolve the problem.*

## Crop planning

As with most things, taking the time to plan your crops will enhance your probability of successful production. Good planning each year and good record keeping can provide you with a "crop history" that you can annually review to aid your production decisions. Learning from your mistakes and what were keys to success are all essential pieces as part of the learning curve in agriculture. There are many aspects to consider when planning your crop such as: the amount of space you have to use, the temperature/heat units annually for your space, what you want to grow and eat, what you have grown before in that soil, how much labour you have available to work the crops, what irrigation needs your crops will require, how long the crop will be in the ground, and where you will store your finished crop. However, the most important question is: **who are you going to sell the crop to?** When you have a buyer, you can estimate a realistic income projection for the season and plan your crops accordingly to meet the needs of your customers.

Knowing some average yields/row feet is a most helpful tool to support solid planning. The following table outlines a few common vegetables and their production estimates and planting densities.

**Table 1. Planting yields per 100' and planting densities for various vegetables**

Vegetable	Average crop yields/100' row	Recommended planting/ person for subsistence
Bush beans	120 lbs.	20-30 ft.
Pole beans	150 lbs.	20-25 ft.
Beets	100 lbs.	10-20 ft.
Broccoli	75 lbs.	10-15 plants
Cabbage	150 lbs.	10-20 plants
Carrots	100 lbs.	25-30 ft.
Cauliflower	100 lbs.	10-15 plants
Corn	10 dozen ears	50-100 ft.
Cucumbers	120 lbs.	15-25 ft.
Kale	75 lbs.	10-20 ft.
Leeks	150 leeks	10 ft.
Lettuce- head	80 heads	10-15 plants
Onions-bulb	80 lbs.	50-100 ft.
Peas-shelled	15 lbs.	50-100 ft.
Peppers	50 lbs.	5-10 plants
Potatoes	100 lbs.	30-50 ft.
Pumpkins	200 lbs.	5-10 ft.
Radishes	100 bunches	15-25 ft.
Spinach	30 lbs.	30-50 ft.
Squash-summer	150 lbs.	5-10 ft.
Squash-winter	125 lbs.	25-30 ft.
Tomatoes	100 lbs.	10-20 plants
Watermelon	50 fruits	10-15 ft.



Photo courtesy of Robin Tunncliffe

**Table 2. The 20 top crops: Planting and harvesting timelines**

Vegetable	When to sow	When to transplant	When to eat
Bush beans	mid-May	N/A	July-September
Beets	mid-April	N/A	July-over winter
Broccoli	March-May	April-July	July-overwinter
Cabbage	March- May	April-June	July-overwinter
Cauliflower	March-May	April-June	July-October
Carrots	March-July	N/A	June-overwinter
Corn	mid-May	N/A	August
Cucumbers	April	May	August-October
Kale	Feb-July		May-overwinter
Leeks	Feb-April	May-July	August-overwinter
Lettuce-head	March-Sept	All year	All year
Onions-bulb	Feb-March	April-May	July-September
Peas	Feb-August		June-September
Peppers	March	late May	August-October
Potatoes	March-June	N/A	July-October
Pumpkins	April	May	September-October
Radishes	Feb-August	N/A	March-November
Spinach	Feb-August	April-September	April-November
Squash-summer	April	May	July-September
Squash-winter	April	May	September-overwinter
Tomatoes	Feb-April	April-May	July-October
Watermelon	April	May	August-September



To assist you in developing your crop production plan, the local West Coast Seed catalogue has a fantastic table for the full rundown of when to plant in our area. Several other seed sources are provided in Appendix A.

Another invaluable resource for the learning small-scale organic farmer that provides a full range of information from planting dates to expected yields and planting guidelines is *"The New Vegetable and Herb Expert"* by Dr. D.G. Hessayon.

There are many things to consider when deciding what to plant on your land. Some of these considerations are as follows:

- How many hours per week are necessary to successfully seed, harvest, weed and water your chosen crops? If you are at the beginning of your farming career, be sure to document your time doing such diligent tasks for future reference and understand what crops are best for your operation.
- What is the method of sowing seed that is most effective for each farmer and for the space necessary to plant? If planting into plug trays, full soil trays, pots or even directly into the soil, one has to consider if hand sowing versus mechanized seeders is more effective? Perhaps certain kinds of seeders will also be easier to use for different crops.
- It is also important to decide what planting methods are best for different crops, including how much time the crops will need in the germination space, acclimatizing to the outdoors, and eventually being transplanted to their final bed. All crops have different planting dates, sometimes several planting dates and many harvesting times.
- What follow-up activities such as thinning, weeding and mulching are necessary and for what duration?
- It is helpful to consider potential issues with cultivation, pests and staged harvesting prior to planting so that you have some successful problem solving plans should they be necessary. Such planning will reduce the possible stress that can accompany these challenges.

### Seeds

No comprehensive discussion about crop planning can forget to mention the importance of using quality seeds and wise seed purchasing for your operation's success. Seeing the fruit of your labours from seeds to plants that are eventually produced and made available for your dinner table, or for sale, is quite delightful and enhances one's seed enthusiasm. There are many seed companies and varieties of seed available and each year, with many new seed varieties annually that can become an experiment or a new crop quest. Purchasing seed from local producers is always a great choice as these seeds are best suited to the local climate and it is easy to communicate with these smaller producers, which allows you to receive support should you require it. In addition, when you begin to need larger quantities of seed, it is fantastic to look into the seed catalogues and be able to purchase larger quantities at better prices. It is important to note that the seed packet price is always the highest and when you look through the catalogues you will notice other purchase categories for larger amounts of seed which will save you money in the long run.

Most seed with the exception of onions will keep up to three years if they are stored in dry and cool areas. Some farmers have taken up the practice of saving their seeds in glass or plastic containers in freezers to maintain the high germination count longer.

Some reputable companies to consider are listed in Appendix A.

### Production economics

When developing a farm business plan, one of the key elements for developing a farm enterprise budget is developing an estimate for yields and prices that will allow for projecting total revenues, costs and gross margins. Table 3 outlines some estimated revenues and costs for Vancouver Island organic production.

**Table 3. Production yield, revenue and cost for a five acre organic vegetable operation on Vancouver Island**

Vegetable Field Crops	Sq Ft	Yield/SqFt	Production			Revenue less direct costs	
			Revenue	Cost/Sq Ft	Direct Costs		Gross Margin
Brussel Sprouts	8,000	0.2636	\$ 2,108.80	0.14	\$ 1,128.00	0.12	\$ 980.80
Beans	8,000	0.1982	\$ 1,585.60	0.18	\$ 1,472.00	0.01	\$ 113.60
Beets	8,000	0.3852	\$ 3,081.60	0.18	\$ 1,464.00	0.20	\$ 1,617.60
Broccoli	8,000	0.2100	\$ 1,680.00	0.13	\$ 1,024.00	0.08	\$ 656.00
Cabbage	8,000	0.5090	\$ 4,072.00	0.15	\$ 1,192.00	0.36	\$ 2,880.00
Carrots	8,000	0.4788	\$ 3,830.40	0.34	\$ 2,680.00	0.14	\$ 1,150.40
Cauliflower	8,000	0.1936	\$ 1,548.80	0.12	\$ 928.00	0.08	\$ 620.80
Corn	8,000	0.1054	\$ 843.20	0.09	\$ 736.00	0.01	\$ 107.20
Cucumbers	8,000	0.2652	\$ 2,121.60	0.10	\$ 792.00	0.17	\$ 1,329.60
Garlic	8,000	0.2624	\$ 2,099.20	0.28	\$ 2,248.00	-0.0186	-\$ 148.80
Lettuce	8,000	0.4604	\$ 3,683.20	0.14	\$ 1,080.00	0.33	\$ 2,603.20
Onions	8,000	0.7377	\$ 5,901.60	0.15	\$ 1,232.00	0.58	\$ 4,669.60
Peas	8,000	0.4824	\$ 3,859.20	0.28	\$ 2,240.00	0.20	\$ 1,619.20
Peppers	8,000	0.5017	\$ 4,013.60	0.18	\$ 1,416.00	0.32	\$ 2,597.60
Potatoes	8,000	0.3124	\$ 2,499.20	0.16	\$ 1,248.00	0.16	\$ 1,251.20
Pumpkin	8,000	0.2575	\$ 2,060.00	0.09	\$ 720.00	0.17	\$ 1,340.00
Rhubarb	8,000	0.4421	\$ 3,536.80	0.13	\$ 1,072.00	0.31	\$ 2,464.80
Spinach	8,000	0.5434	\$ 4,347.20	0.33	\$ 2,624.00	0.22	\$ 1,723.20
Squash	8,000	0.4388	\$ 3,510.40	0.09	\$ 736.00	0.35	\$ 2,774.40
Tomatoes	8,000	0.5954	\$ 4,763.20	0.23	\$ 1,824.00	0.37	\$ 2,939.20
Turnips/Rutabaga	8,000	0.9694	\$ 7,755.20	0.21	\$ 1,680.00	0.76	\$ 6,075.20
Zucchini	8,000	0.1675	\$ 1,340.00	0.10	\$ 792.00	0.07	\$ 548.00
Greenhouse	2,500	6.8871	\$ 17,217.75	2.92	\$ 7,297.50	3.97	\$ 9,920.25
Cucumbers							
Greenhouse	2,500	7.15	\$ 17,874.00	2.996	\$ 7,490.00	4.153	\$ 10,384.00
Tomatoes							
<b>TOTAL FOR ALL CROPS</b>	<b>181,000</b>		<b>\$ 105,332.55</b>		<b>\$ 45,115.50</b>	<b>13</b>	<b>\$ 60,217.05</b>

Source: BC Ministry of Agriculture (2008)  
[www.agf.gov.bc.ca/busmgmt/budgets/budget\\_pdf/small\\_scale/2008mixed%20veg.pdf](http://www.agf.gov.bc.ca/busmgmt/budgets/budget_pdf/small_scale/2008mixed%20veg.pdf)

### Setting up the books

You will need to talk with tax and bookkeeping professionals to know how to set up your system and know how to assist you with your planning and execution of your financial management. Having the proper chart of accounts will make your bookkeeper more effective than just meeting the tax reporting requirements and will allow you to manage your operation with greater decision making information.

### Management accounting

Management accounting, sometimes known as cost accounting, is a useful management tool that allows a producer to know the breakdown of costs, which is useful for making management decisions. An enterprise budget (crop budget) typically includes direct and indirect variable costs and revenues to generate a gross margin for each crop. These enterprise budgets then roll into a consolidated budget that includes both fixed and variable costs for the entire operation.

## Financial management

The key to successful financial management is to have a complete system in place for measuring financial performance. These measures include

**Income statement** – annual sales less expenses, depreciation and amortization, taxes.

**Balance sheet** – assets and liabilities; the difference between these is the equity, or net worth of the operation.

**Statement of cash flow** – This statement identifies the sources and uses of cash in the operation and allows for farmers to view their liquidity and ability to meet current financial obligations.

## Financial ratios

If you are going to apply for a bank loan, the bank will need to evaluate financial ratios to make a credit decision. For young, new and small-scale organic farmers, this may be challenging, but after three years of production, you will have the financial information necessary that will allow you to approach a commercial lender. For measuring performance, the following ratios are the ones that bankers keep an eye on.

- **Current ratio** = current assets/current liabilities
- **Quick ratio** = current assets – inventory/current liabilities
- **Debt ratio** = total debt/total assets
- **Debt/equity ratio** = total debt/total equity
- **Debt coverage ratio** = total debt payments /earnings before taxes, and interest
- **Gross margin** = total sales – cost of goods sold/sales
- **Return on assets** = total net income/assets
- **Return on equity** = total net income/shareholders' equity

Many farmers use simple MS–Office Excel spreadsheets; however, while this method is simple, it may be difficult to get the information you want for effective decision-making. Today, there are professional accounting software packages for agriculture on the market such as AccPac or Farm Credit Canada's "Ag Expert Analyst farm accounting software", or good general accounting packages like QuickBooks and Sage (formerly Simply Accounting). Taking the time to get a sound financial management system in place will be key to successful growth monitoring and will allow you to make good financial decisions for expanding operations.

## Human resource management

Managing human resources requires a very special skill set. The person that takes on the leadership human resource management (HRM) position needs to have time, organization, and good communication skills. That person also needs to be compassionate and patient. Many farmers lack the required skills for being a good human resources manager. Before the season becomes too busy, it is important to either find a person to take this job or to decide early on what the farm operation needs in order to succeed and what is expected of the various people on the farm. Clarity in this area is vital for the farm to properly function.

Farming runs at a different pace than most businesses and people come to the farm for various reasons. It is rare that a person comes to the farm only to work as a labourer. It is often the case that people want to really learn the "life of farming" and desire to spend much of their time on the farm learning about the details of daily life. Some people show up as volunteers or apprentices. They prefer to forgo a wage to learn how to farm in a "live school." They want to live and eat on the farm so they can wake up with the roosters and set their personal rhythm to that of the land. In these cases, agreements are drawn up that support such a learning environment to encourage clear communication, fair trade for time and skill and general commitment between all parties. This "live school" fits what many people want to experience, but currently these apprentice programs are being challenged by the Labour Relations Board. All of the teaching, food, accommodations, stipends and extras provided for the apprentice is unrecognized by typical employment standard models.

## **Apprentices**

In terms of getting the right apprentices onto your farm, one has to consider many details. First, the apprentices have to be on your farm for the time period you need their labour. As the farmer, you will take plenty of time teaching farming skills, and the reward of your teachings will take time to appear as the apprentices develop and become more capable. The farmer must be sure that their valuable time spent teaching will be returned in skill development and appreciation by the students.

Since the apprentices generally stay for the full farm season, the farmer wants to make sound choices about apprentices. Having a clear and informative introduction to your farm with your own set of specific questions guided by your true needs will be vital to having successful interviews. These interviews can be conducted via email questionnaires and followed up by phone or Skype calls. It is always important to check references and very helpful to have a volunteer day first with your proposed apprentices. Most farms take the additional step of having a grace period of a few weeks so that all the parties can settle in to the farming groove and be sure that the set-up will be fitting and hospitable for a season's worth of energy and enthusiasm for all.

Accommodations for apprentices are important to maintaining long-term apprentice comfort. If the apprentices require private space in their home at the end of the day, then it is important that the apprentices have decent cooking, bathroom, computer and living facilities. Each farm's arrangements will significantly differ from rustic trailers, tents, vans, cabins to solid four-season shelters. Whatever your arrangement, it is very important that the apprentices are absolutely clear and secure with what you are providing. Safe and secure accommodations can make or break an apprentice-farmer relationship.

Apprentices and employees are most likely to have repetitive farm labour tasks that they will be able to successfully manage. Depending on the operation and the farm's location, these facts will determine what hours are reasonable to attract labourers. Some farmers have found that five hour harvest days work best to keep the employees productive and engaged for the morning hours and finished when the heat makes harvesting less efficient.

## **Volunteers**

Many of the volunteers that come onto the farm are members of the community who desire to be closer to their food systems and are willing to trade their time for the wonderful locally grown food. Some volunteers are travelling folks who want to experience a country in a cost-effective way using their time and energy in trade for food and lodging. Sometimes the latter group have a great interest in farming and living close to the land, and sometimes they do not, and may just want a cheap vacation. Therefore, knowing whether the volunteer is willing to pitch in and take a time consuming task off the farmer's "to-do" list, or whether they may create more work for the farmer, is contingent on the volunteers' attitudes towards the work. Understanding this dynamic is important for the farmer, and each volunteer situation will need to be considered from a balanced approach to determine whether volunteers are contributing or taking away from your farm's success. Organizations such as World Wide Opportunities on Organic Farms (WWOOFers—[www.wwof.org](http://www.wwof.org)) can provide an excellent opportunity to link farmers with people who are willing to come and work on your farm. Many WWOOFers are willing and able throughout the year to come and work, which may be a part of your overall volunteer strategy for engaging the community and providing support for farm operations.

# Marketing

One of the greatest challenges facing most farmers is not growing incredible food but knowing how to sell the food to available markets. Every business needs to know who their target market is, what their customers want, what they can afford and how to get their product or service to market efficiently at a price that ultimately supports the business's profit and viability.

How do you start your marketing? There are a variety of starting points to establish your successful marketing rhythm. Some of the keys to marketing success include the following:

## Know what you want to sell

When you know your product or service, it is much easier to decide to whom and when you want to sell your products. To establish the products that are best for you to sell, you have to decide what will make you special and differentiate you from your competitors. What do you like to grow given your environmental circumstances? For example, there is no financial benefit to growing peppers when you live in a climate that is not warm enough to grow them. Once you have determined what you like to grow and whether it is attainable, it is then vital to understand what those crops are actually worth. Learning how to do a cost analysis of your crops and products is important to understanding whether you can afford to grow the crop after taking into account the basics of seed, inputs, time and energy. However, the minimal profit margin on foodstuffs make learning what products are worth growing fairly easy as most selling venues such as grocery stores, box programs and farmer's food markets will have prices within a 20% range—most of the time. There will always be additional factors to consider such as the season, accessibility to the crop, access to markets, level of difficulty you may have had growing the crop and if you are paying additional costs to be a certified organic grower. In addition, if you are selling baby crops or those specialty crops that are in high demand, these may have higher seeds costs. Collectively, all these factors are important when considering what to produce.

A current price range of most crops is important to know; although, the factors stated above may sway your particular products to the lower or higher end prices.

**Table 4. 2013 produce price list**

Product	Volume	Price Range	Volume lb.
Apples	lb.	\$1.50-3.50	
Artichokes	lb.	\$2.00-3.00	
Arugula	110 g	\$3.00	\$8.00-12.00
Asparagus	lb.	\$6.00-8.00	
Basil	50 g	\$2.00-2.50	\$16.00-24.00
Beans	lb.	\$4.00-6.00	
Beets	lb.	\$2.50-4.00	
Blackberries	pint	\$3.50-5.00	
Braising Greens	lb.	\$6.00-8.00	
Brassica Shoots	lb.	\$5.00-8.00	
Broccoli	lb.	\$3.50-5.00	
Brussel Sprouts	lb.	\$3.50-4.50	
Cabbage	lb.	\$2.00-4.00	
Carrots	lb.	\$3.00-5.00	
Carrots-baby	lb.	\$4.00-8.00	

Farmlands Trust

Product	Volume	Price Range	Volume lb.
Cauliflower	lb.	\$4.00-5.00	
Celeriac	lb.	\$2.75-4.00	
Collards	lb.	\$4.00-6.00	
Corn	ea.	\$1.00-1.50	
Cucumbers-large	lb.	\$2.00-3.00	
Cucumbers-small	lb.	\$3.00-4.00	
Edible Flowers	pce	\$0.20	bunch \$2.00-4.00
Eggplant	lb.	\$4.00-6.00	
Eggs	dozen	\$4.50-6.00	
Escarole	head	\$2.50-4.00	
Fava Beans	lb.	\$3.00-4.00	
Fennel	bulb	\$2.25-2.50	
Garlic	ea.	\$1.50-3.50	\$13.00
Garlic Scapes	lb.	\$4.50-6.00	
Green Onions	100g	\$1.50-2.50	\$6.00-10.00
Herbs	bunch-100g	\$3.00	\$12.00-20.00
Kale	1/2 lb. bunch	\$2.00-3.00	
Leeks	lb.	\$3.00-4.00	
Lettuce	head	\$2.50-4.00	
Melons	lb.	\$2.50-3.00	
Onions	lb.	\$1.50-4.00	
Parsnips	lb.	\$3.00-5.00	
Pears	lb.	\$1.75-2.50	
Peas	lb.	\$5.00-7.00	
Peppers-hot	lb.	\$9.00-12.00	
Peppers-sweet	lb.	\$5.00-8.00	
Plums	lb.	\$2.00-3.50	
Potatoes	lb.	\$1.50-5.00	
Pumpkins	lb.	\$1.50-2.00	
Radish	1/2 lb. bunch	\$2.50-3.00	\$3.00-5.00
Raspberries	pint	\$5.00-6.00	
Rhubarb	lb.	\$2.50-3.50	
Salad Mix	110 g	\$3.50	10.00-15.00
Shallots	lb.	\$6.50-12.00	

Product	Volume	Price Range	Volume lb.
Sorel	lb.	\$4.00-5.50	
Spinach	110g	\$3.00	\$10.00-12.00
Squash-summer baby	lb.	\$5.00-7.00	
Squash-summer med	lb.	\$2.50-4.00	
Squash-summer large	lb.	\$1.50-2.50	
Squash-winter	lb.	\$2.00-3.00	
Strawberries	pint	\$5.00	
Swiss Chard	1/2 lb. bunch	\$2.00-3.00	
Tomatillos	lb.	\$3.00-4.00	
Tomatoes	lb.	\$3.00-4.50	
Tomatoes-cherry	pint	\$3.50-5.00	
Turnips	lb.	\$3.00-5.00	

## Know your market

The strategies you choose to use when selling and marketing your product will be varied. First, you must know your target market. Who are your customers? Where do they live? Can they afford my product or service? How can I get my product to them? Many of these questions can be answered by paying attention to the trends in your community evidenced by conversations, local papers, bulletins, workshops and even, to some degree, what you see or do not see on your local grocers' shelves. One of the easiest and fastest ways to get a great collection of information about your target market is to directly survey markets. Go to people with simple questions that lead to specific answers that you need to understand what these people already do, want, believe in, can afford and are willing to try. Remember, at this point, that if you are interested in selling to restaurants, grocery stores or a box program, these should be some of the groups you survey. In this case, you may need to create additional surveys that are customized to those types of operations. A good basic survey has 10 questions on a single sheet that you will fill in with interviewees, ensuring that you take less than 10 minutes of their time. It is said that a minimum of 50 surveys will provide you with a great sample of data that can be used to help you succeed and give your new business, products and services the best chance to become successful.

## Know your competition

A practical way to get an understanding about the competition is to visit farmer's markets, grocery stores and restaurants, and spend time talking with other producers and buyers about their products, services and buyer's needs. Take notes about the prices and sizes of everything. If you note that your competition is missing a product or a size that you had intended to sell, consider why the competition does not sell that product. Understanding the competition and evaluating the niches will allow you to develop the market intelligence that will allow you to differentiate your products and may save you the costly mistake of producing a crop that you love but one that customers are not interested in buying. When you prepare to go out and conduct your market research, seek out other small-scale organic farmers for gaining information. Most will be willing to share what they have learned as these growers typically are one of the kindest groups of entrepreneurs and they are usually willing to share their advice, their stories of trials and tribulations and overall lessons learned.

## Markets and niches

**There are many tips for successfully working with marketing niches. It is guaranteed that each farmer you meet will have more to add to your budding list of good ideas that will help you reach these niches.**

## Farmers markets

Review all the local farmer's markets to decide which one will best suit your personality, what you sell and how you want to sell. Each market will have a different set of guidelines and vision statements that will help you decide where you feel most aligned. Some markets are larger and perhaps more established, which means more rules and higher market fees, but if you enjoy the market energy and sell more products there, the higher fee may be compensated. Some markets may be situated in your community and support more of your neighbors, which may be an important enough reason for you to sell there, even if the grand total sales for the day are less. New farmer's markets are starting up everywhere, and perhaps being a new small-scale organic farmer that is helping to get a new market going is a reason that resonates with you to sell there. For a current list of farmers markets in the Greater Victoria region, visit [www.birdsofafaether.ca/events/victoria-farmers-markets](http://www.birdsofafaether.ca/events/victoria-farmers-markets).

## Box programs

Box programs are a fantastic way to work with other farmers to provide many people with a collection of food items on a regular basis. Some farms have a plentiful supply of a variety of products, but often when farmers work together on box programs the arrangement of food goodies in the weekly box is more diverse and consistent. If you can provide a few items for a box program, you can avoid the stress of trying to do it all yourself.

## Restaurants

Many restaurants are interested in purchasing good quality local organic products. All restaurants have different food mandates and budgets, but if you work with a variety of restaurants, you can tailor to market needs. For example, a large hotel chain can likely afford more products but they may also want a larger quantity of certain crops. A smaller "mom and pop" operation will have a tighter budget but will likely prefer a smaller amount of more variety.

It is important to establish a relationship with your local restaurants. Good communications and consistency go a long way when working with a restaurant. It is highly beneficial to discuss what foodstuffs they may want and what quantity (at different times in their year) while in the planning stages of your operation. At this time, it is vital to determine a solid schedule when you will make contact, when orders must be made, when you will deliver and how you will get paid. Maintaining high quality customer service will also support the flow of understanding of how the chefs desire to receive their products and what you as their farmer can provide. In most cases, this will also support their understanding of your pricing. For example, washing potatoes, cutting down carrot greens, discarding wilted or discoloured radish tops are all extra clean up tasks that take time but on the flip side provide compost for your farm and stay out of the restaurant garbage while providing a cleaner and easier crop for the chef to work with. This service is a selling feature that allows you some room to increase your crop price and perhaps strengthen your selling position with some clients.

Another benefit to having great relations and communications with your restaurant clients is the potential for aftermarket sales that you can establish. Bringing food to a farmer's market and having some leftovers is common; selling after-market food to your restaurant clients is a good way to enhance sales and minimize food waste.

## Value-added Christmas markets

Christmas markets can be a great way to bring in sales in the off-season. Most farmers will produce enough food so that they can preserve some of it for the winter sales. People are always delighted to receive and purchase the preserved freshness of the prime season in the way of jams, jellies, vinegars, chutneys, sauces, pickles, pestos, canned and dehydrated vegetables and fruits or smoked meats. Competitively price your products. Account for all the added costs of jars, pectin, heat energy to run the stove and dehydrators, and most importantly, track your time. When pricing your value-added products, estimate the original food price, the time and additional costs to produce the product to sell your goods that are fair value to the consumer, but are honourable to you as the farmer. It is important to also note that all value-added products that are preserved should also be sent in for Capital Regional District (CRD) testing to be sure they are safe. These products need to be clearly labelled with all ingredients, starting with the largest to the least percentage.



## Ideas - stories, recipes, novelties

People are energetically drawn to you: your personal farming history, farming stories and advice, recipes, books and courses will benefit your customers. When you create a following for your farm and establish personal connections with customers, many of your sales and sales experiments have more potential to reward you with revenues because people come to trust and love you and enjoy the time shopping and talking with you, the farmer.

## Wholesale sales

If you are growing large quantities of some products, you may be interested in selling wholesale to some of the larger grocery stores. We are very fortunate to have grocery store chains interested in supporting their local small-scale organic farmers. Talking to the market food managers can provide great ideas and stimulus for crop growing choices. Wholesale outlets will pay less for your products than the other venues; however, wholesale markets may be essential to absorb your crop production at certain times, and therefore having relationships with these buyers may be beneficial for your marketing plan.

## Roadside sales

Having a road side stand is a wonderful way of generating sales and supporting your local community. It is helpful to consider if your community supports this type of local selling and if they have any specific standards for what your stand can look like. Some communities or rural roads may not have the traffic necessary to generate a successful stand and there may be safety concerns to consider. Look to other local stand providers for advice and guidance on what does sell and work in your area.

# Organic certification

The certification process is not necessary for all growers but it is most helpful for many as they learn the ropes of organizing and aligning their farm practices with the best organic methods of growing. In many cases, certification will support the expansion of their marketing strategy. Applying for Certified Organic status does not need to be a daunting task. The learning process of keeping solid farming records for seeding, inputs, mapping, farm and bed dimensions, crop rotation, composting, crop audits, sales audits, water and soil tests and general farm information or choices that may reflect annual changes, will support a long term understanding of your operation. The knowledge base gained by organic certification record keeping will help you develop a successful track record of where you have come from and where you want to go. Additionally, the networking and information support of your local organic sector (IOPA-Island Organic Producers Association—[www.iopa.ca](http://www.iopa.ca)) and the national body—Canadian Organic Growers ([www.cog.ca](http://www.cog.ca)) will provide you with many opportunities for building capacity as an agricultural producer.

## Basic certification tips

1. Map out your entire farm, acknowledging all structures and garden spaces. Add in all the dimensions of your fenced areas, structures, and garden beds, including areas you hope to bring into production in the future.
2. Create simple spreadsheets that are readily available to maintain successful tracking for the following data:

**Seeding-** Noting the date, type of crop, specific name of crop, company seed was brought from, quantity sown, the location, harvest date and extra information that could be helpful information to gain awareness later about germination percentage, age of seed, bed preparation and/or amendments used. Add to the final column throughout the growth of the crop when there are great successes or unexpected challenges.

Date	Crop	Variety	Company	Quantity Sown	Location Sown	Harvest Date	Extra Information
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**Compost schedule-** Maintaining good compost records can be most helpful in understanding the quality of compost created.

Date	Ingredients Added	Quantity of Compost	Location	Temperature Readings	Notes
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**Inputs-** Filling in the spreadsheet each time you gather inputs as opposed to searching for the individual receipts later.

Date	Quantity	Type of Input	Supplier or Source	Brand Name	Notes
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**Crop rotation-** Helping you to understand the growth and needs of your soil and ensure that you avoid planting the same crops on soils repeatedly, which may potentially cause disease and nutrients issues in your crops.

Location	Crop	Sown/ Transplanted	Harvested	Notes
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**Audits-** Providing a specific time period and all the products you have grown in that year. Many growers will use various accounting systems to help with maintaining these calculations but a basic spreadsheet using the various invoice books for the differing methods of marketing can provide all the information necessary to fill in this form. As a note, it can be time consuming to go through each invoice for a year calculating each crops production individually so do consider an effective system of tracking for your specific operation.

You may want to have one spreadsheet for documenting the actual products/crops full production totals and another for a more defined breakdown for each customer (restaurant/market/grocery store) by the month and the crop with specific crop totals. These two spreadsheets can work well together to provide a fuller picture.

Products	Actual Production	Production Sold	Production Left to Sell
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Crop	March	April	May	June	July	Aug	Sept	Oct	Nov	Total
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3. Additional records not required by certification but absolutely helpful include maintaining a daily journal, planting calendar, monthly expense sheets and annual budget. Another log of the unexpected learning can also be surprisingly helpful.

4. It is advisable to get a water test every few years if using a well, pond or other natural reservoir to be sure of the safety and quality. Soil tests completed for various areas are recommended every two years. Ask labs for guidelines on how to submit samples. This step can make a huge difference in the accuracy of your test. For soil samples, be certain that the soil temperature is conducive to accurate information. The basic guideline is to take the sample when the soil has warmed in late April and before you have amended and planted in it.

If you choose not to certify, reviewing the guidelines and developing an understanding of the best organic practices for your crops and natural environment are a skill set that will serve you well throughout your farming/gardening career.

**Review the guidelines:**

[www.cog.ca/about\\_organics/organic-standards-and-regulations/](http://www.cog.ca/about_organics/organic-standards-and-regulations/)

[www.certifiedorganic.bc.ca/cb/certification.php](http://www.certifiedorganic.bc.ca/cb/certification.php)

[www.iopa.ca](http://www.iopa.ca)

## Know what makes you happy!

Knowing what makes you happy may take a while to truly understand when growing fresh food and raising livestock, but eventually you will find aspects to this work that will bring you great satisfaction. It may be the simplicity or even the challenge when trying something new that makes you excited. It may be seeing all those friendly and grateful folks at the market each week or the chefs in the restaurants that are delighted to create some magic with your terrific foodstuffs. For many farmers, the wonderful food that graces their tables night after night and fills their pantries and freezers brings great comfort and motivation to continue growing certain crops. When you enjoy what you are doing, it is easier to do it and accept some of the trickiness that is certain to come your way somewhere down the line. Remember that your happiness will be the greatest motivator you will ever have!



Photo courtesy of Ed Johnson

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Kouik, R. (1986). *Designing And Maintaining Your Edible Landscape Naturally*. Sooke Food Community Health Initiative (2012). So you want to farm in Sooke. Retrieved on May 12, 2014 from [www.sookefoodchi.ca](http://www.sookefoodchi.ca)

# Appendix A: Resources

Business Planning Farm Business Advisory Services Program  
[www.agf.gov.bc.ca/busmgmt/FB\\_Advisory\\_Services.html](http://www.agf.gov.bc.ca/busmgmt/FB_Advisory_Services.html)

Safety - Health and Critical Control Point (HACCP)  
[www.inspection.gc.ca/food/fsep-haccp/program-manual/eng/1345821469459/1345821716482](http://www.inspection.gc.ca/food/fsep-haccp/program-manual/eng/1345821469459/1345821716482)

## Fertilizers

- **BioFert** [www.biofert.net](http://www.biofert.net)
- **Gaia Green** [www.gaiagreen.com](http://www.gaiagreen.com)
- **Natures Nutrients** [www.organicfertilizercanada.com](http://www.organicfertilizercanada.com)

## Seeds

- West Coast Seeds: [www.westcoastseeds.com](http://www.westcoastseeds.com)
- William Dam Seeds: [www.damseeds.ca/productcart/pc/home.asp](http://www.damseeds.ca/productcart/pc/home.asp)
- Johnny's Seeds: [www.johnnyseeds.com](http://www.johnnyseeds.com)

## Soils and plant tissue testing

- Integrity Sales- provide soil analysis and amendment strategies  
Contact: Dwight Pennel 250-544-2072, 2180 Keating Cross Rd, Saanichton, BC
- MB Laboratories Ltd- 250-656-1334, 2062 Henry Ave. West, Sidney, BC [www.mblabs.com](http://www.mblabs.com)
- Evergro Canada Inc.- soil, tissue and water testing 250-381-2281, 630 Garbally Rd., Victoria, BC
- General Soils Ribbon Test [www.sfec.cfans.umn.edu/prod/groups/cfans/@pub/@cfans/@sfec/documents/article/cfans\\_article\\_360665.pdf](http://www.sfec.cfans.umn.edu/prod/groups/cfans/@pub/@cfans/@sfec/documents/article/cfans_article_360665.pdf); and [www.growercentral.com](http://www.growercentral.com)
- Plant Health Laboratory- plant disease testing
- Abbotsford Agriculture Center, 604-556-3126, 1767 Angus Campbell Rd, Abbotsford, BC V3G 2M3  
[www.agf.gov.bc.ca/cropprot/lab.htm](http://www.agf.gov.bc.ca/cropprot/lab.htm)

## Supplier lists for everything a farmer may need

- John Deere Landscapes- 2065A Keating Cross Road Saanichton, BC V8M 2A5
- Integrity Sales- Dwight Pennel, Keating X-Rd, Saanich 250-544-2072
- Tower Fence-1080 Goldstream Ave, 250-478-9733
- Top Shelf Feeds- 2800 Roberts Rd, Duncan, 250-746-5101
- WestTech Irrigation- Alpha Street, Victoria 250-361-1573
- Willow Wind Feed and Pet food- Sooke Rd- 250-478-8012

## Water testing

- MB Laboratories Ltd- 250-656-1334, 2062 Henry Ave. West, Sidney, BC, [www.mblabs.com](http://www.mblabs.com)
- Evergro Canada Inc.- soil, tissue and water testing, 250-381-2281, 630 Garbally Rd., Victoria, BC, [www.growercentral.com](http://www.growercentral.com)
- Agrichem Analytical-250-538-1712, 409 Stewart Rd, Saltspring, BC [www.agrichem.ca](http://www.agrichem.ca)

# Appendix B: Local Victoria farmer's markets

Small **Victoria farmers markets**, known as “pocket markets”, are bringing fresh fruits and vegetables as well as a wide array of other processed food products to neighborhoods, communities, and events throughout Greater Victoria.

## Tuesdays

### **Fernwood Community Market**

4:30—8:30 pm  
Fernwood Square

### **Centennial Square**

12:00 noon—5:00 pm  
Pandora Ave

## Wednesdays

### **Colwood Farmers' Market**

June 3<sup>rd</sup>—Sep 30<sup>th</sup>  
4:00—7:00 pm  
1767 Island Hwy (between Juan de Fuca Library and The Recreation Centre)

### **View Royal Market**

3:00—7:00 pm  
View Royal Community Hall  
279 Old Island Hwy.

### **Esquimalt Community Market**

5:00—8:00 pm  
Town Square (behind the municipal hall)

### **Mayfair Market**

4:00—8:00 pm  
3417 Douglas St. (middle parking lot)

### **Humboldt Valley**

12:00 noon—3:00 pm  
784 Humboldt (on the plaza by Cafe Mela)

## Thursdays

### **Sidney Summer Market**

5:30 pm—8:30 pm  
Beacon Ave (Closed to traffic)

### **Island Chef's Collaborative Market**

10:00 pm—5:00 pm  
Bastion Square

## Thursdays (cont'd)

### **Centennial Square**

12:00 noon—5:00 pm  
Pandora Ave.

### **Gordon Head**

3:00—6:00 pm  
1806 San Juan (at St. Dunstan Anglican Church)

### **Estevan Village**

3:00—6:00 pm (corner of Estavan and Musgrave)

## Fridays

### **Chefs only Market**

(starting June 12<sup>th</sup>)  
8:00 am—12:00 noon  
625 Hillside Ave. (FoodRoots warehouse)

### **Island Chef's Collaborative Market**

10:00 am—5:00 pm  
Bastion Square

## Saturdays

### **Vic West Market**

10:00 am—2:00 pm  
Craigflower Rd. and Raynor Ave.

### **Quadra Village Farmer's Market**

10:30 am—3:00 pm  
Kings Rd. and Quadra St.

### **Gorge/Tillicum Market**

9:30 am—2:00 pm  
Pearkes Arena (outside)

### **Moss Street Market**

10:00 am—2:00 pm  
Sir James Douglas Elementary School grounds  
401 Moss St.  
[www.mossstreetmarket.com](http://www.mossstreetmarket.com)

**Reynolds High School Market**

4th Saturday of each month  
9:30 am—1:00 pm  
Reynolds High School  
3963 Borden St.

**Strawberry Vale Market**

9:30 am—2:00 pm  
Outside Strawberry Vale Community Hall  
11 High St.

**Goldstream Station Market**

June 5th—Oct 16th  
10:00 am—2:00 pm  
Bryn Maur Road, Langford  
Phone: 250-507-5767

**Sooke Country Market**

10:00 am—2:00 pm  
2047 Otter Point Rd.

**Peninsula Country Market**

9:00 am—1:00 pm  
Saanich Fairgrounds  
1528 Stelly's Cross Rd.

**James Bay Community Market**

9:00 am—3:00 pm  
Corner of Menzies St. and Superior St.  
[www.jamesbaymarket.com](http://www.jamesbaymarket.com)

**Dockside Green**

9:00 am—1:00 pm  
398 Harbour Rd. (beside Fol Epi bakery)

**Warehouse Market**

10:00 am—2:00 pm  
625 Hillside Ave. (FootRoots warehouse)

**Sundays**

**Metchosin Farmers' Market**

Open from May to October  
11:00 am—2:00 pm  
Metchosin Municipal Grounds  
(behind the Fire Hall)  
4450 Happy Valley Rd.

Contact: Michelle Simmonds  
Phone: 250-478-4503  
Email: [metchosinfarmersmarket@hotmail.com](mailto:metchosinfarmersmarket@hotmail.com)

**Highlands Market at the Caleb Pike Homestead**

Last Sunday of the month  
10:00 am—2:00 pm  
1589 Millstream Rd.



Photo courtesy of Ed Johnson



