

CHAPTER 15

GREENHOUSE MARKETING, ECONOMICS & BUSINESS PLANS

MARKETING

INTRODUCTION

*Once the grower has a prime product, that product needs to be marketed. How the grower goes about marketing their product will determine the success or failure of their operation.

*Marketing is a specialty unto itself and should not be attempted by the novice.

*This section covers a few of the basics that must be kept in mind when marketing your greenhouse hydroponic tomatoes, peppers, cucumbers, lettuce, etc.

THE INDUSTRY AND COMPETITION CONCERNS (tomatoes as an example)

*In general:

Open field tomatoes are sold in direct competition with greenhouse hydroponic tomatoes and will always be sold for a lower price.

Open field tomatoes from the USA are primarily produced in Florida and California

One disadvantage for open field tomatoes is the climate. Therefore, most field tomatoes from the USA are grown in the Spring, Summer and Fall.

During the late Fall, Winter and early Spring greenhouse hydroponic tomatoes command a larger share of the market (including those from Mexico gh & field).

*World-wide (combination of field and greenhouse hydroponic):

China is the top tomato producer (mainly field grown) in the world and exports mainly to Vietnam, Hong Kong and Russia.

USA is the second ranked tomato producer (field plus greenhouse/hydroponic = total) and exports mainly to Canada and Mexico.

Top fresh tomato exporters (total) = Spain Mexico Canada USA Italy France Turkey

Top fresh tomato importers (total) = USA France Canada Italy Mexico Japan

Top exporters of fresh market tomatoes (total) into the United States (2002):

Mexico (\$550 million) Canada (\$175 million) Holland (\$50 million)

Spain (\$10 million) Israel and others (\$10 million)

*North America (Canada, USA and Mexico): (field and greenhouse hydroponic)

An increasing competition for the fresh tomato market from Canada and Mexico:

1995: North American Free Trade Agreement (NAFTA) led to trade disputes.

1996 to present: trade disputes continue over problems created by NAFTA.

The US imports more tomatoes from Mexico during the Winter (Jan Feb).

Canadian imports are nil during these months due to low light and high energy costs.

Mexican imports are reduced in Summer when US & Canadian production is up.

Most Mexican & US production is in open field vs greenhouse for Canadian production.

***The United States:**

Area in greenhouse tomato production in the USA is estimated at ~1235 acres (2010).
Leading greenhouse tomato producing states are California, Arizona, Colorado, Minnesota, New York, Pennsylvania, New Mexico, Nevada, Texas and Virginia.
Major greenhouse hydroponic tomato & cucumber producers in the USA (>100 acres):
Nature Sweet 265 acres in Willcox AZ and 44 acres in Snowflake AZ
Houwelling Farms 125 acres in Camarillo CA
Village Farms 232 acres in Texas (also in PA & NY)
Although open field, fresh market tomatoes are cheaper than greenhouse hydroponic tomatoes, 61% of consumers purchased greenhouse product during the Winter of 1999-2000.
Greenhouse tomatoes are purchased by all consumer groups.
Although more open field, fresh market tomatoes are produced, greenhouse tomatoes now make up over 10% of the total tomato consumption in the United States.

TYPES OF HYDROPONIC/CEA OPERATIONS

*** Very small operation (Example: Sunizona):**

1-2 greenhouses run by a family or retiree(s)
Usually requires a second income (second job or retirement income)
Small market: produce sold at the greenhouse, at a farmer's market, to local stores, etc.

*** Large operation (Examples: Nature Sweet, Village Farms, Grimmway Farms):**

1 to several greenhouses of 5 acres or more run by a corporation
The corporation pays a team of experts to run the operation (including growers, nutrition and pest management specialists, engineers, marketing specialists, etc.)
Large market: local, statewide, nationwide, international

***Cooperative:**

Several small growers working together in their businesses and marketing
Can all grow the same product or several products
Small to large market: but must be a dependable source of produce for the buyers

THE PRODUCT

***Most crops grown using controlled environment agriculture and hydroponics are high cash value and perishable. An exception: China grows both horticultural and agronomic crops (cotton, peanuts, etc.) using CEA in the form of plastic mulches.**

***Usually regarded as luxury crops (as opposed to staple crops such as wheat, corn, rice, etc., which usually can not be grown economically using CEA/hydroponics).
“Luxury foods”, such as tomatoes, peppers, cucumbers, lettuce, specialty greens, etc., add color and variety to a meal as well as vitamins and minerals.
Herbs add flavors to our meals and medicinals provide high quality alternative medicines.
Floriculture crops (much of which is grown using CEA) add beauty to our environment.**

***Definitions for greenhouse hydroponic tomatoes include the use of permanent structures (plastic/glass) and hydroponic growing systems to differentiate them from field grown tomatoes.**

- *For tomatoes (beefsteak and TOV) (U.S. Grade Standards For Greenhouse Tomatoes):
 - #1 fruit must be “fairly well formed” whereas #2 fruit can be “reasonably well formed”
 - Fruit must be free from decay, sunscald, freeze damage, bruises, cuts, catfacing cracks, scars, puffiness, shriveling, disease, insects, etc.
 - For any particular lot of tomatoes: 10% may be damaged but only 1% soft or decayed.
 - NEVER SELL AN INFERIOR PRODUCT!

- *Tomatoes may be sold as a “fresh market product” or as a “value added product”.
 - Value added = to enhance or change the product before offering it to the customer.
 - Example: tomato paste, tomato sauce, tomato soup, salsa.

- *Consumer concerns: Today’s consumer takes many factors into account when buying produce.
 - What is most important to YOU? Let’s have a show of hands:
 - Use of chemicals and pesticides
 - General freshness, condition and appearance of the product
 - Cleanliness of the product; is it free of dirt, insects and disease
 - How the product was handled which might result in problems with contamination
 - Perceptions with regard to genetically modified organisms (GMO’s) or foods
 - Effects of foods on diet and disease (i.e., lycopene in tomatoes as a deterrent to cancer)
 - Problems with spoilage over time
 - Where the product was grown
 - Over-packaging and other packaging issues

METHODS OF MARKETING AND SALES (just the basics - marketing is very complex!)

- ***Direct Farm Market**: Example: the grower sells the product at a roadside stand or takes the product to a farmer’s market . This is typical of a small family business.
 - When selling at a stand, etc., the idea is to make the product look “natural”.
 - Use wooden crates or baskets and hand written signs.
 - Mirrors in back make it appear as though there is more product than there actually is.
 - Lights brighten the area and can be used to highlight certain items.

- ***Grower/Packer/Shipper**: Similar to the above but on a much larger scale where the grower packs and ships their product to a place of sale. Ex. Nature Sweet, Village Farms.

- ***Sales Agent/Distributor** (usually receives a commission of 10% or more)
 - They can sell direct to supermarket chains, to a wholesaler to a terminal market (**) or through a broker. (Note: The more people involved in the transaction, the higher the final price of the product to the consumer.)

- ***Wholesaler/Handler**: This person operates within a terminal market (**).
 - They sell produce at a price and “mark-up” agreed upon with the buyer.

- (**) **Terminal market**: A central site, under the jurisdiction of the USDA & often in a metropolitan area, that serves as an assembly and trading place for agricultural commodities. Terminal markets are usually at or near major transportation hubs.

METHODS OF PAYMENT

*Sale based on:

Cash to the seller: The buyer pays the seller outright for the product and takes all responsibility for it after the purchase.

Consignment: The seller delivers the product to the buyer/distributor. The seller is paid for all sold product, BUT... Whatever product is not sold the seller must take back and will not be paid for! This is common when the product is not in good condition or can not be guaranteed. Therefore, the value of the product rests with the grower/shipper with no risk to the buyer. The person buying on consignment often receives a 15% commission but may also pay for the handling and freight.

***Two types of pricing:** Depending upon the terms of the agreement, the price of produce can shift with the market (variable pricing) or be fixed (contract pricing).

Variable pricing: a greenhouse hydroponic tomato grower might make more money per unit in the Winter when competition is low and demand is high, but not do well during the Summer when there is competition from field growers and demand is lower.

Contract pricing: the grower would receive a fixed price year-around. This might be lower in the Winter than what could be obtained with variable pricing, but the grower would make up the difference in the Summer when prices would otherwise be much lower.

ADVERTISING AND “SALES BULLETS”

*Unless the public knows about the grower’s product they won’t buy it!

And, the grower’s product must be better than other’s for the consumer to want it!

*Remember, in the case of tomatoes, open field tomatoes are cheaper than greenhouse hydroponic tomatoes. So the grower must convince the consumer that it is worth the added price to buy their greenhouse hydroponic product!

*One advertising technique is to use “**Sales bullet**”

= short phrase to emphasize a particular positive factor or attract a particular audience and can be added to the advertising or packaging to promote the product.

Pesticide free	Hand picked with care	High in cancer-fighting lycopene
Sunshine sweet	Nature sweet	Nature’s finest
Vine ripened	Vitamin rich	Arizona grown
Arizona sunshine	Hydroponically grown	You’ll love every healthy bite
Tomato eaters make better lovers		Grown in Wildcat country

***Logos & Branding:**

In order to set a product apart from others (brand it) and make it instantly recognizable, companies create a unique “logo”.

A logo is a unique design that symbolizes a particular product:

In the case of the Olympic Games, the logo is 5 interlacing colored circles

In the case of Facebook, the logo is a lower case white “f” on a blue rectangle

In the case of EuroFresh Farms, the logo is a combo of American & Dutch flags

The logo is put on all things company: web sites, stationary, produce boxes, produce, etc.

ECONOMICS & BUSINESS PLANS:

INTRODUCTION

*Controlled environment agriculture and hydroponics is often labeled as “intensive”.

To the economist, “intensity” is related to the labor and capital inputs per unit of land involved.

Compared to open field agriculture, the labor and capital inputs per unit of land for CEA/hydroponics are much greater.

*However, because of the potential for multiple cropping and higher yields, as well as the high cash value of crops chosen for CEA/hydroponics, the high returns can more than make up for the costs.

POTENTIAL ECONOMIC ADVANTAGES OF CEA/HYDROPONICS

***Multiple cropping**

With almost all forms of CEA and hydroponics growers can produce multiple crops in a single year. Open field agriculture is usually limited to one.

Greenhouse hydroponic tomatoes can be grown year-around with 2 overlapping crops using inter-planting (see Chapter 3).

Greenhouse hydroponic cucumbers can produce 2 to 3 crops per year.

Greenhouse hydroponic lettuce, with as little as 40-45 days to maturity, can yield up to 10 crops per year.

***Higher yields** - Several factors contribute to higher yields with CEA and hydroponics:

Control of the aerial environment (temperature, relative humidity, carbon dioxide levels, light, etc.) maximizes plant growth and productivity.

Control of the root environment (temperature, moisture, nutrient composition, oxygen levels, etc.) also maximizes plant growth and productivity.

Higher planting densities result in higher productivity per unit area.

Mulches and row covers for field crops can significantly increase early yields (before other open field products are ready for market and when prices are higher).

*However, these increased returns, in the form of multiple crops and higher yields, are only realized by increased costs:

THE COSTS OF CEA/HYDROPONICS

*The Land:

The initial cost of the land, roads and utility installation (water, sewer, natural gas, electricity, phone, etc.) will usually need to be paid up front via a loan and will then be paid off over the first several years of operation.

The land may also need to be modified to accommodate greenhouses and support buildings including grading, fencing, wind breaks, etc.

*The Structures: These can be amortized over several years.

The greenhouse itself (frame, glazing, construction labor, environmental control system and the nutrient delivery system – injectors, mixing tanks, PVC delivery tubing, etc.).

Support buildings

Office space with restrooms

Packing area

Storage area for produce which might include a cold room

Storage areas for supplies including seeds, growing media, fertilizers, produce shipping boxes, irrigation equipment, support devices (clips, tomahooks, etc.), tools, ladders, gloves, smocks, etc.

Workshop with equipment for fabrication and repairs

*Various Annual expenses (include but are not limited to):

Seeds or transplants

Growing media (rockwool, perlite, etc.) – cubes, blocks, slabs, bags, etc.

Irrigation equipment (poly and drip tubing with stakes, emitters, misc. plastic)

White reflective ground cloth for the greenhouse floor (may last 2-3 years)

String for plant support

Tomahooks, vine clips and cluster clips (if these are not recycled)

Fertilizers

Labor: Plant care & harvest (usually 1 full-time plant worker/2000m²), fruit packing, office, etc. Should also include training costs.

Management costs: head growers, marketing, human resources, etc.

Should include training costs, travel, etc.

Misc. tools, ladders, gloves, etc.

Repairs and replacement parts on the structure, environmental control system, nutrient delivery system, tools, etc.

Marketing expenses

Utility costs (water, electric, natural gas (or other fuel), phone, sewer, etc.)

Bee hives (tomatoes and peppers) and beneficial insects

Limited pesticide equipment and pesticides (organic is best) if needed

Insurance, property taxes and interest payments

Carts, bicycles and other vehicles

*Other expenses may be incurred depending upon the type of structure, crop, location, and other considerations.

PREPARING A BUSINESS PLAN

- *A business plan is a formal document that will help you
 - Define the purpose of your business including personal and business goals
 - Discover problems before you begin the business
 - Take advantage of new opportunities as they occur
 - Estimate the cash needs for your business
 - Explain your business goals to others including loan agents, investors, etc.
 - List your skills and abilities as well as what is needed
 - Outline marketing prospects

*Elements of a business plan (As described in the booklet “Preparing a Business Plan”)

Title page

- Make this look as professional as possible.
- Include the company name, the date, contact person, contact information

Table of Contents

- Gives an outline of your plan (include page numbers)

Business Profile and Summary (what problem are you trying to solve & how?)

- This is a basic orientation of the purpose and concept of your business
- Basic financing and financial resources required
- Basic business activities and targets – marketing, production, labor, financial and projected income/net worth

Business Organization

- How the business is organized (sole proprietor, partnership, corporation)
- Any required registrations and/or licenses (Ex., organic, Gip/Gap, etc.)
- Business managers and advisors and their roles

The Marketing Plan

- The industry: trade associations, journals, other growers, advisory services
- Industry and market trends
- Political and legal constraints or aids
- Consumer responses, preferences and the target audience
- Advertising, promotion, sales and pricing

The Human Resources Plan

- Employee plan – how many employees, job titles, functions
- Organizational chart – How the employees are organized
- Compensation and benefits
- Labor relations: training, motivation (piece work?), discipline procedures, etc.

The Production Plan

- Description of the land, buildings and facilities
- A list of all the equipment needed (environmental control, auxiliary power units, spray equipment, scales, meters, tools, heavy lift equipment, electric or other carts, vehicles, etc.)
- A list of all the materials/supplies needed (plants, beneficials, bags, etc.)
- The production strategy (specifics about the crop and system to be used)
- Initial construction and production/sales schedules (week by week plans)

The Financial Plan

Income statement (income from sales, operation expenses, net income)
Projected cash flow summary (need adequate capital first 3-5 years)
Projected statement of assets, liabilities and equity for the next 3 years
Capital sales and purchases (land, buildings, equipment)
Loan summary (type of loan, security given, interest rate, etc.)
Financial performance indicators (profit, growth/risk ratios for first 3 years)

The Long-Range Plan

Should cover the next 5-10 years
Business goals and objectives (i.e., no pesticides, expand staff training)
Major milestones anticipated (i.e., projected mortgage payoff date)
Additional production/labor, financial backing and management or marketing skills that will be required for expansions or additional products (diversification) of the business.

***Final note:** Any person considering starting a CEA/hydroponic business should learn as much as they can about plant science, nutrition, diseases and IPM techniques, greenhouse structures and control systems, marketing and business management practices. More information about business planning can be obtained from local financial institutions, state departments of agriculture, or other agencies.

REFERENCE MATERIAL

- 1. Preparing A Business Plan: Greenhouse Vegetable Example.** 1992. Published by the Extension Systems Branch, British Columbia, Ministry of Agriculture, Fisheries and Food, 808 Douglas Street, Victoria, B.C., Canada, V8W 2Z7. ISBN 0-7726-1514-4
- 2. Planning A Profitable Hydroponic Greenhouse Business.** 1996. A.J. Savage. Sovereign University Publishing House, 30 Caro Mio 1, Sark, Channel Islands, United Kingdom, GY9 0SE. ISBN 0-929440-00-5
- 3. Protected Agriculture: A Global Review. Part 4. Economic Factors.** 1995. M.H. Jensen and A.J. Malter. The International Bank For Reconstruction and Development/The World Bank. 1818 H. Street, N.W., Washington, D.C. 20433. World Bank Technical Paper. ISBN 0-8213-2930-8.
- 4. Web Pages:**
University of Florida: Commodity Outlook 2003: Southeast U.S. Fresh Vegetable Market. http://edis.ifas.ufl.edu/BODY_FE373
USDA Tomato and Tomato Products Situation.
<http://www.fas.usda.gov/http/circular/2004/03-25-04%20tomato%20article.pdf>
USDA International Agricultural Trade Report: U.S. Greenhouse Tomato Industry Alleges Unfair Competition, Files Antidumping Action Against Rising Imports From Canada. <http://www.fas.usda.gov/http/circular/2001/01/06/Statistics/HotTomatoFeature.pdf>
Greenhouse tomatoes change the dynamics of the North American Fresh Tomato Industry. http://www.ces.ncsu.edu/depts/hort/greenhouse_veg/pdf/ER2GHtomato.pdf
<http://www.terminalmarkets.com/>