Shiitake Mushroom Marketing Guide For Growers

Developed for
The Southeastern Minnesota Forest Resource Center

by
Patricia Meiville and Ann Potter

Published by the Southeastern Minnesota Forest Resource Center
Lanesboro, Minnesota 55949
PREFACE

Background

The development of this Grower's Guide is part of the Shiitake Mushroom Demonstration Project developed by the Southeastern Minnesota Forest Resource Center (FRC) in Lanesboro, Minnesota. The Forest Resource Center's goal is to improve the management of our hardwood forest resources on private lands. This objective, combined with local farmer's economic need to find new crop alternatives, has created an interest in growing shiitake mushrooms in Minnesota.

Growing shiitake is quickly becoming a national trend. Some states already have organized growers' associations to help the individual grower get started and expand. Supplies and spawn are available through mail order and local distributors. Extensive materials are available about inoculating, growing, fruiting, and harvesting in both indoor and outdoor environments. A mushroom that was once primarily supplied form the west and east coasts, or imported from Japan, is now being grown throughout the Midwest.

The Forest Resource Center is committed to supporting shiitake mushroom growers in their efforts and promoting the shiitake mushroom on both a local and national basis.

Purpose of the Guide

As the staff of the Forest Resource Center talked with interested growers and other grower organizations, one question was always asked, "Where and how do we sell them?"

Although there are hundreds of books on marketing and sales available, growers thought that these texts provided too much theoretical information that takes too much time to review, and does not deal specifically with the produce industry.

The Forest Resource Center also found that growers didn't want to be experts, and that they didn't like the idea of selling at all. It was just a "necessary evil."

The purpose of this guide is to help the grower answer the questions, "Where and how do we sell them?" It was not created to make you, the grower, an expert in Marketing and Sales. That would take volumes. It is designed:

- To give you specific information about both the produce industry and selling mushrooms, so that you can plan what to do with your mushroom when they are ready for market.
- To be practical and easy to use so that you not only learn how to market and sell but can apply the information in a way that fits your specific needs.
- For the growers, not salespeople. It will provide you with the information you need to make marketing and selling as easy as possible, in a language you can understand.
- To help you sell fresh mushroom. Many of the concepts will apply if you branch out into other products, such as dried mushrooms or powder.
- To help potential growers make decisions about whether to enter the market.
How to Use the Guide

The guide is to be used as a workbook. You should write in it, store other shiitake information in it, and update it regularly.

There are seven working sections.

- MARKETING OVERVIEW
- MARKETING ASSESSMENT
- DISTRIBUTION
- PACKAGING
- PRICING
- PROMOTION
- PERSONAL SELLING

At the end of each section is a worksheet for you to complete. The worksheets are designed to guide you through the development of your own specific plan.

The guide’s SUPPLEMENTAL section includes a hypothetical analysis of three shiitake operations, definition of terms, methodology, acknowledgments, and miscellaneous.

Each section is individually labeled and allows enough room to add any of your own information.

About The Authors

The Southeastern Minnesota Forest Resource Center, Inc. is a member supported private, nonprofit, educational corporation promoting the wise economic, educational, and recreational use of our natural resources. Incorporated in 1980, the Forest Resource Center is located north of Lanesboro, Minnesota. Demonstration areas, a shiitake mushroom operation, and classes on woodland management are components of the Center’s educational and economic development component. Six miles of hiking trails and classes in wild edibles, birdwatching, habitat management, etc. provide educational and recreational opportunities. The shiitake mushroom project was begun in 1983. In 1986 the Forest Resource Center received a grant from the Northwest Area Foundation. This guide is a result of that grant. The Forest Resource Center is open to visitors, please call to make an appointment to find out more information.

The guide has been researched and developed by two independent marketing consultants: Ann Potter, of Ann Potter and Associates, and Patricia Melville, of Melville & more.

Patricia Melville is president of Melville & more, a marketing and sales consulting firm specializing in sales training and new product development. Ms Melville has 11 years of sales experience, three of which were with a foodservice distributor in the Minneapolis area. In addition, Ms Melville has four years of new product development and marketing management experience and has worked with both service and packaged goods. Her credentials include an MBA in Marketing and Organizational Development and a Bachelor of Science in Hotel/Restaurant Management.

Ann Potter, president of Ann Potter and Associates, has over eight years of marketing research experience in Minnesota. While at the Minnesota Trade Office’s Agricultural Trade Division, Ms Potter was Senior Research Specialist in charge of helping Minnesota’s food companies develop new food products or crops such as: lupines, gourmet pickles, pesto, farmstead cheese, and wild rice. She was active in developing the Minnesota Grown Cam-
campaign. Ms Potter has an M.B.A. in Market Research and a strong and varied research background in many areas including health care, heavy equipment, and vacuum chamber technology.

Methodology

The materials provide in this guide are based on extensive research completed in early 1987 in the Minneapolis/St. Paul and Rochester, Minnesota markets. The produce market changes constantly and varies from location to location. As a result, specific data provided in this guide may not be accurate for your specific marketplace or over time.

A complete description of the methodology used is included in the SUPPLEMENTAL section at the back of the guide.

For more information about marketing and sales, there is a bibliography of sources used to complete this guide. It is located in the SUPPLEMENTAL section at the back of the guide.

If you have any specific questions about the concepts or ideas presented in the guide, please contact:

Forest Resource Center
Route 2, Box 156A
Lanesboro, Minnesota 55949
507-467-2437
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARKET OVERVIEW</td>
<td>1</td>
</tr>
<tr>
<td>Marketing Definitions / Marketing Planning / Positioning Alternatives / Collective Marketing Associations / Market Overview Worksheets</td>
<td></td>
</tr>
<tr>
<td>MARKET ASSESSMENT</td>
<td>13</td>
</tr>
<tr>
<td>Definitions of Market Assessment / Purpose of Market Assessment / Components / Defining Market Parameters / Market Assessment Worksheets</td>
<td></td>
</tr>
<tr>
<td>DISTRIBUTION</td>
<td>23</td>
</tr>
<tr>
<td>Overview of Distribution Channels / How to Select a Channel / Characteristics of the Produce Business / Characteristics of Two Distribution Channels / Distribution Worksheets</td>
<td></td>
</tr>
<tr>
<td>PACKAGING</td>
<td>43</td>
</tr>
<tr>
<td>Boxes / Plastics / Wraps / Pulp Products / Labels / Grading Standards / Making Packaging Decisions / Retail and Wholesale Applications / Packaging Worksheets</td>
<td></td>
</tr>
<tr>
<td>PRICING</td>
<td>55</td>
</tr>
<tr>
<td>Influences on Demand / Market Prices / Setting a Price / Markups and Margins / Establishing Operating Costs / Reactions to Falling Prices / Negotiating a Price / Pricing Worksheets</td>
<td></td>
</tr>
<tr>
<td>PROMOTION</td>
<td>63</td>
</tr>
<tr>
<td>Promotion as Communication / Knowing Your Target Audience / Setting Promotional Objectives / Developing a Promotional Strategy / Promotional Tools / Media Advantages and Limitations / Promotion Worksheets</td>
<td></td>
</tr>
<tr>
<td>PERSONAL SELLING</td>
<td>85</td>
</tr>
<tr>
<td>Preparing to Sell / Prospecting New Accounts / Qualifying Your Customers / The Sales Model / Feature - Benefit Statements / Selling to Wholesalers and Retailers / Personal Selling Worksheets</td>
<td></td>
</tr>
<tr>
<td>SUPPLEMENTAL SECTION</td>
<td>99</td>
</tr>
<tr>
<td>Small-Scale Financial Analysis</td>
<td></td>
</tr>
<tr>
<td>DEFINITION OF TERMS</td>
<td>115</td>
</tr>
<tr>
<td>METHODOLOGY</td>
<td>117</td>
</tr>
<tr>
<td>ACKNOWLEDGMENTS</td>
<td>119</td>
</tr>
<tr>
<td>BIBLIOGRAPHY</td>
<td>123</td>
</tr>
<tr>
<td>MISCELLANEous</td>
<td></td>
</tr>
</tbody>
</table>
MARKET OVERVIEW

It is very common for people to use the terms marketing and sales synonymously, however, if spoken to a marketer, this causes a raised eyebrow or a shake of the head. Both terms are very important. Marketing is a broader, umbrella-like term that includes all of the activities necessary to successfully bring a product to market, with sales playing a crucial role.

The purpose of this section is to provide you with an overview of basic marketing components and introduce you to the language of marketing. Each of the following sections of the guide takes one of the components of marketing and describes it in detail.

This section will include:

- MARKETING DEFINITIONS
- MARKETING PLANNING
- POSITIONING ALTERNATIVES FOR SHIITAKE MUSHROOMS
- A NOTE ON COLLECTIVE MARKETING ASSOCIATIONS

The information provided in this section, and expanded on throughout the guide, is designed for the use of the individual grower. However, the same concepts, planning process, and implementation ideas would apply whether you sell your mushrooms directly or through a co-operative association or a distributor organization.

Many of the formal definitions provided in the guide are from one of two texts: Marketing, Contemporary Concepts and Practices, by William Schoell, and Principles of Marketing, by Philip Kotler. Both are classics within the marketing industry. For more information, refer to the BIBLIOGRAPHY.

---

Marketing is a human activity directed at satisfying needs and wants through exchange processes. This is a simple definition, yet it has many interconnected elements. To simplify the concept even more, let's break the definition down into smaller pieces.

A need is something a person feels they must have. Needs can exist at many levels. There are survival needs like safety, warmth, food and clothing, social needs for affiliation, power and acceptance, and personal needs like creativity and knowledge.

If a need is not met, a person will go looking for something to satisfy it, or try to reduce their sense of lacking in some way.

A want is the object that a person looks for to satisfy a need. Wants are very personal and are based on the culture we live in and our individual personalities. One sick person may want tomato soup, while another wants cookies and milk.

What is important to remember, particularly when we get to personal selling, is that we do not create needs. Consumers are interested in and desire things that fulfill their
needs. Your goal is to provide the product that will satisfy their needs the best and deliver it more efficiently and effectively than your competition.

One exciting thing about marketing is that wants and needs are constantly changing, so there are always new opportunities in the marketplace. It is a little like the surf, there is always another wave coming soon.

Many needs and wants are left unmet because most people have limited dollars available. When assessing what he wants, the consumer chooses the item that will give him the most satisfaction for his dollar. When the consumer allocates his dollar for something he wants, his want then becomes a demand.

Anything that can satisfy a need or want is a product. It can be goods (like mushrooms), services, location, concepts, people or associations.

To be the most effective in your marketing efforts, select the customer group where your product will satisfy the group’s need as much as possible.

As you evaluate where you want to market your mushrooms, keep asking yourself about the "fit" between what you have to sell and what the customer wants.

The term market can be used any time there is a buyer and a seller for a product.

A target market is a well defined set of present and potential customers. All markets can be "segmented" into groups of customers who will respond in a similar way to a given set of marketing efforts. These segments can be grouped according to many factors such as demographics (sex, income, age) geographic location and psychological variables (social class, economic standing).

To select your target market you must select the segment or segments you want to enter. Choose the segments where your product most closely meets their wants and needs. It is important to focus on meeting the needs of a limited number of segments, particularly if you have limited resources available. For example, if you live in Southern Minnesota and have 50 pounds of shiitake mushrooms to sell each week, you may want to target grocery stores in Rochester, Minnesota, and wholesalers who deliver to restaurants in your area.

When you select your target market, take into consideration: your capabilities and resources, your overall objectives, the amount of product you have available, your location, your competitors, and their resources and capabilities. Be sure to estimate the revenues, costs and profits you can expect in return from each market and allocate your resources accordingly.

The word that brings the action to marketing is exchange. An exchange occurs when a seller provides the buyer with his desired object or want in return for a payment. In most cases in the produce industry, the payment is money.

There are four elements that are "mixed" to create a blend that best satisfies customers’ wants. They are: product, place (or distribution), promotion and price. Often times, packaging is added to make the fifth "P". Together these elements make up the marketing mix. The mix consists of everything you can do to influence the demand for your product.
A marketing strategy is a broad plan of action that specifies a target market and marketing mix for that target.

Your marketing strategy is an action plan for effectively using your resources to meet your established objectives. The plan is focused toward a set of targeted customers.

Promotion involves informing, persuading or reminding your targeted customer to buy your mushrooms. It is how you communicate the benefits of your mushrooms and persuade your customers to buy them.

The elements of promotion are: advertising, personal selling, public relations and sales promotion. These four elements are called the promotional mix.

There are at least four distribution channels available to get your mushrooms to the consumer: retail (sales to stores), wholesale (sales to wholesalers/distributors), direct marketing to the consumer (roadside stands, farmers’ markets), and exporting.
For the purpose of this guide, we will focus on the retail and wholesale channels. However, we have included general information on direct marketing in the PROMOTION section. In addition, several excellent publications about direct marketing have been developed by the Minnesota Grown Project, at the Minnesota Department of Agriculture. We have tried not to duplicate their work and have provided ordering information in the SUPPLEMENTAL Section.

Once you determine a marketing strategy, you need to develop a marketing plan. A marketing plan spells out exactly what you are going to do, how much it will cost, and when you will do it, to implement your strategy. When developing your plan, remember that plans do not need to be elaborate; they need to work! Keep it simple at first, and add new ideas as your business and resources expand.

Also, be realistic about the time and resources you have available to you. Set goals and timelines that you can meet, or you will find you won’t use the plan at all.

Your marketing plan should include:

a) specific activities needed to implement your strategy, who will be responsible for each activity and when it will be completed.

b) a budget summarizing the resources needed to implement your strategy.

c) sales and profit forecasts so you can measure your results on an ongoing basis.

d) a timetable to review results.

MARKET PLANNING

As growers, you need to know what you want to accomplish in growing shiitake mushrooms. Part of the answer is probably “to make money,” but you need to be more specific, or you will not have any way to measure your results. You need to set some marketing objectives.

Some possible objectives are: to begin selling your mushrooms in three new grocery stores; to increase the volume you sell through wholesalers by 10%; or to increase your revenue for the year by 15%. The objectives you choose should fit the needs of your organization, your resources, and be realistic in your market area.

The definitions provided above are all the tools you need to begin to design your own marketing plan. The guide describes all the fundamental elements of marketing as it specifically affects you and the decisions you need to make to successfully bring your shiitake to market.

When you have read the entire guide, you will be able to answer these and more questions:

- What is my target market?
- What are my marketing objectives?
- What is my positioning strategy?
• What is my distribution channel(s)?
• What kind of packaging will I use?
• What will my margins be?
• What will I do to promote myself and my product?
• What are the features and benefits of my shiitake mushrooms?

It is recommended that you work through all the other worksheets following each section in this guide. Take your time, and do all of the required "homework". Then return to this section and complete the following worksheet entitled Marketing Strategy

Every product is a combination of perceived attributes that have potential to satisfy customer needs and wants. A product's position refers to customer perception of its attributes relative to competitive brands' (i.e. Campbell's, Hazel Dell's, etc.) It is, therefore, the customer who positions the product.

If you can determine how your customers perceive (position) your mushrooms compared to those of your competition, you can select a positioning strategy, or positioning statement, to influence and manage your product's position.

A product can be positioned to compete head-on with another brand or to minimize direct competition. For example, if a competitor's mushroom is perceived as nutritional, you can compete head-on by comparing your mushrooms to theirs for nutritional content. As you will see, it may not always be possible to prove the superiority of your mushrooms.

To minimize direct competition, you would not position your mushroom as nutritious, but would choose a different strategy such as natural or exotic. Then the customer would have to choose the mushrooms with the attributes that best meet their needs.

When you are selecting a positioning strategy, always base it on your customer's perceptions and their needs and wants. Your may think shiitake mushrooms are beautiful, but your customers may not.

In our research, we wanted to find out consumer perceptions of shiitake mushrooms. We looked for consumers with a generally high awareness of, and interest in, food. To access this population, we surveyed cooking classes at three Minneapolis/St. Paul cooking schools. PLEASE NOTE THAT THIS SURVEY MAY NOT BE REPRESENTATIVE OF YOUR TARGET MARKET. Our survey produced information that can be used in developing a marketing mix. A copy of the survey is included in the Supplementary Section. Following are results from the survey.

68% had eaten shiitake mushrooms before, mostly in restaurants: served in sauces, soups, salads, sauteed as appetizers, or in Chinese dishes. Many of the restaurants
were located on the east and west coasts.

85% had never purchased a shiitake mushroom before. Reasons: they didn't know about them, didn't need them, they weren't available, and/or they didn't know how to store or prepare them.

15% had purchased shiitake mushrooms, from either Lunds, Byerly's, Williams Sonoma, or a San Francisco Chinese Market. They learned about them through restaurant menus, friends, recipes, food magazines, cooking classes or in the Orient.

73% had never used a wild mushroom before, but of those 15% who had used them, they used them in salads, sauteed in appetizers, sauces, and in soups.

60% have never used a dried mushroom. Of the 30% that had, they used them in sauces, salads, soups, and Chinese stir fry cooking.

63% said they would pay up to $3.00 for a 3-oz. package.

10% said they would pay up to $4.00 for a 3-oz. package.

5% said they would pay up to $5.00 for a 3-oz. package.

13% found $3.00 too high a price for a 3-oz. package.

One person said they would pay $5 if they were grown in Minnesota.

58% would use them as a substitute for button mushrooms. 20% wouldn't because of their brown color and thicker texture.

---

Perceptions - Retail

In the survey we tested seven possible positioning strategies for the shiitake mushroom: unusual, flavorful, exotic, trendy, wild, nutritional, and natural. Following are the perceptions of the surveyed sample population:

Unusual: yes-68%, no-8%, undecided -24%

Reasons they were considered unusual were name, scarcity, and color.

Flavorful: yes-43%, no-14%, undecided-43%

Most growers consider the shiitake mushroom very flavorful. Keep in mind that 68% of the respondents have tasted shiitake mushrooms, so at least 11% of them didn't remember how they tasted. Taste awareness is lower than you think.

Exotic: yes-48%, no-33%, undecided-19%

They were perceived as exotic because they were different from button mushrooms, were brown, had an unusual name, and were not readily available.
Trendy: yes-40%, no-25%, undecided-12%
Some thought that they "sounded" trendy and were "yuppyish."

Wild: yes-68%, no-20%, undecided-12%
They were thought to be wild because of their name.

Nutritional: yes-50%, no-10%, undecided-40%
This category had a very low level of awareness. Many people didn't know that mushrooms in general had any nutritional value.

Natural: yes-83%, no-1%, undecided-14%
Shiitake mushrooms were perceived as natural because they were not processed.

To gauge the perceptions of the shiitake mushroom in the wholesale industry, we talked with the end users: chefs currently using shiitake mushrooms in their cooking. The interviews were made up of open-ended questions. The following is a summary of their responses.

Uses for shiitake mushrooms

- grilled
- marinated
- sauteed
- sliced
- with Pate Chou
- with other mushrooms
- in vegetarian entrees
- with game

- with pasta
- in fish sauces
- with meats
- in combination with shallots
- in wild rice entrees
- in soups
- in wild mushroom stroganoff
- cooked in wine

Features

- Delicate flavor
- Meaty texture
- Interesting

---

<table>
<thead>
<tr>
<th>Flavor</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUTTON</td>
</tr>
<tr>
<td>OYSTER</td>
</tr>
<tr>
<td>SHIITAKE</td>
</tr>
<tr>
<td>ITALIAN PORCINI</td>
</tr>
<tr>
<td>CHANTERELLE / MOREL</td>
</tr>
<tr>
<td>LEAST MOST</td>
</tr>
</tbody>
</table>
Not Compatible with

This category was very individualized. Three that were consistently mentioned were:

- Desserts
- Fruit
- Salads (In Raw Form)

Quantity Purchased

Three to five pound boxes.

Where They First Heard About Them

They were introduced to shiitake mushrooms by their produce salesperson; at the area vocational institute or cooking school; or in a recipe.

Useful Information

They would like information about storage and handling; shelf life; recipe ideas or unique uses; and descriptions for waiters/waitresses.

IMPLEMENTING POSITIONING STRATEGY

Once you have selected your positioning strategy it will become the basis of all of your marketing mix decisions.

For example, if you choose to position your mushrooms as exotic and decide to sell in the retail market, your mushrooms would need to:

- Be packaged using graphics, colors and logo that make them look exotic. The copy or language on the package must be exotic, mysterious, soft, and sensual.
- Be placed in the specialty food section of the produce department with the other exotic foods.
- Be priced higher than a regular button mushroom. Exotic means rare and always more expensive.
- Have promotional materials that communicate that your mushrooms are exotic. The materials could include point-of-purchase literature, recipes for "exotic" dishes, or the history of the mushroom in Japanese culture. These materials would use the same kind of language as in the product packaging.
- Distribute your mushrooms through grocery stores that are known for carrying the highest quality and most Exotic produce.

This is only one brief example of a positioning strategy. The possibilities are limitless. Experiment with one or two ideas, then test them out on your friends, customers, or the general public before making a final decision.
An alternative to individual marketing is for growers to sell their products through a collective marketing association. A common organizational form for such an association is a local growers' cooperative, which is owned and controlled by the growers themselves. Typically, the cooperative assumes marketing responsibility for 100% of the product harvested by its members.

Growers benefit because the cooperative can promote product use and negotiate sales more effectively than an individual grower, with limited resources available for marketing, can do alone. Although sales to the co-op may occur at prices lower than some members might obtain through personal sales, members gain by avoiding the time and expense of personal selling, and, in the long run, by securing higher volume sales at more stable prices.

By organizing production schedules among its members, a cooperative can meet the requirements of buyers who require a year-round supply of mushrooms. Similarly, since the major buyers of shiitake maybe from larger organizations such as grocery chains, individual growers who operate through a cooperative may obtain greater bargaining power, which can translate into steadier pricing. Finally, during periods of over-supply, (when production exceeds market demand), a cooperative can assign production quotas to its members so as to minimize wasted product and below-cost pricing.

Another key responsibility of many cooperatives is to promote increased product demand. This may be done via such activities as: in-store demonstrations, distribution of recipes and participation in trade shows and exhibits. Such a promotional campaign typically involves a long-term strategy, for even a successful campaign may require several years before results are observed. Some growers organizations perform promotional and educational functions, but leave marketing to individual members. Starting a growers' cooperative results in costs as well as benefits to growers. Typically, members must agree to sell 100% of their product (excluding personal use) to the co-op, which prevents growers from attempting to market some of their product by themselves. Also, there are expenses associated with starting and operating a cooperative. Members are often required to contribute money to pay for start-up costs; the cooperative repays these contributions over time. Additionally, costs of selling product (called a marketing fee) are deducted from the proceeds returned to individual growers. However, this marketing fee is usually substantially less than the cost would be if growers personally marketed their own mushrooms.

A well-run cooperative can be the most efficient means for growers to market their products. By pooling resources, the cooperative can hire staff with expertise in marketing, and operate with the size advantages of much larger producers. All profits are allocated to growers at the end of the year, usually based on quantities sold. Finally, because of various laws favoring agricultural cooperatives, growers can coordinate their businesses in ways that otherwise would be prohibited.
FINAL MARKETING STRATEGY  (Note: It is recommended that you initially skip this section’s worksheets and work through all the other sections and worksheets before starting this one. In other words, save this one for last.)

What are your objectives for:

1988:

1989:

1990:

Long range:

What is your target market or markets?
Describe your product.

What is your positioning strategy?

Describe your marketing mix. (Refer to the worksheets at the end of each section to complete this description.)

Place (distribution):

Price:

Packaging:
Market Overview Worksheets

Promotion:

Use this space to develop an implementation plan for your strategy.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Requirements</th>
<th>Deadline</th>
<th>Assigned to</th>
</tr>
</thead>
</table>


MARKET ASSESSMENT

A market assessment is an analysis of the current environment for your product. Think of it as "taking stock of the situation," from all aspects, all at once.

It is both a snapshot and a constantly moving picture of where shiitake is today, where it has been, and where it is going.

This section includes an outline for you to follow and tools for you to use to assess the market for your shiitake. Such an effort is crucial for you to provide yourself with the best available information for making strategic marketing decisions.

This section will include:

- DEFINITION OF A MARKET ASSESSMENT
- PURPOSE OF A MARKET ASSESSMENT
- COMPONENTS
- DEFINING MARKET PARAMETERS
- IMPLEMENTATION

A market assessment is a body of information about your market. It also includes the analysis of how this information relates to your shiitake operation.

When you collect such information, you conduct market research. The more timely and accurate the information, the better.

Some information will be found in magazines and research reports. The remainder (and often the most important) will be from what other people tell you.

This information is most often "stored" in one of four ways:

- In your memory,
- On scraps of paper,
- In some sort of filing system, or
- As part of a marketing plan (document).

"Knowledge is Power." Your market assessment will allow you to make extremely powerful marketing decisions for your shiitake operation.

These decisions complement your overall marketing goals and comprise the basis for your marketing strategy.
These decisions will concern your operation's:

- Target Market(s)
- Product Form
- Prices
- Packaging
- Promotional Efforts
- Research Efforts
- Financial Projections
- Long-range Planning, and other areas.

A good market assessment means you are gathering good, timely, accurate information on your market.

In a sense, if you are a businessperson, you must always be "doing" a market assessment.

Shiitake are sold in a changing world, and an assessment is never "done." But, some elements of it (distribution channels, sources) don't change as fast as do others (prices, consumers).

**COMPONENTS**

To conduct a market assessment, you must constantly be asking questions and be on the lookout for information sources.

The following are the components of a market assessment. The discussion of each component includes the type of questions you will need to ask yourself as you assess the components of your market.

**Distribution Channels**

Identify the distribution channels in your market area for your product. Locate brokers, wholesalers, retailers, farmers' markets, specialty stores and other channel members.

- Who carries specialty produce in your area?
- Where are they located?
- Where do they buy their produce?
- How is it delivered?

**Consumer Profiles And Activities**

Identify the shiitake users in your market area. You must determine who is buying shiitake, why they buy them, and how they use them.
• What kinds of chefs and institutions are buying shiitake?
• What kinds of grocery shoppers buy shiitake?
• How do they each use the product?
• How much are they willing to spend per pound?

Competitors may be large scale operations or small growers. They may be distributors, brokers, or even growers of related mushroom varieties. Find out as much as you can about your competitors' activities.

• Who are they?
• Where are they?
• How much do they actually sell?
• What do they do well?
• What can I do better than they do?
• Where are they successfully selling it?
• For what price?
• What are their future plans?

Determine current, historical, and future estimates of price, demand, and supply of shiitake in your market area.

• How far has the price fallen?
• How much is being grown?
• How much shiitake will consumers want next year?
• How long does it take to educate consumers?

Track produce and shiitake industry developments in new products, research findings, channel trends, imports/exports, etc.

• Is this new strain any better than mine?
• Are most retailers going toward Integrated buying?
• Is shiitake really effective at preventing AIDS?
• Is the People's Republic of China gearing up to export dried shiitake?
Environmental Factors

Track external factors which are generally out of your control, but which control your business operations. These usually include the weather and governmental activities

- What will rainfall be next spring?
- What will the cost of oil be?
- What will my taxes look like?

DEFINING MARKET PARAMETERS

To conduct a market assessment, you need to review your marketing goals and objectives. These will help you select the market area you wish to assess.

Only you can decide whether a market fits your overall goals and objectives. It is recommended that you seriously review the time and financial resources available to you. Also consider the amount of saleable shiitake you will have.

If you are a small grower, chances are that your time and financial resources may still be too limited to go farther than the closest large, metropolitan area.

For this reason (and without knowing your unique situation), it is recommended that if you are a small grower, you begin by assessing those markets geographically close to where you grow your product.

If you are a larger grower, your situation may be totally different. You may be forced to go to even larger markets as a means of selling your supply. Therefore, larger shiitake producers cannot afford to view local markets as their only outlet.

How do you start assessing all of the thousands of markets out there?

It would be exceedingly complex for you to try and find out everything about every market, all at once. You probably cannot afford it, nor would it be an efficient use of your time.

In this case, it is recommended that you conduct informational interviews with a number of specialty brokers (ideally in different parts of the country) who deal with shiitake. Their job is keeping track of national markets for your product.

Airshipping to distant cities is relatively easy, if you use a broker and/or distributor. This sort of arrangement happens every day. The smaller grower shouldn't count out these markets, if he can make it affordable.

Due to their high value and highly perishable nature, shiitake are shipped overnight by air, from both coasts, to nearly anywhere in the U.S.

For this reason, any shiitake buyer located near an airport has numerous options for shiitake grown in another county, state, or region. Your competitors are growing shiitake in California, Michigan, Ontario, Singapore, Virginia and Vancouver, to name a few places. Your job is to provide a better, fresher product than they can!
Whether you're in Lancaster, Wisconsin, or on Maui, Hawaii, you've got to start with where you are, with the tools you've got, including:

- The nearest good library,
- Your telephone, and
- The U.S. Postal Service.

Once you get your contacts identified, you will be on the telephone quite a bit, talking with people who know shiitake. Be honest with everyone you talk to.

If you are talking to buyers, assure them that you are not trying to sell them anything yet, but that you are just looking for some market information and need some good advice. (Everyone loves to give advice.)

Go to association meetings. Meetings and trade shows are excellent places to pick up competitive and trend information. You can talk to people directly, and overhear quite a few other valuable conversations.

To start implementation of your market assessment, pretend you've been dropped into a totally new culture. Your mission is to learn as much as you can, as fast as you can.

The following are the steps you need to complete a market assessment:

1. Locate or buy the book by Geraldine C. Kaye, *Wild and Exotic Mushroom Cultivation in North America: A Growers' and Gourmets' Guide to the New Edible Species*. (see the BIBLIOGRAPHY). This guide provides an extensive listing of shiitake organizations, brokers, and other resources. It can save you a lot of time.

2. Read, review, and consider subscribing to the following publications: *Gourmet, Cuisine, Bon Appetit*, good mushroom journals, the *Shiitake News, Frieda’s Hot Sheet, The Packer, Food Broker, Supermarket News, Progressive Grocer*, and others.

Find someone who may subscribe to these already (grocer, cook, another grower, etc.). Or look up the publications' phone numbers in the library's directory of periodicals. Then call up the advertising or circulation department and ask for a sample copy. (Tell them you might want to advertise.)

For an extensive, relatively current national listing of over 16,000 produce outlets and sources, *The Red Book* is the bible of the business. It is available through Vance Publishing, 7950 College Blvd., Overland Park, KS, 66210. PH: (913)381-6310. At $300 per year (including updates), it is relatively expensive, so you may want to just find someone who subscribes and occasionally reference a few pages.
3. Consider becoming an associate member of the state grocery, wholesaling, and/or restaurant trade associations and chef societies. Get their magazines. Review them for names of people and companies. Find out who does what, where.

4. Get a current Business-to-Business Yellow Pages for your area and/or closest metropolitan area. Start your own list of firms under "Fruit and Vegetable Brokers, Wholesalers" category.

Call everyone on this list. Ask if they carry shiitake mushrooms. Ask if they know who does. Ask for the name of their buyer. Get them talking about how they see shiitake selling in your area.

5. Use the Consumer Yellow Pages "Grocery Stores" category. File these stores the same way.

Call each grocery store, ask for "produce," and ask whoever answers if they carry shiitake mushrooms. Tell them why you are interested and then ask them where they get their shiitake. Don't be afraid to ask how much they sell in an average week or month.

6. Find the corporate/chain headquarters' addresses and phone numbers for the companies owning many of the stores you just listed above. Call the general number. Ask the receptionist for the name and exact title of whoever makes the produce decisions for mushrooms. (Tell him/her you want to write him/her a letter.) But don't talk to him/her yet.

The next day, formulate a list of general topics and questions you want to cover. Call and ask them. Be respectful of time! These people are usually very busy.

7. Contact restaurant and hotel associations, as well as all local chef societies. Get names and phone numbers of the most likely chefs who would know the most about shiitake.

Call them up. (Chefs are most available in the mid-afternoon.)

8. Ask newspaper food editors for names of cooking schools and other resources for you. Get phone numbers.

9. Find the area farmers' market managers and call them.

10. Join the closest shiitake growers' association. Attend meetings. (See listings in the book by G.C. Kaye.) You will always have to give some information in order to get some, especially with competitors.

Once you have assessed your market, you should have a good feel for your role within it. It is now up to you to use the information (and collect more on an ongoing basis) to make intelligent marketing decisions and to review your current marketing activities with an ever more critical eye.
Market Assessment Worksheets

What are your targeted markets?

What assessment tools will you use:

Periodicals

Trade Associations

Yellow Pages - Grocery

Yellow Pages - Fruit and Produce Wholesalers

Corporate Headquarters
Food Editors

Farmers' Markets

Cooking Schools

Growers' Associations

What are the characteristics of the shiitake mushroom consumer in your market area?
Develop a profile of the shiitake mushroom competitors in your market area.

What are the history and projections for:

Price:

Demand:

Supply:

Describe the industry trends for specialty produce for your market area.
Market Assessment Worksheets

What environmental factors will influence the sale of shiitake mushrooms? How?

Notes:
DISTRIBUTION

To sell your mushrooms, they have to be available when and where your customers want to buy them. To accomplish this, you need to plan how you will store, ship, and deliver your mushrooms, on what days, at what time and how often.

The fresh mushroom business is increasing and becoming more complicated every year. Consumer tastes are becoming more refined, demanding higher-quality, fresher products. As a result, your mushrooms need to be handled faster, and kept in better condition than ever before.

You will need to select the marketing distribution channel best suited to handle and sell your mushrooms. The purpose of this section is to provide you with some general, practical information about handling the shiitake mushroom, and the distribution channels available to shiitake growers.

The first portion of this section will describe the characteristics of distribution channels in general, with emphasis on the retail and wholesale channels.

The second portion of this section will concern itself with practical, detailed shipping options available to you, the grower.

This section is designed to give you the basics from which you can decide your distribution strategy, according to your specific requirements.

This section will include:

- OVERVIEW OF DISTRIBUTION CHANNELS
- HOW TO SELECT A CHANNEL
- CHARACTERISTICS OF THE PRODUCE BUSINESS
- CHARACTERISTICS OF TWO DISTRIBUTION CHANNELS
- STORAGE, SHIPPING, HANDLING

How do you get your shiitake from your farm or woodlot into the mouths of end-users?

OVERVIEW OF DISTRIBUTION CHANNELS

There are four principal marketing channels of distribution you can pursue to commercially sell your shiitake.

These four are:

1. **Direct marketing.** Roadside stands, Farmers’ Markets

2. **Wholesale Markets.** Restaurants, Hotels, other Institutions and some Independent Groceries)
3. Retail Markets. Chain and Independent Groceries

4. Exports

Distribution channels flowchart. Read from bottom to top.

Within each channel there are various ways to move your shiitake shipment, depending on the unique aspects of the specialty produce business in each locale. It also depends on the number of marketing functions you, the grower, wish to do yourself.

You can try to do some or all of these functions yourself (i.e., by direct marketing). Or you can hire a firm to do some of the shipping, warehousing, breakdown, packaging, jobbing, billing, collecting, and customer service functions for you.

For example, refer to the box in the Distribution diagram labeled "Shipping Point Firms". If you are your own seller and shipping clerk, then you act as a shipping point firm.

Other such firms include growers' cooperatives or a shipping point brokers, which may do these and other functions for a fee or by taking actual ownership of your product.
In either case, you need to select which marketing distribution channel(s) to use for your product.

This decision will affect all other aspects of marketing your mushrooms: packaging, pricing, promotion, product availability, inoculation schedules, and more.

The four primary goals in selecting a distribution channel are described in the following paragraphs.

1. **Match your product's unique characteristics with the needs of the segment you are supplying.**

   You may find a 'good fit' with one channel over another. Examples of these include: some unique product characteristics, your geographic proximity, your size, current contacts from a former job, etc.

   An example of this would be selling your unique, soft-stemmed shiitake, through the wholesale channel, to very sophisticated chefs who may be demanding the "totally edible shiitake" at that time. Your mushroom's unique qualities may not be seen as an advantage if sold to a relatively uneducated consumer retail market.

   Return to your market assessment background information (see MARKET ASSESSMENT). Review all aspects of your product and operation (include packaging, price, location, delivery, customer service, etc.). Review them from the eyes of potential buyers in different channels. Ask yourself what they would list as the unique advantages of your operation and mushroom product.

2. **Review your resources.**

   Look at the time and financial resources you will have available in the next two or so years. Be critical. Select a channel that is reasonable for you to be able to address, in terms of volume of product required, prices/shipping costs, amount of promotional support required, packaging costs, and other factors.

   If you only will have 10 pounds a week of product for the next year or so, you are probably not going to supply a major metropolitan wholesaler unless he is willing buy from a number of small growers.

   Ask yourself, "Is it worth the drive there? Will it pay me to do this?"

3. **Estimate your profit potential for each of the channels you are considering.**

   Your business is not a charity.

   It is crucial that you figure your costs of servicing each channel under consideration. Is further processing or prepackaging required? What are transport costs? What are your expected volumes? What sort of sales effort will be required? What degree of promotional support is required or expected?
See the section on PRICING for a description of how to figure your costs, revenues and profits.

4. Identify Subjective Factors.

Many decisions we make are based not on objective facts, but on subjective feelings.

Maybe you don't want to be bothered with plastic trays and prepackaging. Or maybe you want to ship to San Francisco, where your sister lives. Or maybe you want to help support struggling young chefs in your community.

All of these preferences are legitimate. Just acknowledge that by acting on these alone, you may not be maximizing profits at the same time.

**CHARACTERISTICS OF THE PRODUCE BUSINESS**

It is the nature of the produce business to do things quickly. Fruits, vegetables and mushrooms are highly perishable commodities. Their quality begins to deteriorate from the moment you harvest them, and it continues to deteriorate throughout the marketing process.

There is an urgency about the business, as you and other firms try and market your shiitake as quickly and efficiently as possible. Greater freshness means greater value to the consumer and greater revenue for the sellers.

Everyone up and down the channel will lose revenue on shiitake if their value is lost due to poor temperature and humidity control, improper handling and packaging, slow delivery and waiting, and overall poor coordination of delivering supply to meet demand.

For this reason, the entire distribution process is built for efficiency and speed. You need to adopt a respect for this, building into your business a policy of quick deliveries and responsive resolution of customer service problems.

This urgency has also lead to a very informal approach to making agreements. There is often no time to draw up contracts, negotiate fine details, and then have both parties sign them.

You will find that the "gentleman's agreement" is alive and well in the produce business. A high degree of trust is expected and usually maintained at all levels, even with competitors. Learn to feel comfortable with informal arrangements, and don't abuse them.

**CHARACTERISTICS OF DISTRIBUTION CHANNELS**

**Retail Channel**

The retail channel consists of all distribution functions that service corporate and independent food stores, which sell perishables to the general consumer.

Retail stores range in size and scope from mega "warehouse" super-stores down to the independent "mom and pop" grocery. These are serviced by brokers, distributors,
warehouses, and jobbers, each of whom may be integrated, (i.e., owned by or affiliated with the same company), or wholly independent.

Many of the larger retailers today have fully integrated their warehousing and distribution functions. National, regional and many local grocery chains store their produce in enormous corporate-owned warehouses, specifically designed for perishables. In some cases, the store itself can be the warehouse.

These grocery chain receiving and warehousing facilities are usually located on the edges of major metropolitan areas, near rail lines, and with good freeway access.

Corporate-owned stores as well as independent and unaffiliated stores will order from this warehouse: sometimes daily, sometimes weekly, depending on need. Warehouse personnel put together loads and deliver directly to each store, as scheduled.

Most of these larger retail grocery chains practice "integrated buying". They will act as their own wholesaler and broker, calling up their produce orders directly from the "shipping point market" (i.e. the place where it is grown), and bypassing the wholesalers.

The chain buyer will order shiitake by one or more of the following methods: calling the grower or company directly, using a familiar "specialties" broker, or using the corporation's closest regional buyer to locate and deliver a specified number of cases.

However, groceries may also order relatively hard-to-find specialty items, (such as shiitake) from wholesale terminal markets or directly from local growers, depending on the product's availability, rarity, quality, cost, and other factors.

In Minnesota, shiitake are often shipped to Twin Cities' retail warehouses by 'throwing it on the truck', which means adding shiitake to a mixed shipment already arriving 2-3 times a week from that shipping point.

In a major Hopkins, Minnesota, chain warehouse, if shiitake do not move out to stores within 10 days or so, the quality control manager sells them to a firm which buys this older produce for resale.

Before attacking the retail channel, you, the grower must decide what retail buying level would be smartest to approach:

- The chain buyer; or
- Individual stores' produce managers or buyers.

To answer this, a good market assessment should be undertaken. Research will uncover and identify those stores where shiitake is already being sold. These should be studied as prime candidates for your sales efforts.

Background information should also answer two crucial questions:
1. What is each chain's policy for introducing and carrying new specialty produce items? Do they take risks? If so, for how long? What is the chain's reputation regarding produce?

2. How much autonomy do chains give their store produce managers? Are they free to decide which new items to carry? Are they expected to order from the central warehouse? Can they order from local growers?

You can save a lot of time and energy if you know the answers to these questions. Find out! Make a few phone calls. Talk to produce managers. Talk to other growers (shiitake and otherwise) who currently sell to these stores.

---

**Produce Managers**

Most produce managers in the Minnesota area are not required to order specialty produce from any specific warehouse if they do not want to do so. They are independent and free to make autonomous decisions about new products. Obviously, if owned by a chain, they will be encouraged to use the company warehouse, in varying degrees.

Depending on your market area, store produce managers may carry shiitake already. They may carry them only sporadically, for certain times of the year (i.e., Chinese New Year). Or they may have tried them and had bad luck. They may not even know what you are talking about when you say the word "shiitake."

Shiitake may or may not be easily available to a produce manager from other sources. Find where they get most of their specialty produce now. This is your direct competition.

There is limited refrigeration space in the produce section of any grocery store. Produce managers must please their customers by carrying the established products they are used to buying there. But they also must keep competitive, by offering new, exciting new produce items (like yours)!

Items are arranged on the shelves or in refrigeration cases according to the number of "facings" (individual product packages) showing.

A produce manager will most likely prefer prepackaged shiitake instead of bulk, given the per pound value of the product, and the grocer's high cost of labor to package at the store ($14.00/hr. in Minneapolis). This may not always be true, as bulk displays are popular in some areas with high retail demand for shiitake.

Be accommodating! Be extra willing to adapt your product to the way a produce manager wants it. The manager knows how it will best sell. That's a manager's job.

Shiitake are most often found in one of three places within the produce section. They are found in or near:

- White, button mushrooms;
- Ethnic or oriental sections; or
- Specialty, or new produce item displays.
The produce manager is constantly bombarded by salespeople's requests for more space in the refrigeration case—at the expense of someone else's facings. Produce section competition is then a battle over shelf space 'turf.'

How do produce manager decide how to allocate shelf space? They conduct a daily election. They first decide what "incumbents" and "new candidate" produce items to nominate. And then the shoppers come in and vote—at the cash register.

Of course, tomatoes are more popular than starfruit. So the produce manager interprets sales "votes" with an eye for these differences. And each produce manager has individual means of comparing apples to oranges, especially with regard to new product introductions.

New products may also be introduced by the corporate buyer, suggesting that produce managers "try out" a specific new item, for a month or two.

The manager will look for turnover in the form of repeat purchases of your product. Anyone can try something once. But the second and third purchases indicate that the product is in real demand.

Ask the produce manager how long a trial period would be for shiitake, how turnover is judged, and what the numbers would have to be for a successful introduction.

If the corporate buyer has not tried shiitake before, the buyer may request a probationary or trial period where your produce is placed in several of the most likely stores for a limited amount of time, anywhere from two weeks to six months.

Such a trial, in conjunction with a demonstration program and other merchandising efforts, will help your chances of making your product go the distance by helping assure enough product volume and turnover.

Shiitake growers should have enough volume and commitment to merchandising before attempting to sell to a major retail operation and supply its warehouse with a stock item.

To introduce a relatively new produce item, you must prove that your product is popular. Very often, following successes in a few stores, the individual store produce managers may put in a request that the warehouse carry specific new items.

Secondly, before the chain is willing to put you in the warehouse, you must also prove that your operation is committed to, and has the capability of, supplying such a large market on a consistent basis.

The corporate level buyer may wish to see your willingness to invest in promotion and the education of the consumer market. This may require the presentation of a merchandising program. In turn, the corporate director may be willing to share some of the risk.
Therefore before selecting retail chain warehouses as your distribution channel, be prepared to deliver the quantities needed, provide product availability, and substantial promotional support.

Sales efforts should be directed toward the corporate produce director, or someone with a comparable title at the executive level. They may actually do the buying, or will direct you to the specialty buyer, depending on the size of their company.

**Wholesale Channel**

Most produce wholesalers nowadays supply the institutional food market: restaurants, hotels, cafeterias, hospitals, and other public institutions. They may also supply independent grocery stores, co-ops, and markets.

They may order direct from a grower, buy at an auction, order through a shipping point broker, or call a local broker to handle the details.

Wholesalers will match your supply of shiitake with buyers' demands and perform such functions as: receiving, storage, and the forward physical distribution of your shiitake to the end-user. They usually have a strong buying force and a sales force, the latter responsible for selling your shiitake to new and existing accounts.

In most small-to-medium sized cities, wholesalers have consolidated the receiving, wholesaling, and jobbing functions into their single-firm operations. Only in larger terminals are these functions still performed by specialized firms.

Wholesalers are usually located at a metropolitan terminal market complex. To find this area of the city, look in the Business-to-Business Yellow Pages under "Fruits and Vegetables: Wholesale" and check the addresses. (In the Twin Cities, Minnesota, the terminal is in the midway area on Kasota Avenue).

A wholesale produce operation usually consists of a very large warehouse in a central area of the city, near some railroad spurs. Trucks pull up to the loading docks, and forklifts constantly load and unload produce on pallets. The firm has a number of different coolers, kept within prescribed temperature and humidity ranges, to accommodate different types of produce.

The crowded office is probably upstairs, overlooking the warehouse floor. Things run at a hectic pace there, due to the nature of the business: fresh produce is constantly decaying. And time is money.

Wholesalers carry product in bulk as well as prepackaged. They may also repack your shiitake into smaller containers. Check with your local wholesalers and ask what packaging they want from you.

**Brokers**

Produce brokers make their living locating, negotiating a price for, and delivering produce to whoever calls them up; usually a wholesale or retail warehouse or foodservice account. They usually work on a commission basis, but sometimes take ownership of the product.
Brokers most often work in crowded, loud and hectic offices with multiple telephone lines coming in—each one with someone on the other end with something to sell or buy.

A broker often puts truckloads together (mixed or full), either at the shipping point to sell into a distant market, or by calling from the delivery point for local accounts.

In the case of shiitake, a destination point broker can most often get a better price than a wholesaler can, ordering in greater quantities and saving on shipping costs. Brokers use both air and truck to ship shiitake.

"Specialty" brokers specialize in locating and selling hard-to-find, high value produce items. These brokers are extremely valuable for their role in the promotion of a new, specialty produce item like the shiitake.

However, as the product gains acceptance, or the price falls for some other reason, specialty brokers may lose interest in the product. They may no longer be able to make the margins required to cover their costs.

Each broker has unique methods with growers or grower organizations. Review your market assessment files and call a broker or two. What they will want to know is:

- Volume of shiitake available;
- Your price per pound;
- Shipping point options;
- And other concerns.

Look at the distribution channels you are considering. List out the services provided by the broker to these markets. Weigh these services with the return you will receive. What are these services? And can you do them another way, and as effectively, for a greater return?

Only then can you effectively evaluate whether to use a broker.

**Comparative Distribution Channels**

<table>
<thead>
<tr>
<th>WHOLESALE</th>
<th>RETAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PROS</strong></td>
<td></td>
</tr>
<tr>
<td>Lower Packaging Cost</td>
<td><strong>Brand Name Product Identity</strong></td>
</tr>
<tr>
<td>Fewer Delivery Stops</td>
<td><strong>Larger Demand Potential</strong></td>
</tr>
<tr>
<td>Lower Promotional Cost</td>
<td><strong>Increased Control of Product</strong></td>
</tr>
<tr>
<td>Lower Educational Cost</td>
<td>Sales (Where &amp; How Product is Sold)</td>
</tr>
<tr>
<td>Higher Profit Margin Potential</td>
<td></td>
</tr>
<tr>
<td><strong>CONS</strong></td>
<td></td>
</tr>
<tr>
<td>No Control of Product Sales</td>
<td><strong>Increased Packaging Costs</strong></td>
</tr>
<tr>
<td>Grower Anonymity</td>
<td><strong>Increased Delivery Costs</strong></td>
</tr>
<tr>
<td>May Require Larger Volumes</td>
<td><strong>Increased Promotional Costs</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Increased Educational Costs</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Smaller Profit Margin Potential</strong></td>
</tr>
</tbody>
</table>
Product Delivery

After your successful sales call (see PERSONAL SELLING), you will get instructions on how orders are placed.

There is no standard process for ordering. Each account has a different system. Some outlets may request that you call them at certain times on designated days.

If you are placing them on consignment, retail buyers may ask you to drop by in person once a week, to help straighten out the shiitake display, and freshen up your product.

At this same time, you should get specific directions and instructions for the loading dock, as well as their delivery schedules. Retail stores have established schedules for receiving shipments. They have heavy receiving days as well as light days. They take coffee and lunch breaks at established times, especially if they use union labor.

Whether you, a broker, or another service is delivering your shiitake, upon receiving an order do not be late for your delivery, especially if you have a number of accounts scheduled consecutively. It will throw off your whole day. You may end up with product still in your truck that you can't deliver for two more days.

Upon arrival at a retail store, find anyone from produce and tell them that you are here. If you can't find anyone in back, go into the store, through the produce section, and into the back room (probably loaded with citrus boxes). Find somebody.

If you live in an isolated area without other means of distribution, you may want to approach your local restaurants and find out if they will buy directly from local growers. You may need to show them how your mushrooms are grown to ease their minds.

As we surveyed restaurants, we found that a few were hesitant to buy mushrooms - even cultivated shiitake - directly from growers, primarily because of their concern over poisoning and related liability issues.

For this and other reasons, it is highly recommended that growers purchase liability insurance for their operations and product. Proof of insurance may be one of your most valuable sales tools.

Such coverage may be most easily obtained by adding provisions for a farm product onto a general liability policy with farm exposure. Growers should ask their insurance agent about such an addition to their current coverage. The agent may ask for additional coverage that is more "safe" (i.e. buildings, equipment, etc.) to also be included. The cost of adding such coverage for shiitake may run approximately $300 - $500, depending on your situation.

When selling to a warehouse, first check in with the receiving person in charge. The inspector, manager or assistant will most likely want to spot check your shiitake, and with an inspector, or buyer will inspect a sample box or two. Don't be afraid to show them.

Be proud of your work! This person is the decision-maker and has the final say. Don't try and argue about quality. Just give them what they ask for.
If some of your shiitake do not meet their standards, upon inspection or due to spoilage later on, a retailer may ask that you replace them "next time around," or to just credit their account. A wholesaler may need them replaced immediately. Offer to do any of this.

When you pass wholesale warehouse inspection, your mushrooms will be unloaded by shipping and receiving personnel, who will strip off any additional cooling or plastic wrap to allow the boxes adequate ventilation. At this time, they will either be stacked on industrial shelving or stacked onto pallets in the appropriate cooler.

Have a multiple (three copies) shipping invoice ready for signature upon retail or wholesale delivery. Have it neatly typed. The produce manager or receiver will sign it and give a copy to their bookkeeper.

Payment for shiitake varies greatly, so find out the method used for each account. Some companies take net 30 days or longer. Some retail buyers carry a checkbook and pay on the spot, and some will even pay prior to delivery, as is the case of produce managers who roam farmers' markets.

If you aren't lucky enough to be paid in cash, send the account an invoice within ten days after delivery.

The typical retail customer buys on the basis of appearance. Yet, too often products are mishandled after leaving the grower's farm or woodlot. "The mishandling is certainly not intentional, however, the result is a damaged product," which may not show itself until the shiitake reaches the retail shelves, much like banana bruises. (quote: Bud Kerr, USDA, Wash. D.C.)

For this reason, as with any mushrooms, the less handling and human contact, the better.

Shiitake should be cooled down to 34-38 degrees Fahrenheit dry, prior to packaging or prepackaging. This is always true, but especially important if harvested in summer heat! The shiitake respirates at a tremendous rate, giving off a high level of BTU’s per pound per degree fahrenheit. They build up a lot of heat on their own.

If the mushrooms are not cooled first, the prepackaging wrap will act as a physical barrier between the mushroom and refrigeration. Your shiitake may then literally cook themselves!

Mushrooms should be lightly brushed off, as needed. Do not wash them!

Clean gloves should always be worn when handling shiitake, to assure that the oil and heat from your hands do not affect the product.

Shiitake contains a very high percentage of water. After harvest, they are constantly giving off this water, and losing weight in the process. Weight is sales revenue for you, and this loss of weight is called "shrinkage." To minimize shrinkage, streamline your distribution process and always deliver as fresh a product as possible.
Storage Requirements

Ideal storage conditions for shiitake are:

- 34-38 Degrees Fahrenheit
- 85%-95% Humidity
- Keep Dry (No Direct Moisture, Icing or Dry Ice)
- Provide Good Air Circulation
- Separation from Other Produce (especially leafy)

Never use ice or dry ice as cooling devices for shiitake.

Unlike produce items such as broccoli or lettuce which are often iced in shipping, the shiitake is a very delicate product. Their surrounding temperatures need to be as controlled as possible, and all-out efforts should be made to keep them dry. Otherwise, they become slimy, and slime is what receiving inspectors look for in a bad mushroom.

Several produce brokers have mentioned that the presence of bulk mushrooms and lettuce or other leafy vegetables together in a small or poorly ventilated environment may have a negative impact on the leafy produce, causing brown stains to appear on the lettuce. The mushrooms respire and use up the supply of oxygen, which lettuce needs. It is therefore highly recommended that any kind of bulk mushrooms, ideally be shipped separated from other produce.

Get to know about pre-made, disposable gel packs (cold packs), which can be used with an insulated cooler or in conjunction with plastic wrap to keep boxes of shiitake cool for short periods of time. Gel packs may be purchased from industrial storage firms specializing in cooling systems.

The packs range from 1/2 to 2 1/2 pounds each, approximately 5" X 10" X 2", and can be frozen and reused several times. Inside is a non-toxic gel which will not contaminate the mushrooms, should the cover be punctured. One case of 24 packs costs approximately $8.00. Also, when you ship in an insulated box or van, there will be no outside air coming in. Therefore, make sure that the internal air circulates as much as possible within the box, to ventilate your mushrooms.

For more information: talk to your local University Horticulture Expert, Extension Agent, network with other growers, or consult produce warehouses or experienced refrigerated truckbody sales personnel.

General Shipping

There are a number of means of getting your shiitake from your farm or woodlot to their destination, depending on where it is going, the time it takes to get there, the cost you are willing to pay, and the volume/weight of your product.

For long distances, shiitake are most often airshipped, and not trucked. Air is more expensive, but many shippers have concluded that three hours in an airplane maintains
tains mushrooms quality better than two days in a truck. Some retail chain operations truck them with other mushrooms, depending on availability.

Cooling and insulation requirements are highly dependent upon a number of variables. These include the distances and time you will be driving, the number of stops, the number of doors, and the number of times the doors will be opened.

It is highly recommended that a truck refrigeration expert be consulted to work with your specific needs and recommend the optimal configuration.

For very short trips in cool to cold weather, you may wish to deliver small volumes of shiitake in your current vehicle.

Keep in mind that your car or truck is probably not well-insulated, and transporting in such a manner is not optimal for long periods of time.

The mushroom needs low temperatures, high humidity and air circulation. You should strive to accommodate these requirements as best you can through the use of small, portable coolers, cold packs, air conditioning, and other creative means.

Experiment with small amounts for different lengths of time and under different temperatures.

There are many options for refrigerated vehicles, ranging from a cargo van to a full 18-wheeler. For relatively small shipment volumes, the vehicle configurations to consider are either:

A new or used slip-in insulated box for a full or mid-sized pick-up truck;

A new or used insulated cargo van.

An 8-foot, "slip-in", insulated box for a full-size 3/4 or 1 ton pick-up truck costs from $3000-$4000 installed. (Note that this does not include refrigeration.) A slip-in is easily transferred from one pick-up to another, as chassis wear out or in case of accident, etc.

A refurbished cargo van can cost from $8000-$9000, depending on its condition and on the number of doors. To refurbish and insulate an existing van costs from $1000-1500.

There are both insulated and semi-insulated vans and boxes available. The difference is the amount of insulation used and the number of walls and floor insulated.

To save money on the purchase of a new vehicle, you may wish to buy a used cargo van or box. Unfortunately, small, insulated cargo vans or slip-in boxes alone are rarely found on the used marketplace. They last a very long time (boxes often lasting through 3 chassis), and their owners tend to keep them until they wear out.
When shopping for a used cargo van, slip-in box, or other insulated vehicle, make contact with local used truck dealers. Tell them what you are looking for. Don't forget to talk with the truck rental firms (Ryder, Hertz, etc.).

When you know the kind of vehicle you want, contact companies that already have such a fleet on the road. They could be looking to sell.

You may also consult a midwest publication entitled: Minnesota/Dakota Truck Merchandiser, published at 7216 Boone Ave. North, Suite 76, Brooklyn Park, MN 55428. PH: 612/537-7730. This monthly magazine lists specific used trucks for sale, with photos, descriptions and ads from midwest dealers.

Cooling Equipment

An insulated van or box alone will not keep your product cold and humid. Some sort of cooling system is needed to ensure that fresh product gets delivered.

When selecting a cooling system for mushrooms, be concerned with how each one meets your needs on three key factors: temperature, humidity and ventilation.

There are two means of keeping the product cool: refrigeration systems and cold plates.

Refrigeration systems ("Reefers") operate off the vehicle's power and will easily keep mushrooms cold. However, these systems will also remove humidity.

Reefer systems are manufactured by names such as Thermo King or Carrier. The system consists of two components: a condenser, mounted outside on the van's roof or above the cab, and an evaporator, mounted inside the truck or van body. There are also a number of control and standby options.

Reefer systems installed in a slip-in box cost from $2700 to $6000, depending on cooling requirements and options. Reefer systems installed in a cargo van cost from $2000 to $3000, also depending on cooling requirements and options.

Industrial cold plates (or holdover plates) are large-scale versions of the smaller, consumer plastic blue gel coolers which you may have in your freezer or styrofoam cooler. Unlike the consumer model, the industrial version has a zinc outer cover and a series of copper tubes woven through it.

Unlike the reefer systems' forced air method, cold plates cool things down through convection, and they do not remove humidity.

The cooling plate is sized for each application, according to the length of the route and number of door openings, size or your vehicle, and other factors.

Cold plates operate with a one horsepower compressor, which can be plugged into standard 115 volt household current for overnight recharging.

An industrial cold plate to fit an average pick-up truck box costs roughly $2000, and with good maintenance it will last an estimated 15-20 years. Industrial cold plates may be purchased through firms specializing in truck cooling systems.
Talk with other growers, use your local grocery produce manager, or use the Business-to-Business Yellow Pages to locate a shipping company or broker that handles "reefer freight." Call them. Ask for "dispatch," and ask about your particular trucking situation.

Most shippers or trucking firms deal with full truckloads.

For this reason, don't be surprised if your local shipper may be reluctant to carry 50 to 75 pounds of shiitake unless he can either fill out a load with something else or charge you a full-load rate. As an example of this, one Rochester, Minnesota, broker estimated a $300 cost to haul a truckload of mushrooms from Rochester to the Twin Cities, 100 miles distant.

A local produce broker, through contacts, may be able to fill out the load for you. Make sure that the broker has experience shipping mushrooms and how they interact with other produce.

You may also consider filling out a load by yourself. Locate nearby growers or vendors of compatible produce who have similar delivery schedules and ship your loads together.

Don't be afraid to dig around for names of possible shipping partners by asking your destination or receiving point person, by going through telephone directories, farmers' market contacts, your local extension service, or produce supply houses.

If you are interested in shipping shiitake to a major city from an outstate or rural one, take time to consider how your local produce is being delivered to your own area food-service and grocery accounts.

If it is being trucked from where you want your shiitake to go, backhauling could be an option for you. Get names of the wholesalers doing the local supplying, call them up and ask whether they would be interested.

A backhauler will be interested in knowing where to make the pickup, where to make delivery(ies), whether your schedules are compatible, and how much shiitake you will be shipping. Charges will probably be based on some combination of a piece/case count and by weight.

If you are dropping off at the same wholesaler's warehouse anyway, this could be a beautiful relationship!

While United Parcel Service (UPS) will take perishables by air, its trucks and planes are not refrigerated, and UPS makes no guarantees about the conditions of your mushrooms upon arrival.
For cooling, UPS recommends that you wrap the product well with plastic and a disposable gel cold pack, insulated from direct contact with the mushrooms.

Try out your packaging techniques on a small-scale, experimental basis. Given shiitake's need for good ventilation, experiment with a few airholes. Talk with other growers for their techniques.

UPS's normal service requires four working days to deliver (for example: Minneapolis to Boston). However, UPS' "Next Day Air" or "Second Day Air" services can deliver faster, for higher rates.

Check to see whether UPS will deliver to your destination on Saturdays. Different offices deliver on different days of the week. Place a UPS pick-up order one day ahead of time, or take the product directly to the local office.

There is a 70 pound maximum weight limit per package. There is also a maximum size restriction of a combination of 108 inches, totaling two measurements: the length and girth (waist) of the package.

Use strong strapping tape and a secure label. Once UPS has accepted your package, make sure to keep all documentation, for tracking purposes. Also, check to see whether the UPS office on the receiving end has a cooler.

---

**Bus**

Shipping shiitake by bus is not ideal. But for some locales, and for short distances, it represents a moderately successful mode of transport.

Greyhound bus does accept perishables, but freight offices do not have coolers.

Freight is put under the bus alongside passenger luggage in compartments with minimal air circulation and at temperatures similar to outside temperatures.

If you are shipping a short distance, along a Greyhound route for example, in a time of year when temperatures range around 34-38 degrees F, the bus may be ideal for you.

In hotter temperatures, try using disposable gel cold packs and plastic wrap (see UPS description). In colder temperatures, avoid shipping by bus.

Check with your local depot for schedules and an estimate of how full the bus will be. Drop your shipment off at the depot with enough time to do some paperwork beforehand.

Greyhound's "Priority Service" guarantees that your package will get on the bus. But this can cost up to double your original charges, depending on weight.

Charges are based on weight only. Size limitations are either 74" on one side, or the sum of 3 sizes no greater than 141". The weight limit is 100 pounds per box.

Payment may be prepaid by cash, check, or credit card. Or it may be sent C.O.D.
If there is a phone number attached to the package, the receiving depot will call your receiver to come down, sign for it, and pick it up. Make sure they know it is coming! Most of Greyhound's freight offices are open from 6:00 AM until 8:00 PM.

Check with other bus lines in your area for their policies, routes and rates.

Most overnight, air express firms (Federal Express, Emery, etc.) make it a policy to not accept perishables. They cannot and will not insure them. They may unknowingly accept your perishables, treating them as regular non-perishable items, and will charge you the normal rates. It is not recommended that you try this method. However, it has been done successfully.

Express services will normally pick-up your packages if given enough notice.

Air freight operators (Flying Tigers, etc.) ship large-scale cargo in planes designated for freight only. Therefore, unlike commercial flights, freight is given top priority. There is never a risk that your freight will get bumped to make room for passenger luggage. But the price to you is greater, for the freight operator is not able to rely on passenger revenue to help cover costs.

Charges to you, the sender, are based on the package's actual weight, or in the case of large, lightweight items (like mushrooms), the package's dimensional weight.

Dimensional weight is calculated by multiplying each of the package's three dimensions by each other, and dividing the total by 194, to arrive at the number of pounds per foot of dimensional weight. This figure is compared to actual weight and you are charged whichever is the larger figure. For example: the Forest Resource Center 3 pound box is 5' X 13 1/2' X 10 1/2'. 5 times 13.5 times 10.5 equals 708.75. 708.75 divided by 194 equals 3.65 pounds per foot of dimensional weight.

Freight service can be slow, unless priority service is requested, which guarantees next day service.

Probably the most inexpensive means of air shipping shiitake is using an "airport to airport" service via a commercial carrier.

Commercial flights are passenger flights, and subject to changing schedules, depending on passenger volume, demand, etc. So there is some risk of getting bumped off, delayed or rerouted.

A call to local commercial air freight representatives can give you a range of costs, flight schedules, and most important, information on the availability of refrigerated coolers at both ends of the flight for your mushrooms.
Cargo sections of planes are pressurized and kept at cabin temperature. Be concerned how much care is taken in moving the mushrooms to and from the plane, and into the cooler. Are they going to be sitting on the tarmac in the sun for 2 hours?

It is recommended that your package be delivered at least two hours before departure. It should be packaged in sturdy cardboard boxes with or without cold pack and wrapping, depending on the length of the flight. Dimensional limitations will depend on the airports you will be using and their ability to handle heavy or large freight.

You will need to complete an airbill. The freight office will help you fill it out. You are the "Shipper" and the receiver of the shiitake is the "Consignee." The airbill lists out all of your special shipping requirements. So, specify to hold the shiitake in a cooler (if available) upon arrival.

Some commercial air freight firms can arrange to deliver your product once it arrives. Otherwise, the shipper will call your receiver or consignee when it arrives. Make sure to list the receiver's phone number! Or make arrangements for your receiver to pick it up during times when the freight office is open.

Most firms require payment up front, by cash, credit card, check or using an established account.
Distribution Worksheets

Describe the distribution channels in your market area.

How do your mushrooms meet the needs of each produce channel?

What resources do you have available to service each channel?

What is the profit potential for each of the channels?

What are your preferences in selecting a channel of distribution?
Distribution Worksheets

What is your target distribution channel or channels?

What is the procedure for ordering and delivery?

How will you store and ship your mushrooms?

Notes:
PACKAGING

Product packaging plays a very important part in marketing a food product. Many marketing experts consider packaging the fifth P in the product mix of product, price, place, promotion.

Packaging can be defined as the activities of designing and producing the container or wrapper for a product. It is a means by which you communicate your positioning statement (see MARKET ASSESSMENT) and product information to the consumer. In many market segments, the package is a primary influence in motivating the consumer to buy.

For these reasons, packaging has often been called the "silent salesperson." It plays an extra important marketing role in those markets which do not allow for much personal selling. Think about the role of packaging after you have dropped off your prepackaged mushrooms at the grocery store and they have been placed on display. No person is usually there to sell them just the package itself.

Keep your budget, marketing objectives and target market in mind when designing your packaging.

Many subtle factors go into the design of good packaging. In this section, we will look at packaging criteria for mushrooms sold to both retail and wholesale markets.

This sections includes information about:

- BOXES
- PLASTICS
- WRAPS
- PULP PRODUCTS
- LABELS
- GRADING STANDARDS
- MAKING PACKAGING DECISIONS
- RETAIL AND WHOLESALE APPLICATIONS

Uses

Boxes are used when you are selling to a wholesaler, individual restaurant, at a farmers' market or when you are selling in bulk to a retail outlet that will repackage them on the premises.
Construction

Boxes can be custom designed in any shape or size desired, according to a set of specifications. They can be glued or self-locking.

- **Glued boxes** are made on assembly machines where large volumes of boxes are assembled rapidly. These machines require a large investment in capital.
- **Self-locking** boxes are assembled by hand.

Boxes must be designed to maximize structural support for the product. A 200-pound test weight is standard within the industry, however a 175-pound test weight, if additionally reinforced, is satisfactory for the weight of mushrooms and will hold up well in handling and storage.

![Generic box available from the Forest Resource Center.](image)

Color Options

Boxes come in two colors: kraft (brown) or white. Additional colors may be created through the printing process. This process adds considerable cost to the carton.

White boxes are more expensive and are often used with food products. The benefits of the white color are cosmetic only but may highlight your mushrooms to their best advantage.
Special Treatments

Boxes can be coated with moisture-resistant adhesives that will help keep the mushrooms dry and add to their shelf life. Only a light coating is required. Mushroom boxes do not need waxing.

Venting

Mushroom boxes must be vented so that air can circulate around the mushroom. Mushrooms give off a lot of heat and venting helps to minimize spoilage. Suppliers can help you design the vents to maximize the shelf life of your mushrooms. Make sure that the vent design does not interfere with the structural design or strength of the box.

Size Requirements

Three sizes of packaging are used for mushrooms in the wholesale markets. These are roughly as follows:

- 3# Box 450-475 Cubic Inches
- 5# Box 750-775 Cubic Inches
- 7# Box 1000-1100 Cubic Inches.

All three sizes fit into walk-in coolers and will stack on pallets and distributors’ shelves. Box sizes are not influenced by grade or size of mushrooms.

Wholesalers will often repack a 5 or 7 pound box into smaller 3-pound boxes, because restaurants request them in smaller quantities with more frequent deliveries.

Stock Sizes

A wide variety of solid wall boxes is available in stock through most suppliers. Some suppliers also sell overruns and misprinted boxes when they are available. Prices run approximately 50% of custom costs. Die cut boxes can not be ordered from stock or surplus, as they are a custom order only. When considering the use of a solid wall box, be sure to test a sample to measure the effect on your mushrooms and the potential loss of shelf life. Misprints or inappropriate boxes may not make a favorable impression on your customers.

Custom Design Costs

Prices for custom boxes are determined by the amount of material used in the box, quantities ordered, set-up charges for die cut development, and printing costs.
Die Cutting Development

Die cutting costs run approximately one dollar ($1) per square inch. Die cuts are designed to provide the best venting for the product stored in the box and, at the same time, take into consideration labeling and structural requirements. The average cost for die cut development is $500. It will vary depending on the complexity of your box design.

Printing Costs

Printing costs run about fifty cents ($.50) per square inch. Printing for boxes is handled much like any other printed material. Camera-ready art can be designed by most suppliers or be provided by you. However, the art designed by outside sources must take into consideration the die cut and printing specifications required for production. One-half inch margins on all print materials are required for production purposes. The average cost for print (straight print only) layout is $300. Graphic and logo design is extra.

Average Prices

The average price for a custom designed box is $.50 to $.75 cents each. Price breaks are usually given for every 5000 ordered. CAUTION: Price quotes may or may not include die or printing set up charges. Check all three major components of the custom quote: materials, die, and printing. Printing and die set up charges are a one-time fee.

Shipping Parameters

All boxes are shipped flat. Two to three weeks lead time is required from point of production to delivery. Shipping costs are not usually included in the price quotation. Ask your supplier about shipping costs before making a purchasing decision. Determine the physical size of the order to make sure you have storage space available.

Selecting A Supplier

The best source of finding any good supplier is to ask someone who has used one. Find out how they liked working with them and examine the quality of their work. If you do not know of anyone, go to the Yellow Pages and look under "Boxes."

When selecting a supplier, interview a number of them if possible.

- Ask if they have experience in producing boxes designed for food storage, and mushrooms specifically.
- Get price quotations.
- Find out if they produce in the quantity you need. Some suppliers only take very large volume orders and others handle primarily smaller jobs.
- Look at sample boxes.
- If you are having them do the art work, ask for samples of their work and, if possible, meet the designer.
Take a good look at the level of service and enthusiasm you get from them during the preliminary discussions. This is usually a good indication of how they will treat you once the order is placed.

Uses

Plastic containers are used when selling to retail grocery stores and when mushrooms are sold in prepackaged quantities.

Foam Products

Foam trays (also called meat trays) are available in white, green, light blue, rose and yellow. An 8" x 5" x 1" container could hold approximately four ounces of product (without stems). This size tray is usually a stock item. The trays cost approximately $0.02 each. Foam trays are not recommended for mushrooms because moisture may collect at the bottom of the tray. They are film wrapped and do not have any drainage holes, so the mushroom will not get the venting it needs to maintain a good shelf life.

Molded Products

Molded plastic containers come in a variety of standard sizes or may be custom ordered at an additional cost. Bottoms and lids are sold separately. They may be used together or the bottom may be film-wrapped. Molded plastics come with or without airholes. Pricing on molded plastic containers are approximately:

- Pint Size Lids: $.02 each
- Bottoms: $.03 each
- Quart Size Lids: $.05 each
- Bottoms: $.05 each

Prices will vary greatly in different geographic locations so get price quotations from your local supplier before making a final decision. Shipping costs are charged separately. Have the supplier estimate the shipping cost for you. Also find out the size of the order to ensure that you have storage space available.

Standard Sizes

Standard produce wraps come in 5000-foot rolls. Depending on the size of the container, a standard roll would wrap approximately 4000 packages of mushrooms. (Get specific quantities from your supplier.) Non-perforated wraps can be inserted into a cutter bar system, incorporating a hot wire that will cut the wrap at the desired length and a hot plate to seal the wrap at the bottom of the container.
All FDA-approved food wraps have a certain amount of absorbency. Certain wraps tend to darken mushrooms, so be careful to specify that the wrap is for mushrooms when ordering. You may want to test-wrap samples before placing a final order.

Price Estimates

Prices for wraps (non-perforated) are approximately:

- 12\" width - $25 per roll
- 15\" width - $31 per roll
- Cutting bar system - $175 plus freight 
  (allow 2 to 3 weeks for shipping)

Pricing will vary greatly depending on your geographic location. Get price quotations from your local suppliers. Shipping costs are separate.

PULP PRODUCTS

Uses

Pulp-based boxes are slightly less expensive than plastic containers. However, pulp boxes tend to absorb moisture and set up a climate for bacterial growth which may shorten the shelf life of the mushroom. They may be used for short-term storage where the mushroom can be transferred to another container—for example at a farmer's market.

LABELS

Definition

Labeling is part of packaging and consists of printed information describing the product and appears on or with the package.

Uses

Labels can have many uses. They can be used to:

- Identify the product or brand, such as "cocktail mushrooms."
- Describe the product, such as "log grown," "black mushroom," or describe how to use the mushroom.
- Grade the mushrooms. *see Grading Standards later in this section*
- Promote your product by means of an attractive graphic design.

A good label may include any or all of the above information. However, keep in mind that it must be visually pleasing and easy to read, and should communicate your selected positioning message.
Production Considerations

Producing a label is a sophisticated process that includes many individual decisions, each influencing the final cost. It is a good idea to work closely with your designer and/or printer to evaluate your specific need. Following is some of the general information you will need in making a decision.

Labels usually come in standard shapes, such as round or square, or can be custom designed at an additional expense.

Square or rectangular labels can have pointed or rounded edges.

Labels require graphic design, typesetting and often keylining. These services can be provided by a graphic designer or are usually available through label suppliers at an additional charge.

Labels can be in the form of bands, tags, or pressure sensitive labels. Bands require the development of a custom die and are the most expensive. Tags can fall off the product. Pressure-sensitive labels are commonly used on food items.

Labels can be in a single color or in multiple colors--two, three, or four. Each new color increases the printing cost. There is also an additional charge for specialty inks.

If you are using a colored border you must allow for 1/16" to 1/8" of bleed for printing. Get specific requirements from your printer.

Pressure-sensitive labels must 'set' on the package at room temperature for about an hour before being refrigerated. When getting price quotations, remember to specify that your labels will be refrigerated. It will influence the kind of adhesive that will be used.

Labels are run off a plate. There are different plate charges for one, two, three, and four-color printing.

Some printers specializing in labels have a standard label that is run in large volumes on a periodic basis that can be customized with your name and address for substantially less cost. In Minneapolis, Marketplace Labels calls them "Versa" labels.

Label costs can vary greatly depending on the size, number of colors used, complexity of design, and volume ordered. Weigh your pricing decision against the value added to the package.

"Minnesota Grown" Labels

"Minnesota Grown" labels (see samples in Supplementary Section) are available through the:

Minnesota Department of Agriculture
Minnesota Trade Office/Agricultural Trade
90 West Plato Boulevard
St. Paul, Minnesota 55107
A guidebook is available that includes instructions for using the Minnesota grown certification mark, sample uses, a registration form and camera-ready copies of the logo. Their certification mark is registered with the Secretary of State and U.S. Patents and Trademarks to identify food products which are produced, processed, or manufactured in Minnesota. To participate in the program, you need only complete the form located in the guidebook and return it to the Minnesota Department of Agriculture.

Residents of other states should check with their state departments of agriculture for similar campaigns promoting locally grown produce.

Legal Requirements

Labels must be accurate. They should not mislead customers or fail to include pertinent information. There are federal and state labeling regulations. Make sure your labels contain all the necessary information before printing.

In Minnesota, labeling requirements for fresh mushrooms assume that no preservatives are added. Minnesota state requirements for labels are:

**Name of the product** (Shiitake Mushroom)

Grower or Association Information, including the name, address, zip code and telephone number for whomever is responsible for the product. This information can be placed on the box during printing or by using a rubber stamp, screening or pressure-sensitive stickers.

**Net Weight Declaration.** Regulations cover the specific size (height) of printed type in which you must declare your product’s net weight.

- If the front/top of the package measures 5 square inches or less, your declaration must be no smaller than 1/16” in height.
- If it is 5-25 square inches, your declaration must be no smaller than 1/8” in height.
- If it is 25-100 square inches, your declaration must be no smaller than 3/16” in height.
- If it is over 100 square inches, your declaration must be no smaller than 1/4” in height.
- If more than one size container is used, use the 3/16” or 1/4” inch type size to be safe.

Optional components may include instructions for refrigeration between 34-38 degrees Fahrenheit, arrows designating up, or a logo.

Generally, Minnesota growers may sell any fruits or vegetables that they grow without a license. If you buy mushrooms from another grower or a wholesaler to resell, a Retail Food Handler’s License is required. These are available from the Minnesota Department of Agriculture: (612) 296-6470. Growers in other states should check with their state’s comparable department for licensing information.
The Forest Resource Center has proposed a grading standard for fresh shiitake mushrooms. The mushrooms would be graded by the diameter of the cap and the quality of the mushroom. The grades are as follows:

**Large**- cap diameter greater than 2-1/2 inches

**Medium**- cap diameter 1-1/2 inch to 2-1/2 inches

**Small**- cap diameter less than 1-1/2 inch

**Grade A**- Premium, caps no more than 75% open.

**Grade B**- Standard, caps greater than 75% open.

**Grade C**- Mushroom pieces.

The basis for making a packaging decision can include many different considerations. Each decision is unique, based on your individual needs and perceptions, yet they must be consistent with your product position, pricing, distribution and marketing strategy. Keep in mind that there is no “right answer.” Experiment to find what is right for you.

To make packaging decisions, you need to:

- Investigate what is standard or required in your selected market segment.

- Evaluate the pros and cons of your competitors' packaging.

- Develop a packaging concept by defining what the package should be or do for the product. For example, it may need to protect the mushrooms, describe how they taste, or offer recipe suggestions.

- Decide on the requirements for your label, such as color, text, size, shape, and how it will be attached (adhesive, string, etc.)

- Evaluate your cost. You must evaluate your packaging costs based on your budget, as well as on customers' perceptions of value added by your packaging idea. In other words, will they buy more?

- Test out your packaging and label design ideas with your potential customers and see how they like them.
After extensive research of both the retail and wholesale produce markets in Minneapolis and Rochester, Minnesota, we found the following information.

**Wholesale**

- Preferred a three-pound box with die cut airholes so that mushrooms do not absorb heat or dry out.
- Purchased mushrooms sight unseen so they were not sensitive to package design. Boxes were mostly of kraft construction, some having white interiors.
- Boxes were usually 200-pound test weight.
- Light grade moisture-resistant adhesive was used to treat the interior of the box.
- Restaurants stored the mushrooms in their coolers in the same boxes and were not influenced by graphics or packaging.

**Retail**

Most mushrooms were packaged in a plastic container (mostly molded plastic with drain holes) with a clear film overwrap so that the customer could determine the freshness and quality of the product.

- A 12 inch wrap would cover most containers.
- When stems are removed, packaging can be shallower.
- Pressure-sensitive labels were placed on top of the container, not covering airholes.
- Labels were colorful and often included the word "fresh."
- Individual packages were shipped to the supplier in a master carton. Using a three-pound wholesale box may be adequate for this purpose until your revenue or volume warrants the design of a master carton.

The Forest Resource Center has developed standard packages for both the wholesale and retail markets using the above criteria. They have designed them so that individual growers may customize them with their own names, addresses, etc., through the use of a rubber stamp, screening or a pressure sensitive label. For more information contact the Forest Resource Center.
Packaging Worksheets

What is your positioning statement?

What kind of packaging does your target customer need?

Type:

Size:

Construction:

Color:

Special Treatment:

Price:
Packaging Worksheets

Are there custom design costs? What for? How much?

What kind of labels will you use?

What information will you include on your label?

How will you design your packaging to fit your positioning statement?

What are your sources for purchasing packaging?

Notes:
PRICING

In this section we are talking about making money or profit. Many people think that the pricing function of the marketing mix means picking a price for your product and if it doesn’t sell, lower your price. However, pricing decisions are much more complex. They are based on knowing your costs, and desired profit margins as well as the competition’s prices.

Price is the amount of money asked or paid for a product or service. Setting prices is elusive, ever changing, and requires a little bit of theory and a little bit of “gut” feeling to be right.

This section will include:

- INFLUENCES ON DEMAND
- MARKET PRICES
- SETTING A PRICE
- MARKUPS AND MARGINS
- ESTABLISHING OPERATING COSTS
- REACTIONS TO FALLING PRICES
- NEGOTIATING A PRICE

Traditionally, agricultural growers have had little or no control over the prices they received for their products. Prices are often governmentally regulated. This is not the case for shiitake mushrooms. They are part of a free and competitive market and prices will rise and fall in accordance with the law of supply and demand.

It is difficult to estimate the affects of supply and demand on your ability to profitably sell your mushrooms. If the demand for mushrooms is greater than the supply, then you will be able to command a higher price. As supplies increase to meet or exceed demand, then prices will drop.

Other circumstances can alter the demand for your mushrooms, such as new competitors entering the market or delays in getting your mushrooms to market. Bad weather can destroy your harvest completely and therefore your source of revenue.

In 1986, prices for shiitake mushrooms, on the farm, were $5 to $9 dollars a pound. Wholesalers sold their shiitake mushrooms in the Minneapolis area for $6 to $10 dollars a pound. Prices above that level were too high, and chefs looked for other wild mushrooms to substitute for the shiitake.

Prices in the grocery stores in Minneapolis were about $4 for a 3-4 ounce package. Not many shiitake were sold, but it is not clear whether the price was prohibitive.
Although these prices look good, they are again constantly changing. In 1986, a limited number of growers were producing shiitake mushrooms in the midwest, and mushrooms were flown in from the coast and were considered a premium.

In 1987 and beyond, we see many new growers entering the market. This may cause prices to fall—the question is, how low?

In time, large enough volumes of shiitake may be grown so that the development of a marketing organization would be feasible. This might give growers some market leverage, and prices would remain favorable. For now, use conservative price estimates when developing your budget and projections.

**SETTING A PRICE**

Pricing is difficult for shiitake mushrooms because there is no centralized source of shiitake pricing information, as is available for more standard produce items. You can interview your wholesale customer, or visit your grocery store and find out what they are charging for shiitake. Then, by subtracting their markups or margins, you can learn what your competition is charging. You could then set your price solely based on this information. But still you may be losing money.

So how do you establish a price?

Estimate your costs, set your overall profit margins and mark-up your mushrooms accordingly. This sounds simple, but it is difficult if you do not know your costs.

Few small growers know their production and handling costs, so they depend on price comparisons and what the stores or wholesalers are getting to set their prices.

Without knowing your costs, you may be selling your mushrooms at below a break-even point for your business. You may be losing money without knowing it!

Keep in mind that any price decisions you make must be in line with the market pricing. If your prices are too high, your mushrooms probably won’t sell. If they are too low, you will jeopardize the established price levels. When someone sells or “dumps” their product on the market at a low price, it upsets the equilibrium of the market. If this occurs, the seller temporarily takes market share away from other sellers, and all established prices are destroyed.

Also keep in mind the effect the price will have on the image of your mushroom. Many people think that the lower the price, the better something will sell. However, many customers equate higher prices with higher quality, and lower prices with lower quality. Pricing is a matter of value. Price influences how your product is perceived, so don’t take the romance out of your mushrooms by pricing them too low.

**MARK-UPS AND MARGINS**

**Markups** are figured on cost, **margins** are figured on the selling price. (A 100% markup means a 50% margin.) So something that you grow for $4 and sell for $8 would be marked up 100%, but would only have a 50% margin. Sometimes the terms mark-up and margins are used interchangeably in the marketplace, however the food industry generally uses margins.
Expected margins are different for retail and wholesale markets and vary both geographically and between companies.

You can estimate your customers' margins by finding out at what price they are reselling your shiitake at the local grocery or restaurant.

If you are considering investing in a shiitake operation, you definitely should undertake the following exercises and consider all alternative investment opportunities options for investing your funds, to attain your desired goals.

It is strongly recommended that you consult your accountant for a complete review of your financial goals, tax situation, forecasting assumptions and allocations of expenses toward your shiitake operation, as well as start-up costs, depreciation, and other factors too specific to handle here.

This section does not pretend to be a complete guide on how to put together an projected income statement, operating plan or financial forecast. There are numerous books available on this subject, some of which are listed in this guide's bibliography. We recommend you consult these, your library, or the U.S. Small Business Administration. (Also see SUPPLEMENTAL SECTION, "Small-Scale Financial Analysis").

Assuming you are new to shiitake and setting prices, you should begin with setting some estimates for three areas: sales, costs of sales, and expenses. Do this for each month of the year.

Start with expenses. This way, you can project alternative breakeven points, assess how reasonable they are, and determine if your sales estimates will give you an adequate profit margin.

Expenses can be estimated by unit costs. To get these figures, you need to answer the question, "How much does it cost me to sell one pound of shiitake mushrooms?"

Calculate the cost of all materials and direct labor expenses that are required for each pound of mushrooms produced. These costs are part of the variable expenses. Variable expenses are costs to you that will vary with the number of logs you inoculate and harvest. Examples of some variable costs are wax, spawn, packaging, labor, delivery/freight, and sales promotions and commissions.

One common mistake growers make at this point is neglecting to add in the cost of their own or their family's labor. Keep records of the time you spend. You are a valuable resource!

Fixed expenses are costs you pay no matter what, regardless of how many pounds shiitake you ever sell. Examples of some fixed costs are monthly telephone charges, utilities (electricity, gas, water), insurance, interest, depreciation, rent, and some promotional costs.
Your variable expenses must be added to the total fixed expenses to arrive at your total expenses for each pound of shiitake.

Based on all of this, you can determine your estimated break-even point. This is the price which exactly matches your total costs, and below which you lose money on your mushrooms.

You will probably change your estimated cost figures a few times, and try a number of different profit margins, as you come up with your optimal selling price on a per-pound basis.

Ask yourself whether this price will this cover your costs.

Is it competitive with current market prices?

Then multiply the selling price by the number of pounds you think you'll sell, and that is your projected dollar sales volume.

Can you really sell that many pounds at that price?

**Example**

The following is one hypothetical example of how to estimate your operating costs. Yours will no doubt be entirely different. Additional information can be provided by your accountant, or by a Cooperative Extension Agent in your county, or the U.S. Small Business Administration. (Also see SUPPLEMENTAL SECTION, "Small-Scale Financial Analysis").

*We strongly recommend that all growers seek expert advice from a financial advisor, tax accountant or similar professional before investing in a new business of any kind.*

**Start-up Costs - Cash Expenses:**

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Cost per unit</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logs</td>
<td>500 logs</td>
<td>$0.50/log</td>
<td>$250.00</td>
</tr>
<tr>
<td>Spawn</td>
<td>500 logs</td>
<td>$0.15/log</td>
<td>75.00</td>
</tr>
<tr>
<td>Wax</td>
<td>2 cartons</td>
<td>$10/carton</td>
<td>20.00</td>
</tr>
<tr>
<td>Drill</td>
<td>1</td>
<td>$150/each</td>
<td>150.00</td>
</tr>
<tr>
<td>Drill bits</td>
<td>5 bits</td>
<td>$6/bit</td>
<td>30.00</td>
</tr>
<tr>
<td>Total Start-Up Cash Expenses</td>
<td></td>
<td></td>
<td><strong>$525.00</strong></td>
</tr>
</tbody>
</table>

**Labor Expense**

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Cost per unit</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inoculate</td>
<td>60 hours</td>
<td>$4.00/hour</td>
<td>$240.00</td>
</tr>
<tr>
<td>Inspect</td>
<td>10 hours</td>
<td>$4.00/hour</td>
<td>40.00</td>
</tr>
<tr>
<td>Total Start-Up Labor Cost</td>
<td></td>
<td></td>
<td><strong>$280.00</strong></td>
</tr>
</tbody>
</table>

**Total Start-up Costs (cash + labor expenses) $805.00**

Other start-up costs may include: shade cloth, chain saw and supplies, building construction, computer and peripherals, business cards, used tractor, etc.
### INCOME

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yield (lbs)</td>
<td>40.</td>
<td>1,200.</td>
<td>1,000.</td>
<td>500.</td>
<td>300.</td>
<td>3,040.</td>
</tr>
<tr>
<td>Selling Price (x)</td>
<td>$4.</td>
<td>$4.</td>
<td>$4.</td>
<td>$4.</td>
<td>$4.</td>
<td>$4.</td>
</tr>
<tr>
<td>Total Sales</td>
<td>$160.</td>
<td>$4,800.</td>
<td>$4,000.</td>
<td>$2,000.</td>
<td>$1,200.</td>
<td>$12,160.</td>
</tr>
</tbody>
</table>

### EXPENSES

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Start-up Costs</td>
<td>$805.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$805.</td>
</tr>
<tr>
<td><strong>Non-Labor Costs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel (15-50 m. trips at .20/mile)</td>
<td>$20.</td>
<td>$150.</td>
<td>$150.</td>
<td>$150.</td>
<td>$150.</td>
<td>$620.</td>
</tr>
<tr>
<td>Utilities</td>
<td>$15.</td>
<td>$100.</td>
<td>$100.</td>
<td>$100.</td>
<td>$100.</td>
<td>$415.</td>
</tr>
<tr>
<td>Boxes (.60/3-lb)</td>
<td>$8.</td>
<td>$240.</td>
<td>$200.</td>
<td>$100.</td>
<td>$60.</td>
<td>$608.</td>
</tr>
<tr>
<td>Promotion</td>
<td>$500.</td>
<td>$400.</td>
<td>$400.</td>
<td>$300.</td>
<td>$200.</td>
<td>$2,000.</td>
</tr>
<tr>
<td><strong>Total Non-Labor Costs</strong></td>
<td>$543.</td>
<td>$890.</td>
<td>$850.</td>
<td>$750.</td>
<td>$610.</td>
<td>$3,643.</td>
</tr>
<tr>
<td><strong>Labor Costs ($4.00/hour)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soak and rack</td>
<td>0.</td>
<td>$160.</td>
<td>$160.</td>
<td>$160.</td>
<td>$160.</td>
<td>$640.</td>
</tr>
<tr>
<td>Harvest (15 pounds/hour)</td>
<td>$11.</td>
<td>$320.</td>
<td>$267.</td>
<td>$134.</td>
<td>$80.</td>
<td>$812.</td>
</tr>
<tr>
<td>Delivery (10 hours)</td>
<td>$16.</td>
<td>$160.</td>
<td>$160.</td>
<td>$160.</td>
<td>$160.</td>
<td>$656.</td>
</tr>
<tr>
<td><strong>Total Labor Costs</strong></td>
<td>$27.</td>
<td>$640.</td>
<td>$587.</td>
<td>$454.</td>
<td>$400.</td>
<td>$2,108.</td>
</tr>
<tr>
<td><strong>Total Expense</strong></td>
<td>$1,245.</td>
<td>$1,530.</td>
<td>$1,437.</td>
<td>$1,204.</td>
<td>$1,010.</td>
<td>$6,426.</td>
</tr>
</tbody>
</table>

### Net Income

Net Income \(=\) Income - Expenses

- **($1,085.)**
- **$3,270.**
- **$2,563.**
- **$796.**
- **$190.**
- **$5,734.**
REACTIONS TO FALLING PRICES

If your sales decrease, be careful to assess the situation and determine the reasons for the decline before you change your prices. Determine if industry prices are falling, if your product prices are out of line, or if there is a problem with the quality of service you provide.

There are several other reasons prices may fall:

- Economic conditions (recessions, tax time)
- Substitute products entering the market
- Sales of related products decreasing
- Market saturation (supply has met demand)

If prices fall, evaluate the long-term implications of any price decisions you make, the benefits to your customer, and match competitive price reductions by a reasonable amount.

Try not to set your prices too low or sell below cost. If someone "dumps" their mushrooms on the market at a low price, it is called "distress selling," and it upsets the equilibrium of the market. If this occurs, you may lose market share, but remember: it is a temporary state.

In a declining market:

- Don't take rumors as reality.
- Don't blame price alone for price drops.
- Don't react too quickly.
- Don't Ignore the situation.

Even if price isn't the problem, there is a problem!

NEGOTIATING A PRICE

Negotiating prices is integral to the sales process. Once you have determined the prices from your wholesalers and retailers and have set a price for your mushrooms, don't panic when it comes time to give your price. You have done your homework and have a good idea of the going prices. Simply quote your price when asked. If your price is not acceptable to your customer, you can either lower it or try to sell your mushrooms to someone else.

Once you have quoted a price and found it to be too high at a few accounts, don't hesitate to go back and quote a lower price to your original customers. Produce pricing is constantly changing.

Be sure to know your lowest price! Remember that the lowest price is based on your cost and what you need to break-even. The highest price is more flexible and is based on demand, your competitors' prices, and your profit goals. If you can't get your lowest calculated price, consider using them as promotional giveaways: to chefs, produce buyers, or as demonstration samples.
What influences the demand for shiitake mushrooms in your market area?

What is the current market price?

What are your margins or mark-up?

What is your break even price?

What is the lowest price you will charge for your mushrooms?

<table>
<thead>
<tr>
<th>Estimate your operating costs here.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unit</th>
<th>Cost per Unit</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash Expenses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Cash Expenses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor Expenses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Labor Expenses</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Pricing Worksheets

<table>
<thead>
<tr>
<th>Years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td></td>
</tr>
<tr>
<td>Yield</td>
<td></td>
</tr>
<tr>
<td>Selling Price</td>
<td>Total Sales</td>
</tr>
<tr>
<td>Expenses</td>
<td></td>
</tr>
<tr>
<td>Start-up Costs</td>
<td></td>
</tr>
<tr>
<td>Travel</td>
<td></td>
</tr>
<tr>
<td>Utilities</td>
<td></td>
</tr>
<tr>
<td>Boxes</td>
<td></td>
</tr>
<tr>
<td>Promotion</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>Total Non-Labor Expenses</td>
<td></td>
</tr>
<tr>
<td>Labor: ___/hour</td>
<td></td>
</tr>
<tr>
<td>Soak and rack</td>
<td></td>
</tr>
<tr>
<td>Harvest</td>
<td></td>
</tr>
<tr>
<td>Delivery</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>Total Labor Cost</td>
<td></td>
</tr>
</tbody>
</table>

62
PROMOTION

Many new products have failed in the market, not because of their quality or packaging, but because people didn't know they were there, and, if they did, they didn't know what they were or how to use them.

In order to position your product, you must promote it.

You can promote your mushrooms through the use of advertising, public relations, sales promotion and personal selling. These four components are called the promotional mix.

This section provides you with information about the promotional mix, setting promotional objectives, developing and implementing a promotional plan and current practices so that you can make effective promotional decisions.

This section will include:

- PROMOTION AS COMMUNICATIONS
- KNOWING YOUR TARGET AUDIENCE
- SETTING PROMOTIONAL OBJECTIVES
- DEVELOPING A PROMOTIONAL STRATEGY
- PROMOTIONAL TOOLS
- MEDIA ADVANTAGES AND LIMITATIONS

Promotion involves informing, persuading, and reminding your customers about your mushrooms. It is accomplished by influencing your customers' behavior by sharing ideas, information and/or feelings. This is called communication.

There are two important people or groups of people involved in the communication process: you, the sender, and the targeted customer group, or receiver. Communication between you occurs when you transmit a message, the customer receives it and you both have a shared meaning. The tools you use for communicating are called messages and channels.

Communication occurs on many levels and can include any of the five senses. The customer can see an advertisement or a product sheet, hear a radio spot, or touch, smell and taste a shiitake mushroom.

The communication process is based on the following model.

1. You must identify the targeted customer groups' characteristics and what change in behavior is desired.
2. Once the desired behavior is determined, a message must be developed to create the change.

3. The message or thought must be put into a form customers can interpret.

4. A channel (medium) must be selected to best carry the message to the customer.

5. The customer converts the symbol back into a message and assign meanings to it.

6. The customer reacts by asking questions, making comments, and buying or not buying the product.

7. The customer provides feedback to you about what meaning they assigned to the message, and reactions to it. This sometimes requires marketing research to get results.

At times, the customer will receive a different message than you sent. This is called "noise."

As the communicator, you need to develop a strategy via the following steps:

- Identify your target audience
- Determine the desired response
- Choose a message
- Choose a media channel
- Select the attributes you will use

---

**KNOWING YOUR TARGET AUDIENCE**

It is important to know what audience you want to reach in order to make promotional decisions. You can focus on current customers, potential customers, or people who influence the buying decisions. The audience can be an individual or a group.

Your selected audience will influence all of your promotional decisions. It will determine what you will say, and how, when, where, and who will say it. In order to make these decisions, you need to know what your audience reads and listens to, how they are influenced to buy, and what they need and want.

---

**SETTING PROMOTIONAL GOALS**

Your promotional objectives should be based on your marketing strategy, available resources, and defined target market. Goals can be general (develop customer awareness of shiitake mushrooms), or specific (develop customer awareness of shiitake mushrooms in the Rochester market so that fifty percent of the market will know what they are in our first year of business).

Selecting a specific promotional goal is often more effective because it helps you focus your resources, and it is easier to measure the results of your efforts. Like your marketing objectives, promotional goals should be stated clearly, and have well-defined actions and timelines needed for implementation.
Stages Of Readiness
Your ultimate goal is to have your customers purchase your mushrooms. But a long process of decision making occurs before a purchase is made. Consider your audience in terms of any of the following stages of readiness:

Awareness: How aware is your audience of what a shiitake mushroom is, what do they know about it, and what do they know about your company or brand name?

Knowledge: What attributes are they familiar with?

Appreciation: How do they feel about shiitake mushrooms? Remember, you can not increase customer appreciation if your product is flawed or inferior.

Preference: Do your mushrooms have an attribute that would lead your customer to choose your mushrooms over other types or brands of mushrooms?

Conviction: Even though your customers may prefer shiitake mushrooms, would they have a conviction to buy them? For example, maybe they do not have a recipe that uses them.

Purchase: What will induce your customers to purchase your mushrooms now or later? For example, "This is the height of the mushroom season, enjoy them now!"

Once you have identified the stage or stages your target customer is in, you can select the Promotional objectives needed to move him to the next stage. Some promotional alternatives are described below:

Creating Awareness Product plays an important role in your distribution strategy. A food service wholesaler wants to stock products that are known and used by their customers. Creating product awareness for the consumer can be very expensive. To begin to educate consumers in a local market area would probably cost at least $10,000, if you were to do it yourself. It is more effective to educate the wholesaler and retailer about shiitake mushrooms and its attributes and let them and the local food industry experts, along with editors and food critics, educate the public.

Providing Product Information Consumers, wholesalers, and retailers often want specific information about your mushrooms. Each group needs different information. Our research indicates:

Chefs want information about how to store and handle the mushrooms, shelf life, and possible uses. Some wanted recipe suggestions.

Wholesalers want flyers and product information for their salespeople to take to the chefs and general product information to educate their staff.

Retailers want recipe cards, product information sheets, and other general point-of-purchase materials for their consumers, as well as general product information for their produce staffs.

Consumers want recipes and storage and handling information.
Getting Consumers to Buy  Getting people to buy requires different promotional efforts than to build awareness. It is focused on motivating rather than informing, and might include special offers to get people to try the product.

Persuading Wholesalers and Retailers to Buy  Wholesalers and retailers need to know that a consumer demand exists or can be stimulated before they will agree to stock your mushrooms. Communicating with wholesalers and retailers is different than with the consumer. They want to know about replacement of spoiled goods, shelf space requirements, point-of-purchase displays, cooperative advertising arrangements, availability of samples, and profit potential.

Increasing Amount and Frequency of Use  To increase the amount and frequency of use, you would have to develop materials that encourage people to eat more mushrooms and, more specifically, shiitake mushrooms.

DEVELOPING A PROMOTIONAL STRATEGY

Once you have determined your promotional objectives, you need to develop your promotional strategy. Like your marketing strategy, it is designed to help you best allocate your resources in order to achieve your promotional objectives. It includes a description of your target audience, the message or messages you want to communicate, and the development of a promotional mix.

The promotional mix, one of the four major components of the marketing mix, involves a blending of four elements or tools:

- Public Relations
- Personal Selling
- Sales Promotion
- Advertising

All of the elements of the promotional mix must be coordinated and integrated so they reinforce each other and create a consistent message to achieve your promotional objectives. For example, coordinate your packaging decisions with your promotional decisions so that they complement each other.

As you develop your strategy, weigh your decisions carefully. Ask your customers what would be useful. Shop around for the best resources. Do a few things well. Don’t develop multi-purpose pieces that lose their effectiveness and compromise your product. Use free services and exposure as much as possible. Continue to ask yourself whether you are getting the message to the audience you want and whether you are getting results.

As you develop your strategy, you need to develop a promotion budget. This is a very difficult task, and there are few standards to follow. Budget decisions for your promotional strategy can be made in a number of ways. Two methods are:

Affordable Method: Sit down and determine what you can afford to spend on promotion. This method doesn’t take into consideration the impact of promotion on sales volume. It is also inconsistent and doesn’t allow for long-range planning.
**Promotion by Objective:** This method bases your promotional budget on your specific objective, the tasks needed to achieve those objectives, and the costs of performing those tasks. The sum of the costs becomes your promotional budget.

The four promotional tools: **personal selling**, **public relations**, **sales promotion** and **advertising** each have a unique set of characteristics and costs. As you develop your strategy, select the tool or tools that best meet your promotional objectives while making the most efficient use of your resources.

**Personal Selling**

Personal selling is face-to-face contact between you or your representative and the buyer representative. It is an effective tool when you are trying to increase preference, conviction, or action in your customer.

Personal selling involves many different kinds of close relationships between people where both parties can see each other's needs and characteristics. The customer usually feels obligated to listen and respond in some way. More information is included in this guide's section entitled PERSONAL SELLING.

**Public Relations**

The shiitake mushroom is a specialty produce item in need of a great deal of promotion. Public relations is one of the easiest, cheapest ways to promote your product and company. It encompasses the entire process of developing a favorable reputation—an all-around good feeling—about your operation in the minds of your community and targeted buyers.

How do these people develop such good feelings about your business? Through what they **read** about you, what they **hear** about you, and what they **see**.

Public relations includes press relations, product publicity, corporate communications, and lobbying. As a grower, you will probably focus your efforts on publicity and press relations. Both are effective because they give you high levels of credibility and because they reach your customers with news stories that can dramatize your product.

Public relations covers a very broad range of "impression opportunities," including:

- The personalities of your sales force;
- The way your delivery van looks;
- The way you treat your employees;
- The quality of your products;
- The way you answer the phone, and more!

Cultivate or refine your public relations consciousness.

You, the grower, must make a personal investment in such promotion if your shiitake are going to be successfully sold in your market area.
Personal Assessment
Examine your promotional abilities.

1. Do you personally know more about shiitake than just how to grow them? Do you know how to cook them? What they go well with? Their nutritional value? What about other gourmet mushrooms? Other gourmet items?

If you are lacking in these areas, begin a strong self-education campaign. Read gourmet magazines. Experiment with different ways to use shiitake. Cook in ways you may have never tried before. Talk with national experts. Be as credible and helpful as possible to your customers as well as the media. Keep up on trends. Don't stop reading, cooking, and talking. You will be sought out as an expert, and your company's reputation will soar.

2. Do you enjoy meeting new people? Talking with strangers?
You will need these skills. Start and/or keep working on them. Like it or not, how you present yourself is most often how people will perceive your entire mushroom operation. Someday, you will run into a newspaper reporter who will ask about your upcoming crop. Be ready to be open, interesting, and the kind of source that reporter will want to keep in a phone index as an expert on mushrooms and gourmet trends.

Public Image
Look at your existing operation with an objective eye and ear. Assume you are a produce buyer who has just moved to town. What would a new buyer think about your company? Be critical. (Warning: This is an extreme example.)

1. What would the produce buyer be hearing from other produce buyers concerning your operation? (poor quality?, lousy service?, shifty management?)?
2. How would the company look (mediocre product?, dirty trucks?, scruffy delivery people? illegible invoices?)?
3. How would the company sound (babies crying on the phone? management talking down to employees? pessimistic? uncertain?)?

If you can't imagine any of this, go out and ask your customers. They'll tell you. Then take a good look at your image, and take action to correct those aspects that don't help you.

Tighten up on quality control. Paint the trucks. Hire an answering service. Rent uniforms. Buy a used typewriter. And then, use publicity to tell the world how great you are.

Publicity
Publicity can help you correct aspects of a bad reputation. If you have a good reputation, publicity can help you merchandise it. Publicity is one means of conveying ideas about your firm to the world.

Your best "advertising" may be publicity, which is great because publicity has more credibility than advertising because consumers have less resistance to it. Publicity is different from advertising, because publicity is free, "placed" with editors and reporters who work in the editorial departments of media, who are constantly looking for "news."

General Media
What is "news," in terms of your shiitake mushroom operation?
Train yourself to recognize types of news and feature stores when you listen to or read the news. Then, force yourself to answer the question "What is there in my business that would fall into one of these topic categories?" Then, tell the press about it.

The following are 12 topic ideas with examples of news release headlines, written for an imaginary shiitake operation named "Mikey's Mushroom Forest." While this is not a complete list of news topics, see which of the following could apply to you:

1. Inoculation Season:
"MIKEY'S ELVES DRILL FOR GOLDEN MUSHROOMS"

2. Expansion:
"NEW 'LOG HOUSE' FINISHED FOR MIKEY'S MUSHROOMS"

3. Open House:
"ANNUAL FUNGI-FEST, NEXT SATURDAY AT MIKEY'S"

4. New Product:
"MIKEY'S BROADENS LINE TO INCLUDE OYSTER MUSHROOMS"

5. Spring Flush:
"LIKE A BUMP ON A LOG, THE SHIITAKES ARE HERE!"

6. Major Account:
"MIKEY'S TO SUPPLY BEATRICE FOODS WITH Shiitake"

7. Staff Promotion:
"ZACK DEDEN PROMOTED TO VICE PRESIDENT AT MIKEY'S"

8. Company Award:
"MIKEY'S MUSHROOM FOREST WINS JAYCEE'S SERVICE AWARD"

9. Annual Results:
"BIG PROFIT-SHARING YEAR AT MIKEY'S MUSHROOMS"

10. Speeches:
"MIKEY TELLS H.S. SENIORS BUSINESS OPPORTUNITIES MUSHROOMING!"

11. Amazing Discoveries:
"MIKEY'S MUSHROOM LAB DEVELOPS AIDS VACCINE"

12. Visitors/Tours:
"FRENCH TRADE MINISTER TASTES Shiitake AT MIKEY'S"

13. Community Events -
"MIKEY COOKS UP SHIITAKE STORM AT WOMEN'S AUXILIARY LUNCHEON"

And on and on. You get the idea.
Targeted Media
The definition of news for one audience may not be the same for another. For example, what is news to a wholesale produce buyer may not interest chefs at all. Learn where your target audiences get their information. Get copies of publications that they read. And learn their definitions of "news". They will most probably be quite different from the general media’s.

Grocery  Corporate grocery chains often develop their own in-house weekly news sheets which are sent to produce managers. These sheets include the latest on seasonal produce availability, upcoming promotional campaigns, display suggestions and new produce developments.

Call and identify the in-house editor or writer of these news sheets. Call and ask if they accept news releases. Then, add their names to your media list.

Wholesale  Most wholesalers read industry weeklies, such as The Packer, or other regional or local publications. Get to know where they get their information and add these publications and editors’ names to your media list.

Chefs  Chefs in your area may read an independent or association newsletter whose editor would be interested in hearing about your mushroom operation. Once again, get to know the editors and writers, and add their names to your media list.

A Public Relations Plan
"The World Stands Aside for a Company with a Plan." Yet nearly everyone hates to draw up these plans. They can be very effective, as is the case with public relations.

The basic elements of a public relations (PR) plan are:

- **Objectives:** What do I want this PR to do for business?
- **Audiences:** Who do I want to hear and read it?
- **Media:** How will the audience hear and read it?
- **Projects:** What will they hear and read about?
- **Messages:** What will they remember about it?
- **Budget:** How much will this project cost?
- **Schedule:** When will it happen?

In developing a public relations schedule, arrange your projects on a vertical axis and list months or weeks of the year along a horizontal axis. This will help you visualize when events will occur in order to help prepare a monthly PR budget.

When you feel comfortable making the news happen, and then successfully communicating it, you will be a true professional at practicing publicity.
Dealing with the Press
Prepare for publicity by establishing relationships with photographers, printers, or writers, whomever you need.

You should begin developing or continue updating your media mailing list.

In larger cities, reporters are specialized. You can call the media's general editorial number and get the names of those reporters who deal with your subject, in sections most likely titled Food, Leisure, Lifestyles, or Business.

In smaller cities without such specialization, just send your materials to the editor.

The editor has one purpose: to pack the columns with useful ideas in words and pictures, ideas that are fresh, if not absolutely new.

Most editors have space for only a few of the articles and pictures their secretaries pile on their desks each day. So they quickly glance at the titles, topics and sources of the releases, tossing those that ring a bell into a basket for further study and consigning the rest to the files or wastebasket.

A news release is a press release or publicity release. Whatever you call it, the news release is a brief piece of writing designed to bring something to the public's attention.

Your release will be competing with dozens of others for the editors' eyes before it even has a chance of reaching the reader.

A good opening sentence, or lead, will pull the reader into the copy, which then contains the good old five W's: Who, What, When, Where, and Why.

Attached is a sample news release that our fictitious Mikey's Mushroom Forest sent to its mailing list of: newspaper food editors, national industry magazine editors, and grocery chain editors.

Photos are the first thing that catches the reader's or editor's eye. A good, sharp photograph of an easily recognized subject is often more valuable to editors than the freshest idea.

Take pictures! Always have a good camera or photographer on hand, with black and white film, for every promotional event you schedule.

Photos should be black and white and have a glossy emulsion surface. They should be sharply focused with good contrast. (Put dark things on a light background and vice versa.) 4" X 6" or 5" X 7" prints are good for close-up photos of one or two people.

Never touch the glossy surface. You will leave fingerprints that may make an editor avoid using your photograph. Use a very soft felt-tip pen or tape a description to the back of the photo. Never write on the photo with anything hard, or it will show through.

Many larger newspapers have installed new color presses and are anxious for color photo opportunities. If you think your operation has the kind of photogenic colors
they want (oak leaves, Amish barns, etc.), don’t try and take the shot yourself. Plan ahead, call the paper and let them know three to four months in advance. A reporter and photographic team may be sent to your forest for the coverage of a lifetime.

Some Final Do’s and Don’ts
Call a reporter or editor with some real news! Don’t be afraid. People do it every day. Just be careful to pick newsworthy items. And don’t cry wolf.

Use the word "publicity." Talk about "News."

Let the press write your story for you. Keep in mind that you are just supplying the background material.

Be courteous and respectful of any editor’s or reporter’s time. Bend over backwards to help them out. You need each other.

SAMPLE NEWS RELEASE

FROM: Mikey’s Mushroom Forest
Rural Route 2, Box 93
Mushtown, MN 55400
612/000-0000

CONTACT: M. Capp

"FIRST FLUSH" SHIITAKE MUSHROOMS OFFER RARE TASTE

The shiitake are popping out of the logs at Mikey’s Mushroom Forest this week, as the fall flush (harvest) has begun. "It’s like the first wine of the season," says president M. Capp. The new shiitake have a smokier, wilder taste than those harvested later in the season. "The logs are just learning how to grow these things, and you can really taste the freshness."

Mikey’s will be offering these "First Flush" shiitake to its current retail and wholesale customers, while supplies last. Prepackaged like Mikey’s standard shiitake, the "First Flush" premium variety will use distinctive stickers and corresponding shelf displays.

These pungent, oriental brown mushrooms have been a favorite on local menus for the past several years. And the arrival of the first flush is welcome news to area chefs, produce managers, and consumers.
Sales Promotion
Sales promotion tools are used to create an immediate increase in response or sales. It does not build long-run brand preference. Sales promotion provides information that will lead your customers to the product and an incentive for them to buy immediately.

There are a number of sales promotion tools that can be used in promoting shiitake mushrooms to both the retail and wholesale buyer. They include:

Point-of-Purchase Displays and Literature
Point-of-purchase displays and literature are used in grocery stores. It is common for grocery stores to provide:

- A newsletter or booklet each month with food ideas, recipes, and product information for customers;
- Recipe cards featuring specialty foods;
- A new product shelf at the front of the store;
- Product literature about storage and handling; and/or
- Appealing and Informative signage within the produce department.

If you are thinking of including point-of-purchase materials in your promotional strategy, be sure to ask your grocers what they would prefer and what gets used. Each store has different needs—one may use recipes, another may prefer product information sheets.

Demonstrations
Food product sampling in grocery stores is a marketing phenomenon which is growing rapidly. Producers are able to reach the consumer directly with their product, and consumers are able to see, taste and smell new products before purchase.

To conduct a store demonstration, you must first contact the produce manager or store manager and convince them of the need for a demonstration. Some stores schedule their demonstrations well in advance so make your request as early as possible. Together, you then set up the dates and projected amounts of mushrooms to be used. Most produce departments will require you to provide the mushrooms at no charge.

Some stores have a policy that only professional demonstration services are allowed to conduct demo’s in the store. If so, you must contract with one of these services to make arrangements and to conduct the demonstrations.

Demonstrations normally last eight hours, from 10 a.m. to 6 p.m. This allows the demonstrators to become familiar with the product before the noon rush. Make sure you provide the demonstrators with information and educate them about your mushrooms.

The average price for demonstrators in the Minneapolis/St. Paul area through a service is $7.00 per hour for a sixteen-hour weekend job. There are additional costs for putting on a demonstration including plates, napkins, forks, etc., plus the mushrooms used. The average cost for a demonstration runs about $200 per day. It may be more
expensive if the store has heavy traffic. For example, a Minneapolis Byerly's store can have 2,000 shoppers on a Saturday.

Timing is crucial when having a demonstration. You want to reach as many people as possible. The dates you pick need to be prime dates for people to buy, like pay day. Do not have a demonstration before a big holiday.

**Trade Shows**

Many associations organize annual conventions and will sponsor a trade show at the same time. You can rent a booth to display and provide samples of your mushrooms at trade shows. The purpose of these shows is to introduce new products, meet new customers, develop sales leads, and increase your overall customer contacts.

There are thousands of trade shows annually. You need to decide which would be most appropriate for reaching your target audience, and evaluate the cost of the show against the possible return in sales. Giving away free samples can be very costly so make sure you find out the number of people who attend the show and how much product you will need for samples.

Many trade shows have limited space and book a year in advance. When considering exhibiting at a show, call for information concerning booth space availability, requirements, registration fees, the types of companies that exhibit.

Some of the shows that take place in the Minneapolis/St. Paul area are described below.

**Upper Midwest Hospitality Restaurant and Lodging Show**

This show is sponsored by the Minnesota Restaurant, Hotel and Resort Association and is held in February of each year. Exhibits are open for three days and are frequented by regional chefs, cooks, hotel and restaurant managers, and resort owners. Food samples are given away at this event.

For more information, contact the Upper Midwest Hospitality, Inc., Minnesota Restaurant, Hotel and Resort Association, 871 Jefferson Avenue, St. Paul, Minnesota 55102.

**Minnesota Food Expo**

The Minnesota Food Expo is a joint promotional effort between Minnesota food companies and the State of Minnesota. The Board of Directors decides when and where to stage each show and reviews an initial list of food buyers. The Minnesota Department of Agriculture manages all aspects of the Expo.

The Expo is held for one evening in a fine hotel and is "by invitation only" so it is focused at guests who represent potential sales. Guests sample from the "Table of Taste," visit company exhibits, and meet representatives. Each guest receives a packet of sales literature. The guests represent chain food buyers and food retailers; buyers for hospitals, restaurants, schools and institutions; caterers; food editors; brokers; and distributors. The average attendance ranges from 200 to 600.
For more information about the Food Expo contact the Agricultural Trade Division, Minnesota Trade Office, 90 West Plato Blvd., St. Paul, Minnesota 55107 or (612) 296-1414.

Minnesota Grocers Association

The Minnesota Grocers Association is a trade association for the grocery industry. With over 1200 stores, it represents retailers, wholesalers and suppliers. Over 3500 potential buyers attend the show. The show runs for two days.

For more information, contact the Minnesota Grocers Association, 555 Wabasha Street, Suite 215, St. Paul, Minnesota, 55113 or (612) 228-0973.

Samples
Providing free samples of your mushrooms can be an excellent sales promotional tool if it is directed at the right audience. Two good audiences are vocational-technical schools and cooking schools.

Vocational Technical Schools

Select those vocational-technical schools in your area with chef training programs. You can provide them with free samples and educate them on the use of the shiitake mushrooms. This may lead to an increase in demand once the students enter your customer target market as chefs. These schools can also provide you with creative advice and recipe development ideas.

You begin by sending a letter of introduction to the food service department detailing information about shiitake mushrooms and explaining your interest in getting the school involved by giving students an opportunity to see, taste, and use the mushrooms.

A presentation format is effective when working with the faculty and students. You should provide background information, storage and handling guidelines, and cooking information.

Another promotional idea would be to sponsor a recipe contest for shiitake mushrooms at the school. It would require a nominal prize for the winner but would result in imaginative, creative ideas for uses of the mushrooms as well as introduce the students and staff to cooking with shiitake.

Another possibility is to develop a mushroom class or program for the school. Vocational-technical schools are always interested in new ideas for their extension classes that are designed for food service professionals.

Cooking Schools

Cooking schools are attended by your potential customers, those people who have a high awareness and interest in food. You need to call the cooking school director and explain that you are interested in providing shiitake mushrooms for their classes. You will probably be asked to talk with the individual teacher.
Ask for a class list, select the classes where shiitake mushrooms might be used and call and talk with the teacher. Find out how much they will need and how they would prepare them. When you deliver the mushrooms, provide the teacher with information about the mushrooms to pass along to the class.

Another idea is to develop a mushroom cooking class or special mushroom cooking dinners. These may include generic information about mushroom cooking and feature the shiitake mushroom.

State Fairs

The Minnesota State Fair has often been used by promoters of new products as a way to introduce their new product ideas to the Minnesota public. It can be an effective way to introduce shiitake mushrooms to thousands of people in a short period of time. When deciding to exhibit at a state fair, carefully evaluate the fit between your objectives and the use of your resources.

All applications for booths at the Minnesota State Fair are handled by mail. Each application is reviewed by the State Fair Space Rental Committee and allocated on the basis of several factors including availability, size of space requested, and location. The request for spaces generally outnumber the spaces available each year, therefore, your application will be reviewed and awarded space based on the uniqueness of your product and how it compares to other products sold at the fair. Applications are accepted starting in January.

The price of space at the fair in 1987 was $42.00 per front foot. This is a one-time charge for the fair season. You must provide the booth structure, extension hook-up for water and electricity (if needed), all equipment within your booth, insurance, and entrance fee into the fair each day. For more information contact the State Fair Space Rental Information Office at (612) 642-2256 for an application.

Direct Marketing

You can also choose to market your mushrooms directly to the consumer. You can reach them in three ways: roadside stands, pick-your-own programs, or farmer’s markets.

Roadside Stands and Pick-Your-Own Programs

If you plan to sell at a roadside stand or offer a pick-your-own program, advertising and promotion are important to your success. You need to let people know that you are in business, where you are located, and entice them to come and buy.

You can place local newspaper ads or radio advertisements on local stations. Include your name and location and an inviting description of the mushrooms with one or two strong feature and benefit statements to get the customers to stop and buy.

Roadside stands and pick-your-own programs have higher labor costs but often provide better profit margins. Your stand may need to provide more than just mushrooms to attract customers. There is a possibility that the issue of safety in the customer’s mind might deter them from purchasing mushrooms from a stranger at a roadside stand.
Farmers' Markets

Farmers' Markets are successful because they offer better food quality, price savings and a special buying atmosphere where the consumer can talk with the grower and touch and sample their products.

Following is information about the Minneapolis Farmer's Market:

- As of May, 1987, there was a two year waiting list to get a stall.
- Some growers take a chance and try to rent a stall on a daily basis if other growers do not show up.
- An organization or farm may rent a maximum of three stalls.
- There is an initial $75 membership fee regardless of how many stalls you rent.
- The daily rates for stalls are:
  Monday through Thursday: $5
  Friday: $8-$10
  Saturday: $30
  Sunday: $15
- The annual rate (projected for 1988) for seven days a week is $350 to $400.
- The only mushrooms at the market are local growers of button mushrooms and people who sell morels in season.
- It is important to build up a reputation by appearing regularly.
- There are many types of buyers at the market from highly knowledgeable gourmets to people simply looking for cheap produce.

If you choose to try a direct marketing method for selling your mushrooms, additional information is available through the Minnesota Grown Project at the Minnesota Trade Office located in St. Paul, Minnesota. They provide publications on direct farm marketing including "A Guidebook for Promotion and Publicity", a guidebook for growers, and other titles.

If you live outside Minnesota, contact your appropriate state agency for similar publications.

Advertising

Advertising is any paid form of nonpersonal presentation and promotion of ideas, goods and services identified by a sponsor. Advertising comes in many forms and can fill many needs within the promotional mix. Advertising is used when you want to communicate with a number of people who cannot be reached economically and effectively through personal contact.

It is public, persuasive, and offers opportunities to dramatize your product through the use of print, sound, and color. It is not as motivating as personal selling because of its impersonal nature. Your customer does not feel obligated to buy.
Advertising is a very complex, dynamic promotion tool, and we can not teach you everything you need to know in this guide. We will provide you with the basics. If you consider using advertising in your promotion strategy, consult additional books designed specifically to educate you about advertising and purchasing the support services you need.

Remember every advertisement (ad) you develop represents you, your mushrooms, and your company, so allow for enough in your advertising budget to produce an ad that communicates your quality and standards. A poor quality advertisement is not neutral, it will create a negative image in the minds of your customers.

Objectives

You will be using product advertising, which focuses on selling a specific product. It will be directed at your target customers or marketing channel. Product advertising has three objectives: informing, persuading, and reminding.

Informing Some ads are designed to create awareness and understanding and develop a demand for a new product by educating customers about the product, its uses, and where to buy it.

Persuading Some ads are designed to stimulate selective demand, that is, choosing your mushrooms over your competitors. This is accomplished by creating a brand image, comparing your product’s attributes to you competitors, and motivating your target customers to buy.

Reminding Some ads are designed to remind your customers about your product once you have established preference. This is accomplished by summarizing your features and benefits in ads over a long period of time.

Advertising Process

Advertising can be very expensive and needs to be well focused. The purpose of the following is to assess your ability to produce your own advertising or to monitor the activities of an agency or employee who will be producing advertising for you. To manage the advertising process:

Define your Advertising Target. You must clearly decide who you want to reach. It may be all of your target market or a subpopulation.

Set Advertising Objectives. Your objectives should be based on your previous decisions about your target market, marketing positioning, and marketing mix. You must evaluate your promotional mix and determine which objectives can be accomplished more effectively through the use of advertising. Advertising objectives are usually based on either sales or communication. Sales objectives may include an increase in sales dollars, market share, or percentages. They should be specific, measurable, and realistic. Communication objectives are used when you want to increase your product awareness in the marketplace. In setting these objectives, state exactly how much of what marketplace you want to reach.

Establish An Advertising Budget. For non-advertising experts budgeting can be tricky because there are hidden costs. If you are not aware of all of the steps and requirements
for developing an ad, it is difficult to estimate an accurate cost. Any of the budgeting methods mentioned earlier can be used in establishing an advertising budget. Make a lot of telephone calls, shop around and ask a lot of questions when you are developing an ad.

**Develop a Creative Strategy** yourself, or hire an ad agency. This will require you to:

- Decide on the basic idea or message you want to communicate to your target audience
- Develop an advertising concept or situation that communicates the desired message
- Develop an ad using the style, words, format and tone that fits your concept
- Layout the ad so it can be used in your targeted form of media.

Because this process takes a great deal of creativity and can truly "make or break" the success of your ad, consider using a professional in helping you develop your ad.

**Select Advertising Media Vehicles.** You can advertise through a number of media including newspapers, magazines, direct mail, radio, and television.

When you evaluate the media alternatives, you must take into consideration who you want to reach, how often you want to reach them and how effective each medium is in accomplishing your objectives. Each medium has certain advantages and limitations. You must also consider:

- Your target audience’s media habits (what mediums do they use?)
- The best showcase for your product (does it photograph well or should it be illustrated?)
- The nature of your message (is it technical? Immediate?)
- The cost (what can you afford?)

---

**Newspapers**

Newspapers can be daily, weekly or monthly with local or national distribution. Each are targeted at different market segments. Ads should be placed in the appropriate section of the newspaper.

- **Advantages:** high credibility, reaches a large target audience, and is Immediate.
- **Disadvantages:** ad life is short, color reproductions are expensive and sometimes inferior and ads may compete for attention.
Magazines

Magazines range from large-circulation general interest to lower-circulation special interest publications. The number of specialty magazines have increased over the last few years. Most magazines are national and published monthly.

- **Advantage:** focused ad placement to reach target audience.
- **Disadvantage:** long lead times, less repeat exposure, limited responsiveness to market changes.

Radio

Radio reaches almost everyone in either their car or home. Stations are identified by their music or ethnic appeal. Stations can be local or regional and they tailor their program formats for a specific audience.

- **Advantage:** production time for ads is short and ads can be changed quickly.
- **Disadvantage:** ads cannot contain much detailed information and people do not often pay close attention.

Television

Television reaches almost every home in the United States. Target audiences are selected through programs, times and station preferences.

One newer option for promoting new food products is through cable television. Stations are often looking for new program ideas or may provide community services concerning nutrition and food.

- **Advantage:** ads stimulate multiple senses and can show complex products in motion.
- **Disadvantage:** COST!

Direct Mail

To be effective and build recognition in a direct mail campaign, you must produce mailings two to four times a year. Direct mail can be sent out in envelopes directly to the customer or distributed door-to-door. It requires that you maintain an up-to-date mailing list.

- **Advantage:** direct communication with targeted customer is accomplished and buying response is higher than in some other media
- **Disadvantage:** It can be costly depending on size of target market.
Promotion Worksheets

Who is your target audience?

What stage of readiness is your target audience in?

What are your promotional goals?

What is your estimated promotional budget?

How will you use each of the following promotional tools?
  • Personal Selling
  • Public Relations
Promotion Worksheets

Who is your audience?

What mediums reach your audience?

What is your message?

Describe your publicity campaign.

Write three sample news releases.
Describe a news topic for each of the following:

- Wholesale Market
- Retail Market
- Chefs

Describe your public relations plan.

Sales Promotion
- Point of Purchase:
- Demonstrations:
- Trade Shows:
- Samples:
- State Fair:
- Direct Marketing:
Advertising
- Newspapers
- Magazines
- Radio
- Television/Cable
- Direct Mail

Develop a promotional plan in the space provided below.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Requirements</th>
<th>Deadline</th>
<th>Assigned to</th>
</tr>
</thead>
</table>


PERSONAL SELLING

It is easy for growers to think "my mushrooms will sell themselves." Although shiitake are a wonderfully tasty and healthy product, this will rarely be true. Wholesalers and retailers need to know you are in business and what you are selling. And if they have more than one source of supply, you need to somehow be better than your competitors. These factors are all part of the sales process.

Many myths exist about what characterizes a good salesperson. Some people think you need to be outgoing and talkative, some say well-organized, and others say pushy. Many believe that salespeople are born into it, that through who they "are," they can sell naturally without effort or anxiety. This isn’t true.

Yes, selling is easier for some, but anyone can learn to sell. The key is to learn about and understand the sales process. As you become familiar with the sales model and develop your own strategies and plans, you will grow more and more comfortable with selling. Remember that even the well seasoned, professional salesperson who looks like he isn’t selling at all has a well-thought-out plan for every customer and account.

The purpose of this section is to provide you with practical information about selling and, more specifically, selling shiitake mushrooms to wholesalers and retailers. It is designed to give you the basics from which you can develop your own style and techniques.

This section will include:

- PREPARING TO SELL
- PROSPECTING NEW ACCOUNTS
- QUALIFYING YOUR CUSTOMERS
- THE SALES MODEL
- FEATURE/BENEFIT STATEMENTS
- SELLING TO WHOLESALERS AND RETAILERS

Keep in mind when you review these materials that there are no "right answers" in selling. As you develop your own sales style, you will try many different things. Some will work and some won’t. So, be creative with your ideas and have fun!

You can not begin selling until you have developed a marketing strategy including a selected target market and a marketing mix. In order to sell successfully, you must have:

- Stable product, both in quality and quantity
- Established prices and discount policies
- Product packaging available
- Promotional support materials
- Distribution channels you will use

---

PREPARING TO SELL
Buyers must clearly understand what you are selling before they can determine whether your product is what they want. It is unlikely that they will buy from you if any of the above pieces are unclear or missing.

PROSPECTING NEW ACCOUNTS

Prospecting means finding and cultivating new customers. If you are just getting into business, you will begin by prospecting. If you currently have established accounts and a limited supply of mushrooms, you will likely prospect for new accounts as you need them. If your supply of mushrooms is large, you will spend part of your time both servicing existing accounts and prospecting for new ones.

You can prospect new accounts or "leads" in a number of ways. Once you have selected your target market, you can try any or all of the following methods.

1.) **Use the "Yellow Pages."** You can develop a list of grocery stores, food service distributors, and brokers with names and addresses and call each of them to get the name of their buyer(s).

2.) **Ask your current customers** who else might want shiitake mushrooms. They are usually willing to share this information if they are not in direct competition.

3.) **Join organizations** that your potential customers belong to. For example you can join your local grocers' association or chefs' society. Most of these organizations have a separate category of membership for suppliers.

4.) **Develop referral sources.** There are many people who are familiar with your target customer. For example, local cooking schools would know the stores where its students usually shop. Or an Area Vocational Institute with a Chef Training Program would know the local distributors, restaurants and chefs in your area likely to try shiitake mushrooms.

5.) **Volunteer to speak** to a group or write an article about shiitake mushrooms. This exposure will position you as an expert in and resource for the product. In evaluating whether to accept an invitation, consider whether the group will help you reach your targeted customer.

6.) **Send a letter introducing yourself** and your mushrooms to your targeted audience. Then, either wait for a response or follow-up with telephone calls, depending on the size of the mailing. This process is usually easier than making telephone "cold calls" where you call people who do not know who you are. The letter of introduction helps establish a connection between you and the buyer, and it helps you focus your discussion.

7.) **Make cold calls.** A cold call is when you stop in to see a potential buy without an appointment. Many salespeople do not like to make cold calls, because they usually lead to a great many rejections. This system of prospecting is used less often nowadays, and it can communicate to your buyers that you don't think that their time is valuable. A simple telephone call to make an appointment, or to see if it is convenient to stop by ("I'm in the neighborhood") is a much more effective approach.

8.) **Collect printed Information.** Start collecting any printed information associated with shiitake mushrooms or your target market. Look for newspaper articles, collect
mailing lists, new store grand openings, and local grocery store fliers that give you ideas about possible prospects.

With limited time and resources, and a perishable product, it is essential that you focus your efforts on selling to people who are likely to buy your mushrooms. You should develop a list of criteria that would describe a good customer for your mushroom. Then, as you call on prospects, you ask questions that will determine how they fit your criteria. Some of the criteria might be:

1.) **Their resources and ability to pay.** Sell to places that have a budget to purchase your mushrooms consistently, and pay their bills on time.

2.) **The size of their business.** Evaluate the potential volume of business you can do with an account. It may be worthwhile to drive fifteen extra miles to sell to an account that can purchase twenty extra pounds a week. Don't waste time on accounts that require more mushrooms than you have, unless they are willing to accept smaller quantities from a number of different sources.

3.) **Any purchasing restrictions they may have.** If a grocery chain negotiates a mushroom contract annually from one source, don't waste a lot of sales effort on the account. Develop a relationship so that you can be considered on the next contract, and move on to the next account.

4.) **Geographic location.** Many growers live in rural areas, and it is important to plan where you want to sell and how far you want to drive. Driving is expensive, not only in gas and mileage, but in time. Evaluate the best use of your time. One isolated restaurant fifty miles out of the way may not be worth calling on regularly. Balance the time and distance against the potential revenue you could get from the account.

5.) **Probability of doing ongoing business.** If you find an account that is committed to using someone else's mushrooms, it is going to be difficult to establish a relationship. You want to develop long-term customers to be guaranteed of a steady source of sales and revenue. Of course, you should compete for the business. But monitor the time and resources you utilize against your potential returns. You could establish a number of other accounts more easily by the time you get a chance on your competitor's account.

One way of qualifying your customers is to do some advance samplings. Don't wait until your whole crop is ready for market to go out and qualify and sell. Prepare some shiitake samples and call on some potential customers. Show them the quality of your mushrooms. Determine their interest: when your mushrooms are ready, you will have an established market.

- **Remember not to put all your shiitake in one basket!**

  Sell to more than one account.
THE SALES MODEL

One way of selling your mushrooms would be to visit a few prospects, show them your mushrooms and see if they buy any. Remember that every call you make takes an investment of time and effort and adds to the costs associated with selling your mushrooms. It is important that each call is well-planned and effective.

To get the best return from your sales efforts:

- Have a plan for each account and customer
- Develop a presentation
- Know the key objections for buying and how to handle them
- Ask for the order (or "close")
- Provide excellent service and follow-up on every call, every time

Each of these components works together to form a sales model. This model has been the formula for success for many salespeople. Use the model as a guideline, modifying it to fit your needs and marketplace, and then develop your own sales strategy and style.

Planning the sales call

This is sometimes called the preapproach. Before picking up the telephone or visiting with a customer, you must plan what you want to do or say. When planning for a sales call:

1.) **Do research about the customer.** Find out about the company, its products and if it is using any competitive products. If it is a retail outlet, go and familiarize yourself with their operation. At restaurants, look at the menu. For other businesses, get company literature.

2.) **Set your call objectives.** It would be great to get an immediate sale from every call you make, and that should always be your primary goal. However, there is a natural process that needs to occur before a customer is ready to buy. For each account, you must be aware where you are in the process and set a new objective each time you approach the account. Some call objectives are: to qualify the customer, to gather more information about their needs, to provide mushroom samples, or to make a presentation about shiitake mushrooms to their staff.

3.) **Decide on an approach.** Decide how you are going to "approach" the customer. Are you going to send a letter of introduction, make a presentation, or call for an order or an appointment? Is it time to leave them a sample, or are you going to close?

4.) **Set a call schedule.** Every customer has times when they are busier then others. When you are planning, take into consideration the best day and times to call on your customers. For example, calling on restaurants is best before 10 a.m. or between 2 and 4 p.m. No one will have time to talk with you if you show up during the lunch and dinner rush.
Making presentations

There are three kinds of presentations: **preplanned** (or "canned"), **formulated**, and **needs satisfaction**.

A **preplanned** presentation is memorized and delivered to every customer in the same way. A formulated presentation begins by assessing the customer’s needs, and then giving a preplanned presentation in response. Both the preplanned and formulated presentation styles are generic and work well in certain settings like trade shows, or in demonstrations where you do not have the time or environment to focus on each customer’s specific needs.

The most effective sales presentation for meeting customers’ needs and wants is the **needs satisfaction presentation**. In this approach, you ask questions to find out about the specific needs of the customer, then make a presentation that addresses their needs specifically.

For this kind of presentation, you must know your product, its features/benefits, and how to handle objections very well, so that you can be responsive and have the right facts and tools available to "close" the sale.

Making a presentation includes the following steps:

1.) **Meet and greet your customer.** Have an opening line to get their attention and keep them interested in hearing more about shiitake mushrooms.

2.) **Set an agenda.** Say what you are there for and get an agreement from your customer. For example, if it is your first call, you may say that you are going to tell them a little about you and your business, and that then you will want to know more about them. The customer then knows what to expect and what you want from them, and they can more comfortably listen.

3.) If it is an introductory call, **tell them a little about yourself and your business.** Say enough to build a bond so that they are comfortable and you have established some credibility with them (3-4 minutes). Don't say too much about the mushrooms, because you don’t know anything about their needs yet.

4.) **Ask questions.** Find out about their needs and wants. If it is your first call, you will want to know what they are using and what they need, how the organization works, who has purchasing power, what is the best way to work with them, do they use shiitake mushrooms now, what competitors do they purchase from, and are they happy with them. If you are established with the account, find out how they liked the last mushrooms, how they used them, etc.

   **Remember to listen.** Too many people want to start selling right away and cut the customer off. If selling is based on filling customer needs and wants, it is essential that you find out what they are. It is okay to take notes while they talk and write down any needs that you hear.

5.) **Make your presentation.** To begin, you repeat their needs, get agreement, and then explain how you can meet them. For example, "You mentioned that you are interested in adding a Chinese food dish to your menu." They say, "Yes I am." Then you explain why a shiitake mushroom would be a perfect (if not essential) ingredient for this new dish.
This is where you need to think on your feet and know your product and benefits. As you talk to them about shiitake mushrooms, you "repeat and meet" their needs one at a time, by focusing on the feature and benefits that will apply.

When making presentations keep in mind one need every business owner has is to make or save money. Be ready to explain how shiitake mushrooms will make money for them. "by carrying shiitake mushrooms, you add to your line of specialty produce items and will increase your revenue base" or, "because shiitake mushrooms are more flavorful than buttons, you will use fewer mushrooms and have more flavor" are two examples.

It is difficult to put flavor and texture into words. Let your clients see, taste, and feel your mushrooms whenever possible. In this case, one bite is worth a thousand words.

Dealing with objections
An objection is a reason that a customer will not buy your mushrooms. Many people are uncomfortable with talking about objections, and they think that saying anything will make matters worse. This isn't true. A customer will not buy as long as he has objections.

You must uncover and deal with their objections one at a time. When there aren't any left, it is likely you have a sale.

There are two kinds of objections: logical and psychological.

Logical objections concern the physical product, service, delivery, etc. For example, "I would need to have them delivered twice a week instead of three times" is a logical objection. It is concrete. It can be measured and met.

Psychological objections are much less clear, and sometimes they are never really definable, based more on gut feeling. These objections deal with issues such as: how a customer may need to be more comfortable with you. They may like buying from their usual supplier, and don't like being told what to do. Or they are apathetic. Or they don't like you. There are an infinite number of psychological objections, and they can be elusive.

However, you will develop a sixth sense once you have been selling for awhile. If you have an inner voice that says "something doesn't add up," chances are there is a psychological objection in the way.

What do you do when a customer says he doesn't like the color or size of your mushroom? Or he just isn't interested? Will you walk away and go someplace else? You may not need to.

When dealing with objections:

- Don't disagree with a customer—no matter how silly the objection.
- Be positive when answering
- Don't put words in a customer's mouth like "It is probably too expensive for you."

Neutralize objections before they come up. If there is a common concern, you can neutralize it before it becomes an objection by using an example from another client.
For example, you might say "XYZ restaurant was concerned about the price but found that they could use less because of the flavor, so the cost factor was minimized by an improved taste." Congratulations. You have just neutralized the issue of price.

As you are selling, you will begin hearing some of the same objections again and again. Keep a list of objections you hear and how you have handled them.

Remember there are some people you will never sell to because you cannot meet their objections. For example, a customer may not be able to spend $1.99 per pound for mushrooms. When you come across an objection you can't meet, go on to the next customer.

Some of the objections you might hear about shiitake mushrooms are:

- They're too expensive
- They look rotten because they are brown
- I don't know what to do with them
- They taste funny
- They're too chewy
- Mushrooms are dangerous
- They feel slimy
- I've never heard of them
- I buy American

Be ready to deal with these and others!

**Closing the sale**

Closing the sale is the hardest part of selling for most people, for a good reason. It feels uncomfortable to do. There are natural unspoken boundaries between people. In order to close a sale, you will take one big step over the comfortable boundary into your customer's space. It is hard for most people to ask for what they want.

It will help to remember that you do not create needs, you satisfy them. To ask for an order, you are not being manipulative or really pushy. But you are being assertive, and you are being helpful. If you truly believe you have great shiitake mushrooms, and someone is looking for great shiitake mushrooms, then closing is just a matter of gaining agreement about the logistics.

There are a number of ways to close a sale:

1.) **Ask for the order.** Just ask if they would like to place an order.

2.) **Review the points of the agreement.** For example, "You said you like deliveries Monday, between 9 and 10 a.m., and you could use eight pounds a week. Would it be convenient to begin delivering to you next Monday?"

3.) **Give them two alternatives to choose from.** For example, "Do you want 10 pounds delivered twice a week, or 20 pounds at a time?"
4.) Explain what they will lose if they don't order now. For example, "If I don't get an order today, I may not be able to save any of my next harvest for you."

5.) Offer a special price. For example, "If you place your order today, I can sell them to you for twenty cents less per pound."

If they say no when you ask for the order, ask them, "Why not?" This will bring you back to dealing with objections, and you keep moving back and forth until all the objections are met, or there is one you can't meet.

Follow-up

Studies show that 65% of all business lost is because the customer didn't get good service. Keep in mind it is much easier to keep an account than get a new one. Simply do what you said you were going to do, when you said you would do it, for the price you agreed on.

When following up on an account, make sure that orders get processed on time, customers get replacements for bad mushrooms, and paperwork gets processed on a timely basis. Keep a customer file for each account with copies of all agreements, deliveries, bills, etc.

Everybody makes mistakes now and then, customers expect them. Admit your mistakes immediately, and do everything you can to remedy the problem. Saying that you are sorry helps, too.

As you are beginning to establish yourself with new accounts, make a personal follow-up telephone call to see how they like the mushrooms, and if they had any problems.

As more growers enter the marketplace, competition will increase and your product and price may not be that different. In that case, service may be the deciding factor.

FEATURE AND BENEFIT STATEMENTS

Every product has features and benefits. A feature is a characteristic of the product. A benefit refers to the value the characteristics have to the customer. For example, shiitake mushrooms have more flavor than button mushrooms (feature), so you can use fewer when you cook (benefit). Customers buy because of benefits, so each time you describe a feature of the shiitake mushroom, also explain the associated benefit.

Some of the features and benefits of shiitake mushrooms are listed in the following table:

<table>
<thead>
<tr>
<th>FEATURE</th>
<th>BENEFIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locally Grown</td>
<td>Fresher than shipped from coast.</td>
</tr>
<tr>
<td></td>
<td>Supports local businesses.</td>
</tr>
<tr>
<td></td>
<td>Lower shipping charges.</td>
</tr>
<tr>
<td>Log Grown</td>
<td>Better flavor and quality.</td>
</tr>
<tr>
<td></td>
<td>Promotes forest management.</td>
</tr>
<tr>
<td>FEATURE</td>
<td>BENEFIT</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Flavorful</td>
<td>Compliments other foods well. Can be used with other seasoning like butter, garlic, pepper, nuts, sweet peppers, hot spices, onions. Hearty flavor is enhanced when used in combination with spices. Best flavored, commercially grown mushrooms available.</td>
</tr>
<tr>
<td>Versatile</td>
<td>Natural complement to food from chicken to veal. Works well using different methods from sautéing, braising, duxelles, sauces and soups.</td>
</tr>
<tr>
<td>Texture</td>
<td>Comparable to the Cepes and Porcini mushroom. Holds up in cooking better than button mushrooms.</td>
</tr>
<tr>
<td>Natural</td>
<td>No preservatives, herbicides or pesticides, so it is good for you.</td>
</tr>
<tr>
<td>Nutritional</td>
<td>Contains elements which have the power to lower cholesterol in the blood. Contains antiviral/antitumor agents. Helps in cases of influenza and viral illnesses.</td>
</tr>
<tr>
<td>Hearty</td>
<td>Resists bruising and spoilage.</td>
</tr>
</tbody>
</table>

In our research, we talked with many produce managers and buyers in the Minneapolis area and asked them what growers needed to do to sell them shiitake mushrooms. One of the things we discovered is that due to the perishable nature of the product and need for speed in delivery, purchasing agreements were rarely ever put in writing. A lot of the buying and selling in the produce business is based on verbal agreements.

The following are recommendations for selling your mushrooms to produce wholesalers and retailers.

**Food Service Wholesalers**

Wholesalers in Minneapolis and St. Paul currently need to bring in all of their shiitake mushrooms from the west coast. They are very interested in finding high quality, consistent local suppliers. The mushrooms would be fresher, and they would save expensive shipping costs.

1.) Call and get the name of the buyer responsible for specialty mushrooms.

2.) Call the buyer, explain what you are selling, and ask for an appointment (15-20 minutes) to see him.

3.) Bring mushroom samples (4-6 ounces) for the buyer.
4.) Ask questions about buying procedures, needs, etc. (see Sales Model).

5.) Wholesale Buyers will ask the following questions.
   - How many pounds will you have available?
   - How often can you deliver?
   - Will you have supply year round or seasonally?
   - If so, when will they be available?
   - Where and how do you grow them?
   - What is your price per pound?
   - How are they packaged?
   - What size and quality are they? (give them samples)
   - Are they available now?
   - How will you ship them?
   - Do you have any literature available?

6.) Close the sale. Ask if they would like to start buying immediately and how much they would like to order.

7.) Send a follow-up letter thanking them for their time (and order if you get one).

8.) Follow-up with them as you have agreed on in your discussions.

Retailers

Very few shiitake mushrooms are sold in grocery stores in the Minneapolis/St. Paul area, primarily because the consumer doesn’t know what they are or how to use them. Promotional materials play a big part in helping educate the consumer and information about developing these materials is included under PROMOTION.

It is important when selling to the retail market to get to know your produce buyers and service them well.

1.) Call the store and get the produce buyer’s name. If it is a chain store operation, call the corporate office also. Some stores within a chain make purchasing decisions independently. Others are required to purchase through corporate warehouses.

2.) Call and explain what you are selling and make an appointment to introduce yourself.

3.) If you are meeting with the produce manager of an individual store, go to the produce department and ask directions to the manager’s office.

4.) Bring mushrooms and packaging samples to leave with the manager or buyer.

5.) Ask questions about buying procedures, point-of-purchase materials, in-store demonstrations, etc. Have questions prepared for individual produce managers and corporate buyers.
6.) Produce managers or buyers will ask the following questions:

- Where and how you grow your mushrooms?
- How much do you have available?
- Do you have year round availability and if not, when are your mushrooms available?
- What are your prices?
- What-point-of purchase materials do you have available?
- What does your packaging look like?
- Are they packaged with or without stems?
- How many ounces per package? How many packages per case?

7.) Close the sale. Ask if they would like to start buying immediately and how much they would like to order.

8.) Send a follow-up letter thanking them for their time (and order if you get one).

9.) Follow-up with them as you have agreed on in your discussions.

(See DISTRIBUTION for Product Ordering and Delivery.)
Personal Selling Worksheets

Where will you look for prospects?

What criteria will you use to qualify your prospects?

What do you need to do to plan for your sales calls?

What material or samples do you need for your presentation?

What questions will you ask your customers?
Personal Selling Worksheets

What are the key objections to buying your mushrooms? How will you deal with them?

What form of closing will you use? What will you say?

What do you need to do to follow-up on each account? Who will follow through and how?

How will you handle customer requests and complaints?
Personal Selling Worksheets

What are the procedures for calling on your targeted accounts?

What are the procedures for ordering and delivery?

<table>
<thead>
<tr>
<th>What are the features and benefits for your mushrooms?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Features</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
FINANCIAL ANALYSIS OF THREE HYPOTHETICAL, SMALL-SCALE SHIITAKE MUSHROOM PRODUCTION ENTERPRISES  by Dale D. Gormanson and Melvin J. Baughman

ABSTRACT:

Financial returns were calculated for three hypothetical, small-scale shiitake mushroom production enterprises that were assumed to operate over seven years. At a seven percent discount rate, the net present values (NPV) were $-768 for the 200 log outdoor farm, $1,106 for the 1,000 log outdoor farm and $54,193 for the 3,000 log controlled environment chamber. Among all separable cost and revenue items, NPV was most sensitive to "revenues" which in turn depended upon mushroom yield and price.

BACKGROUND:

The shiitake mushroom (Lentinus edodes) has a long commercial history. In Japan shiitake has been harvested from the wild for centuries. In the 1940's the Japanese realized the commercial importance of the mushroom and developed an efficient means to cultivate it. Today shiitake is grown primarily in China, Japan and Korea. It is Japan's leading agricultural export with 67,000 growers and retail sales totaling over $1.0 billion per year (Harris 1986).

In recent years thousands of private woodlot owners in the United States have become interested in producing shiitake as an additional income source. Shiitake is compatible with woodlot management. Short, small-diameter logs can be cut from trees removed for woodlot improvement thinnings, timber harvest residues, and wildlife habitat cuttings. These logs can then be used to grow shiitake.

At present there is a lack of information about potential financial returns from shiitake production to guide investors. This report documents results of a financial analysis of three hypothetical, small-scale shiitake production enterprises: a 200 log shiitake farm, a 1,000 log shiitake farm, and a 3,000 log controlled environment chamber.

This study analyzes the financial performance of these enterprises using net present value (NPV), and internal rate of return (IRR), and examined how sensitive the measures of projected performance were to changes in expenditures and revenues. Financial analysis was performed with the "Cash" microcomputer program (Blinn et al. 1986).

METHODS:

Three hypothetical scenarios for producing shiitake mushrooms were developed. For each scenario the physical activities were described. Shiitake yields were estimated from data provided in Kuo and Kuo (1983) (see Appendix A). Wholesale prices per pound for shiitake were estimated from a range in prices provided by Sommers (1986). Costs for all labor, equipment and materials were estimated (Appendices B, C, and D). Land costs and ad valorem property taxes for land were excluded from the analysis under the assumption that landowners would continue to own the land required for shiitake production regardless of future land use. Ad valorem property taxes for the controlled environment chamber were included in the cash flow. All three scenarios were assumed to have a project life of seven years to permit direct financial comparisons among projects. It was further assumed that equipment, materials and buildings would have no salvage value after seven years. The net present value (NPV) and internal rate of return (IRR) were calculated for each scenario on a before-tax basis.
Net present value is the present value of expected returns minus the present value of expected costs, with future costs and returns discounted to the present at the appropriate interest rate. Internal rate of return is the compound rate of interest that equates the present value of expected costs with the present value of expected returns. It is the interest (discount) rate at which NPV equals zero. A nominal discount rate of 7.0 percent was used to calculate NPV. This discount rate assumes a real rate of return of 3.88 percent and 3.0 percent inflation.

It was assumed that all cash flows occurred at the beginning of the year. Sensitivity analysis was performed for each major cost and revenue item. Basic procedures for shiitake production are described in Appendix E.

RESULTS - 200 Log Shitake Farm:

Table 1 shows the cash flow for a 200 log shiitake farm. Derivation of costs and revenues exceed annual costs in years 4, 5, and 6. The bottom line shows cumulative net revenues are never positive.

The NPV of a 200 log farm is less than zero at all discount rates (Table 2). IRR is also less than zero. These measures point to a financially unattractive project regardless of the discount rate.

Sensitivity analysis shows that substantial changes must occur in costs and/or revenues to make this size enterprise profitable (Table 3). NPV is most sensitive to changes in revenue and delivery cost. For example, if revenue increased by 10 percent, NPV would increase by $401.89, but this is still less than the additional $768.22 needed to break even at a 7.0 percent nominal discount rate. Risk associated with this scenario is further analyzed in Table 4. In order to make NPV zero, revenue would have to increase 19.12 percent, or delivery cost would have to decrease 68.70 percent.

If this scenario is revised to terminate the project after six years rather than seven years, NPV is $-483 at a 7.0 percent discount rate. This is an improvement over the NPV of $-768 for a seven year project. In the seventh year logs are still producing mushrooms but yield is very low and revenue is not sufficient to cover operating expenses.

<table>
<thead>
<tr>
<th>Item</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logs and Plugs</td>
<td>$400.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Inoculation Equipment</td>
<td>340.44</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Laying Yard</td>
<td>416.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Harvest Equipment</td>
<td>.00</td>
<td>375.95</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Utilities</td>
<td>32.00</td>
<td>32.96</td>
<td>33.95</td>
<td>34.97</td>
<td>36.02</td>
<td>37.10</td>
<td>38.21</td>
</tr>
<tr>
<td>Inoculation Labor</td>
<td>80.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Administration</td>
<td>120.00</td>
<td>123.60</td>
<td>127.31</td>
<td>131.13</td>
<td>135.06</td>
<td>139.11</td>
<td>143.29</td>
</tr>
<tr>
<td>Log Maintenance</td>
<td>.00</td>
<td>137.61</td>
<td>141.74</td>
<td>145.99</td>
<td>150.37</td>
<td>154.88</td>
<td>159.53</td>
</tr>
<tr>
<td>Harvest Labor</td>
<td>.00</td>
<td>6.78</td>
<td>17.46</td>
<td>73.73</td>
<td>50.01</td>
<td>28.62</td>
<td>5.90</td>
</tr>
<tr>
<td>Delivery</td>
<td>.00</td>
<td>197.76</td>
<td>203.69</td>
<td>209.80</td>
<td>216.10</td>
<td>222.58</td>
<td>229.26</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Annual Costs</td>
<td>1,388.44</td>
<td>874.66</td>
<td>524.15</td>
<td>595.61</td>
<td>587.55</td>
<td>582.29</td>
<td>576.18</td>
</tr>
<tr>
<td>Total Annual Revenues</td>
<td>.00</td>
<td>170.57</td>
<td>439.21</td>
<td>1,854.80</td>
<td>1,258.09</td>
<td>719.91</td>
<td>148.30</td>
</tr>
<tr>
<td>Annual Net Revenues</td>
<td>-1,388.44</td>
<td>-704.09</td>
<td>-84.94</td>
<td>1,259.18</td>
<td>670.54</td>
<td>137.62</td>
<td>-427.88</td>
</tr>
<tr>
<td>Cum. Net Revenues</td>
<td>-1,388.44</td>
<td>-2,092.53</td>
<td>-2,177.46</td>
<td>-918.28</td>
<td>-247.74</td>
<td>-110.12</td>
<td>-538.00</td>
</tr>
</tbody>
</table>
Table 2. Net present value (NPV) for a 200 log shiitake farm at various discount rates.

<table>
<thead>
<tr>
<th>Nominal Rate (%)</th>
<th>NPV, ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.00</td>
<td>-643.61</td>
</tr>
<tr>
<td>5.06</td>
<td>-709.98</td>
</tr>
<tr>
<td>7.12</td>
<td>-771.69</td>
</tr>
<tr>
<td>9.18</td>
<td>-829.06</td>
</tr>
<tr>
<td>11.24</td>
<td>-882.38</td>
</tr>
</tbody>
</table>

Table 3. Sensitivity of NPV to a 10% change in each cost and revenue activity for a 200 log shiitake farm. (7% nominal discount rate)

<table>
<thead>
<tr>
<th>Item Changed</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logs and Plugs</td>
<td>40.00</td>
</tr>
<tr>
<td>Inoculation Equipment</td>
<td>34.04</td>
</tr>
<tr>
<td>Laying Yard</td>
<td>41.60</td>
</tr>
<tr>
<td>Harvest Equipment</td>
<td>36.19</td>
</tr>
<tr>
<td>Utilities</td>
<td>21.84</td>
</tr>
<tr>
<td>Inoculation Labor</td>
<td>8.00</td>
</tr>
<tr>
<td>Administration</td>
<td>81.89</td>
</tr>
<tr>
<td>Log Maintenance</td>
<td>77.81</td>
</tr>
<tr>
<td>Harvest Labor</td>
<td>15.98</td>
</tr>
<tr>
<td>Delivery</td>
<td>111.82</td>
</tr>
<tr>
<td>Revenue</td>
<td>401.89</td>
</tr>
</tbody>
</table>

Table 4. Change required in individual costs or revenue to make NPV equal to zero for a 200 log shiitake farm. (7% nominal discount rate)

<table>
<thead>
<tr>
<th>Item Changed</th>
<th>Percent Change</th>
<th>Dollar Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logs and Plugs</td>
<td>-100.00</td>
<td>400.00</td>
</tr>
<tr>
<td>Inoculation Equipment</td>
<td>-100.00</td>
<td></td>
</tr>
<tr>
<td>Laying Yard</td>
<td>-100.00</td>
<td>340.00</td>
</tr>
<tr>
<td>Harvest Equipment</td>
<td>-100.00</td>
<td>416.00</td>
</tr>
<tr>
<td>Utilities</td>
<td>-100.00</td>
<td>361.90</td>
</tr>
<tr>
<td>Inoculation Labor</td>
<td>-100.00</td>
<td>218.37</td>
</tr>
<tr>
<td>Administration</td>
<td>-93.81</td>
<td>80.00</td>
</tr>
<tr>
<td>Log Maintenance</td>
<td>-98.73</td>
<td>768.22</td>
</tr>
<tr>
<td>Harvest Labor</td>
<td>-100.00</td>
<td>768.22</td>
</tr>
<tr>
<td>Delivery</td>
<td>-68.70</td>
<td>159.76</td>
</tr>
<tr>
<td>Revenue</td>
<td>19.12</td>
<td>768.22</td>
</tr>
</tbody>
</table>

1000 Log Shiitake Farm:

Table 5 shows the cash flow for a 1,000 log shiitake farm. Derivation of costs and revenues is explained more fully in Appendix C. In this scenario annual net revenues exceed annual costs in years 3, 4, 5, and 6. The bottom line shows positive cumulative net revenues in years 5, 6 and 7. Note that in year 7 annual costs exceed annual revenues. Here logs are in the last year of production and mushroom yield is low.

Net present value is $1,106.44 at a 7.0 percent nominal discount rate. This means, for example, that a 1,000 log shiitake farm has the potential to return $1,106.44 more than the 7.0 percent rate of return that could be earned in the next best investment alternative. The NPV's for other discount rates are shown in Table 6. In this scenario the nominal IRR is 11.97 percent. These measures point to a financially attractive project for investors using a nominal discount of 11.97 percent or less.

In this scenario NPV is most sensitive to a change in revenue and moderately sensitive to changes in costs for log maintenance, utilities, and advertising (Table 7). Risk associated with this scenario is further analyzed in Table 8. In order to reduce NPV to zero, revenue would have to decrease 5.49 percent or log maintenance, utilities or advertising would have to increase 28.44, 32.11 or 37.20 percent, respectively.

If this scenario is terminated after six years, NPV at a 7.0 percent discount rate is $1,966 in contrast to a NPV of $1,106 for a seven year project life. Revenues from mushroom sales in the seventh year are not sufficient to cover operating expenses.
Table 5  Cash flow for a 1,000 log shiitake farm.

<table>
<thead>
<tr>
<th>Item</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logs and Plugs</td>
<td>1,250.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Inoculation Equip.</td>
<td>637.20</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Laying Yard</td>
<td>832.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Harvest Equipment</td>
<td>.00</td>
<td>669.50</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Utilities</td>
<td>505.00</td>
<td>520.15</td>
<td>535.75</td>
<td>551.83</td>
<td>568.38</td>
<td>585.00</td>
<td>603.00</td>
</tr>
<tr>
<td>Office Supplies</td>
<td>115.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Advertising</td>
<td>.00</td>
<td>3,090.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Inoculation Labor</td>
<td>400.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Administration</td>
<td>240.00</td>
<td>247.20</td>
<td>254.62</td>
<td>262.25</td>
<td>270.12</td>
<td>278.23</td>
<td>286.57</td>
</tr>
<tr>
<td>Log Maintenance</td>
<td>.00</td>
<td>688.04</td>
<td>708.68</td>
<td>729.94</td>
<td>751.84</td>
<td>774.40</td>
<td>797.63</td>
</tr>
<tr>
<td>Harvest Labor</td>
<td>.00</td>
<td>33.90</td>
<td>87.30</td>
<td>368.65</td>
<td>250.05</td>
<td>143.09</td>
<td>29.48</td>
</tr>
<tr>
<td>Delivery</td>
<td>.00</td>
<td>271.92</td>
<td>280.08</td>
<td>288.48</td>
<td>297.13</td>
<td>306.05</td>
<td>315.23</td>
</tr>
</tbody>
</table>

Total Annual Costs  3,979.20  5,520.71  1,866.43  2,201.16  2,137.53  2087.19  2,031.91
Total Annual Revenues  .00    852.84  2,196.06  9,273.97  6,290.47  3,599.55  741.51

Ann. Net Revenues  -3,979.20  -4,667.87  329.63  7,072.82  4,152.94  1,512.35  -1,290.40
Cum. Net Revenues  -3,979.20  -8,647.07  -8,317.44  -1,244.62  2,908.32  4,420.67  3,130.27

Table 6. Net present value (NPV) for a 1,000 log shiitake farm at various discount rates.

<table>
<thead>
<tr>
<th>Nominal Rate (%)</th>
<th>NPV, ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.00</td>
<td>2,185.94</td>
</tr>
<tr>
<td>5.06</td>
<td>1,606.50</td>
</tr>
<tr>
<td>7.12</td>
<td>1,076.86</td>
</tr>
<tr>
<td>9.18</td>
<td>592.19</td>
</tr>
<tr>
<td>11.97</td>
<td>0.00</td>
</tr>
<tr>
<td>13.30</td>
<td>-259.13</td>
</tr>
</tbody>
</table>

Table 7. Sensitivity of NPV to a 10% change in each cost and revenue activity for a 1,000 log shiitake farm. (7% nominal discount rate)

<table>
<thead>
<tr>
<th>Item Changed</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logs and plugs</td>
<td>125.00</td>
</tr>
<tr>
<td>Inoculation Equipment</td>
<td>63.72</td>
</tr>
<tr>
<td>Laying Yard</td>
<td>83.20</td>
</tr>
<tr>
<td>Harvest Equipment</td>
<td>64.45</td>
</tr>
<tr>
<td>Utilities</td>
<td>344.61</td>
</tr>
<tr>
<td>Office Supplies</td>
<td>11.50</td>
</tr>
<tr>
<td>Advertising</td>
<td>297.45</td>
</tr>
<tr>
<td>Inoculation Labor</td>
<td>40.00</td>
</tr>
<tr>
<td>Administration</td>
<td>163.77</td>
</tr>
<tr>
<td>Log Maintenance</td>
<td>389.04</td>
</tr>
<tr>
<td>Harvest Labor</td>
<td>79.88</td>
</tr>
<tr>
<td>Delivery</td>
<td>153.75</td>
</tr>
<tr>
<td>Revenue</td>
<td>2009.46</td>
</tr>
</tbody>
</table>

Table 8. Change required in individual costs or revenue to make NPV equal to zero for a 1,000 log shiitake farm. (7% nominal discount rate)

<table>
<thead>
<tr>
<th>Item Changed</th>
<th>Percent Change</th>
<th>Dollar Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logs and Plugs</td>
<td>88.52</td>
<td>-1,106.44</td>
</tr>
<tr>
<td>Inoculation Equipment</td>
<td>100.00</td>
<td>-637.20</td>
</tr>
<tr>
<td>Laying Yard</td>
<td>100.00</td>
<td>-832.00</td>
</tr>
<tr>
<td>Harvest Equipment</td>
<td>100.00</td>
<td>-644.47</td>
</tr>
<tr>
<td>Utilities</td>
<td>32.11</td>
<td>-1,106.44</td>
</tr>
<tr>
<td>Office Supplies</td>
<td>100.00</td>
<td>-115.00</td>
</tr>
<tr>
<td>Advertising</td>
<td>37.20</td>
<td>-1,106.44</td>
</tr>
<tr>
<td>Inoculation Labor</td>
<td>100.00</td>
<td>-400.00</td>
</tr>
<tr>
<td>Administration</td>
<td>67.56</td>
<td>-1,106.44</td>
</tr>
<tr>
<td>Log Maintenance</td>
<td>28.44</td>
<td>-1,106.44</td>
</tr>
<tr>
<td>Harvest Labor</td>
<td>100.00</td>
<td>-798.80</td>
</tr>
<tr>
<td>Delivery</td>
<td>71.96</td>
<td>-1,106.44</td>
</tr>
<tr>
<td>Revenue</td>
<td>5.51</td>
<td>-1,106.44</td>
</tr>
</tbody>
</table>
3,000 Log Shiltake Farm - Controlled Environment Chamber:

Table 9 shows the cash flow for a controlled environment chamber (CEC) that holds 3,000 logs. Derivation of costs and revenues for this scenario is described more fully in Appendix D. The bottom line shows positive cumulative net revenues after year 3. Net present value is $54,193.29 at a 7.0 percent nominal discount rate. This means, for example, that a CEC operating under the assumptions for this scenario has the potential to return $54,193.29 more than the 7.0 percent rate of return that could be earned in the next best alternative. The NPV for other discount rates is shown in Table 10. In this scenario the nominal IRR is 37.54. These measures point to a financially attractive project.

In this scenario NPV is most sensitive to a change in revenue (Table 11). Risk associated with this scenario is further analyzed in Table 12. If revenue decreased by 29.97 percent, that change alone would bring NPV to zero, assuming a 7.0 percent nominal discount rate. A 100 percent increase in the value of any cost item would not bring NPV to zero.

If this scenario is terminated after 6 years, NPV at a 7 percent discount rate is $39,055 in contrast to a NPV of $54,193 for a project lasting 7 years. In this case mushroom revenue is still high in the seventh year because the logs that are fruiting were just inoculated in the fifth year and half of their total production occurs in year 7.

<table>
<thead>
<tr>
<th>Item</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cont. Env. Chamber</td>
<td>33,485.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Property Tax</td>
<td>360.00</td>
<td>370.80</td>
<td>381.92</td>
<td>393.38</td>
<td>405.18</td>
<td>417.34</td>
<td>429.86</td>
</tr>
<tr>
<td>Misc. Parts &amp; Supplies</td>
<td>50.00</td>
<td>669.59</td>
<td>689.50</td>
<td>710.27</td>
<td>731.58</td>
<td>753.53</td>
<td>776.13</td>
</tr>
<tr>
<td>Logs and Plugs</td>
<td>3,750.00</td>
<td>.00</td>
<td>3,978.38</td>
<td>.00</td>
<td>4,220.66</td>
<td>.00</td>
<td>4,477.70</td>
</tr>
<tr>
<td>Inoculation Equipment</td>
<td>770.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Laying Yard</td>
<td>1,420.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Harvesting Equipment</td>
<td>.00</td>
<td>5,896.75</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Utilities</td>
<td>785.00</td>
<td>808.55</td>
<td>832.81</td>
<td>857.79</td>
<td>883.52</td>
<td>910.03</td>
<td>937.33</td>
</tr>
<tr>
<td>Office Supplies</td>
<td>500.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Advertising</td>
<td>.00</td>
<td>3,090.00</td>
<td>.00</td>
<td>3,278.18</td>
<td>.00</td>
<td>3,477.82</td>
<td>.00</td>
</tr>
<tr>
<td>Inoculation Labor</td>
<td>1,200.00</td>
<td>.00</td>
<td>1,273.08</td>
<td>.00</td>
<td>1,350.61</td>
<td>.00</td>
<td>1,432.86</td>
</tr>
<tr>
<td>Administration</td>
<td>720.00</td>
<td>741.60</td>
<td>763.85</td>
<td>786.76</td>
<td>810.37</td>
<td>834.68</td>
<td>859.72</td>
</tr>
<tr>
<td>Harvest Labor</td>
<td>.00</td>
<td>1,271.32</td>
<td>1,309.46</td>
<td>1,348.74</td>
<td>1,389.20</td>
<td>1,430.88</td>
<td>1,473.81</td>
</tr>
<tr>
<td>Logs Maintenance</td>
<td>2,004.00</td>
<td>2,064.12</td>
<td>2,126.04</td>
<td>2,189.83</td>
<td>2,255.52</td>
<td>2,323.19</td>
<td>2,392.88</td>
</tr>
<tr>
<td>Delivery</td>
<td>.00</td>
<td>1,359.60</td>
<td>1,400.39</td>
<td>1,442.40</td>
<td>1,485.67</td>
<td>1,530.24</td>
<td>1,576.15</td>
</tr>
</tbody>
</table>

| Tot. Ann. Costs                   | 45,644.00 | 16,272.24 | 12,755.51 | 11,007.36 | 13,532.32 | 11,677.70 | 14,356.44 |
| Tot. Ann Revenues                 | .00      | 31,981.50 | 32,940.95 | 33,929.17 | 34,947.05 | 35,995.46 | 37,075.32 |
| Ann Net Revenues                  | -45,644.00 | 15,709.26 | 20,185.44 | 22,921.81 | 21,414.73 | 24,317.76 | 22,718.88 |
| Cum. Net Revenues                 | -45,644.00 | -29,934.74 | -9,749.30 | 13,172.52 | 34,587.25 | 58,905.01 | 81,623.89 |
Table 10. Net present value (NPV) for a 3,000 log shiitake farm - controlled environment chamber at various discount rates.

<table>
<thead>
<tr>
<th>Nominal Rate (%)</th>
<th>NPV, ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.06</td>
<td>60,835.50</td>
</tr>
<tr>
<td>11.24</td>
<td>41,639.91</td>
</tr>
<tr>
<td>17.42</td>
<td>27,362.10</td>
</tr>
<tr>
<td>23.60</td>
<td>16,395.81</td>
</tr>
<tr>
<td>29.78</td>
<td>7,840.41</td>
</tr>
<tr>
<td>35.96</td>
<td>1,048.95</td>
</tr>
<tr>
<td>37.54</td>
<td>0.00</td>
</tr>
<tr>
<td>38.02</td>
<td>-904.67</td>
</tr>
</tbody>
</table>

Table 11. Sensitivity of NPV to a 10% change in each cost and revenue activity for a 3,000 log shiitake farm. (7% nominal discount rate)

<table>
<thead>
<tr>
<th>Item Changed</th>
<th>Percent Change</th>
<th>Dollar Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controlled Envir. Chamber</td>
<td>100.00</td>
<td>-33,485.00</td>
</tr>
<tr>
<td>Property Tax</td>
<td>100.00</td>
<td>-2,256.61</td>
</tr>
<tr>
<td>Misc. Parts &amp; Supplies</td>
<td>100.00</td>
<td>-4,435.54</td>
</tr>
<tr>
<td>Logs and Plugs</td>
<td>100.00</td>
<td>-14,623.20</td>
</tr>
<tr>
<td>Inoculation Equipment</td>
<td>100.00</td>
<td>-770.00</td>
</tr>
<tr>
<td>Laying Yard</td>
<td>100.00</td>
<td>-1,420.00</td>
</tr>
<tr>
<td>Harvest Equipment</td>
<td>100.00</td>
<td>-5,676.31</td>
</tr>
<tr>
<td>Utilities</td>
<td>100.00</td>
<td>-5,356.77</td>
</tr>
<tr>
<td>Office Supplies</td>
<td>100.00</td>
<td>-500.00</td>
</tr>
<tr>
<td>Advertising</td>
<td>100.00</td>
<td>-8,773.17</td>
</tr>
<tr>
<td>Inoculation Labor</td>
<td>100.00</td>
<td>-4,679.42</td>
</tr>
<tr>
<td>Administration</td>
<td>100.00</td>
<td>-4,913.21</td>
</tr>
<tr>
<td>Harvest Labor</td>
<td>100.00</td>
<td>-7,188.39</td>
</tr>
<tr>
<td>Log Maintenance</td>
<td>100.00</td>
<td>-13,675.12</td>
</tr>
<tr>
<td>Delivery</td>
<td>100.00</td>
<td>-7,687.56</td>
</tr>
<tr>
<td>Revenue</td>
<td>-29.97</td>
<td>-54,193.29</td>
</tr>
</tbody>
</table>

Table 12. Change required in individual costs or revenue to make NPV equal to zero for a 1,000 log shiitake farm. (7% nominal discount rate)

CONCLUSIONS:

Given the cost and revenue assumptions in the three scenarios analyzed, shiitake mushroom production may be profitable under certain circumstances.

Profitability is first of all related to the scale of operation. The 200 log farm was not profitable at any positive interest (discount) rate, but the 1,000 log farm was profitable for interest rates of 11.97 percent and lower. The scale that an investor chooses may depend on the capital assets available and planning horizon. For example, the 1,000 log farm begins to turn a profit after four years and a cumulative investment of $15,705. The CEC earns a profit after three years but requires a cumulative investment of $85,679.
Sensitivity analysis indicates that among all separable cost and revenue items, profitability is most sensitive to changes in revenue! At a 7.0 percent discount rate the 200 log farm broke even when revenue increased 19.12 percent; the 1,000 log farm broke even when revenue decreased 5.51 percent and the CEC lost profitability when revenue decreased 29.97 percent. Among cost items, for the 200 log farm NPV was most sensitive to a change in delivery cost, but a 69 percent decrease would have to occur to bring NPV up to zero. For the 1,000 log farm NPV was moderately sensitive to costs for log maintenance, utilities and advertising. NPV was not very sensitive to any cost item for the controlled environment chamber.

Among all three scenarios the controlled environment chamber yielded the highest NPV and IRR but it required the greatest capital investment.

Before investing in shiitake production, potential investors should (1) carefully estimate their own costs and revenues, (2) discount all cash flows to the present using the interest rate that could be earned in the next best alternative, and (3) analyze uncertainty associated with their estimates by testing the sensitivity of NPV to changes in separable cost and revenue items.

FUTURE RESEARCH NEEDS

Growers have virtually no knowledge of the market performance of their product in consumer markets. Some needed research is as follows:

- scope and size of market
- market channels for the product
- Identification of important marketing variables and how they affect prices
- grades and standards for the raw and processed product
- market information and information flows
- marketing costs and margins
- market efficiency
- market development alternatives and methods
- price reporting and its impact on the market

Dale D. Gormanson is a recent graduate from the University of Minnesota (1987). Melvin J. Baughman is an Assistant Professor and Extension Forester at the University of Minnesota.

REFERENCES


Shiitake Mushroom Marketing Guide


APPENDIX A: ESTIMATING SHIITAKE YIELDS

It is commonly assumed that a given log will yield between 10 and 30 percent of its weight (prior to inoculation) in mushrooms (on a fresh weight basis) over the life of the log (Harris 1986, Kuo and Kuo 1983). With this in mind, a 5-inch diameter by 48-inch long red oak log was weighed and found to be approximately 30 pounds (Deden 1986). If we multiply 30 pounds of log times 30 percent yield, we obtain 9 pounds of potential shiitake mushrooms for the life of the log. Since this would be the best production we could expect, a yield of 3.6 pounds per log, as used in these scenarios, would be a reasonable, conservative assumption.

Yields shown below are from Kuo and Kuo (1983). By determining the proportionate yield by year and then multiplying each proportion by our estimated yield of 3.6 pounds per log, we had the basis for estimating annual yields for the 200 log and 1,000 log shiitake farms.

<table>
<thead>
<tr>
<th>Year After Inoculation</th>
<th>Yield/#</th>
<th>Proportion of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year</td>
<td>1,017</td>
<td>.04</td>
</tr>
<tr>
<td>Second Year</td>
<td>2,572</td>
<td>.10</td>
</tr>
<tr>
<td>Third Year</td>
<td>10,505</td>
<td>.41</td>
</tr>
<tr>
<td>Fourth Year</td>
<td>7,051</td>
<td>.27</td>
</tr>
<tr>
<td>Fifth Year</td>
<td>3,780</td>
<td>.15</td>
</tr>
<tr>
<td>Sixth Year</td>
<td>651</td>
<td>.03</td>
</tr>
<tr>
<td>Total</td>
<td>25,576</td>
<td>1.00</td>
</tr>
</tbody>
</table>

106
### APPENDIX B: DERIVATION OF COSTS AND REVENUES FOR A 200 LOG SHIITAKE FARM. ¹

<table>
<thead>
<tr>
<th>Costs Description</th>
<th>Year</th>
<th>$</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logs</td>
<td>1</td>
<td>100.00</td>
<td>Assumes 200 logs, each 5&quot; in diameter by 4' long, can be acquired for $.50 each.</td>
</tr>
<tr>
<td>Spawn Plugs</td>
<td>1</td>
<td>300.00</td>
<td>Assumes 50 spawn plugs per log at a cost of $1.50 per logs.</td>
</tr>
<tr>
<td>Inoculation &amp; Cultivation Equipment</td>
<td>1</td>
<td>340.44</td>
<td>Hammer ($10.), hot plate for wax ($30.), burlap or perforated polyvinyl sheets for covering logs ($25.), wooden horses (stands) for supporting logs during drilling ($25.), stands for laying and raising logs ($50.), 8,000 rpm drill ($150), 2 carbide drill bits ($12.), 4 lbs. wax ($5.44), hose for watering logs ($15.), record book ($10.).</td>
</tr>
<tr>
<td>Laying Yard</td>
<td>1</td>
<td>416.00</td>
<td>1,800 sq. ft. of shade cloth ($216.); poles, cable, gravel, land clearing ($200.)</td>
</tr>
<tr>
<td>Harvesting Equipment and Materials</td>
<td>2</td>
<td>365.00</td>
<td>Used refrigerator ($100.), USDA approved scale ($175.), packaging materials: 240 3# boxes @ $0.25 each ($60.); labels tape, inserts and containers ($30.).</td>
</tr>
<tr>
<td>Utilities</td>
<td>1-7</td>
<td>32.00/yr.</td>
<td>Water and electricity.</td>
</tr>
<tr>
<td>Inoculation Labor</td>
<td>1</td>
<td>80.00</td>
<td>Assumes 20 hrs. to drill, inoculated and wax 200 logs at $4./hr.</td>
</tr>
<tr>
<td>Administration</td>
<td>1-7</td>
<td>120.00/yr.</td>
<td>30 hours at @ $4./hour.</td>
</tr>
<tr>
<td>Log Maintenance</td>
<td>2-7</td>
<td>133.60</td>
<td>Assumes labor for moving, turning, and watering logs equal to 10 min./log/yr. (.167 hr.) x 200 logs x $4./hr.</td>
</tr>
<tr>
<td>Harvest Labor</td>
<td>2</td>
<td>6.58</td>
<td>28.8 lbs. mushrooms (17.5 lbs. harvested per hour @ $4./hr.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16.46</td>
<td>72.0 lbs. mushrooms (17.5 lbs. harvested per hour @ $4./hr.)</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>67.47</td>
<td>295.2 lbs. mushrooms (17.5 lbs. harvested per hour @ $4./hr.)</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>44.43</td>
<td>194.4 lbs. mushrooms (17.5 lbs. harvested per hour @ $4./hr.)</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>24.69</td>
<td>108.0 lbs. mushrooms (17.5 lbs. harvested per hour @ $4./hr.)</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>4.94</td>
<td>21.6 lbs. mushrooms (17.5 lbs. harvested per hour @ $4./hr.)</td>
</tr>
<tr>
<td>Delivery</td>
<td>2-7</td>
<td>192./yr</td>
<td>(6-100 mile round trips/yr @ $0.20/mile) + ($4./hr. x 3 hrs./trip x 6 trips)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Revenue Description</th>
<th>Year</th>
<th>$</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>165.60</td>
<td>28.8 lbs. mushrooms @ $5.75/lb.</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>414.00</td>
<td>72.0 lbs. mushrooms @ $5.75/lb.</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>1,697.40</td>
<td>295.2 lbs. mushrooms @ $5.75/lb.</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>1,117.80</td>
<td>194.4 lbs. mushrooms @ $5.75/lb.</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>621.00</td>
<td>108.0 lbs. mushrooms @ $5.75/lb.</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>124.20</td>
<td>21.6 lbs. mushrooms @ $5.75/lb.</td>
</tr>
</tbody>
</table>

¹. These costs and revenues are in current-year dollars and they were inflated at three percent per year before entering in the cash flow table (Table 1).
APPENDIX C: DERIVATION OF COSTS AND REVENUES FOR A 1,000 LOG SHIITAKE FARM.

<table>
<thead>
<tr>
<th>Costs Description</th>
<th>Year</th>
<th>$</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logs</td>
<td>1</td>
<td>500.00</td>
<td>Assumes 1,000 logs, each 5' in diameter by 4' long, can be acquired for $.50 each.</td>
</tr>
<tr>
<td>Spawn Plugs</td>
<td>1</td>
<td>750.00</td>
<td>Assume 50 spawn plugs per log at a cost of $0.75 per logs. The per unit spawn cost in this case is less than for the 200 log farm because the grower can get a quantity discount for the amount purchased.</td>
</tr>
<tr>
<td>Inoculation and Cultivation Equipment</td>
<td>1</td>
<td>637.20</td>
<td>8,000 rpm drill ($150.), 2 carbide drill bits ($12.), hammer ($10.), hot plate for wax ($30.), 2 wax applicator ($8.), 20 lbs. wax ($27.20), burlap or perforated polyvinyl sheets for covering logs ($25.), wooden horses (stands) for supporting logs during drilling ($25.), stands and bedding materials for laying and raising logs ($250.), water tank for soaking logs ($100.).</td>
</tr>
<tr>
<td>Laying Yard</td>
<td>1</td>
<td>832.00</td>
<td>3,600 sq. ft. of shade cloth @ $0.12/sq. ft. ($432.); poles, cable, gravel and land clearing ($400.).</td>
</tr>
<tr>
<td>Harvest Equipment and Materials</td>
<td>2</td>
<td>650.00</td>
<td>Used refrigerator ($100.), USDA certified scale ($175); packaging materials: 1,200 3# boxes @ $0.25 each ($300.), labels, tape, inserts, and containers ($75.)</td>
</tr>
<tr>
<td>Utilities</td>
<td>1-7</td>
<td>505.00/yr.</td>
<td>Phone service ($225.), water and electricity ($160.), trash ($120.).</td>
</tr>
<tr>
<td>Office Supplies</td>
<td>1</td>
<td>115.00</td>
<td>Used desk and file ($90.), record book and other misc. ($25.).</td>
</tr>
<tr>
<td>Advertising</td>
<td>2</td>
<td>3,000.00</td>
<td>10,000 4-color brochures @ $0.30 each.</td>
</tr>
<tr>
<td>Inoculation Labor</td>
<td>1</td>
<td>400.00</td>
<td>Assumes 100 hrs. to drill, inoculate, and wax 1,000 logs at $4./hr.</td>
</tr>
<tr>
<td>Administration</td>
<td>1-7</td>
<td>240.00/yr.</td>
<td>60 hrs./year @ $4.00/hr.</td>
</tr>
<tr>
<td>Log Maintenance</td>
<td>2-7</td>
<td>668.00</td>
<td>Assumes labor for moving, turning, and watering logs equal to 10 min./log/yr. (.167 hrs.) x 1,000 logs x $4./hr.</td>
</tr>
<tr>
<td>Harvest Labor</td>
<td>2</td>
<td>32.91</td>
<td>144.0 lbs. mushrooms (17.5 lbs. harvested per hr. @ $4./hr).</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>82.29</td>
<td>360.0 lbs. mushrooms (17.5 lbs. harvested per hr. @ $4./hr).</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>337.37</td>
<td>1,476.0 lbs. mushrooms (17.5 lbs. harvested per hr. @ $4./hr)</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>222.17</td>
<td>972.0 lbs. mushrooms (17.5 lbs. harvested per hr. @ $4./hr)</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>123.43</td>
<td>540.0 lbs. mushrooms (17.5 lbs. harvested per hr. @ $4./hr)</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>24.69</td>
<td>108.0 lbs. mushrooms (17.5 lbs. harvested per hr. @ $4./hr)</td>
</tr>
<tr>
<td>Delivery</td>
<td>2-7</td>
<td>264.00/yr.</td>
<td>(6-100 mile round trips/year @ $0.20/mile) + ($4./hr. @ 6 hrs./trip x 6 trips).</td>
</tr>
<tr>
<td>Revenue Description</td>
<td>Year</td>
<td>$</td>
<td>Comments</td>
</tr>
<tr>
<td>---------------------</td>
<td>------</td>
<td>---------</td>
<td>------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>828.00</td>
<td>144.0 lbs. mushrooms @ $5.75/lb.</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>2,070.00</td>
<td>360.0 lbs. mushrooms @ $5.75/lb.</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>8,487.00</td>
<td>1,476.0 lbs. mushrooms @ $5.75/lb.</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>5,589.00</td>
<td>972.0 lbs. mushrooms @ $5.75/lb.</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>3,105.00</td>
<td>540.0 lbs. mushrooms @ $5.75/lb.</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>621.00</td>
<td>108.0 lbs. mushrooms @ $5.75/lb.</td>
</tr>
</tbody>
</table>

1. These costs and revenues are in current-year dollars and they were inflated at three percent per year before entering in the cash flow table (Table 5).

**APPENDIX D: DERIVATION OF COSTS AND REVENUES FOR A 3,000 LOG SHIITAKE FARM.**

<table>
<thead>
<tr>
<th>Costs Description</th>
<th>Year</th>
<th>$</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controlled Environment Chamber</td>
<td>1</td>
<td>33,485.00</td>
<td>Structure ($25,000.), furnace ($3,500.), air exhaust system ($4,500.), thermoelectric with humidity measure ($30.), office equipment ($115.), soak tank ($200.), rebar soak rack ($60.), pulley and chain hoist ($80.).</td>
</tr>
<tr>
<td>Property Tax</td>
<td>1-7</td>
<td>360.00/yr</td>
<td>Assumes agricultural farm homestead classification &amp; credit, 10 + acres.</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>1-7</td>
<td>650.00/yr</td>
<td>Equipment maintenance, contingencies.</td>
</tr>
<tr>
<td>Logs</td>
<td>1,3, 5,7</td>
<td>1,500.00/yr</td>
<td>Assumes 3,000 logs, each 5&quot; in diameter x 48&quot; long, can be acquired for $0.50 each.</td>
</tr>
<tr>
<td>Spawn plugs</td>
<td>1,3  5,7</td>
<td>2,250.00/yr</td>
<td>Assumes 50 spawn plugs per log at a cost of $0.75 per log.</td>
</tr>
<tr>
<td>Inoculation and Cultivation Equipment</td>
<td>1</td>
<td>770.00</td>
<td>2 hammers ($20.), 2 8,000-rpm drills ($300.), 5 carbide drill bits ($30.), hot plate for wax ($30.), to wax applicators ($40.), burlap or perforated polyvinyl sheets for covering logs ($100.), stands and bedding materials for laying and raising logs ($250.).</td>
</tr>
<tr>
<td>Laying Yard</td>
<td>1</td>
<td>$1,420.00</td>
<td>6,000 sq. ft. of shade cloth @ $0.12/sq. ft. ($720.); poles, cable, gravel and land clearing ($700.)</td>
</tr>
<tr>
<td>Harvest Equipment and Materials</td>
<td>2</td>
<td>5,725.00</td>
<td>Refrigerator ($400.), packing table ($25.), USDA certified scale ($175.), packaging materials: 10,900 3# boxes @ $0.25 each ($2,725.), labels, tape, inserts and containers ($2,400.).</td>
</tr>
<tr>
<td>Utilities</td>
<td>1-7</td>
<td>785.00/yr</td>
<td>Phone service ($225.), water and electricity ($280.), 4 cords fuelwood for furnice ($160.), trash ($120.).</td>
</tr>
<tr>
<td>Office Supplies</td>
<td>1</td>
<td>500.00</td>
<td>Used desk, files, record books, and other miscellaneous.</td>
</tr>
<tr>
<td>Advertising</td>
<td>2,4,6</td>
<td>3,000.00/yr</td>
<td>10,000 4-color brochures.</td>
</tr>
</tbody>
</table>
### Shitake Mushroom Marketing Guide

<table>
<thead>
<tr>
<th>Description</th>
<th>Year</th>
<th>$</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inoculation Labor</td>
<td>1,3</td>
<td>1,200.00/yr.</td>
<td>Assumes 300 hrs. to drill, inoculate, and wax 3,000 logs @ $4./hr.</td>
</tr>
<tr>
<td>Administration</td>
<td>1-7</td>
<td>720.00/yr.</td>
<td>180 hrs./year @ $4./hr.</td>
</tr>
<tr>
<td>Harvest Labor^2</td>
<td>2-7</td>
<td>1,234.29/yr.</td>
<td>5,400 lbs. mushrooms (17.5 lbs harvested per hour @ $4./hr.)</td>
</tr>
<tr>
<td>Log Maintenance</td>
<td>1-7</td>
<td>2,004.00</td>
<td>Assumes labor for moving, turning, and watering (soaking), logs equal to 10 min./log/yr. (.167 hrs.) x 3,000 logs x $4./hr.</td>
</tr>
<tr>
<td>Delivery</td>
<td>2-7</td>
<td>1,320.00/yr.</td>
<td>(30 100-mile round trips/year @ $0.20/mile) + ($4./hr @ 6 hrs./trip x 30 trips).</td>
</tr>
</tbody>
</table>

1. These costs and revenues are in current-year dollars and they were inflated at three percent per year before entering in the cash flow table (Table 9).

2. The CEC located at the Southeastern Minnesota Forest Resource Center (Lanesboro, MN) was used to gauge yield estimates for indoor production of shiitake. The fruiting chamber is approximately 600 square feet and can hold 600 logs (1 log per square foot). The life of a 5-inch diameter by 48-inch long log is assumed to be three years (one year for the spawn run and two years or fruiting. Mushroom yields are assumed to be 3.6 pounds per log over the log life. A total of 5 fruiting cycles per year per log is assumed (600 logs occupy the fruiting chamber for 2 weeks and then are rested for 2-1/2 months before being forced to fruit again). Therefore, after 10 fruiting cycles the logs are spent. In order to make this operation continuous, 3,000 logs (600 logs times 5 fruiting cycles) will have to be inoculated every odd numbered year.

### APPENDIX E: BASIC PROCEDURES FOR SHIITAKE PRODUCTION

Steps involved in shiitake mushroom cultivation include cutting trees into proper size logs, inoculation with spawn plugs, temporary laying, permanent laying, and raising or inducing mushroom formation (Kuo and Kuo 1983). Details for each step are described in the following paragraphs. Much of the following information was adapted from Shitake News, Vol. 3, No. 3.

### LOGS

Logs for shiitake cultivation are cut when the trees are dormant. The accepted practice is to cut logs in the late fall or early winter when sugar content of the wood is highest. The recommended size for beginners is 4 to 6 inches in diameter and 36 to 48 inches in length. Several species are good hosts for shiitake, but red and white oak are most highly recommended because these species give consistently higher mushroom yields. There are several points to bear in mind when selecting logs for shiitake cultivation.
1. **Bark texture and thickness** is an important property of the log. Bark insulates the logs from rapid changes in temperature, stimulates fruiting, and helps maintain the water content in the log. Logs cut from leafless trees have better bark retention.

2. **Straight logs** are preferred for ease of handling.

3. Logs cut from **trees must be alive** prior to cutting.

4. Logs must be **free from insects and fungi**. The log is the source of nourishment for the shiitake fungus. Foreign agents easily out-compete the shiitake fungus during the establishment phase.

**INOCULATION**

Logs are generally inoculated in late March or early April. First, starting 4 to 6 inches from the end of the log, a series of holes 1-inch deep and 2-inches apart are drilled around the log every 8 to 10 inches down the length of the log. Next, shiitake infected spawn plugs measuring 5/16 inches in diameter and 3/4 inches long, or sawdust impregnated with shiitake, are inserted into the holes flush with the log surface. The holes are then sealed with melted wax to keep weed fungi out and moisture in.

**LAYING AREA**

After logs are inoculated they are moved to a storage area (laying yard) to incubate. Incubation is the most critical phase of shiitake cultivation. Ideal incubation conditions are temperatures between 60 and 80 degrees F, relative humidity between 80 and 85%, 50% shade and air movement. It takes one to two years for the fungus to colonize the logs. Fruiting (mushroom formation) only occurs after the fungus completely invades the logs. The appearance of a fuzzy, white fungal growth at the ends of the log is a good indicator of complete colonization.

There are several key points to bear in mind during the laying period. Moisture content of the log is the key to successful shiitake cultivation. Continuous wet conditions are not desirable because they favor surface contamination by weed fungi. When watering logs it is recommended that logs get soaked thoroughly and then be allowed to dry out. The inside of the log should be moist but the log surface should be dry. In dry environments stack logs low; in moist environments, stack higher or re-stack in a different pattern to promote better air ventilation. Logs can be covered with burlap or other porous materials to favor moisture retention while at the same time allowing good ventilation. The logs should be protected from drying winds in the winter. Snow cover is ideal because it provides wind protection and moisture. Pine stands make ideal laying yards. They provide good wind protection and contain fewer weed fungi than hardwood stands. Shade cloth is recommended if a shaded area does not exist.

**FRUITING**

When the fuzzy, white fungal growth appears at the cut ends of the log, conditions need to be changed to favor fruiting. The logs are now moved to a "raising yard". The raising yard and the laying yard can be one and the same. In raising, logs are held at a near vertical position as opposed to a sub-horizontal position in the laying phase.

Fruiting requires moisture, air movement and shade. Optimum fruiting conditions are cool nights followed by warm days. Temperatures should average between 46 and 72 degrees F. with 85% relative humidity. At the raising site, logs are kept in an upright inclined position, leaning against a support. The support can be a wire stretched between two large trees or a wooden rack. The interval between logs is 2 to 3 inches, so that water or rain can fall and
seep to the rear side of the log and mushrooms can be picked from either side. Logs in the raising yard should be
turned end for end every 2 to 4 months to ensure even moisture distribution (Kuo and Kuo 1983). Availability of
nearby water is an advantage since logs may have to be sprinkled with water or soaked in water in the absence of
rainfall. For fruiting, log moisture content preferably should be higher than 35%. Logs can be forced to fruit by soaking
the logs in water for 24 to 72 hours.

Once mushroom formation has started it takes shiitake 2 to 7 days to mature to a harvestable stage. Mushrooms
are picked just before the cap expands completely. Shiitake mushrooms must be refrigerated between 32 and 43
degrees F. and kept dry (Meeting Notes 1986). Crops continue to appear once in the spring and once in the fall for 4
to 6 years, whenever high humidity or rainfall follows a fluctuating chill-warm weather cycle (Kuo and Kuo 1983).

**CONTROLLED ENVIRONMENT CHAMBER FRUITING**

In a controlled environment chamber (CEC) shiitake mushrooms are produced in an environment with controlled
temperature, light, humidity and airflow. In this case aged logs (logs colonized by the shiitake fungus) can be stored
outdoors in a relatively dry area (30 to 40% relative humidity) when not in production. Fruiting is induced by soaking
the logs in cold water (48 to 55 degrees F.) to a degree of "fully saturating" the logs with water and then allowing
them to fruit slowly between 60 to 70 degrees F. for 5 to 7 days. Depending on the strains used, log diameter and
methods used, the harvest life of a log varies from 1 to 3 years and can be fruited between 5 and 8 times during a 1-
year cycle (Harris 1986, Deden 1986). The following steps for artificial fruiting were adapted from Kuo and Kuo
(1983) and Harris (1986).

1. Mature logs (logs at least a year old and raised or logs which have been stored at a low humidity condition) are
   placed in a tank filled with cold water (48 to 55 degrees F.) so that the entire log surface is submerged in water. The
   soak time lasts as long as 2 to 4 days or until buttons start to appear on the log surface. The logs are then moved and
   stacked vertically in a fruiting chamber.

2. In the fruiting chamber, the temperature should not exceed 70 degrees F. Logs are kept at a near vertical position,
   leaned against a rack, thus allowing mushrooms to sprout on the entire surface of the log. The ideal growing
time of the mushrooms is 1 to 2 weeks. The harvest period lasts for approximately 10 days so fruiting logs are in the
   greenhouse for about 14 days and then new logs are brought inside. Light is required to promote fruiting. A light-
dark cycle of approximately 7 to 10 hours is preferable to continuous lighting. About 50 foot candles of light is suffi-
cient. This is equivalent to using the light meter of a camera as follows: set the film speed to ASA 400 and the
   shutter speed to 1/60 second. In optimum light the meter should read 14 when measured against a gray card (Harris
   1986).

3. At the end of the fruiting sequence (flush), logs are moved from the fruiting chamber to a dry environment
   where log moisture content is allowed to drop below 35%. This dormant period generally lasts between 1 and 2
   months. During the dormant period (resting period) the logs are covered with perforated plastic, shade cloth, mus-
   lin or some other material to keep the rain off.

The above discussion on shiitake cultivation is intended only as a brief review. It is by no means comprehensive.
For a more complete treatment of shiitake cultivation consult the references found at the end of this report.

**CONTROLLED ENVIRONMENT CHAMBER**

The Southeastern Minnesota Forest Resource Center's (Lanesboro, MN.) controlled environment chamber
(CEC) served as a prototype to gauge indoor shiitake production cost and yield estimates. The structure is basically
a 22' x 52' earth-bermed cement block building with a gravel floor. The building includes a 500 gallon recirculating
hot water heating system (Baby Garn). Radiant heat is provided by water circulating through 1/2 inch copper pipe under 3 inches of crushed limestone on the floor of the fruiting chamber. The fruiting chamber is roughly 20 feet x 30 feet (600 square feet) and can handle approximately 600 logs (1 log per square foot). Light, humidity and temperature are controlled by using current energy efficient greenhouse construction methods. Space is provided for grading, packing and refrigerating the mushrooms.

PRODUCT DISCLAIMER

Information in this report is for educational purposes only. References to commercial products, companies, or trade names is made with the understanding that no discrimination is intended and no endorsement is made by the author.
DEFINITION OF TERMS

Backhauling- shipping a product on a truck returning from its primary destination.

Broker- brings buyers and sellers together and assists in negotiation. They do not carry inventory, take title of the product, get involved in financing or assume risk.

Cold Plate- a rechargeable industrial cooling device for shipping perishables.

Demand- when consumers allocate their dollars for something they want or need.

Dispatch- central shipping office that coordinates and monitors trucking schedules.

Dumping- selling product at far below market prices (usually due to oversupply).

Exchange- when a seller provides the buyer with a desired object or want in return for a payment.

Flush- Period of mushroom fruit production.

F.O.B. (Free on board) Destination- seller pays cost of transportation to buyer's location.

F.O.B. Factory- buyer pays cost of transportation to his location plus same base price paid by all other buyers.

Insulated Box- a type of refrigerated transport unit usually mounted on a truck chassis.

Integrated Buying- a centralized buying function (usually retail) which bypasses an independent wholesaler and orders product directly from the shipping point.

Jobber- the person who calls on retailers to restock displays.

Kraft- brown color of boxes.

Lead (lede)- the opening sentence in a news release, designed to draw the reader into the body of the copy.

Market- condition existing when there is a buyer and a seller for a product.

Marketing- a human activity directed at satisfying needs and wants through an exchange process.

Marketing Channels- expedite the flow of goods from producers to consumers.

Marketing Mix- four elements that create a blend that best satisfies customers' wants: including product, place (distribution), pricing and promotion.

Marketing Plan- outlines a marketing strategy and provides the details needed to implement it.

Market Segment- groups of customers who will respond in a similar way to a given set of marketing efforts.

Marketing Strategy- broad plan of action that specifies a target market and marketing mix for the target.

Need- something a person feels they are lacking and must have.
Prepackaging- when the product is packaged at the shipping point prior to delivery to the retailer/wholesaler.

Product Position- the customer’s perception of a product’s attributes relative to competitive brands.

Product- anything that can satisfy a need or want.

Promotion- the process of informing, persuading, or reminding the target customer to buy a product.

Promotional Mix- the elements of promotion including advertising, personal selling, public relations, and sales promotion.

Reefer- an abbreviation for a transport refrigeration system.

Retailer- a firm deriving over half its sales revenue from sales made directly to ultimate consumers.

Shelf Space- the limited amount of physical space or “facings” available for the display of a product in a retail outlet.

Slip-In- an insulation unit installed on pick-up truck beds used for refrigerated transport.

Target Market- a well defined set of customers whose needs match the benefits provided by your product.

Turnover- the number of times a given product facing will sell within a given amount of time.

Want- the object that a person looks for to satisfy their need.

Wholesaler- the firm that sells to retailers, other middlemen, and/or food service accounts, but do not sell, except in small amounts, to end consumers.

Wholesale Terminal- the actual warehouse buildings (usually centralized within a city) where wholesale produce is received and stored prior to delivery.
OVERVIEW

The objectives of our research included the development of this guide which would provide individual growers with information about marketing, selling, shipping, and distributing shiitake mushrooms.

Research consisted of telephone screening and later conducting a great many one-on-one, personal interviews with wholesale and retail produce personnel as well as with targeted consumers and other industry representatives.

Minnesota’s produce and gourmet communities are generally excited about new mushroom products. The research team encountered virtually no reluctance or resistance to talking about shiitake, the produce business, or strategies for growers. The authors feel very grateful for this cooperation, and we wish to acknowledge all those who contributed to this effort. We have made some great new friends in the course of this endeavor.

Wholesale

The research team began by conducting a telephone screening of 39 produce firms listed under “Fruits and Vegetables: Brokers and Wholesale” entries in the Twin Cities’ “Business to Business Yellow Pages”. Screening questions identified those firms that currently handled shiitake on a regular basis, and those that only occasionally special-ordered them, the amounts purchased, and their sources.

From these answers, the research team identified four produce wholesalers who carried shiitake on a regular basis and could give more detailed information on the product and its use.

From February to April, 1987, personal interviews were set up and conducted with buyers, salespersons, and owners of these Minnesota firms. In addition, the two local produce brokers handling shiitake were personally interviewed.

Wholesale consumers and chefs were individually interviewed and surveyed through a chefs’ society.

Retail

For retail shiitake information, an initial telephone screening was conducted of 20 individual store produce managers, for each of 4 upscale Twin Cities and Rochester, MN, grocery chains. Screening questions identified those stores that handled shiitake on a regular basis and those that only occasionally carried them, and requested estimates on the amounts sold as well as sources.

Phone and personal interviews were conducted with corporate buyers and corporate produce directors of Minnesota’s six largest grocery chains.

The produce manager and the inspector from the area’s largest produce warehouse were interviewed.

Individual, in-store interviews were conducted with those five retail store produce managers with the most exposure to shiitake.
The assumption was made that cooking school attendees at specific area classes represented a targeted consumer segment for the shiitake. These forums represented an ideal opportunity for a very informal consumer survey. Questionnaires were distributed prior to five classes at three area cooking schools. 65 respondents returned completed forms. These informal surveys included many open-ended questions and focused on consumers' reactions to positioning alternatives in light of their perceptions of the shiitake mushroom. A copy of the survey format is attached. Results, as cited in the MARKETING OVERVIEW, are not based on a random sample of the targeted universe.

C. Trends

Given the need for local and regional trend information, exploratory interviews were conducted with:

- 3 local mushroom growers/distributors (button and oyster)
- 2 media/food writers
- 20 + chefs
- 3 local kitchen schools
- 3 home economists
- 6 other industry experts.

Due to the relatively recent arrival of shiitake in the midwestern area of the United States, it was deemed necessary to make several calls to national experts on shiitake usage. This was done to obtain an initial feel for shiitake use and trends on both coasts as well as Chicago; trends which may or may not be coming to Minnesota.

These national calls represented a convenience sample and should not be considered a random sampling of the universe, or used for projection purposes in any formalized way.

Exploratory interviews were conducted by phone with the following:

- 2 West Coast Brokers
- 1 West Coast Wholesaler
- 2 East Coast Brokers
- 1 Media Person
- 1 Chicago Area Broker
- 1 Chicago Area Wholesaler

Open-ended questions were asked of both local and national experts, most often asking them to comment on: local shiitake use, the kinds of restaurants currently using them, the degree and nature of consumer and retail awareness, shiitake prices and price predictions, and advice they would give growers.
ACKNOWLEDGMENTS

The authors would like to thank the following companies and individuals for their time, cooperation and enthusiastic support for this project. It could not have been completed without their help.

The authors would also like to thank Janice Cole for her unfailing assistance "in the field" and over countless cups of tea.

Agri-Pak Div., Liberty Carton Company, Minneapolis, MN
Ken Albrecht, Mankato, MN
Altendorfer Mushrooms, Rosemount, MN
Aslesen's, Minneapolis, MN
Barlow Foods, Rochester, MN
Mel Baughman, University of Minnesota, St. Paul, MN
Beckman Produce, Inc., St. Paul, MN
Bergin Wholesale Fruit & Nut Company, Minneapolis, MN
Bix Fruit Company, Minneapolis, MN
Blackship Trading Company, Side Lake, MN
Steve Bratkovich, Jackson, OH
Ann Burckhardt, Mpls Star and Tribune, Minneapolis, MN
Byerly's, Edina, MN
Campbell's Soup Company, Minneapolis, MN
William Chalmer, Vancouver, B.C.
Cub Foods Stores, Stillwater, MN
Dayton's Marketplace Foods, Minneapolis, MN
East Calhoun Co-op, Minneapolis, MN
Eisenberg Fruit Co., St. Paul, MN
Emery Worldwide, Minneapolis, MN
Field and Forest Products, Inc., Peshtigo, WI
510 Groveland, Minneapolis, MN
Jim Florian, Bloomington, MN
Flying Foods International, Long Island City, NY
Flying Tigers Air Cargo, Minneapolis, MN
Forest Mushrooms, Inc., St. Joseph, MN
Forest Resource Center, Lanesboro, MN
French Produce, Rochester, MN
Fresh Promise, St. Louis Park, MN
Frieda's Finest/Produce Specialties, Los Angeles, CA
Fresh Western Marketing, Inc., Salinas, CA
Golden Forest Mushrooms, Madison, WI
Greyhound Bus Company, Minneapolis, MN
Ralph Groeschen, Minnesota Grown Promotion Group, St. Paul, MN
Guiseppi's, Rochester, MN
H. Brooks & Company, Minneapolis, MN
Richard Haskett, Minnesota Trade Office, St. Paul, MN
Hennepin Area Vo-Tech Institute, Minneapolis, MN
Jax Cafe, Minneapolis, MN
Jerry's Foods, Edina, MN
Carol Johnson, Minneapolis, MN
Johnson Truck Bodies, Rice Lake, WI
Kahler Hotel, Rochester, MN
Bud Kerr, USDA, Washington, D.C.
Kitchen Window, Minneapolis, MN
Kolstad Company, Inc., Roseville, MN
Sibella Kraus, San Francisco, CA
Rolfe Larson & Associates, Minneapolis, MN
Lee Ann Chin Restaurants, Minneapolis, MN
Gary Leatham, USDA Forest Products, Madison, WI
Lehmann Farms, Spring Park, MN
Lucia's, Minneapolis, MN
Lunds, Minneapolis, MN
Malat Produce, Minneapolis, MN
Marquette Holms Insurance, Minneapolis, MN
Meredith Catering, Minneapolis, MN
Minneapolis Farmer's Market, Minneapolis, MN
Minnesota Trade Office, St. Paul, MN
Minnesota Grocers Association, St. Paul, MN
Minnesota Hotel, Restaurant and Resort Assn., St. Paul, MN
Minnesota Natural Foods, St. Paul, MN
Midwest Chef's Society
Minnesota Department of Agriculture, St. Paul, MN
Mrs. B's Historic Lanesboro Inn, Lanesboro, MN
Richard Mook, USDA, Washington, D.C.
Mushroom Growers, Inc., Chicago, IL
Northwest Air Cargo, Minneapolis, MN
Eleanor Ostman, Pioneer Press & Dispatch, St. Paul, MN
Packaging Materials, Inc., Plymouth, MN
Pepin Heights Orchards, Lake City, MN
Mary Preus, St. Paul, MN
Rainbow Foods, Hopkins, MN
Red Owl Stores, Inc., Hopkins, MN
Rochester Cartage, Rochester, MN
Roots and Fruits Cooperative Produce, Minneapolis, MN
St. Joe Paper Company, Chesapeake, VA
Sampler Service, Inc., Minneapolis, MN
Kevin Sand, Decorah, IA
Shiitake Growers Association of Wisconsin, Sarona, WI
Shiitake Mushroom Project, Grand Rapids, MN
Super Valu Stores, Inc., Minneapolis, MN
Rick and Ann G. Sweere, Golden Valley, MN
Tapemark Company, St. Paul, MN
Thermo King, Roseville, MN
Thrice Cooking School, St. Paul, MN
Twin City Produce, Minneapolis, MN
Debra Vorderbruggen, Minnesota Food Expo, St. Paul, MN
Waterhouse and Associates, Minneapolis, MN
Alice Waters, Berkeley, CA
Luther Waters, Univ. of Minn., St. Paul, MN
Western Container, Minneapolis, MN
Weyerhaeuser Corporation, White Bear Lake and Austin, MN
Wholesale Produce, Inc., Minneapolis, MN
Wild Game, Chicago, IL
Wisconsin Department of Agriculture, Trade and Consumer
World Container Corporation, Burnsville, MN
United Noodle Company, Minneapolis, MN
Viking Produce, St. Louis Park, MN
Wedge Co-op Grocery, Minneapolis, MN
Sue Zellickson, Golden Valley, MN

Support for the Shitake Mushroom Project at the Forest Resource Center in Lanesboro, MN has been provided by:

The Northwest Area Foundation
The Southeastern Minnesota Initiative Fund
The Laird, Norton Foundation
Minnesota Department of Natural Resources
Minnesota Extension Service
Minnesota Governor's Council on Rural Development
Northwestern Bell Telephone Company
Metafile Information Systems
Caroline and Julia Marshall
Albert and Elizabeth Marshall
Tuohy Furniture/Forest Products
Vincent and Adeline Deden
The Green Thumb Project
Margaret Babcock and Mildred Peters
Steve Towle and Janet Gilbert
C. Robert Binger
Architectural Environments
Garn, Inc.
Rochester Materials Company (ROMAC)
Controlled Environment Growing
David and Judy Ness
John and Jennifer Horihan
Dan and Maureen Anderson
Mitchell Gilbert
Anthony Farris
Nancie McCormish
Gerald and Karen Cleveland
Northeast Iowa Vocational Technical Institute
Field and Forest Products
Four Seasons Distributors
Mushroompeople
With special thanks to our Board of Directors and officers, for their unwavering assistance in pursuing the mandate of the Forest Resource Center - the promotion of the wise economic, educational and recreational use of our natural resources.

President - Richard S. Sheldon
Rochester, MN

Vice President - James Bjornerud
Menomonie, WI

Secretary - Jo Theye
Rochester, MN

Treasurer - Sandra Deden
Lanesboro, MN

Ken Anderson
Rochester, MN

C. Robert Binger
White Bear Lake, MN

Richard Bins
Rochester, MN

Harry Buck
Rochester, MN

Nancy Knowlton
Austin, MN

Richard Nelson
Preston, MN

Jean Olson
Chatfield, MN

Arnold Onstad
Spring Grove, MN

Kevin Sand
Decorah, IA

Roger Steinberg
Rochester, MN

F. Michael Tuohy
Chatfield, MN

Rory Vose
Winona, MN
BIBLIOGRAPHY


THE SOUTHEASTERN MINNESOTA FOREST RESOURCE CENTER, INC.

A member supported private, non-profit educational corporation promoting the wise economic, educational, and recreational use of our natural resources.