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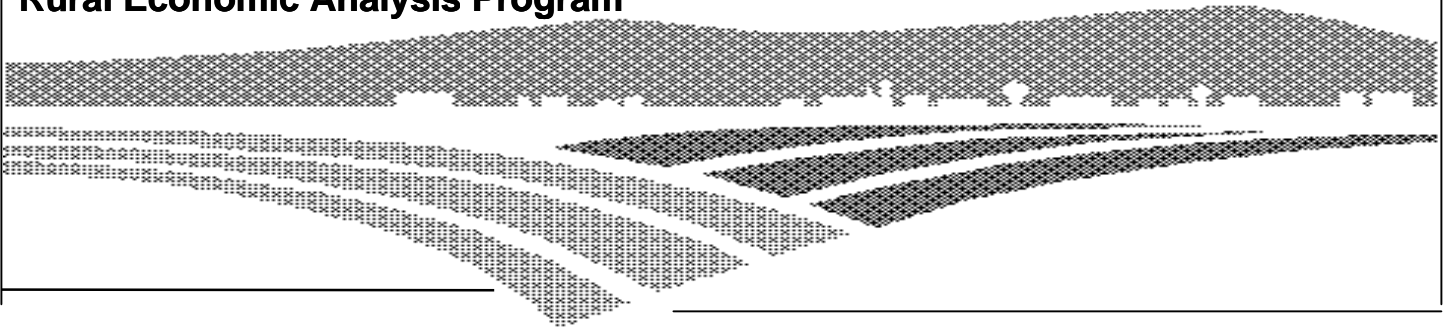
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To Market . . To Market . . . Seven Steps to a Marketing Plan for Horticultural Products

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INTRODUCTION

Solanum Tuberosum looks out over his 100 acres of fruits and vegetables ripening. The fields are virtually weed-free and the fruits and vegetables are top quality. Sol uses Best Management Practices¹ to achieve his high quality production and low costs. He shakes his head and ponders, "I'm a good farmer, how come I can't seem to make more money?"

Sol sells his produce at the local wholesale market for the price the market is offering. Last season he tried some specialty crops—Jerusalem artichoke, horseradish, blue potatoes, okra—to increase his net income. But the Tuberosums ate a lot of Jerusalem artichoke, horseradish, blue potatoes, and okra.

What Sol, like most other knowledgeable producers, is missing is a marketing plan. **Marketing is time consuming and demands careful attention.** Someone will have to spend time on marketing or on production jobs, but not on both, because marketing is a job just like production or any other job. This person may be you or it may be someone you hire. But if you want a better price than what the market is offering on the particular day you sell, you must make marketing an integral part of your planting and harvesting decisions.

Sol continues to think about his plans for last year, "We repaired the equipment, ordered seeds and chemicals, updated the financial records, planned the field layout for where this year's crops would be." He pauses and sighs, "But we never developed a marketing plan."

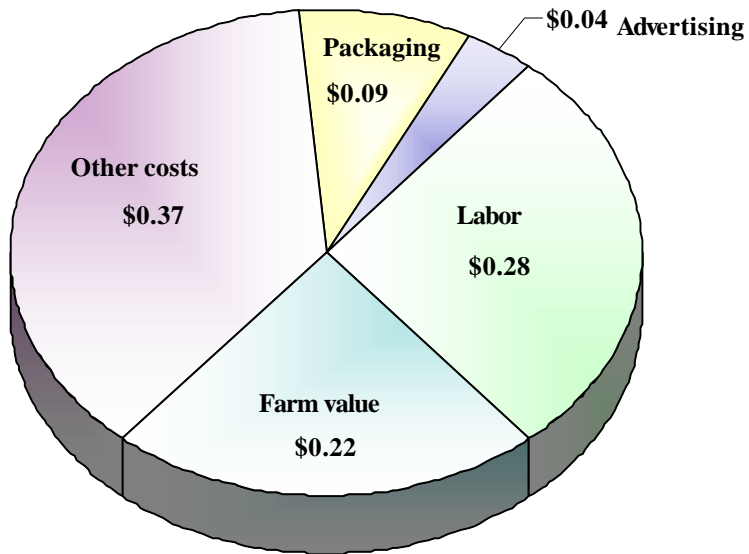
Sol decides that the family needs to discuss the farm operation, since they will all be affected by whatever decisions are made.

In 1996, farmers received, on average, only \$0.22 of the consumers' food dollar (*FoodReview*, 1996, p.9). The remaining \$0.78 was the "marketing bill," which pays for all the processing, wholesaling, transportation, and retailing services beyond the farm gate (Figure 1²). From 1993 to 1994 consumers' cost of food increased by \$21 billion. Little of this increase went to the farmer. In fact, since 1984 the cost of food to consumers has increased by \$179 billion, but farmers have seen only \$20 billion of this increase (*Food Cost Review*, 1995 pp. 28-29). And USDA forecasts that the 1997 Consumer Price Index for food will increase by 3 to 4 percent. As in the past, this increase is not expected to go to the farmer (*Agricultural Outlook*, p.20). You can capture more of the food dollar by developing a marketing plan.

¹Best Management Practices minimize the negative impact of farming by using crop rotations, cover crops, soil testing, Integrated Pest Management, and conservation practices while maintaining economic viability.

²"Other costs" include fuel, electricity, before tax profits, rent, depreciation, interest, transportation, repairs, taxes, and so forth.

Figure 1. Where the food dollar goes



Overview: Seven Steps to an Effective Marketing Plan

- 1. Set goals, objectives, and plans*
- 2. Identify customers and their needs*
- 3. Decide on market outlets*
- 4. Attract customers*
- 5. Price realistically*
- 6. Evaluate the plan*
- 7. Revise the plan*

A good marketing plan must be simple, flexible, and practical. A good marketing plan also depends on a knowledge of the requirements for labor, capital, machinery, and equipment.

STEP ONE: SET GOALS, OBJECTIVES, AND PLANS

* **Goals**

- will make your business better
- reflect your ideas and intentions
- must be realistic

* **Measurable objectives**

- help you attain your goals

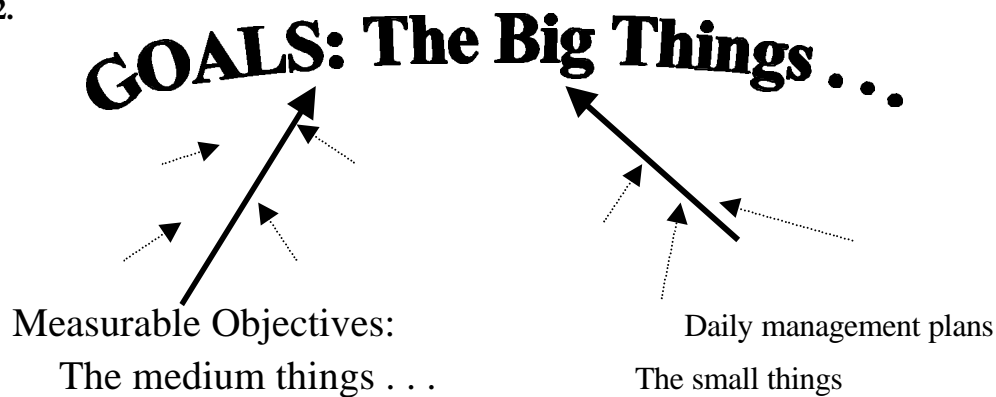
* **Daily management plans**

- get you to your measurable objectives and goals

Taking time to set goals is a critical management step. Without goals, your management decisions will lack direction. With goals, you can tell if your operation provides enough income and satisfaction to justify the time and energy you spend on it.

Goals are long term—ten years or more—and deal with the “Big Things.” Measurable objectives can be achieved over one to nine years and deal with the specifics of reaching your goals. Daily management plans deal with the everyday working of the operation. These plans are achievable in a day, a week, or six months (Figure 2).

Figure 2.



Goals, measurable objectives, daily management plans should

- Involve all members of the family who are old enough to talk seriously
- Reflect your ideas and intentions
- Be written down
- Be prioritized
- Be realistic
- Not be mutually exclusive
- Be flexible

* Goals

Setting realistic and timely goals helps keep the operation focused.

What do you want from the farm and your life in the next 10 to 20 years—longer? What do you need to do to take advantage of everyone's strengths, meet your responsibilities, and satisfy everyone?

Goals answer these questions. Goals allow you **to act, rather than react** because you are managing according to a plan which reflects your intentions and values. By setting goals, you **can direct your resources toward priorities**, which will cut down on unplanned spending and improve your profits. You will have fewer surprises, less stress, and more communication with family members and employees. Because everyone has agreed on a direction to take, everyone works together to reach the goals.

Goals are flexible. You are not locked in to your goals. As time passes, you meet some goals. Situations change. New interests emerge. Your priorities change. As a result, goals need to be updated. You should reassess your goals and make the needed changes.

To set goals, identify, in order,

1. *All* current **resources** of the operation (intangible and tangible): people, their talents and interests, machinery, equipment, land, cash and investments;
2. **Needs** for which the operation must provide: operating costs, debt payments, family living, retirement;
3. A **timetable** for achieving the goals: 10 years, 15 years, 20 years.

Identifying the **resources** of your operation is a very important step. You need to know what you have to work with. Identify the areas of interest and the abilities you, your family, and employees have. Does your son like keeping the records? Does your spouse or an employee like meeting and talking to all sorts of different people? Would he/she enjoy working in the market meeting customers? Is your daughter creative with art? Would she enjoy doing the advertising and signs for the farm? These are your intangible resources.

List your equipment, buildings, and available land. Identify your financial resources. These are your tangible resources.

Your farm must provide for the **needs** of your family. Consider how many people the farm must support, the extent of debt you must pay, and the amount you must put away for retirement and the transfer of property.

Different goals will have different **timetables**. Therefore, set appropriate timeframes for completing your goals. You will be able to evaluate your progress more easily. You will also be forced to review your goals and set new ones as the old ones are met. Setting realistic timeframes will also help you avoid becoming discouraged when the goal is not met in the first season.

The Tuberosums discuss what everyone likes to do best and how everyone's interests and talents can be used best in the operation. They make a list of all their assets—people, land, equipment, and finances—to

help them keep their goals realistic. Since they know exactly what resources they have, they can set goals that use these resources without needing to acquire additional resources.

They decide on these long-term goals:

1. Achieve an increase of 20 percent on their net return. (Their net return for the last four years has remained steady.)
2. Provide an atmosphere where the children will be happy to return to the farm after college.
3. Enhance and maintain their most valuable production asset—the soil.

The Tuberosums know that their first goal will probably require two to three seasons before they are able to achieve it. The second goal is ongoing, since the children need to be pleased with the farm on a daily basis. Success will be determined if the children want to return to the farm after college. The last goal is also continuous, requiring constant use of Best Management Practices and extension information on soil quality.

* Measurable Objectives

Measurable objectives are the specific steps taken to meet your goals. They, too, will depend upon the resources available to you.

The Tuberosums decide to include retail sales in their marketing method. They consider an increase in net return this year of 15 percent to be a reasonable objective.

For the second goal, the family decides to allocate responsibilities according to each one's interests and strengths. Sol will continue as production manager since he is most knowledgeable and enjoys the work. His wife, Rosa, will be in charge of the marketing because she takes pleasure from meeting people and is friendly and outgoing. Their 16-year old daughter, Sassafras, who is interested in business and plans to major in business management in college, will keep the financial, production, and spraying records for the season. Allium, one of the 14-year old twin boys, will help Sol with production and have primary responsibility for equipment maintenance. He has always liked to fix small engines and help work on the big equipment. Thymus, the other twin, will make the signs for the market and design brochures because he likes to spend his free time drawing and painting and wants to be a commercial artist.

To meet the last goal, the Tuberosums plan long-term crop rotations, the use of leguminous cover crops, and soil testing to determine nutrient needs.

* Daily Management Plans

Daily management plans are the small, everyday plans that need to work directly toward your goals and objectives. They are the seed and chemical orders, the Integrated Pest Management (IPM) evaluations, the sign making, equipment maintenance, and all the other daily, weekly, and monthly activities that need to be performed to keep the farm functioning smoothly.

As they talk, each member of the family makes a list of what he/she needs to do before they open for sales in mid-June. They also decide to meet weekly to keep "on track." All of them feel they are contributing to the success of the operation.

STEP TWO: IDENTIFY CUSTOMERS AND THEIR NEEDS

- * Who are the customers?
- * What influences their choices?

'All you have to do [to be successful in a retail business] is . . . to take care of the customer . . .'(Diens, p 118.). You must satisfy your customers, since they pay the bills.

At the public library and using the internet, Rosa finds information about their county in the census data, local history books, and various local publications. She is especially interested in family size, average income, the percent of families with two incomes, and ethnic background. Sassafras, Allium, and Thymus talk to their friends at school about the kinds of food they like and where their families buy it.

Use demographic statistics to determine products to produce, product mix, package size, and the potential for value added.

Today, 59.3 percent of women work outside the home (Bureau of Labor). People have less time and are willing to spend more money on value-added products and services. Families are small; they want smaller quantities of fresh produce.

Knowing there is a growing Hispanic, Oriental, Caribbean, or Middle Eastern population in the area or that people are willing to try new foods can lead you to produce a variety of herbs, hot and sweet chili peppers, Roma tomatoes, bok choy, Chinese mustard, or bitter melon for a niche market. The ethnic group in your area will define the niche market.

One-stop shopping." Shop here for all your needs." These are familiar phrases. People want convenience, nutrition, reliable information, and a host of other intangibles. If they can go to your market for fresh produce, or bedding and landscape plants, and they also find canning jars, coating chocolate, pectin, snacks, drinks, potting soil, trowels, mulch, they will not have to go elsewhere. You

will capture additional sales. Make your product mix creative and diverse.³ But at the same time, be careful not to maintain a large inventory of slow-moving, high-cost products.

Today, fresh produce is packaged in small quantities for immediate use or loose for the customers to select their own quantities.

Time for food preparation is often a trade-off for leisure activities making ‘value added’ an alternative worth considering. Most of the increase in food costs is going to the food away from home sector. Can you capture some of that market? It can be as simple as packaging individual servings or a mix of greens, washed and ready to serve, mixed herbs in a basket, cut flowers, or a gift pack of your fruit and vegetables or of locally produced honey, jams, and jellies. Or value added can become as complex as processing fresh fruit into ice cream or pies. **You must follow the health regulations when preparing food for value-added sales.**

Those families with high disposable income often spend money on amenities like cut flowers, indoor plants, and landscape materials. Will the value added by providing landscaping tips or access to landscape software encourage consumers to do the work themselves? It might be that you need to offer the added value of installing the landscape plants.

Providing value-added products will often entice consumers into the market; once they are in the door,” they will buy items that they had not planned to purchase. You can obtain answers to value-added questions by actively listening to customers, by using your record keeping information, by trial and error, or by all three.

Rosa will decide how to arrange the market, what additional products to sell, and what size packaging to use. To help her make some of these choices, she spends time at the local grocery stores looking at their displays and watching what customers purchase. She also visits other on-farm markets within a 100-mile radius of their operation. She talks to the owners of these operations about product mix, packaging, and hours of operation.

Based on Rosa’s research, the family chooses to purchase some outside products like drinks, snack mixes, jams, and jellies.

STEP THREE: DECIDE ON MARKET OUTLETS

- * Select your market outlets
- * Identify factors affecting the market outlets
- * Focus on the essential: **flexibility**

³ A reminder about product mix: some items are not compatible. For example, the ethylene gas given off by apples will defoliate poinsettias, put carnations to sleep, and hasten ripening of tomatoes. More examples are available in Appendix A.

Sol talks with his cousins, who live in a very rural area. Chrysanthemum Helianthus tells Sol that a pick-your-own operation would not work where they live because there are not enough people, and most people have their own gardens. Chrys says that they are trying to develop, along with the tourism council, a weekend get-away operation where meals are prepared from local produce, meat, and poultry, and "souvenirs" are locally produced food and nursery stock. Each "souvenir" will have a label identifying it as locally produced.

Based on their proximity to a relatively large urban and suburban area, the Tuberosums select a combination of pick-your-own, farmers market, and wholesale. This plan will give them better control over prices.

Keep in mind:

The following suggestions provide a starting point--**be creative**

You can **combine methods**

Flexibility is critical in order to respond to unforeseen factors, such as unusual marketing opportunities or the weather.

The more creative you are in devising and combining marketing methods, the more successful the results are likely to be. **But do not spread yourself too thin!**

* **Market Outlets**

In general, any type of marketing will fall into either the retail or wholesale level.

Retail level

Farmer-direct retail markets target the end user of the produce. They usually provide higher gross returns to the producer, but often move less volume and have additional expenses associated with marketing costs. The most traditional retail outlets are direct marketing on the farm, from the tailgate of a pickup truck, or at an organized farmers' market.

Direct marketing on the farm could include harvested produce or pick-your-own or Community Supported Agriculture (CSA" See Appendix C for description and benefits) or a combination of activities.

Remember to be creative as you consider less traditional retail level sales. (This list is far from exhaustive.)

Sell at local festivals

Establish a festival on your farm

Participate in a special promotion at a local store

Sell via mail order

Sell via the internet

Sell fresh produce or plants at special annual events like the Crab Carnival in West Point, Virginia or the Blue Grass Festival in Galax, Virginia

Provide sweet corn, fresh fruit, and other vegetables for a company picnic or pig roast

Contract with government procurement agents, nursing homes, camps, schools, and similar organizations

Combine outlets

Wholesale level

Wholesale marketing has traditionally been a major outlet for fresh fruit and vegetables. Much of the produce found at grocery stores has been purchased through terminal markets or directly from wholesalers. Some supermarket chains participate in the Virginia's Finest™ program or the Shore to Store program and feature locally grown produce, thereby providing growers with direct contact with the supermarkets. However, depending upon the size and structure of the supermarket chain, these options may not be available. Contracts with food processors or freezers have been another traditional outlet for growers whose production is within hauling distance of the plant. Selling directly to food service establishments like upscale restaurants or hotels which are willing to pay a premium for high quality, fresh produce is another wholesale option.

The advantages of selling wholesale are that you can move larger volumes of produce, and your marketing costs are lower. The disadvantages are that you receive lower gross income, and you may need to guarantee to provide a specific quantity and quality at a specific time throughout the season. There is little flexibility to deal with changes in weather, or disease or insect damage.

Other Alternatives

Other alternatives to explore are food marketing cooperatives, joint ventures, and, of course, working with other farmers to put together a more diverse product mix than one farmer could accomplish alone. Remember, combining market outlets is always a possibility.

It is often beneficial to work with other farmers in the area: there are potential economies of size to be gained. You can both realize savings from producing less variety but larger quantities and better quality. You can share marketing expertise, or even allow someone in one operation to provide what is lacking in marketing expertise in another operation. **If you work with other farmers, be sure all the arrangements are clear in advance and put in writing.** You can avoid potential disruptions during the season by spending the time to be sure everyone has a clear understanding of and agreement on the arrangements at the beginning.

*** Factors Affecting Market Outlets**

There are a number of factors that need to be considered as you decide on your market outlet.

- Market potential?
 - Market location
 - Market competition
- Market constraints
 - Time
 - Labor
 - Your neighbors

Off-farm markets
Physical limitations

Market Potential

Market potential for your products and services includes how much consumers demand and how much you can supply. The quantity demanded of a product depends on the price of the product, the price of competing products, the price of products that go with your product (complementary products), disposable income, population, and tastes and preferences for products. The quantity supplied of a product depends on the price of the product; cost of inputs for production; cost of harvesting, transporting, and storage; technology; the number of producers in the market; and the season. Choose your market based on the market potential.

Retail Market Potential

Use your demographic information, your knowledge of your area, and your list of resources from goal setting to evaluate the retail market potential. Are there a sufficient number of people close enough to you who are potential customers? Do you have a place to market from or will you have to leave the farm to sell at retail? Do you have someone available who likes working with people?

Wholesale Market Potential

Use a market-window analysis to evaluate wholesale or terminal market potential. If you can provide produce at a time when prices are above your cost of production, the wholesale market may be a good choice for you. Market-window analysis is discussed in *The Process for Evaluating Alternative Crops: An Eastern Shore Example*. The basic principle is to collect historic price data from a given market or group of markets, determine the seasonal price patterns, and compare these with harvest dates of the crops you plan to produce. Open market windows exist when the minimum price exceeds your variable costs for the crop. Data available for these analyses are limited because many grocery store chains have developed their own methods of procurement and rely less on terminal markets to purchase their produce.

Combining alternatives

Integrating a variety of marketing approaches may reduce the risk associated with unrealized sales and increase the probability of reaching desired goals. **Remember, do not spread yourself too thin. You cannot pay attention to everything at once.**

Location

When appraisers put a value on property, the three most important things they consider are: location, location, location. The same idea is true for market outlets. The location of the farm will dictate, to some degree, the best market outlet. A grower located near an urban or suburban area has different marketing alternatives from a grower located in a rural area distant from population centers.

However, **location itself can be marketed.** You might use an innovative marketing strategy: possibly a joint venture with a local bed and breakfast, motel, or other enterprise, to develop get-away **be sure to comply with any zoning and permitting requirements the county imposes.**

Competition

You need to look at the competition as you evaluate your market options. Who else and how many are vying for the same consumers? If someone else nearby is open all year, can you afford to be seasonal? What techniques are your potential competitors using to draw customers? Can you work with any of these competitors to reduce the competition and to provide a wider selection of produce than either of you could offer by yourself?

Market Constraints

Time

Time management is one of the most important tasks a manager faces. How you prioritize demands on your time will affect your ability to reach your goals. Time is required for thinking and planning, supervising, crop production and harvesting, and all other activities.

Thinking and planning are legitimate work. You need to think about and plan for the mechanics of the operation and the interactions of production, harvest, marketing, and finance. You must allocate time to each of these activities or delegate responsibility. Delegating responsibilities provides planning time to coordinate activities, but gives rise to the need to allocate time for supervising and interacting with your employees or family members. Allocating time to production is also necessary for the production of high quality products. It may be, however, that to reach the stated goals for the operation, someone else must perform the tasks related to production while you supervise—often a difficult choice because production is rewarding in a way that thinking, planning, and supervising may not be. ‘All other activities’ are time with the family away from work, for eating, sleeping, and the like.

Another aspect of time allocation is deciding the portion of the year you want to be in the market. If you are open year-round, you have less time for family activities, educational programs, and planning. On the other hand, if your competition is open year-round, can you afford not to be?

Labor

As the Tuborsum family discusses the time available, they realize that with the children in school, their primary labor force will be limited to summer vacation. Even if they hire additional help, these employees will probably be Sassafras’s, Allium’s and Thymus’s classmates. They select a seasonal market, leaving the off-season for planning, maintenance, educational programs, and family.

Labor is always an issue with horticultural production. But marketing is also labor intensive. The operation needs someone who

Is interested in marketing
Is willing and able to spend the time required
Likes working with people

If no one in the operation has these characteristics, you might solve the problem by hiring someone. To succeed, you need to give this person freedom to make decisions within clearly stated guidelines and pay him/her according to the responsibility he/she is accepting for those decisions. If the person is already part of the operation, you may need to relieve him/her of other responsibilities once marketing begins for the season. Another alternative might be to work with another farmer who enjoys marketing.

Customers' convenience is critical for successful retail sales. Retail sales require an adequate number of cashiers and stockers to minimize long lines and empty shelves. You need to coordinate expected sales with harvest and packing crews. You may need more labor with increased consumer demands, especially on weekends and holidays. If a pick-your-own operation is selected, cashiers are still necessary and, depending upon the size of the fields being picked at any one time, someone may be needed to direct customers to the best picking, to provide harvest and handling information, and to answer questions. Is reliable, responsible part-time (or full-time) labor available for peak sales periods?

Reliable, responsible employees will check the work schedule before they leave. They will arrive on time and be ready to work. When they finish one job, they will look for other jobs.

Reliable, responsible employees will be clean and dress appropriately. Dress codes are touchy subjects—know the legal requirements before you develop one. Keep in mind, however, it is your operation and you do have the option of requiring employees to adhere to certain standards. You might consider providing aprons or T-shirts of the same color imprinted with your company name or logo to make your employees more easily identifiable and to help avoid some dress-code pitfalls.

Your Neighbors

Consider your neighbors. Their goodwill is vital to your success. If you select an on-farm market that generates increased traffic and noise, what will your neighbors' reactions be? Talk to your neighbors. Listen to their concerns. Keep them informed about what you are doing. Angry neighbors will look for any excuse to complain—chickens running loose, people being noisy, real or imagined zoning infractions, or a host of other excuses. To avoid costly attorney fees resulting from complaints, do your homework and be sure to include your neighbors as part of the discussions and decisions. Happy neighbors are an asset to you; cultivate them.

Off-farm Markets

Selling away from the farm presents additional challenges. Produce must be harvested early in the day to assure high quality and timely delivery to the market location. There may or may not be cold storage available at the market site for highly perishable produce. Someone must be **able to go** to the market. Will you need to replenish produce if you run out? Do the market rules require you to stay until it closes, even if you run out or if business is slow? Will you have to provide your own shade?

Physical Constraints

You can make your market efficient for you and your employees by having the loading and unloading area easily accessible to the cold storage, the sorting and packing area, and the market. How close is your storage or greenhouse space to the market? How quickly can you get to the necessary products to replenish displays?

You need adequate vehicles for off-farm markets, for replenishing purchased goods, and for emergencies which all seem to occur simultaneously.

Having the proper equipment to do the job is always a consideration. Cold storage and grading and washing equipment that can be used for multiple crops need to be available. Are these part of existing resources?

Adequate space is necessary to sort, grade, and pack produce or to produce bedding plants and other nursery stock. You will also need space to store purchased items and bulky packaging materials. Many purchased items are less expensive if you buy them in large quantities. (Remember to ask where the price break is when ordering!)

Remember to be flexible and creative in your use of your assets. Some of the market constraints you can control, others you cannot. Your goals should help you identify and be in control of those areas that you can control.

STEP FOUR: ATTRACT CUSTOMERS

- * Promotion
- * Quality
- * Public Relations

Since the Tuberosums are new to the retail market, they do not have an existing customer base on which to draw. They have farmed the land for the last ten years and are known in the community. To introduce their new venture, they decide to tell their friends, neighbors, and business acquaintances. They elect to spend the money advertising on the local radio station and in the regional newspaper. They will offer the first 100 customers who bring in the coupon from the newspaper a pound of free produce of the customers' choice. They also plan a drawing to celebrate July 4. The winner will receive a \$25 gift certificate to their market.

How do you get people to come to your market and to buy your produce? Promotion, quality, and public relations are all used to attract people to a market.

*** Promotion**

Promotion includes advertising and merchandising.

Advertising

You use advertising to persuade customers that they need the products you sell or to inform them of something new in the market, such as your operation. But remember, **no one wants to be a victim of false advertising or to hear advertising that criticizes another operation.**

One objective of advertising should be to reach as many existing and potential customers as possible for the least cost. Part of evaluating the advertising you use is to calculate the cost of each method.

This list of advertising ideas is not complete. You need to be creative as you develop your list.

Word-of-mouth will work better for an existing operation than for a new one.

“Adopt-a-Highway” provides free advertising and tells customers you are concerned about the community.⁴

Coupons can serve several purposes: entice people to buy something because they feel they are getting a bargain; help measure your advertising efforts; create goodwill. Your objective for using coupons will affect where, when, and for what products you use them.

Postcards and fliers may be an efficient method of advertising. Maintaining a “guest book” or copying the names and addresses printed on personal checks or using two-part order forms may provide a basis for a mailing list. You can purchase mailing lists, but they are expensive.

Demonstrations and product samples are used by grocery stores. Research indicates that about 95 percent of the people who sample the product then buy it (Hitt).

T-shirts, hats, bumper stickers, or other items with your farm name and logo keep your name in front of people.

Less obvious advertising methods are: seasonal festivals, special events like workshops on food preparation or plant care and handling, or special displays in malls or local stores.

Brochures are easy to develop, relatively inexpensive to reproduce, and show customers that their best interests are being considered. Brochures can describe how to plant trees and care for them or provide information for handling and storage of fresh produce or contain recipes for preparation of fresh produce.

Point-of-purchase promotional materials like “Virginia’s Finest™” and a section in your market for locally or regionally produced goods help support all Virginia growers. They also tell people you are interested in supporting local businesses.

Nutritional labels or information about organically grown produce or reduced pesticide usage tells customers that you, too, are concerned about health and environmental issues. To obtain nutritional labels, you can either contact a consultant or use the World Wide Web at: http://www.nal.usda.gov/fnic/cgi-bin/nut_search.pl

Grocery stores use “loss leaders” to get customers into the store. The idea is that customers will buy other things once they are in the store, but if the customers do not come in to begin with, nothing will be sold.

Bags, boxes, and buckets can have your farm name and logo on them. Gift boxes can be created. Stickers with your farm name and logo can be used on plain buckets and bags or directly on the produce.

Stories in newspapers can give you free advertising. A potential drawback is the risk of misinterpreted information and the resulting negative feedback. For example, an article in a newspaper on Christmas tree production featured a choose-and-cut operation that was getting out of Christmas tree sales by not planting new trees. The perspective of the story

⁴ To contact the Department of Transportation about Adopt-a-Highway, call 1-800-PRIDEVA or use the internet: <http://www.vdot.state.va.us/info/adopt-a-hwy.html>. Web site addresses have no end punctuation and no spaces in them. All addresses were valid at the time this manuscript went to print, but the authors accept no responsibility for their validity after that time.

was that this exit would occur immediately, not gradually as the trees were harvested by customers. Christmas tree sales dropped for the operation that season.

A **combination of methods** may ultimately be the most cost efficient.

Develop a brand name, trademark, or logo to identify your products. Companies brand products to build a customer base. Over the last 60 years, many companies have established brand names: Nabisco crackers, Kleenex tissues, Crisco shortening, Ivory soap, Kellogg breakfast cereals, to suggest but a few. These companies have developed products that are perceived to have high quality or some unique characteristics or both that lead to repeat customers.

In 1971, Frank Perdue did the unthinkable, according to all the marketing classes that were taught—he put his brand and guarantee of quality on a generic poultry product. Now most poultry integrators brand their products and guarantee product quality.

Whether you sell at wholesale or retail, by branding your high quality products, you should be able to command a higher price and sell more.

Trademarks and logos are methods of branding products. They are a word, phrase, symbol, or design used to distinguish the source of products or services. Trademarks and logos should be kept simple, but be unique. They need to communicate something that the customer will remember and associate with produce from your farm.

Trademarks should be registered.⁵ To be sure that registering is done correctly, it would be prudent to ask for legal advice. Failure to register the trademark can result in someone else registering it, and the originator losing the right to use it.

Merchandising

Merchandising makes your market attractive and easy to use. It shows customers that you are thinking about their needs.

Visit as many other retail markets as you can. Visits stimulate ideas—using produce crates to create display areas, creating special effects by placing lights in unusual places, using signs to direct customers to a particular item. In addition, visits provide quality and price comparisons. And the visits are fun.

While you may have minimal control over the access to the market from the public road, you can use signs to make the entryway easily identifiable and highly visible. Signs along the road prior to the turn for the operation are helpful, if the county zoning ordinances or highway department allow such signs. Obtaining the required permits for placing signs and meeting all zoning ordinances prior to placement will save time and avoid legal fees and negative publicity.

Market accessibility issues include: adequate parking; handicapped access to the market as well as any restroom, field, or picnic area; and ease and safety of entry and exit from the road to the market or pick-your-own fields.

⁵ To obtain applications or additional information, contact The Assistant Commissioner for Trademarks, 2900 Crystal Dr. Arlington, VA 22202-3513. You can get additional information on the internet at <http://www.uspto.gov/>.

Think about the appearance of the market. Is the market clean? Is it well lighted? Is it easy to move around in? Is there adequate space for customers to walk between displays if other customers are standing at a display? Are there display tables, packing crates, or other impediments blocking easy access to cash registers or other display tables?

Consider the customers' convenience. Is there a place where customers can put heavy or bulky items while they continue to shop? Is the checkout area clearly defined? Does the traffic flow easily to the checkout and outside? Is the checkout placed so that the cashier can watch customers entering and leaving?

Use signs effectively. Are signs easily read? Are prices clearly marked? Is the location of "seconds" (less than top quality produce) clearly identified? Are directions to fields or for picking clear? To be sure written directions are clear, ask someone unfamiliar with the procedure to follow the directions. There is an art to writing clear directions.

How the display is maintained is also a key to merchandising. You want to have an eye-appealing display. If produce is sold in bulk so that customers select the quantity and size they want from a display area, this display must be kept full—or have the appearance of being full. If you want to sell 15 shrubs, your display will have to contain at least twice that number. From a customer's perspective, a display that has half the produce removed is half *empty*, not half full. As the display becomes depleted, you can restock the display (the preferable choice); reduce the size of the area available for that item; remove the item altogether; or put it on sale. **If you put the item on sale, be sure everyone understands that it is on sale.**

Product differentiation is a merchandising technique. The objective of product differentiation is to make your product different enough from everyone else's so that customers will remember it. Quality can be a differentiating factor. Price, however, is not usually an effective one.

Packaging is complex, but is a method of differentiating your product. Review Step 2—Identify Customers and Their Needs as you consider packaging. If the produce is all in half bushel or bushel boxes, it will not sell to the customer who wants two tomatoes, six ears of sweet corn, and two pounds of new potatoes for dinner that evening. It is, therefore, important to choose the package size carefully, based on who the customers are and what they want.

Different produce needs different packaging. For example, green beans, spinach, peas, and similar products can be placed in bulk containers or bagged in smaller quantities with little problem. Customers are unlikely to sort through these items. Tomatoes are different. First, unless the tomatoes are wrapped, people will look at each tomato on several trays and select their own mix for their tray. If bulk tomatoes are available along with prepackaged tomatoes, customers will take tomatoes off the prepackaged trays and use them for their bulk selection. Someone must keep partial trays refilled or remove them from the display.

Wrapping produce helps reduce moisture loss and stops customers from removing produce from prepackaged trays. The quality of wrapped produce is difficult to determine since some of it is hidden. Furthermore, some customers do not want the additional wrapping to dispose of.

* Quality

“[T]he perception of a quality difference is essential for survival in the marketplace” (Martin, p. xiii). Often the only real distinction, especially with fresh produce or with nursery and greenhouse items, is quality. Freshness is both a quality issue and a nutritional issue. Available vitamins and minerals deteriorate over time, as does flavor. The importance of high quality cannot be stressed too much or too often.

To some growers, quality is size (big), color (rich), and firmness (not easily bruised). But nowhere is taste or freshness a consideration. You can market these qualities easily. Once a customer samples fresh, field-ripened produce, nothing less will do, no matter how big or bright it is.

You must be willing to discard some of the produce if you want to maintain high quality. One method for evaluating the quality is to ask yourself, “Would I buy this produce at full price?” If the answer is no, do not try to sell it as top quality. A negative image is much harder to dispel than to create. And it is easier to destroy a positive image than it is to create one. **Consistent high quality makes a difference.**

Grading, sorting, and storing produce properly is costly. If you can charge a higher price than Melvin Mediocre down the road because grading has been done carefully, the cost of disposal is reduced. Gleaning organizations, food pantries, and soup kitchens are delighted to get fresh produce, even if it is not top quality. You acquire the reputation for goodwill and community support. You may also use it as a tax deduction, but be sure to verify the tax requirements.

Mechanical damage, such as bruising and breaks in the skin, provides avenues for decay organisms and moisture loss, which reduce the quality further. Delays in removing field heat and reducing produce temperature to the optimal storage temperature can greatly reduce the shelf life, nutritional value, taste, and appearance of some produce. Refrigerated storage and the immediate removal of field heat help maintain quality.

Produce that is harvested too early will not have the flavor of produce harvested at the proper time. Over-ripe produce will be soft and difficult to handle. For example, ripe peaches are very susceptible to bruising and the more bruising, the less peaches are sold. A study of quality characteristics in Georgia peaches showed that a 1 percent increase in damage resulted in a \$0.03 per pound decrease in price, a one gram increase in weight resulted in a \$0.01 per pound increase in price, and a one unit increase in color (indicating additional ripening) resulted in a \$0.02 per pound increase in price (Jordan, et al.). Similar studies have been done for tomatoes: less damage, better color, and larger size all result in higher prices. **Learn and practice proper post-harvest handling techniques. They will pay high dividends in the long run.** (Appendices A and B provide some guidelines, also check “Terrific Resources.”)

*** Public Relations Issues**

Public relations are important. In a survey of 175,000 consumers researchers found: dissatisfied customers generally told 9 to 10 friends; 12 percent told more than 20 people; 30 percent stopped buying the product or service; and 45 percent planned fewer purchases. Where complaints were resolved satisfactorily: customers told 4 to 5 people and 10 percent bought more products (Swain).

No matter how good you are, there will probably still be complaints. The observation was made that a disgruntled customer needs to tell three people his/her problem before the problem can be resolved. **Be ready to listen.**

Remember you neighbors, too. Good public relations with them will go a long way.

The **quality** of labor is an important public relations consideration. What are the employees' attitudes toward the customers? Are they friendly? Are they helpful with the customers or is their stock answer, "I don't know," with the implication, "I don't care"? Do the full-time farm workers (whether owners, paid managers, or laborers) get along well with the market staff? Conflicts need to be resolved away from the customers. If customers are not comfortable in the market's atmosphere, they will leave before completing their purchases, not return, or both.

You may need to provide training for your employees. They need to be accurate when giving information or handling money. You may need to teach them to identify the produce you sell. For example, can they tell the difference between a Winesap and an Empire apple or between a spruce and a fir tree? You may need to teach them the proper way to make change in the event the cash register fails or one is not being used at all. Customers will benefit from employees having daily briefings. These briefings should cover the produce available for sale that day, the prices, and other relevant information such as what fields are being picked.

Unfortunately, theft is becoming more prevalent—some customers' attitudes tend to be, "You have all this land and all this produce. There is nothing wrong with my taking some of it. You can't use it all." **Do not require young clerks to deal with these situations.** They do not have the expertise or the experience. And more importantly, they do not carry the clout that the manager does. All clerks should, however, be aware of the potential and have a means of contacting management to handle the situation if it arises.

Goodwill results from customer appreciation. One of the best ways to attract new customers is to show appreciation for regular customers. Think about your own response: you are a regular customer at a small hardware store. One day Harry, the owner, asks you to choose between an adjustable wrench or a magnetic note pad with the store's name and logo as a gift. His gift implies that he appreciates your business. His decision to use these relatively inexpensive gifts promotes goodwill. You will tell your friends what Harry did. Harry will gain customers as the result of your advertising for him. Thus, satisfied customers can be one of a firm's best assets as well as one of its most effective sources of advertising.

Listening to customers is part of public relations. Listening to your customers shows that you value them, their ideas, and needs. Questionnaires are a means of listening. Since time is often people's most precious commodity, questionnaires should be carefully designed to obtain the most important information from the fewest, easiest to tabulate questions. (Opinion questions are often very helpful, but they require more time to answer and to evaluate than do multiple choice questions.) You may need to reward customers for giving you their time to complete the questionnaire.

You cannot please all the potential customers, but the more potential customers who are satisfied, the bigger your market share will be. For example, a customer asks for suggestions for an appropriate housewarming gift. You suggest a containerized plant that will grow in full sun or partial shade and in poor soil as well as good soil. Since the customer may not know the growing conditions where the plant will go, you have listened to all the unasked questions by providing something versatile. You

have gained a customer who values your concern for his/her satisfaction and who appreciates your helpfulness.

STEP FIVE: PRICE REALISTICALLY

- * Keep accurate and complete records
- * Include variable and fixed costs

Americans have become accustomed to inexpensive food. In 1994, Americans spent 11.4 percent of their after-tax income on food, less than any other country in the world (Lipton, p. 17). However, this expectation does not obligate you to sell your product for less than the grocery store or the discount garden center in order to attract customers. You are selling quality, service, entertainment, family time together, not just food or nursery items. **Selling at a price that is “too low” hurts everyone.**

Keep accurate records of all your costs, they provide information for evaluating your progress toward your goals, for tax purposes, and for the banker. If it costs \$0.95 to produce an average cantaloupe and your competition sells them for \$0.80, you all lose. **If you cannot cover all of your costs, you will not be able to stay in business.** Furthermore, customers come to expect those unrealistically low prices. If you want to sell something quickly, put it on sale. But be sure that the customers and the other vendors (if you are at a farmers’ market) know that it is a sale. Use signs that will clearly indicate what you are doing.

Sassafras keeps accurate and complete records because these records serve as the basis for pricing the produce as well as for preparing taxes and evaluating how close the family comes to meeting their measurable objectives.

The family decides that Sassafras will provide the best estimate of the cost of production and harvesting and they will mark-up their produce by 75 percent.⁶ They will mark-up the purchased products by 100 percent. They also decide on one section of the market for seconds that will be clearly labeled and priced at production plus harvest cost. A second section will be clearly labeled “sale.” The prices of sale items will vary depending upon whether the sale is the result of over-production or the end of the season for the crop. What they fail to sell, they will donate to the local food kitchen before the produce deteriorates.

The purpose of this report is not to teach record keeping. However, it is necessary to understand some concepts so that you can calculate costs to price appropriately. Appendix D has additional information on record keeping.

All costs include variable and fixed costs. Variable costs are those costs incurred as the result of producing a crop—seed, fertilizer, chemicals. Fixed costs are those costs that occur over several

⁶ To calculate the “mark-up,” you use your variable cost of production and multiply it by the percent you want to have and add this amount to the cost. The Tuberosums decide they need 75 percent above their variable cost of production. Their cost of producing broccoli is \$.60/lb. Their price will be \$1.05/lb.: $$.60 \times .75 = $.45$, $$.45 + $.60 = 1.05 .

production cycles no matter what you plant, how much you harvest, or if you do nothing. These costs are the real estate taxes, interest on debt, insurance, and the like.

Once you have the variable costs, the next step is to go back to your goals. Your economic goals give you an estimate of the total returns you need. Subtract your cost from the estimated total returns. The resulting estimated net returns can be used to calculate the price you need to reach your goal. Price your product accordingly. But a word of caution, **do not be greedy**. You can price too high and sell nothing. You also need to be careful to keep your costs as low as possible. If you set your prices based on “cost plus” and your costs are high, you can also price yourself out of the market. Having the “right” crop and product mix is important for pricing as well as for satisfying your customers.

Visit other operations, the grocery store, or the local garden center and compare your prices to theirs. Your prices do not have to be the same, but if they are too high relative to other places, you might have priced yourself out of the market!

Some products might only break-even or even lose money, but others might bring in excessive returns and make up the difference. Keep these ideas in mind as you plan your product mix and price your merchandise.

STEP SIX: EVALUATE THE MARKETING PLAN

- * Compare net income to economic goals and objectives
- * Compare marketing plan to other goals and objectives

Evaluating the results of your marketing plan is not easy. But it is necessary. Without this step, you will have no idea if you have reached your economic goals or if you are even headed in the right direction. You need to calculate net gains or losses for tax purposes, making year-end the best time to evaluate your marketing plan. Keep in mind, your marketing plan may not be the reason you have not reached your measurable objectives, but accurate records will help you find the problems.

To begin to evaluate your marketing plan, calculate the difference between income and expenses (fixed and variable). Use the resulting net income to compare to the economic goals and measurable objectives you **wrote down** at the beginning of the season.

How close did you come to meeting your measurable objectives? Are you headed in the right direction to meet your economic goals? As you answer these questions, also look carefully at the first five steps. Are your goals and measurable objectives realistic? Were your customers who you expected? Did you meet their needs? Were your market outlets suitable for your location? What did you do to attract customers? Did you pay careful enough attentions to promotion, quality, and public relations? Did you price your produce appropriately?

Ask specific questions about your marketing plan, too. Did you do too little advertising so that potential customers were just not aware of your existence? Was your quality as high as it could be? Was your market staff friendly, courteous, and helpful to the customers? Did you provide what the customers liked in the form they wanted it, or did you provide what you liked in the form you wanted? Did you **truly listen** to the customers—whether they were brokers for large chains, government procurement agents, specialty shops, or retail customers?

Remember, it may not be your marketing plan that has caused you not to reach your objectives. If you look carefully at your expenses, you might find there are areas where you can reduce them. If you look at your pricing, you may find that it could be changed to help achieve your economic goals.

How did the marketing plan help you with your other goals? Was it too much work? Did it move you toward the other goals?

Finally, review your goals and objectives. Given new information, you might need to revise your goals and objectives. **If all the pieces do not work together, your marketing plan will fail.**

STEP SEVEN: REVISE THE MARKETING PLAN

- * Fine tune successful parts of the marketing plan
- * Evaluate less profitable parts

Even if you are satisfied with your results, look carefully at your marketing plan with the idea of “fine tuning” it. Could you change your packaging—bags with the farm name and logo, perhaps, that you considered too expensive the first year? Could you expand your complementary product line? Could you advertise more or in a slightly different manner? Even if you reach your measurable objectives and are headed in the right direction to reach your goals, still consider alternatives. After looking at possible changes, you may decide you are satisfied with things the way they are.

Some of your objectives are not reached as the result of your marketing plan. Your evaluation identifies areas that need to be changed. For example, you find advertising was insufficient. You might decide to use the same method next season but add additional methods. You find that there are other products you could produce and sell in addition to those you grew this season. You realize that customers want information on chemical usage and your sales staff does not know anything about production practice. As a result, you decide to make brochures telling about your production practices and put posters up in the market showing your IPM scout looking for insects.

In evaluating the marketing plan, the Tuberosums find they did not meet the objective of a 15 percent increase on their net return for the season, but they are pleased with the progress they have made. Each family member reports on his/ her area of responsibility. Each notes what is good as well as the areas needing improvement.

As they review the year, they find they want to try different advertising methods, add at least one new crop to the mix, and explore hiring additional help for sales. They observe that there was less family stress as each member had primary responsibility for his/her areas of interest. There was less impulse spending because they had spent time planning purchases. And, best of all, they conclude, everyone worked together toward an agreed upon objective.

SUMMARY

Creativity, flexibility, and simplicity in approaching the marketing task will produce results closer to the desired goals. As you plan your marketing strategy, **brainstorm with others for creative ideas.**

Review and up-date the marketing plan as the season progresses to take advantage of changes in market conditions. **Flexibility is essential.** Evaluate, and possibly revise, goals and measurable objectives at least annually. And **keep the marketing plan simple**—it is ultimately less work and produces the best results.

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APPENDIX A. STORAGE REQUIREMENTS FOR FRESH PRODUCE

Table A1. Storage requirements for fresh produce.

Fruit	Optimal Storage Temperature °F	Chill Point ^a	Optimal Relative Humidity	Ethylene Production ^b	Ethylene Sensitivity ^b	Comments ^c
Apples	32-35	29	90-95	VH	H	Absorb odors from strong smelling foods
Apricots	32-35	30	90-95	H	H	Stored at higher temperatures, become mealy and have less flavor
Blackberries	32-35	30	90-95	L	L	Storage life of 2 to 3 days
Blueberries	32-35	30	90-95	L	L	Cool thoroughly and cover with cellophane to reduce moisture loss
Cherries	32-35	29	90-95	VL	L	Sweet cherries deteriorate rapidly at nonrefrigerated temperatures Sour cherries generally unsuited for storage
Grapes	32-35	29	90-95	VL	L	Do not ripen further after harvest; must be precooled; grapes harvested after rain more susceptible to decay than those harvested after dry period
Nectarines	32-25	31	90-95	--	--	Immature fruit does not gain full flavor or sweetness after harvesting. Remove field heat
Peaches	32-35	29	90-95	H	H	Immature fruit does not gain full flavor or sweetness after harvesting; Remove field heat
Pears	32-35	29	90-95	H	H	Very sensitive to temperature; ripening continues after harvest even though changes in color and firmness may not be apparent; some ripening changes take place in storage; therefore, pears removed from storage ripen faster than freshly harvested ones
Persimmons	32-35	28	90-95	L	H	
Plums	32-35	28	90-95	M	H	Very susceptible to bruising

APPENDIX A. STORAGE REQUIREMENTS FOR FRESH PRODUCE

Fruit	Optimal Storage Temperature °F	Chill Point^a	Optimal Relative Humidity	Ethylene Production^b	Ethylene Sensitivity^b	Comments^c
Raspberries	32-35	30	90-95	L	L	Sort and use without washing; very perishable
Strawberries	32-35	30	85-90	VL	M	Cool thoroughly and cover with cellophane to reduce moisture loss
Vegetables						
Asparagus	34-36	30	90-95	VL	M	Growth, loss of tenderness, loss of flavor and vitamin C content, and decay take place at temperatures above 40°
Green beans	40-45	38	90-95	VL	M	Russeting aggravated by condensation
Lima beans	37-41	31	90-95	L	M	Shelled limas very perishable, require refrigeration
Beets	32-35	30	90-95	VL	L	Top beets before storage
Broccoli	32-35	29	90-95	VL	H	Lose color and vitamin C content above 32°
Brussels sprouts	32-35	31	90-95	VL	H	Rate of deterioration twice as fast at 40° as at 32°
Cabbage, head	32-35	31	90-95	VL	H	Wilts quickly; needs air circulation
Cabbage, Chinese	32-35	31	90-95	VL	H	Needs air circulation; stores well at 32°
Carrots	32-35	30	90-95	VL	L	Exposure to ethylene results in bitterness
Cauliflower	32-35	30	90-95	VL	H	Easily bruised
Celery	32-35	30	90-95	VL	H	
Collards	32-35	30	90-95	VL	H	Vitamin and quality retained when wilting prevented
Corn, sweet	32-35	29	90-95	VL	L	Cool promptly after harvest
Cucumbers	45-50	40	85-90	L	H	Turn yellow in presence of ethylene; very susceptible to moisture loss
Eggplants	45-55	40	85-95	L	L	Very susceptible to chilling injury
Endive, escarole,	32-35	31	90-95	VL	M	

APPENDIX A. STORAGE REQUIREMENTS FOR FRESH PRODUCE

Vegetables	Optimal Storage Temperature °F	Chill Point ^a	Optimal Relative Humidity	Ethylene Production ^b	Ethylene Sensitivity ^b	Comments ^c
Garlic	32-35	25	56-75	VL	L	Do not pack in plastic or mist
Greens	32-35	31	90-95	VL	H	Vitamin and quality retained when wilting prevented
Kale	32-35	30	90-95	L	M	Vitamin and quality retained when wilting prevented
Kohlrabi	32-35	30	90-95	L	VL	
Leeks	32-35	29	90-95	VL	M	Trimming base and putting in cold water will help reverse wilting
Lettuce	32-35	31	90-95	VL	H	Ethylene gas increases russet spotting; not tolerant to carbon dioxide
Mushrooms	32-35	30	90-95	VL	M	Deterioration marked by brown discoloration of surfaces, elongation of stalks, and opening of veils
Okra	50-55	45	90-95	L	M	Deteriorates rapidly; bruises easily
Onions, green	32-35	31	90-95	M	VL	Highly perishable
Parsley	32-35	30	90-95	VL	H	Display with stems in cold water
Parsnips	32-35	30	90-95	VL	L	Wash and thoroughly dry before displaying
Peas, green	32-35	30	90-95	VL	M	Lose part of sugar content if not cooled immediately after harvest
Peppers, Bell, chili	45-50	42	90-59	L	L	Susceptible to chilling injury and moisture loss
Potatoes, table	40-50	31	85-90	VL	M	Exposure to light causes greening Wash and thoroughly dry before displaying
Pumpkins	50-60	40	85-90	L	L	
Radishes	32-35	31	90-95	VL	L	Wash and thoroughly dry before displaying
Rutabaga	32-35	28	90-95	VL	L	Wash and thoroughly dry before displaying
Spinach	32-35	30	90-95	VL	H	Vitamin and quality retained when wilting prevented
Squash, summer	45-50	31	90-95	L	M	Harvested immature for best quality
Squash, winter	50-55	50	85-90	L	L	

APPENDIX A. STORAGE REQUIREMENTS FOR FRESH PRODUCE

Vegetables	Optimal Storage Temperature °F	Chill Point ^a	Optimal Relative Humidity	Ethylene Production ^b	Ethylene Sensitivity ^b	Comments ^c
Sweet potatoes	58-65	54	85-90	VL	L	
Tomatoes, green	55-73	55	85-90	VL	H	Ethylene increases ripening; do not refrigerate if to be used for fresh use
ripe	55-60	50	85-90	M	H	Do not refrigerate if to be used for fresh use
Turnips	32-35	30	90-95	VL	L	Wash and thoroughly dry before displaying
Watercress	32-35	30	90-95	VL	H	Precool promptly after harvest
Melons						
Cantaloupe	38-40	36	90-95	H	M	
Crenshaw	50-55	45	90-95	M	H	
Honeydew	50-55	41	90-95	M	M	Do not ripen after harvest even with ethylene treatment
Watermelon	55-70	50	85-95	L	L	

^a Produce subject to chill injury below this temperature

^b Ethylene production and sensitivity to ethylene exposure, where:

VH = very high

H = high

M = moderate

L = low

VL = very low

^c Source: Lutz, J.M., and R.E. Hardenburg. *The Commercial Storage of Fruits, Vegetables, and Florist and Nursery Stocks.*

Source: USDA. *Transport and Storage Requirements for Produce.*

APPENDIX B. LONG-TERM STORAGE INCOMPATIBILITY

Commodity	Stored with	Results
Citrus	Any strongly scented vegetables	Absorbs odor and taste
Celery	Onions or carrots	Transfer of odors
Ethylene producing fruit and vegetables	Leafy greens or flowers Cucumbers, peppers, green squash	Ethylene damages leafy greens and flowers ^a Causes loss of green color
Apples	Carrots	Ethylene causes bitterness in carrots
Apples, pears	Potatoes	Acquire earthy taste and odor of potatoes

^a Symptoms include: epinasty (downward bending of leaves), premature withering or rapid aging, dropping of leaves, florets, or berries, yellowing of foliage, and inward curving and closing of opened petals (“sleepiness” in carnations).

Source: Based on Hardenburg, et al. pp.28, 87.

APPENDIX C. COMMUNITY SUPPORTED AGRICULTURE

The idea of the CSA came to the United States from Europe and Japan in 1985. Members share in the production risk by purchasing shares in the harvest before the growing season begins and then picking up their shares during the harvest season. Many CSA’s produce organically. The benefits to the producer are

- Early cash flow for seed and other inputs
- Sale of crops prior to planting
- Crop mix easier to plan because of assured market
- Marketing completed prior to planting, thus allowing time during season to concentrate on production

Although CSA’s have traditionally been used for food crops, there is no reason why they cannot be used for greenhouse or nursery plants or animal products.

APPENDIX D: RECORD KEEPING

There are several advantages to keeping accurate records—for your own information, for tax purposes, and for the banker. If you do not have the expertise to put the information together in a meaningful fashion, pay someone to do it for you. There are a myriad of computer programs available that will help make the record keeping easier, but not necessarily produce the final information you need to evaluate your marketing plan. Keeping records on a cash basis—money comes in, money goes out, without accounting for credit owed to you or that you owe to someone else—is fine for taxes. It does

not provide you with the information you need to make decisions. Modifying those cash basis records to account for leftover seed, fertilizer, accounts payable and receivable, and so forth, will provide you with much better information for decision making. (See *Financial Guidelines for Agricultural Producers* for detailed discussion of the tax ramifications of various types of accounting and for how to modify the cash basis accounting.)

For more detailed information on how to keep records and allocate costs to individual crops, attend a record keeping workshop sponsored by your local Virginia Cooperative Extension or talk to an accountant. If you look only at the aggregate, you will not know which crops are profitable and which are not. If a crop appears to be unprofitable, you may need to search further. Some crops by themselves are not profitable, but without those crops, others would not sell. You need detailed information to make accurate decisions.

Assigning variable and fixed costs becomes difficult assets are used for the production of all crops.

For example, labor is used for all crops, but how many hours were used for the production and harvest of tomatoes or for the production of poinsettias? How do you allocate the interest payment for the tractor to each crop?

Virginia Cooperative Extension provides cost of production budgets. **You should use these budgets as guidelines.** They will show you categories you need to include for variable and fixed costs, but the actual dollar amounts for inputs and the man-hours required for your operation will be depend on your choices for seed, fertilizers, pesticides, and cropping practices. It will also be depend on the terrain, soil type, soil texture, water availability and rainfall, and other climactic and weather-related conditions.