



Fresh Vegetable Market Gardening Industry

The purpose of this factsheet is to provide an objective overview of fresh vegetable market gardening in Alberta. This overview isn't intended to be a substitute for individuals making their own thorough assessment of the many key management issues that will determine the success of a market gardening enterprise.

Industry highlights

- Market gardening is producing fresh vegetables and marketing these crops directly to the consumer.
- Fresh vegetable market gardening is distinct from commercial production in which the vegetables are marketed through packers, wholesalers, retailers and restaurants in order to reach the consumer.
- Commercial vegetable producers are large scale producers. They require storage facilities to market their crop throughout the year.
- Market gardeners are small scale producers. They develop their own markets and sell all of their produce directly to consumers during the growing season. Market gardens are often operated as complementary enterprises with bedding plants or u-pick berry production. Many producers are also incorporating ag tourism and events to drive retail sales.
- Individuals who are considering developing a vegetable enterprise should determine which industry (market gardening or commercial vegetable production) provides the best fit with their particular location, land base, production skills, marketing skills and business management skills.

- The acreage and production of the major fresh vegetable crops in Alberta for the years 2003 to 2005 are presented in the following table.

Crop	2005		2006		2007	
	Acres	Tonnes	Acres	Tonnes	Acres	Tonnes
Bean, green	200	272	–	–	175	181
Cabbage	350	2,005	–	–	–	–
Carrots	815	6,248	–	–	755	6,355
Corn, sweet	3,465	14,300	3,100	11,340	4,000	14,560
Cucumbers	75	159	55	177	20	52
Onions	1,000	15,195	1,100	17,237	–	–
Peas, green	2,970	4,495	4,800	6,804	4,200	5,557
Pumpkin	130	1,769	235	2,177	300	1,814

- A 1994 study indicated that 668 producers out of 890 surveyed marketed at least some of their product through market garden channels (i.e. u-pick or farmers' markets). Furthermore, 170 producers marketed their product through market garden channels exclusively.¹
- There has been a yearly increase in exclusive direct marketing.
- Market gardening involves marketing vegetables directly to consumers through the following channels:
 - farm gate sales – all produce is harvested by the grower and sold at the farm
 - u-pick sales – the consumer harvests the produce, then purchases it at the farm
 - farmers' markets – growers bring their produce to farmers markets for sale to consumers

¹ Alberta Horticulture Industry Survey Report; Presented to Council of Alberta Horticultural Industries, December 1994.

- Community Shared Agriculture (CSA) – prior to the season, the grower sells shares to cover all costs and the produce is distributed among the shareholders
- subscription farming – the grower contracts with consumers to supply produce over the season
- direct to food service – growers sell directly to restaurants, caterers and/or anyone that prepares food
- A Council of Alberta Horticultural Industries survey of producers indicated that 57 per cent of the sales value of market garden produce (potatoes, vegetables and fruit) was sold through farmer’s markets, 23 per cent through u-pick operations and 20 per cent at the farm gate.²
- New entrants to market gardening will be required to devote a significant amount of time to market research and developing marketing strategies for gaining exposure and acceptance by consumers. This will be an on-going process.
- Management ability is a significant factor in the success of a fresh vegetable market garden. The key management requirements are:
 - the ability to research markets and determine which vegetable crops will meet consumer needs for each market
 - the ability to juggle several activities at once
 - the ability to train and manage labour
 - the ability to sell produce and please customers (customer service)
 - the ability to keep control of the financial affairs of the business as well as the production operations

Regulatory basics

- Vegetables that are marketed outside the province or through a third party (i.e. broker, wholesaler, retailer, etc.) prior to delivery to the consumer, should conform to the federal* grade and packaging standards. Grade and/or packaging standards do not exist for all vegetables.
- Vegetables that are marketed directly to consumers are not regulated, other than by the demands of the buyer. Growers are encouraged to ensure that a high quality product is provided.
- On farm food safety is currently not regulated for fresh vegetables, but good production practices and record keeping are encouraged and may be demanded by consumers.

- There are federal regulations governing organic production. In order for growers to market a product as organic, they must be certified and must adhere to federal guidelines for production and processing.
- New growers should contact their local county administration or municipal government office for requirements/restrictions regarding intensive production operations.
- Direct sales of vegetables to consumers that take place within the boundaries of a town or city may require the seller to have a license. Growers should contact their municipal government office for requirements.
- In Alberta there are restrictions against produce stands being located on primary and secondary highways; produce stands must be located beyond the road allowance right-of-way boundary.

Market basics

- The focus of market gardening is selling produce directly to consumers. The key requirement for a market garden is close proximity to a large consumer population base (e.g. urban centre).
- New entrants must be prepared to gather as much knowledge and information as they can about the consumer markets for fresh vegetables in their area. This market research should be performed before any production activities are started.
- The focus of market research should be on determining consumer trends in vegetable consumption, what vegetables are desired by consumers, any specifications consumers may have and what production requirements might be needed to produce the desired product. As well, new entrants need to pay particular attention to any evidence of excess supply in their market area and any trends of declining consumption or declining prices.³
- Key questions to be considered in the market research are:⁴
 - who will buy your product?
 - what are the requirements/characteristics of your customers?
 - where are the customers located?
 - what are your customers looking for?
 - who, what and where is the competition?
 - what makes you different?
 - what constraints exist (e.g. start up costs, legal requirements/restrictions)?

2 Alberta Horticulture Industry Survey Report; presented to the council of Alberta Horticultural Industries, December 1994, pg. 10.2.

3 Marketing Your Produce Directly to Consumers; by V.J. Parker-Clark, Alternative Agricultural Enterprises publications Series, University of Idaho, College of Agriculture, Cooperative Extensions System.

4 Market Research, Ag-Strategies, Agdex 848-6, Alberta Agriculture and Rural Development.

- is the market expanding or declining?
- is the market saturated with your product?
- what prices are available for your product and do they fluctuate?
- Vegetable growers must have a marketing strategy. The key strategy issue to be addressed is that vegetables, once harvested, will deteriorate and eventually perish. As a result, growers need to plan a balance between the quantity of vegetables available for sale, the variety of vegetables for sale, the location of their particular vegetables in the consumer market and the marketing channel through which the produce will be marketed to consumers.
- Market garden growers must also determine which of the following channels or combination of channels provide the best means for marketing their produce to consumers.
- **U-pick operations** – These operations sell fresh produce directly to consumers who come to the farm, harvest the vegetables, pay for the vegetables and take them home. U-pick operations require proximity to high population centres, good roads, a parking area, good signage and a selling area with scales and a cash register. The marketing focus for u-pick operations is that consumers are able to purchase “farm fresh” produce and are able to get exactly what they want.
- The advantages of u-pick are:
 - less labour required for harvesting, shipping and storage
 - growers receive immediate payment for their produce
 - largest sales per customer relative to other market channels
 - growers are able to develop a loyal following of customers
- Disadvantages to u-pick include:
 - additional requirements for parking, washrooms and liability coverage
 - inexperienced pickers might lead to crop damage
 - uncertainty as to whether the entire crop will be harvested at the right time
 - increased management needs
- The critical management considerations for u-pick operators are the need to:
 - manage customers who are picking vegetables, to ensure that ripe vegetables are picked and that crop damage is minimized
 - manage the risk associated with having a crop ready for harvest and not having customers picking due to poor weather
 - have a back-up marketing strategy for unsold produce
- There are three strategies that have been used by u-pick operators to minimize risk. While these strategies may reduce risk, there may also be some restriction of the availability of u-pick vegetables. U-pick operations often use several market channels (e.g. farmers’ markets) to sell product. These may require labour inputs and considerations. The three strategies are:
 - **rent a row** – The customer buys a row of vegetables at the beginning of the year. The producer provides all the inputs to produce the crop and the customer harvests the crop.
 - **Community Shared Agriculture (CSA)** – CSA is where a group of customers forms an organization in which each member purchases a share at the beginning of the year. The share purchases cover all production costs, wages for the grower and a return on capital. The producer grows the crops for the organization, which in turn determines how it will be shared among its shareholders.
 - **subscription farming** – A grower contracts with customers prior to the growing season to supply them with a range of products over the season.
 - **Farm gate sales** – These growers harvest the produce, prepare the produce for sale and essentially operate retail outlets on the farm for selling directly to the consumer. Farm gate sales will require a selling shed with scales and a cash register. A cooler is often needed in order to carry harvested vegetables for longer periods. Growers who market through farm gate sales will need to ensure that they have knowledgeable sales people to work with consumers. Farm gate sales also require proximity to large population centres, good roads, a parking area, good signage and facilities to accommodate customers.
 - Over time an outlet for farm gate sales can grow to become a roadside market (located beyond the road allowance boundary). Operating for an extended season and buying additional goods for resale is also possible.
 - The advantages of farm gate sales are:
 - growers receive payment from consumers without incurring transportation costs
 - growers are able to market their produce as “farm fresh”
 - farm gates sales give the operator considerable flexibility in operation size, length of season and method of operation
 - producers have the opportunity to diversify and incorporate other aspects into their operation to draw in customers (e.g. ag tourism, baked goods, ice cream, crafts)

- The disadvantages of farm gate sales are:
 - additional requirements in facilities, staff and liability coverage
 - growers may have difficulty in marketing all of their produce through their outlet and as a result, a back-up marketing plan is needed to deal with any oversupply of produce
- The critical management considerations for farm gate sales are the need to:
 - have a visible location that will attract customers
 - manage labour costs as the costs of having a person manning the booth will add up over time
- Key strategies to be implemented by managers of farm gate sales are:
 - achieve a balance between having a variety of produce for sale and specializing in a particular commodity
 - ensure that one-on-one personal skills are in place to bring in customers, sell produce and create satisfied customers who will become repeat customers
- **Approved Farmers' Markets** – These operations generally consist of a number of growers selling their produce directly to consumers at a common location. Each grower has a separate stall or stand at the market. There are over 100 Approved Farmer's Markets throughout Alberta. There is an updated listing at: www.agric.gov.ab.ca/app21/rtw/markets/markets_map.jsp
- A 2002 Alberta Farmers' Market Association study shows that 55.4 per cent of customers come to buy vegetables and fruit at the farmers' market. The top three reasons that customers like to shop at markets were:
 - freshness of product
 - quality of product
 - support of local farmers
- The advantages of farmers' markets are:
 - individual growers benefit from collective advertising that attracts more people to the market location
 - farmers' markets provide new growers with the opportunity to gain exposure and provide a means for growers to market surplus produce that was not sold through u-pick or farm gate sales
 - the market provides parking and good access to consumers that may not be available to individual growers at their farm locations
 - there are numerous markets operating in the growing season so producers have the opportunity

- to market their produce at a number of farmer's markets and increase their exposure to customers
- overhead cost are low to the grower
- farmers' markets are a great opportunity to try new products and get immediate feedback
- The disadvantages of farmer's markets are:
 - producer must harvest, package and transport the produce to the market
 - since there are many producers offering similar produce, individual growers must be prepared for intensive price competition for sales
 - growers must be prepared to have unsold produce which needs to be dealt with through an alternative marketing plan
- A number of practical strategies for marketing vegetables at farmer's markets are:
 - keeping the same stall location helps establish a market presence
 - avoid bright sunny stall locations and use a spray bottle to keep produce fresh
 - health regulations may require that produce not be sold, displayed or stacked on the ground, therefore individual growers should ensure they have tables at their location
 - sell only high quality produce
 - work to establish a reputation as a grower of good quality crops
 - develop a wider product base in order to maintain a base of loyal customers
- Producers who market at farmers' markets need to determine the appropriate preparation or packaging for their vegetables.
- Once growers have determined their products and market channels, they will also need to develop a range of strategies to achieve consumer awareness.
- Whether a grower markets through u-pick, farm gate sales or farmer's markets, site selection is a critical factor in achieving sales. Producers need to consider the following issues when selecting a site for marketing their produce:
 - visibility from highways and roads
 - access for vehicles
 - cost of building new facilities versus using existing structures
 - customer flow through the sales area
- Market gardeners will need to develop merchandising strategies to focus on product selection, packaging, pricing, display and customer service.⁵

⁵ Marketing Your Produce Directly to Consumers; by V.J. Parker-Clark, Alternative Agricultural Enterprises publications Series, University of Idaho, College of Agriculture, Cooperative Extensions System.

- Market gardeners are required to price their products. The general recommendation is for growers to price their produce based on their cost of production, as well as the prices currently being received in their markets.
- Specific issues to be considered in the pricing decision are:
 - **competition** – A producer selling the same vegetable products as the other sellers at the market will need to price at the going rate. However, producers whose products are unique compared to those of the competition may be able to obtain a premium.
 - **freshness** – Is an important element in achieving product uniqueness and possibly a premium price. Generally, products which are storable, such as potatoes and carrots, will need to be priced competitively with the market. However, for products that are very perishable, freshness may allow for a premium price.
 - **growers must understand basic economic principals relating to the cost of production** – The basic principal is that a price is acceptable as long as it covers all additional costs that would be incurred in making the sale. When making the decision to produce the crop, growers need to ensure that the prices received cover all costs of production. This includes all operating costs such as seed, labour and other inputs, fixed costs associated with owning assets such as land, buildings and machinery and opportunity costs that reflect the management and capital provided by the owner. However, in a situation such as at the end of the day at a farmer's market, the additional cost of selling the remaining produce are quite low since most of the cost of producing, harvesting and hauling the vegetables to market has been incurred. As a result, the best economic decision would be to accept a lower price as long as it covers the additional costs that would be incurred in making the sale.
- The following are specific strategies used by vegetable growers to achieve product uniqueness and premium prices.
 - the use of transplants and early maturing varieties of vegetables will allow individual producers to have market ready produce when the market supply is low and demand is high
 - post-harvest activities such as removing field heat and proper storage and handling can assist in maintaining product quality during periods of high demand and allow producers to extend supply of their products beyond peak production periods
- The following table demonstrates the wide range in prices between the different markets.

Crop	Unit	U-pick	Farmers Market
Snap beans	pound	2.1 - 3.0	3.0 - 4.0
Beets	pound	0.5 - 3.0	1.0 - 3.5
Broccoli	pound	0.6 - 1.3	0.7 - 1.5
Cabbage	each	0.3 - 1.7	0.3 - 2.0
Carrots	pound	0.7 - 1.8	1.5 - 3.0
Cauliflower	each	0.6 - 1.7	1.0 - 2.5
Bulb onions	each	0.4 - 2.1	0.5 - 2.5
Peas	pound	2.1 - 3.0	3.0 - 4.0
Potatoes	pound	0.6 - 1.0	0.8 - 1.5
Zucchini	each	0.4 - 1.3	0.5 - 1.5
Pickling cukes	pound	0.9 - 1.7	1.0 - 2.25
Green onions	bunch	0.8 - 2.1	1.0 - 2.5

- Market gardeners need to develop promotional strategies for gaining customer awareness of the products and the location. Branding, or the creation of a consistent image, can result in repeat customers. Promotional techniques may include the use of:
 - signs, advertising (various media types), direct mail outs
 - materials for distribution at the point of sale and the registration of customer requests for the next season
 - uniforms and name tags
 - websites and memberships in producer associations
- **The critical marketing issue** for market gardeners is to research their particular market in order to determine the market potential for vegetables they might produce, the most appropriate market channel(s) to use for marketing to customers and the most appropriate strategies for achieving customer awareness about their product and location.

Production basics

- Marketing management must be balanced with production management since selling the crop and achieving profitable returns is equally as important as producing the crop.
- Marketing considerations are the primary elements in determining what vegetables to produce, how to produce them and when to produce them.
- The following factors should be considered in the site selection for a market garden:
 - proximity to an urban center
 - cropping history of the land
 - soil type
 - slope of the land and exposure to the sun

- length of the growing season and the frequency of frost and hail
- availability of irrigation water
- access to the site by road
- factors such as shelter belts that can improve growing conditions
- The production process for market gardeners consists of the following key activities:
 - planning
 - seed bed preparation
 - planting
 - cultivation
 - pest control
 - harvest/post harvest
 - marketing
- In developing a production process each producer must consider the production resources available to them. The land, water, labour and machinery resources will determine the nature of the production process implemented by the producer.
- **Critical management issues** in the production process are:
 - **seed bed preparation** – To achieve good germination results, producers need to ensure that the seed bed is level, has uniform compaction and evenly distributed moisture.
 - **crop and variety selection** – Making the decision of which crop(s) to grow will be based on market research and production capabilities. The grower determines the most appropriate variety of a particular crop. New varieties can be selected based on grower experience, recommendations from seed companies, variety evaluations from research groups in comparable climatic regions and from yearly testing by individual growers.
 - **soil temperature** – To achieve good germination results, producers should monitor soil temperature to ensure that various crops are planted when soil temperatures are in their optimal range.
 - **soil moisture** – Soil moisture is a critical factor in good seed germination. To germinate, seeds must absorb moisture to achieve a moisture content of 45 to 60 per cent. Allowing five to eight days between seed bed preparation and planting will allow soil moisture to become more evenly distributed through the seed bed and provide adequate moisture for the seed. Irrigation is an important tool in maintaining soil moisture throughout the growing season.
 - **soil crusting** – Soil crusting will negatively affect seedling emergence and therefore vegetable yields.

Since soil crusting tends to increase with time after cultivation, producers need to focus on achieving good germination and crop emergence before crusting develops.

- **precision seeding** – This is the practice of precisely placing seeds in rows in order to achieve uniform spacing of plants and even growth of plants. The benefits include uniform quality, fewer culls, lower grading and packing costs and perhaps lowers costs for seed and thinning. Precision seeding is both a complex and necessary element of vegetable production. Producers need to develop an appropriate practice for their operation and crop selection.
- **transplanting** – It allows growers to produce crops that can't be harvested before a frost or extend the growing season of crops which can be direct seeded.
- **fertilizer** – Meeting the fertility needs of various crops in different conditions is the key management issue. This can be accomplished by soil testing, fertility balance sheets and tissue fertility sampling.
- **warm season crops** – In order to grow warm season crops such as peppers, producers need to use techniques such as transplanting, hotcaps, mulches and row covers (microclimate modification).
- **pest management** – Growers need to closely monitor potential pest problems and be prepared to deal with them through cultural and chemical means. The number of chemicals registered for use on vegetables is limited. The application of insecticides or fungicides should be done with careful consideration of appropriate pre-harvest intervals (PHI). Consult provincial information sources and/or the Pest Management Regulatory Agency (PMRA) searchable on-line pesticide label database at www.hc-sc.gc.ca/pmra
- **harvest management** – The focus of harvest management is on achieving quality product. Producers need to achieve optimal flavour, colour and size, which generally is at peak maturity.
- **post-harvest handling/storage management** – Careful handling and storage of produce helps producers to preserve and market quality produce over an extended marketing season.
- Management skills are also an important part of a successful production process. Two important considerations are:
 - the capacity to monitor crop performance on a daily basis
 - the desire to seek information from many sources
- Increasing public concern about the environmental impact of agricultural production has necessitated

improvements in production management practices. At the same time, increasing demands for accountability mean producers must be more diligent in their record keeping practices. This allows producers to account for all types of inputs and farm activities, and may provide some protection from legal action and may also solidify markets.

- **The critical production management issues** for producers are:
 - to balance production and marketing issues in production decisions
 - to develop an effective production process and monitor its performance on a regular basis, making adjustments as required
 - to continually seek out research information and production practices that will contribute to improved yields and quality

Economic/finance basics

- Vegetable production shouldn't be viewed as a quick fix solution for farms that are struggling with high levels of debt. High levels of income are achievable in market gardening, however the grower must be prepared to contribute high levels of management and accept high levels of risk.
- Market gardeners will be continually challenged to balance producing a product that meets consumer needs, achieving a good market price and controlling production costs.
- Individual managers must be prepared to keep accurate records of their production costs to:
 - develop price strategies for their products
 - monitor the profitability of the market garden enterprise
- Growers must be prepared to research the prices, costs and operating requirements of various types of market gardens. Also, growers must be prepared to estimate the costs and returns for the specific operation(s) they are considering putting into place.
- Published or collected budget information for market garden production (and marketing) is limited. As well, the production costs for individual market garden enterprises vary due to location, crops, size, machinery, labour use and marketing activities.
- The economic information presented has been pieced together from a number of sources. These figures are provided to give market gardeners a brief overview of the economic factors that will influence the viability of a market garden enterprise.
- The following table presents the economic view of a "typical" market garden operation consisting of one

acre of table potatoes, 2.5 acres of fresh vegetables and 1.5 acres of fruit. The numbers presented are estimates and should be used as guidelines only.

Item	Dollars per Acre	Total (\$)
Anticipated scale	5,000	25,000
Paid labour	1,050	5,250
Building investment	2,020	10,100
Equipment investment	6,400	32,000

- The following yield, cost and revenue figures are averages for all regions in Alberta. Yields will vary according to local growing conditions, revenues will vary according to markets and the marketing channel used. Production costs don't include operating and ownership costs of equipment. The numbers presented are estimates and should be used as guidelines only.

Crop	Yield (tonnes/acre)	Production Costs (dollars/acre)	Revenues dollars/acre)
Asparagus	1 - 2	1,971	3,704
Beans	3.5 - 4.5	896	2,041
Beets	9.5 - 10.5	2,225	5,022
Broccoli	1.75 - 2.5	2,506	3,483
Cabbage	700 - 800 cases	3,078	4,698
Carrots	9 - 15	3,640	8,424
Cauliflower	5.5 - 7.5	2,209	2,840
Celery	750 - 850 cases	6,199	8,689
Corn	1,000 doz.	1,253	3,429
Cucumbers			
– slicers	13.5 - 14.5	6,923	10,184
– picklers	6.5 - 7.5	2,268	4,039
Lettuce	750 - 850 cases	4,239	6,086
Onions – dry	13 - 15	4,293	6,475
Parsnip	5.5 - 7.5	3,521	5,368
Potatoes	9.5 - 11.5	1,372	2,516
Pumpkin	13.5 - 15.5	3,397	4,703
Rutabaga	11 - 13	1,161	2,743
Zucchini	16.5 - 17.5	7,576	10,519

- **The critical economic issue** for market gardeners is to achieve all of the factors necessary for their enterprise to be profitable. These factors are:
 - determining what vegetables are required by various markets
 - producing the product that meets the buyer's specifications

- developing a specific market for the crop
- achieving a market price for the product that is competitive and profitable
- performing the production, harvest and marketing activities at a cost that can be covered by revenues

Resources

The following resources are available to individuals seeking to take a more detailed look at the market garden industry.

Industry Associations

Alberta Farm Fresh Producers Association
 Box 56
 Kelsey, Alberta T0B 2K0
 Phone: 1-800-661-2642
 Fax: (780) 373-2297
 Website: www.albertafarmfresh.com
 E-mail: info@albertafarmfresh.com

Alberta Agriculture and Rural Development services

For more information on any aspect of the fresh vegetable market gardening industry, including production, business planning and development, and marketing, contact:

Alberta Ag-Info Centre
 310-FARM (3276)

Key management issues

- If you continue to investigate this agricultural business opportunity, it is essential that you are able to answer the following questions concerning the fresh vegetable market gardening industry and the management requirements of a market gardening enterprise.
 - have you clearly defined the products you will be marketing and the target market that you will be marketing to?
 - have you determined the marketing channel(s) that you will market your produce through?
 - have you clearly defined the production process and the production resources that you will require to produce for the specific market(s) mentioned above?
 - have you clearly defined the marketing activities that you will be required to perform in order to market your product to the specific market segment mentioned above?

- are you aware of the intensive management required by the production activities of a market garden enterprise?
- are you aware of the amount of time you will have to devote to continuously researching your markets and to adjusting your production activities to best meet the needs of customers?
- are you aware of the key performance factors and the level of performance you will have to achieve for each, in order for your business to be economically viable?
- have you objectively and thoroughly compared the marketing, production, economic and management requirements of a market garden enterprise together with the resources, skills and abilities that you have available?

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