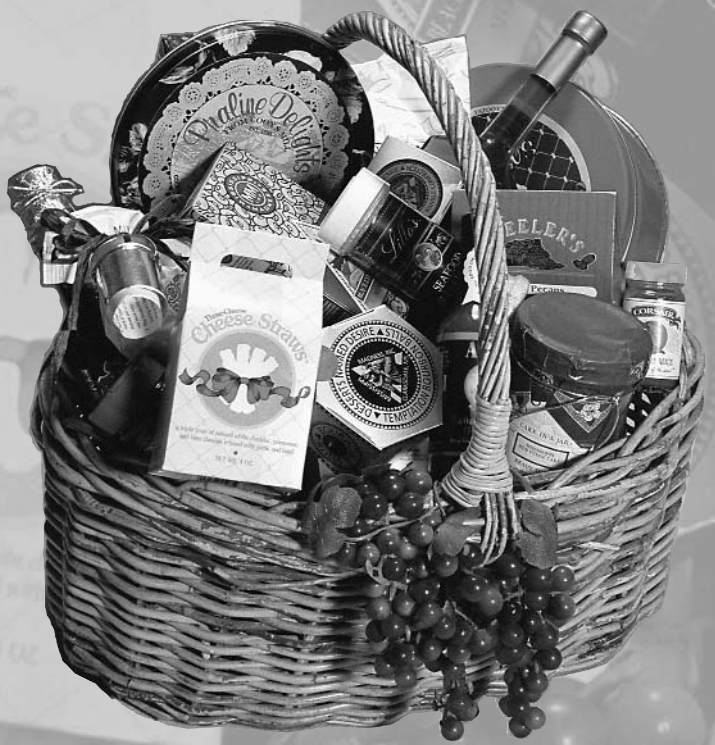
Exploring the Potential for New Food Products



Mississippi State University Extension Service

INTRODUCTION

The Food and Fiber Center of the Mississippi State University Extension Service has worked with hundreds of entrepreneurs and small businesses since its beginning in 1974. The people who come to the Center for help range from those with just an idea for a new cookie to those with millions of dollars looking at a major processing operation. After years of answering the same questions, the staff of the Food and Fiber Center discovered that the initial information needs are essentially the same for almost all clients.

The purpose of this publication is simple and straightforward—to provide information you can understand and use to avoid investing time and money in developing a product that may have little chance for success in the marketplace. There is no attempt or intent in this guide to address the questions of your personal abilities or capabilities of going into business. It does not provide specific details about licensing and/or reporting information necessary for starting a business in the State of Mississippi. This information is available from the Extension Food and Fiber Center and through several resources and agencies such as the Small Business Development Centers located throughout Mississippi (Appendix A) or through the Jackson or regional offices of the Mississippi Development Authority (Appendix B). It is the Center's intent to help guide you through the product development, manufacturing, and marketing stages of a project and to help you analyze the economics of a venture before you commit yourself to it. All the topics covered may not be of interest to you at this time but should prove useful as your business develops. If you are somewhere in the middle of the journey, you should be able to pick up at that point and get the information most suited to your immediate needs.

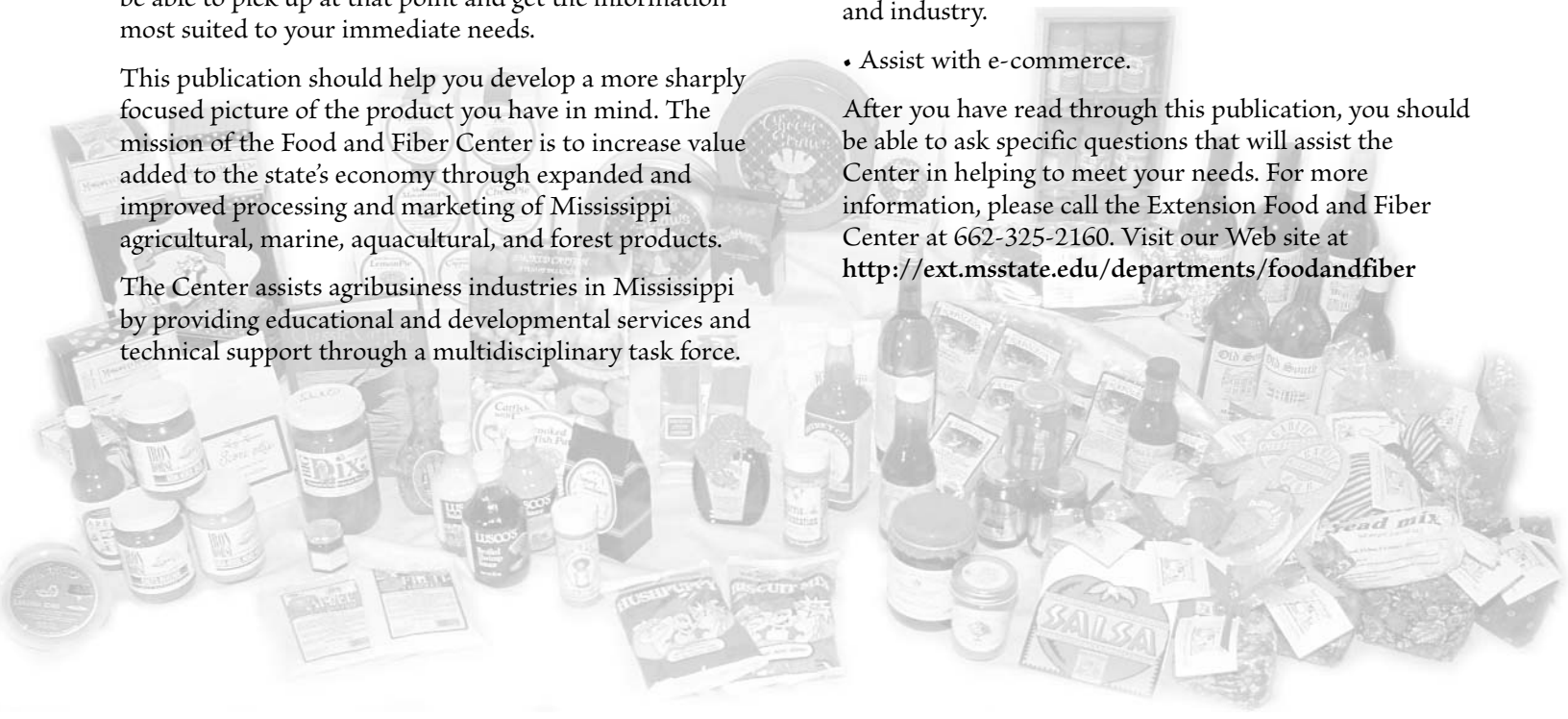
This publication should help you develop a more sharply focused picture of the product you have in mind. The mission of the Food and Fiber Center is to increase value added to the state's economy through expanded and improved processing and marketing of Mississippi agricultural, marine, aquacultural, and forest products.

The Center assists agribusiness industries in Mississippi by providing educational and developmental services and technical support through a multidisciplinary task force.

The areas of specialization include management, industrial and food process engineering, economics, food technology, wood and wood products processing, marketing, distribution, and business analysis. Typical services include the following factors:

- Economic analysis of production processes and marketing and distribution strategies for existing and new products.
- Identify new market opportunities and assist with domestic and foreign market development.
- Educate managers in planning and control of business operations, including quality control programs, disposal of liquid and solid wastes from processing, inventory control, and management information systems.
- Perform feasibility studies for new or expanding agriculture product and wood processing firms.
- Assist with new product development in areas of formulation, processing procedures, packaging, labeling, and market potential.
- Perform management audits for agribusiness firms and evaluate economic justification of capital expenditures.
- Conduct in-plant analysis to improve productivity and operating efficiency and to develop facility and process line layouts.
- Evaluate economic trends for business and industry.
- Provide information about local, state, and federal regulations governing food and wood products processing.
- Review research and technological development for potential application to Mississippi business and industry.
- Assist with e-commerce.

After you have read through this publication, you should be able to ask specific questions that will assist the Center in helping to meet your needs. For more information, please call the Extension Food and Fiber Center at 662-325-2160. Visit our Web site at **http://ext.msstate.edu/departments/foodandfiber**



CONTENTS

THE PRODUCT 2

PROCESSING 3

Processing Regulations 3
Registration of Food Facility 4
Product Recall Plan 4
Safety, Shelf Life, and Sensibility 5
Additives 5

PACKAGING 5
Image 5
Labeling 5
Patents and Trademarks 6
Liability 6
Bar Coding (UPC) 7
Case Counts 7

PRODUCT PRICING 7
Gross Margins and Markups 7

Selling Price Determination 7

PROFITS AND BREAK-EVEN ANALYSIS 8

CONCLUSION 8

APPENDICES 9

A - Mississippi Small Business Development Centers 10

B - Mississippi Development Authority Regional Offices 10

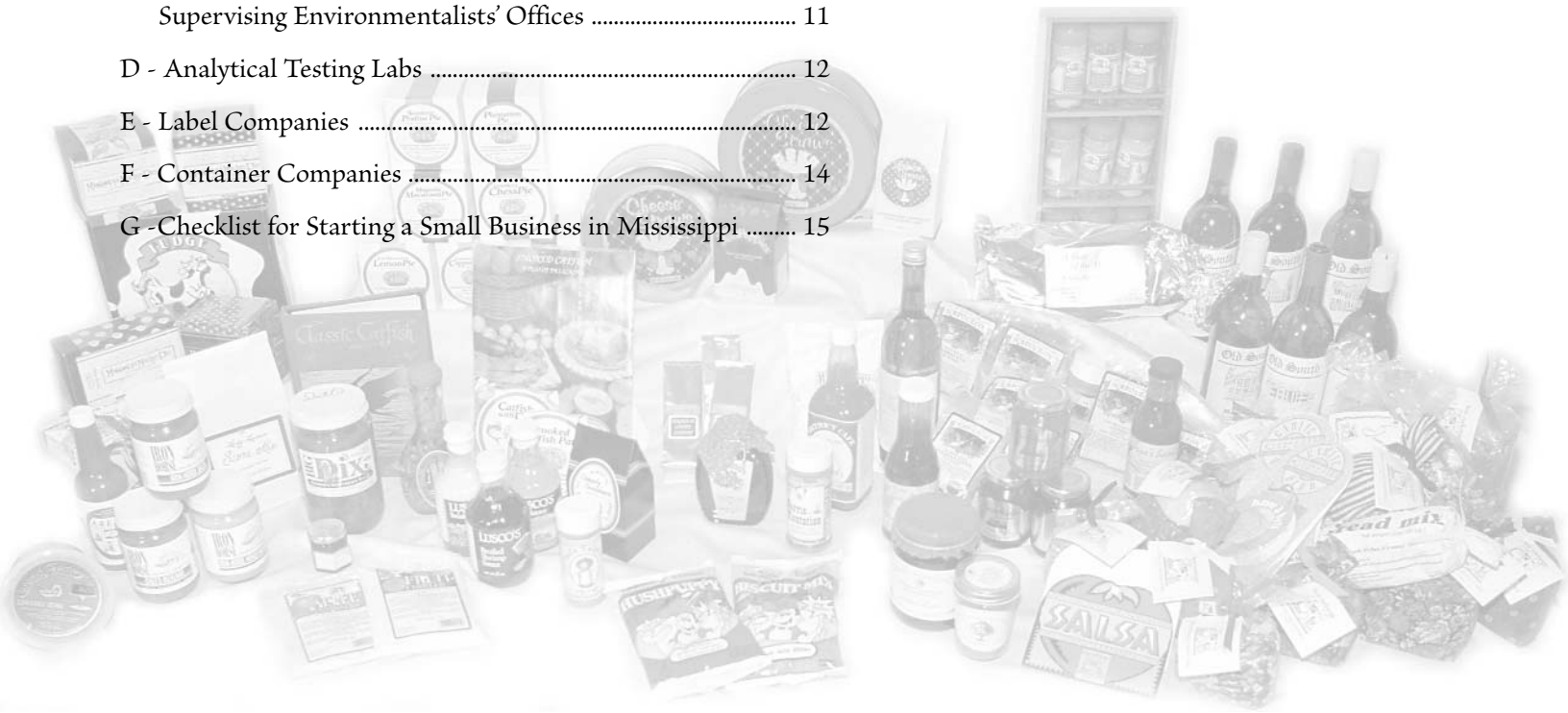
C - Mississippi State Department of Health Districts and Supervising Environmentalists' Offices 11

D - Analytical Testing Labs 12

E - Label Companies 12

F - Container Companies 14

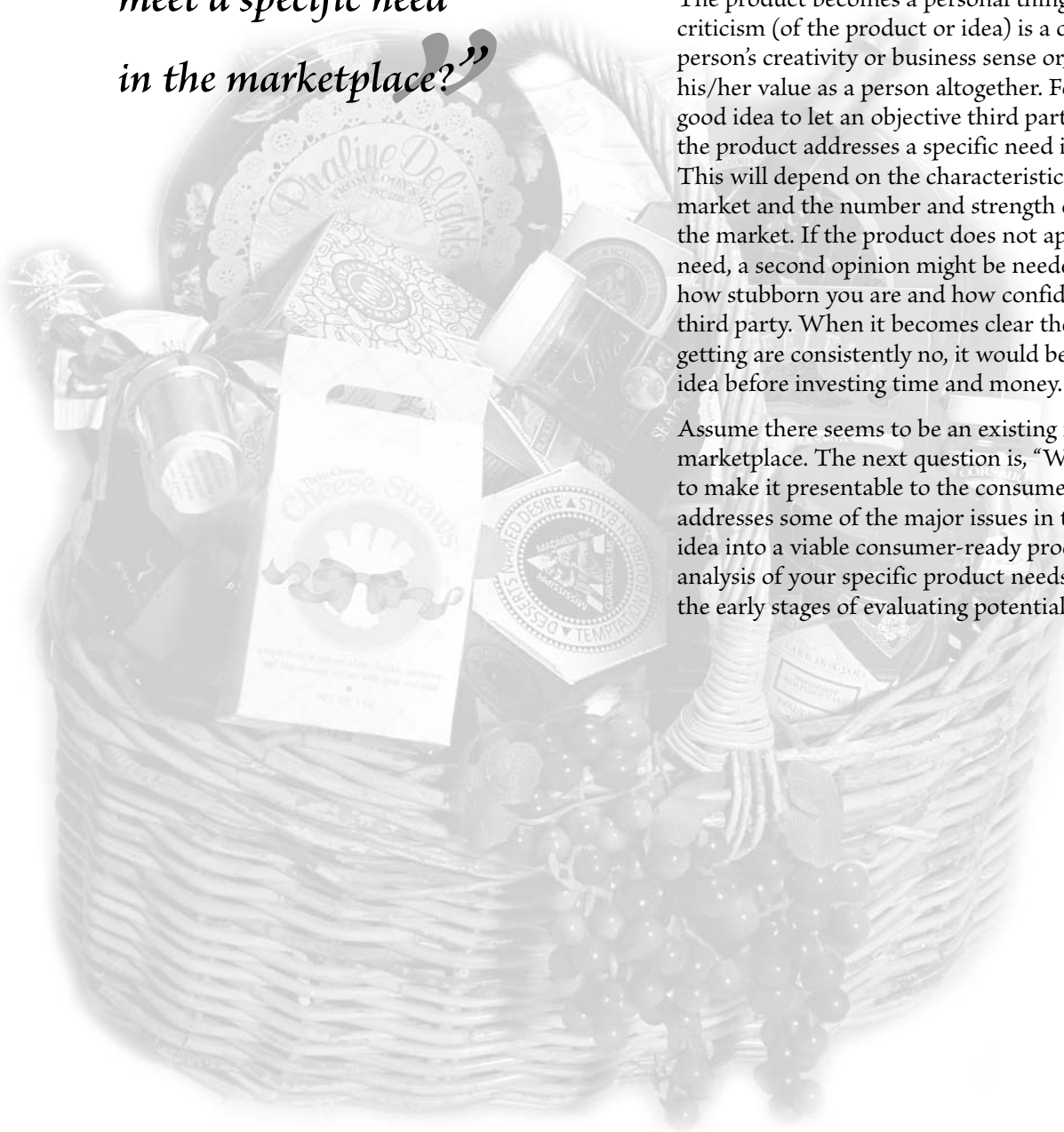
G -Checklist for Starting a Small Business in Mississippi 15



THE PRODUCT

One of the most important initial questions is....

"Will this product meet a specific need in the marketplace?"



Staff members of the Extension Food and Fiber Center have worked with many individuals who toyed with a product or service idea for a period of time and then reached the point they had to do something with it or forget it. At this stage it's just an idea. This doesn't present a problem. In fact, this is probably the best place to start, since little time or money has been invested in the project. For convenience, start with the idea. Now what?

Once the idea is formed and the Food and Fiber Center has a reasonable understanding of what the product characteristics are – what the product looks like, feels like, tastes like, maybe even smells like – a specialist can evaluate the idea's potential. One of the most important initial questions is, "Will this product meet a specific need in the marketplace?" This is an area many people cannot accurately evaluate because they are too close to the idea. The product becomes a personal thing and, therefore, any criticism (of the product or idea) is a criticism of the person's creativity or business sense or, in some cases, his/her value as a person altogether. For this reason, it is a good idea to let an objective third party evaluate whether the product addresses a specific need in the marketplace. This will depend on the characteristics of the target market and the number and strength of competitors in the market. If the product does not appear to meet a need, a second opinion might be needed, depending on how stubborn you are and how confident you are in the third party. When it becomes clear the answers you are getting are consistently no, it would be wise to toss the idea before investing time and money.

Assume there seems to be an existing need in the marketplace. The next question is, "What must be done to make it presentable to the consumer?" The following addresses some of the major issues in transforming an idea into a viable consumer-ready product. A detailed analysis of your specific product needs to be developed in the early stages of evaluating potential for success.

PROCESSING

Most new food product ideas are born in the home kitchen. Many successful companies have been started based on products initially conceived, created, and tested in the home kitchen. However, the typical home kitchen is entirely inadequate when it comes time to produce food products on a commercial basis. Putting aside such issues as efficiency and economies of scale, most home kitchens are not designed to meet health and other regulations required of a commercial food enterprise. For example, the level of sanitation required to meet FDA regulations essentially requires that all surfaces in the areas where food processing takes place (including floors, ceilings, and walls) be washable.

In most cases, regulatory approval to manufacture a food product in the home kitchen will not be granted (although there are exceptions—contact your local Health Department when in doubt). Essentially, this means that for most food products, the decision to "go commercial" means moving production out of the home kitchen and into an approved food processing facility.

Contract Processing

Rather than incurring the expense and headaches of acquiring suitable facilities and equipment, many small food companies choose to work with *custom processors* (also commonly called *contract processors* or *custom packers*) to manufacture their products on a contractual basis, at least initially. In addition to actual processing, such custom processors can provide a variety of services and offer a range of expertise required to transform a product idea into a mass-producible finished product. The Food and Fiber Center can help with identifying custom processors who might be able to contract process your food product.

The decision whether to process yourself ("insource") or contract with a custom processor ("outsource") can be a complex one. While custom processing offers certain advantages, you also give up a degree of control over quality and production timing. Factors that should be considered in this decision (often referred to as "make or buy") include processing requirements, expected volume, capital requirements, costs, and quality considerations. The Food and Fiber Center can help with evaluating contractor bids and making insourcing vs. outsourcing decisions.

Process Planning

If the decision is made to insource (produce) your food product, one of the first steps in planning your processing operation should be to develop a step-by-step description of the process necessary to produce the product, with a focus on the flow of materials, equipment, manpower, and information (as applicable) within the process. Typically, the process is documented in the form of a special flowchart known as a *process flow diagram*, which uses special symbols to depict different types of steps, although this is not absolutely necessary.

There are several questions that should be addressed in developing the process flow:

- How will raw materials (ingredients) be delivered? In what form? In what quantity/size?
- How will ingredients be stored? Frozen? Refrigerated? Dry storage?
- What must be done to ingredients before use? Measure? Clean? Thaw? Weigh?
- How much time is necessary for preparation? Cooking? Cooling? Packaging?
- How will the finished product be handled and stored? Frozen? Refrigerated?

Such questions will help you think through the amount of space needed, the type(s) and size(s) of equipment necessary, and labor requirements. The Food and Fiber Center can assist with process planning for your operation.

Facility Location

The decision of where to locate your food processing facility can be critical to the success of your enterprise. Indeed, if the type of operation requires that customers come to your location to buy your products (e.g., a retail bakery or other foodservice operation), then facility location can potentially be the most important decision you will make in designing your operations system. If customers are expected to come to your facility, the location decision should be primarily driven by customer convenience. Distance, visibility, ease of access, and proximity to other business or destinations should be carefully considered. Countless small retail businesses have failed in spite of everything else being right, simply because it was too inconvenient for customers to come to their location.

If the type of operation is such that customers will not normally come to your facility on a regular basis, then other factors (most of them relating to operating costs) should take on greater importance in deciding where to locate, depending on the situation. Some processing facilities are located near sources of raw materials to save on transportation costs or assure the most fresh, high-quality ingredients, while others are located near customers to save on finished goods transportation costs or to allow fast delivery (important if your product has a short shelf life or doesn't travel well). Other food

processing plants are located near readily available sources of fresh water, or near low costs sources of energy, or perhaps where there is plenty of low cost labor available, or where wastes can be easily disposed. Which factor(s) will be most important in a given situation will generally depend on how important the various inputs are to the operation. The Food and Fiber Center can help with identifying and evaluating facility location alternatives for your food processing operation.

Processing Regulations

Two regulatory agencies that oversee processing food products on the federal level are the Food and Drug Administration (FDA) and the United States Department of Agriculture (USDA). As a general rule, if your product contains more than 3 percent raw meat or poultry or more than 2 percent cooked meat or poultry, the processing of that product falls under USDA regulations; otherwise, it falls under FDA regulations.

The regulations governing "good manufacturing practices" are published by the Office of the Federal Register, along with hundreds of pages of information specific to problems you may never encounter. The FDA's "Current Good Manufacturing Practice in Manufacturing, Packing, or Holding Human Food," Title 21, Part 110 of the Code of Federal Regulations, can be found on the Internet at **http://vm.cfsan.fda.gov/~lrd/cfr110.html** or call the Food and Fiber Center for a copy.

The local agencies to advise you on the things necessary to comply with the various regulations include the Meat Inspection Division of the Mississippi Department of Agriculture and Commerce (MDAC) for USDA regulations and the Food Protection Branch of the Mississippi State Department of Health for FDA regulations. You should contact the director, Meat Inspection Division at MDAC (601-359-1191), or the supervising environmentalist for your health district (Appendix C). The Food and Fiber Center (662-325-2160) at Mississippi State University can also advise you on preliminary requirements to comply with USDA and/or FDA regulations.

Registration of Food Facility

The owner, operator, or agent in charge of a domestic or foreign facility that manufactures/processes, packs, or holds food for human or animal consumption in the U.S. must register with the FDA. A farmer who packs food for sale by a third person or who "processes" food by freezing and/or conducting a conversion of the raw product qualifies as a processor and must register. This registration is not in lieu of your FDA inspection or any other registrations (i.e. low acid canned foods, etc.) Failure to register is a prohibited act under the Federal Food, Drug, and Cosmetic Act. You may be subject to civil or criminal sanctions.

Registrants must use Form 3537 to register or update a registration. FDA encourages online registration at its Web site **www.access.fda.gov**. Questions can be e-mailed to furls@fda.gov. If verbal assistance is needed, contact the Online Registration Help Desk via telephone at 800-216-7331 or 301-575-0156.

To print Registration Form 3537, go to www.cfsan.fda.gov/~furls/frm3537.pdf

For instructions to complete Form 3537, go to www.cfsan.fda.gov/~furls/ins3537.pdf

Additional information can be found on the FDA Web site www.cfsan.fda.gov/~dms/fsbtac12.html

If a facility does not have reasonable access to the Internet, a paper copy of the form may be obtained from FDA by calling 800-216-7331 or 301-575-0156 or by mailing a request to U.S. Food and Drug Administration, HFS-681, 5600 Fishers Lane, Rockville, MD 20857

Registration Exemptions

Facilities regulated exclusively throughout the entire facility by the U.S. Department of Agriculture are exempted from the FDA registration. Other facilities receiving exemption are farms, retail food establishments, restaurants, non-profit establishments that prepare food for or serve food directly to consumers, and fishing vessels not engaged in processing.

Product Recall Plan

From time to time a food processor may need to remove one of its products from the market. The vast majority of recalls are voluntary. Whether the problem is minor or life threatening, good advance planning is the key to resolving it thoroughly and quickly.

The Food and Drug Administration's guidelines, policies, and procedures for recalls can be found in Title 21, Part 7 of the Code of Federal Regulations. The Food and Fiber Center can provide you with a copy of the regulations and more specific details on a recall plan.

Recalls are usually initiated as a result of consumer or customer complaints. It is essential that every legitimate consumer and/or customer complaint is documented and investigated thoroughly. Sometimes a product problem is identified before the product leaves the processor; it should be documented and investigated the same way.

In order to recall a product, the processor must be able to identify the product involved and determine the distribution of that product. A code-dating system needs to be part of the company's policy with a production date

code printed on all finished product packages and/or cases. This code can identify the production date, shift, or hour of production and/or lot or batch number, and production facility. Each processor may devise its own variation of coding. It is important that a meaningful product coding be established and a record-keeping system be adopted so individual lots of the product can be traced from the processing facility to the end user. Use the code date on all quality control records, production reports, and shipping forms.

Examples of code dating:

Julian Date Code
2314A
231 represents the day of the year
4 represents the year 2004
A represents hour period or production batch

Gregorian Date Code
June 5, 2004A or 6/6/04A
Date is self-explanatory.
A represents hour period or production batch

All products produced should be recorded in a daily production log, identifying the product produced, total number of cases produced, and case size. This information is linked to invoices of shipped product, bill of lading, and inventories.

If a legitimate customer complaint is received or if the company has found a problem, a recall can be initiated more easily with the use of the described coding systems. If a recall is necessary, the product can be identified, accounted for in inventory, put on hold, and tracked to the customer until all products are accounted for and located. Arrangements should then be made to get products returned to the processing facility.

Safety, Shelf Life, and Sensibility

Food safety has received much attention in recent years. As new products and technologies are developed and consumers become more and more knowledgeable about food additives and treatments such as irradiation, food safety will become even more important. Most food safety issues can be handled easily if the manufacturer uses the proper manufacturing procedures and exercises common sense. Tamper-resistant closures might or might not be necessary, for example. Even food-borne diseases are minimized as a result of proper handling and care during the manufacturing process.

It is important that the product maintain its appearance, texture, and taste beyond the date on the package (if applicable). This is usually referred to as "shelf life" and is viewed by the consumer as the "fresh through" date. Once that date passes, the product is viewed as "old, stale, or deteriorated in quality." To ensure that the useful life of the product is as long as possible, you should have the product tested to determine the pH and water activity of the product for durability and to detect any changes in texture, appearance, taste, or smell over time. If anything goes wrong with the product, you probably will not hear it from the consumers, but they might tell everyone else!

Additives

Additives might be an unpleasant thought to you, but they do serve an important role in many products. Most additives can be used at little or no expense to the "natural" effect you may be trying to maintain. Additives can function as softeners, hardeners, thickeners, thinners, flavor enhancers, stabilizers, nutritive supplements, color enhancers, sweeteners, and/or preservatives. One or many may be used in any one product. In relation to shelf life of your particular product, a determination must be made concerning additives. It is acceptable to go "all natural," but doing so, however, may impose some restrictions on marketing because of the length of time the product maintains acceptable characteristics.

PACKAGING

Image

Once you are reasonably sure the product can be efficiently manufactured—resulting in a safe, quality product that meets a consumer need—the next step is to build an image for the product. Packaging is your eye-to-eye salesman in the store. If the package cannot sell that first unit, you're in trouble. It is important for your product to be the one product on the store aisle that screams out to the consumer, "Try me!" With several, perhaps dozens, of competitive products with yours on the shelf, the package must dominate the consumer's attention in some way.

As a test, walk down the store aisle where your product's competitors are or where your product will likely end up if you're able to get it into the store. What do you see? Look at the shapes of the packages, the colors used, the logos on the labels, the size of the packages, and the location (low or high on the shelf). Which one would you buy? Why? Hundreds of consumers are going to be making these same observations about your product and they are going to do it in a fraction of a second! The image you create for your product is extremely important to the success of your company.

Labeling

Just as in processing, there are regulations in packaging. The wording on labels must conform to regulations defining type size, listing ingredients, and positioning of prominent information, such as net weight.

Guidelines for minimum labeling requirements are established. The laws that govern package labeling, however, are complex, confusing, and subject to change; it is always best to have labels reviewed by a professional before incurring expenses for labels.

1. The label must have the common and usual name of the food (for example, blueberry jelly, French onion dip). If there is no common or usual name, the food must be appropriately described (for example, sunflower seed soup).

2. Ingredients must be listed by common and usual name in descending order of predominance by weight. Standardized ingredients must be listed. For example, if catsup were used in the formulation, it would be listed in the appropriate order in the ingredient statement, followed by its ingredients in parenthesis.

3. The label must state the name and place of business of the manufacturer, packer, or distributor. If the firm's name and address are listed in a current city or telephone directory, the place of business does not have to include a street address or box number but must include the ZIP code (for example, Oktibbeha County Processors, Starkville, MS 39759).

4. The quantity of the contents must be conspicuously stated in the lower third of the primary display panel of the label. Type size must be easy to read and established in relation to the size of the principal display panel. The line of type must be generally parallel to the package base and should be no less than 1/16 of an inch high.

5. If the product is filled into the container by weight, net weight is stated and must also be declared in metric measure, for example, 12 oz (340.2 g).

6. If the product is filled into the container by fluid ounces, fluid ounces must be stated and must also be declared in metric measure, for example, 12 fl oz (335 ml).

"Nutrition Facts" must be printed on most food products. Some food manufacturers are exempt under the small business exemption amendment. For food products introduced into interstate commerce, an exemption may be claimed if the manufacturer employed fewer than an average of 100 full-time employees and sold fewer than 100,000 units of the product in the United States during the 12-month period before the time for which an exemption is claimed (or, if not previously sold, anticipates meeting these criteria during the period). If these criteria are ever exceeded, the small business exemption expires 18 months later.

Small domestic manufacturers with fewer than 10 full-time employee equivalents and fewer than 10,000 units of any food product sold annually are exempt from the nutritional labeling regulations and the notification requirement.

A food manufacturer claiming exemption generally must notify the Office of Food Labeling (HFS-150), Center for Food Safety and Applied Nutrition, Food and Drug Administration, 200 C Street, SW, Washington, DC 20204. You may contact the Food and Fiber Center at Mississippi State for a copy of the exemption notice form, or, you can visit the Web site **www.cfsan.fda.gov/~dms/sbel.html**.

If your food product is not exempt and requires a "Nutrition Facts" panel, there are a number of laboratories that perform nutritional analyses. Appendix D provides a list of some of the laboratories that provide this service and information for the "Nutrition Facts" for your label. For products regulated by the USDA, different regulations apply to labeling and inspection.

Hundreds of companies specialize in designing and printing labels. Appendix E contains a list of some companies that have been used by Mississippi entrepreneurs. This is not a recommendations list but a starting point for your consideration as these needs arise. You may need several discussions before you finalize your label, so it is important you select professionals for your label design and printing. For more detailed labeling information, visit **www.cfsan.fda.gov/~dms/lab-ind.html** or contact the Food and Fiber Center.

Patents and Trademarks

The question of trademarks and patents always comes up when there are discussions about packaging. As a general rule, there is no valid reason to try to protect a food recipe, since any food scientist or chemist can duplicate one with accuracy in a limited time and only slight changes are necessary to create a different product. (If you have the Coke Classic TM recipe, that's a different story!) Trademarks are a good idea because you have no idea at the beginning how much of an impact your product will have on the marketplace, and you do not want to get tied up fighting someone over a product name or design while sales are increasing rapidly. Be aware, though, that trademarks protect the name or symbols (logos) only. This prevents someone from using an identical or similar name or symbol that causes confusion between the products in question. General information on patents and trademarks is available from the U.S. Department of Commerce, Patent and Trademark Office in Washington DC. A hotline number to call to request this information is 800-786-9199. You also can visit the Web site **www.uspto.gov/**.

Liability

Product liability insurance is a must for anyone engaged in the business of processing food products for sale to the public. Consumer complaints or lawsuits resulting from problems with the end product will ultimately be traced back to the manufacturer for reparation. Food and Fiber Center specialists recommend a minimum of $1 million in coverage. Product liability insurance is usually written as a rider to your regular insurance policy. Start with your local insurance provider in seeking coverage. If your insurance provider does not offer product liability simply check with another insurance agent until you locate a company that offers the coverage. Be sure to shop around for the best price.

Bar Coding (UPC)

The Uniform Product Code (UPC) has become a must on the label because most checkout counters now use the scanning machinery. This is especially true if you are considering grocery chains as a target market. Call the Uniform Code Council in Dayton, Ohio, at 937-435-3870 or visit the Web site at **www.uc-council.org/** to request a brochure and application for the UPC symbol.

Case Counts

Another consideration in packaging is case packs. Grocery chains and distributors purchase products by the case, which consists of individual packages in a larger container. The case (shipper) should be designed to protect the product (and unit packages) from damage from the point of manufacture to the point of display at retail or to the point of use by the consumer. The number of packages in a case is referred to as units per case or 12 ct. (count), 24 ct., etc. Some companies use the case container as another advertising medium and print the company logo on it; however, for smaller companies this may not be economically feasible. It is necessary to recognize the shipper as an additional cost item. A list of manufacturers of corrugated shippers, as well as glass, plastic, and paperboard packages, can be found in Appendix F.

PRODUCT PRICING

Gross Margins and Markups

A frequently asked question by those investigating the possibilities of a new business startup includes "How do I price my product to make sure I'm making a good profit?" Of course, even a question of this type raises additional questions such as, "What is meant by a 'good' profit?" Can the product even be sold at a price that results in profit? Once some consideration has been given to costs and prices of competing products, the question of price necessarily must be addressed.

Until this point, this publication has been covering topics that generally apply to all manufacturers. Now analyze your product costs in detail to determine pricing that is acceptable to the consumer while providing a reasonable profit to you. Some additional study on your own may be necessary if terms—such as profit, gross margin, and markup—seem unusually strange to you. With the following examples you should gain some understanding of how these concepts work together in a business environment. The old adage "buy low, sell high" still holds. The question to address is "how high?"

There is more than a little confusion about the issue of profit and the impact that product pricing has on profit. If you have more than one product, each product in the company's product mix should be treated as a "profit center," i.e., calculate its contribution toward covering operating costs and determine its value in the mix of products.

Selling Price Determination

The essence of this discussion is not to define gross margin and markup, but to help determine what the selling price of the product should be to return a certain percent gross margin. Gross margin is sometimes called "gross profit" and is defined in dollar terms as:

Sales in dollars less cost of goods sold in dollars, where cost of goods sold includes those costs that vary with the number of units of product sold. The costs that directly affect the production process include ingredients, direct labor, packaging, and other variable costs. Fixed costs, those that you have to pay whether or not you manufacture a product, are categorized as overhead costs. These costs include, among others, depreciation, insurance, rent, taxes, and interest. Remember—The gross margin is the amount available to pay fixed costs and return a profit.

The formula for calculating selling price requires that costs be known and a desired gross margin percentage can be identified.

$$\text{Selling price} = \frac{\text{Cost of goods sold}}{\text{100 \% - \% gross margin desired}}$$

As an example, for a desired gross margin of 40 percent and cost of goods sold of $1.50 per unit of product, the formula would be:

$$\text{Selling price} = \frac{\$1.50}{\$1.00\text{-}.40} = \frac{\$1.50}{.60} = \$2.50$$

PROFITS AND BREAK-EVEN ANALYSIS

One of the most pressing issues in considering whether or not to add a product to an existing line (or to begin manufacture of a new product) is how to determine if that product will be profitable. A satisfactory solution is at best a complex process, but there is a simplified method used to eliminate some product alternatives or to select others for further consideration. This method is called a "break-even analysis."

Defined in its simplest form, the break-even point is the point at which sales (revenues) are exactly equal to costs (expenses). At this point, zero profit is made and zero losses are incurred. Even this approach is extremely helpful in that the number of units of a product or the dollar amount of sales necessary to cover all costs is determined. This makes it possible to determine how much of a product you'll have to sell in order to cover your costs.

The basic equation used for determining the break-even point is

Sales = variable expenses + fixed expenses + profit

Since profit is defined as zero at the break-even point, sales must, by definition, be equal to total expenses. or example, let X represent the number of units to be sold to break even (zero profit). Suppose further, that the cost per unit of X is $.35, the selling price per unit is $.75, and there is a fixed cost of $100 to manufacture product X. How many units of X must be sold to break even? Going back to the equation and listing the known values results in

$$.75X = .35X + 100 + 0$$

$$.75X - .35X = 100$$

$$.40X = 100$$

$$X = 250$$

In this case, 250 units of X must be sold to cover all costs. In dollar terms, the break-even point is $187.50 in sales of product X (250 units @ $.75 per unit).

Using the same example, suppose a profit of 20 percent of sales is wanted. What effect would this have on the break-even volume? Since profit is defined as a percentage of sales, the initial equation changes to include the profit calculation:

$$.75X = .35X + 100 + .20(.75X),$$

where .20(.75X) is the profit term, since profit is defined as 20 percent of sales ($.75 per unit times the number of units). The equation then becomes:

$$.75X - .35X - .15X = 100$$

$$.25X = 100$$

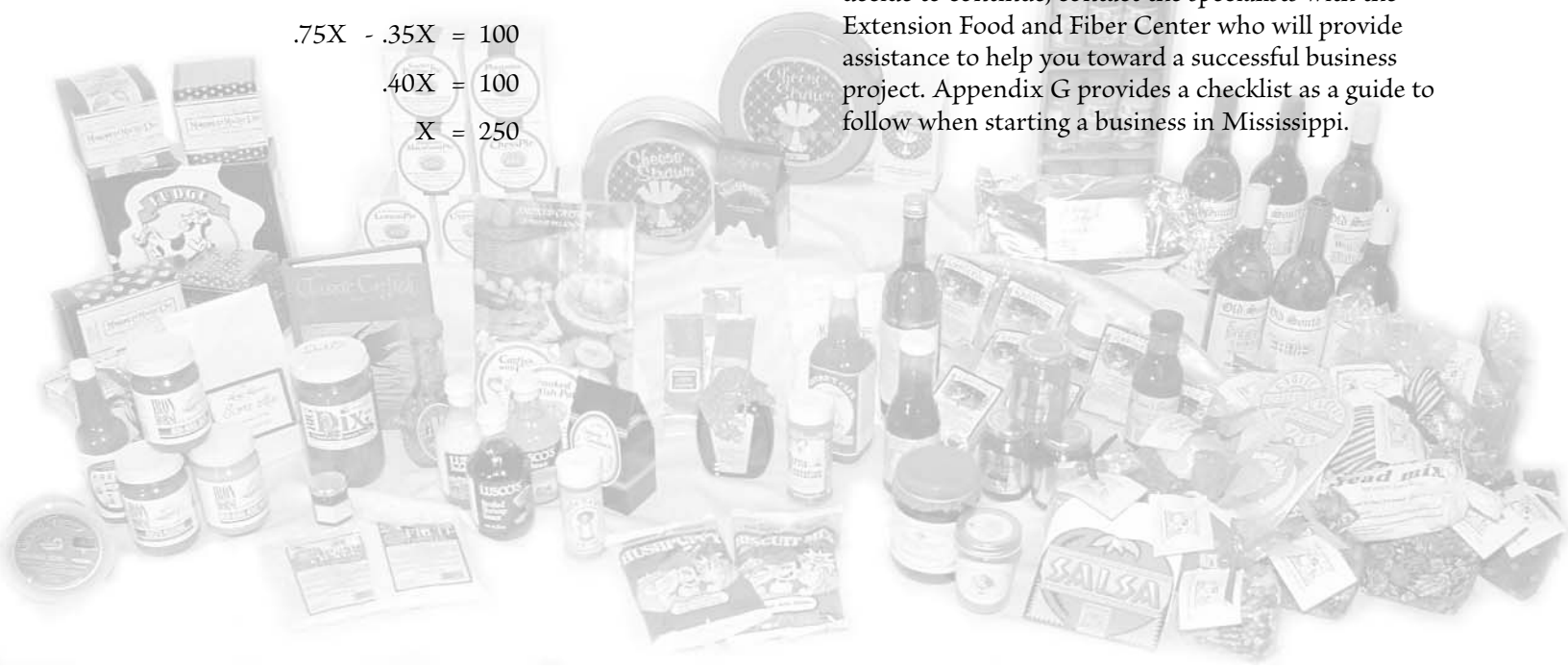
$$X = 400$$

To cover all costs associated with Product X and to make a 20-percent profit on sales, 400 units must be sold. Total sales volume in dollars in this case will now be $300 (400 x $.75=$300).

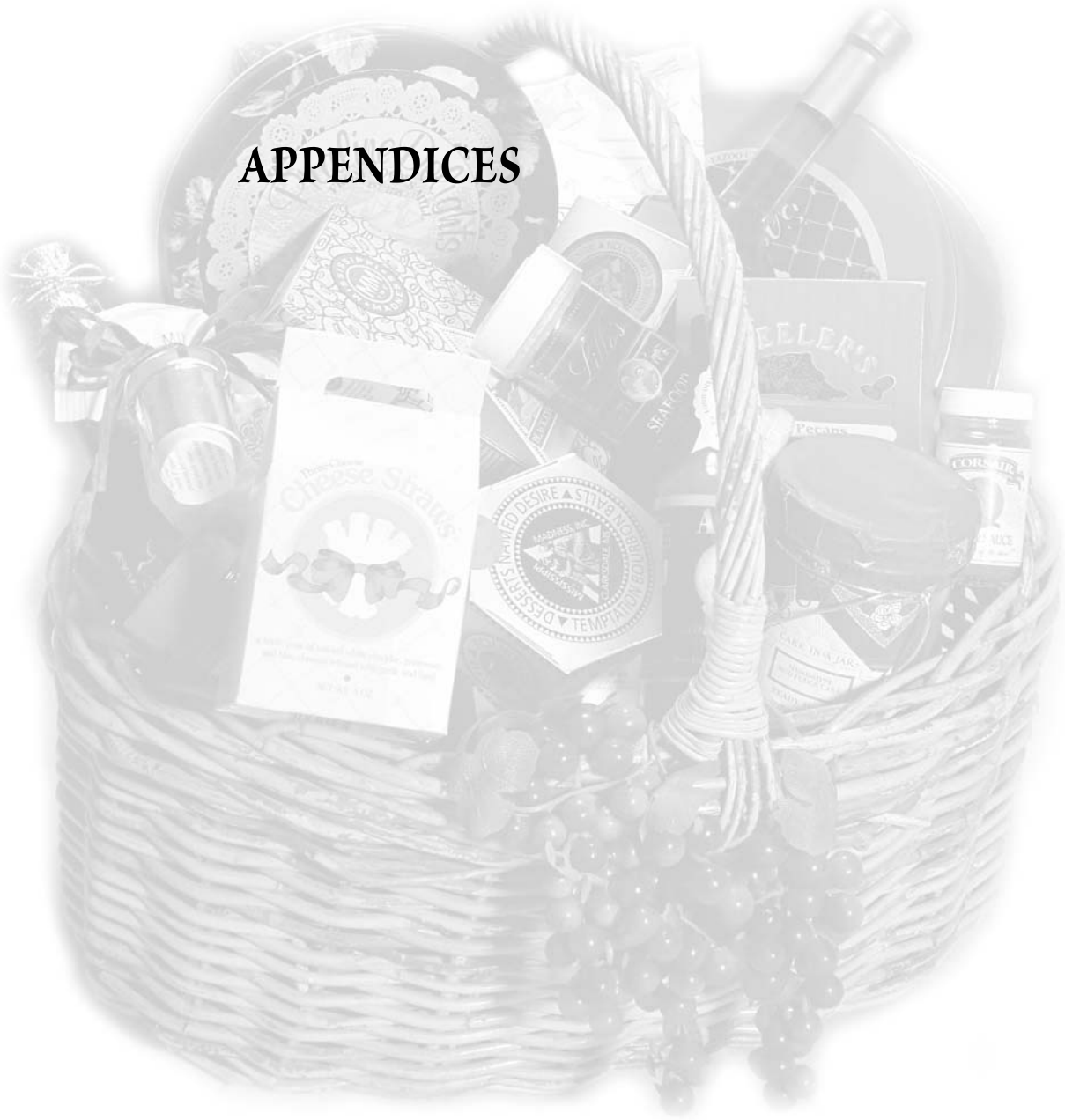
About now you're possibly saying, "Wait a minute. I don't understand this economics stuff." That's okay; specialists with the Food and Fiber Center will provide you with a worksheet at the appropriate time and will help you develop the "cash flow" you'll need if you decide to pursue your idea.

CONCLUSION

Now that you know a little more about what you're in for, what are you going to do? If you've decided to abandon the whole project, that is understandable. Maybe your next idea will be a better one for you. If you decide to continue, contact the specialists with the Extension Food and Fiber Center who will provide assistance to help you toward a successful business project. Appendix G provides a checklist as a guide to follow when starting a business in Mississippi.



APPENDICES



Appendix A

Mississippi Small Business Development Centers

MSBDC State Office
Walter D. "Doug" Gurley, Jr., State Director
P.O. Box 1848
B-19 Jeanette Phillips Drive
University, Mississippi 38677-1848
Phone: 800-725-7232 or 662-915-5001
Fax: 662-915-5650
E-mail: msbdc@olemiss.edu
www.olemiss.edu/depts/mssbdc

Appendix B

Mississippi Development Authority Regional Offices

District 1
Northwest Regional Office
522 West Park Village, Suite O (38930)
Post Office Box 32
Greenwood, MS 38935-0032
Phone: 662-455-4508
Fax: 662-455-7903

Frank Short, Regional Office Manager
Dorothy Henson, Regional Development Specialist
Lisa Brinkley, Regional Development Specialist
Larry Young, Regional Development Specialist

Serving: Attala, Bolivar, Carroll, Coahoma, DeSoto, Grenada, Holmes, Humphreys, Issaquena, Leflore, Montgomery, Panola, Quitman, Sharkey, Sunflower, Tallahatchie, Tate, Tunica, Washington and Yalobusha Counties

District 2
Northeast Regional Office
330 West Jefferson (38801)
Post Office Box 1606
Tupelo, MS 38802
Phone: 662-844-5413
Fax: 662-842-3667

Bill Mobley, Regional Office Manager
Mike Armour, ARC - Director
Sam Agnew, Regional Development Specialist
Danny Liles, Regional Development Specialist
Pat Lewis, Regional Development Specialist

Serving: Alcorn, Benton, Calhoun, Chickasaw, Itawamba, Lafayette, Lee, Marshall, Monroe, Pontotoc, Prentiss, Tippah, Tishomingo and Union Counties

District 3
West Central Regional Office
501 North West Street
Woolfolk Building (39201)
Post Office Box 849
Jackson, MS 39205
Phone: 601-359-2457
Fax: 601-359-2314

Sonny Thomas, Regional Development Specialist

Serving: Copiah, Hinds, Madison, Rankin, Simpson, Warren and Yazoo Counties

District 4
East Central Regional Office
2401 11th Street (39301)
Post Office Box 4398
Meridian, MS 39304
Phone: 601-692-2006
Fax: 601-484-2579

Mitchell Howard, Regional Office Manager
Gerald Mills, Regional Development Specialist
Sharon Chalk, Regional Development Specialist

Serving: Choctaw, Clarke, Clay, Jasper, Kemper, Lauderdale, Leake, Lowndes, Neshoba, Newton, Noxubee, Oktibbeha, Scott, Smith, Webster and Winston Counties

District 5
Southwest Regional Office
Southwest Mississippi Community College
Brumfield Building
Post Office Box 728
Summit, MS 39666-0728
Phone: 601-276-3089
Fax: 601-276-3870

Paul Walker, Regional Office Manager
Chuck Nelms, Regional Development Specialist

Serving: Adams, Amite, Claiborne, Franklin, Jefferson, Lawrence, Lincoln, Pike, Walthall and Wilkinson Counties

District 6
Southeast Regional Office
420 West Pine Street
Post Office Box 1287
Hattiesburg, MS 39403-1287
Phone: 601-545-4001
Fax: 601-545-4006

Angie Cognevich, Regional Office Manager

Serving: Covington, Forrest, Greene, Jefferson Davis, Jones, Lamar, Marion, Perry and Wayne Counties

District 7
Gulf Coast Regional Office
1636 Popps Ferry Road, Suite 203
Biloxi, MS 39532
Phone: 228-396-5518
Fax: 228-392-0940

Bill Webb, Regional Office Manager
Robert Williams, Regional Development Specialist

Serving: Hancock, Harrison, Jackson, George, Pearl River and Stone Counties

Appendix C

Mississippi State Department of Health Districts and Supervising Environmentalists' Offices

District	Counties			District Office
I	Coahoma DeSoto Grenada	Panola Quitman Tallahatchie	Tate Tunica Yalobusha	240 Tower Drive Batesville, MS 38606 Phone: 662-563-5603
II	Alcorn Benton Itawamba Lafayette	Lee Marshall Pontotoc Prentiss	Tippah Tishomingo Union	532 S. Church P.O. Box 199 Tupelo, MS 38802 Phone: 662-841-9015
III	Attala Bolivar Carroll	Holmes Humphreys Leflore	Montgomery Sunflower Washington	701 Yalobusha Street Greenwood, MS 38930 Phone: 662-453-4563
IV	Calhoun Chickasaw Choctaw Clay	Lowndes Monroe Noxubee Oktibbeha	Webster Winston	732 Whitfield Street Starkville, MS 39759 Phone: 662-323-7313
V	Claiborne Copiah Hinds Issaquena	Madison Rankin Sharkey Simpson	Warren Yazoo	5963 I-55N P.O. Box 1700 Jackson, MS 39215 Phone: 601-978-7864
VI	Clarke Jasper Kemper	Lauderdale Leake Neshoba	Newton Scott Smith	3128 Eighth Street P.O. Box 5464 Meridian, MS 39301 Phone: 601-482-3171
VII	Adams Amite Franklin	Jefferson Lawrence Lincoln	Pike Walthall Wilkinson	205 N. Front Street P.O. Box 788 McComb, MS 39648 Phone: 601-684-9411
VIII	Covington Forrest Greene	Jefferson Davis Jones Lamar	Marion Perry Wayne	602 Adeline Street Hattiesburg, MS 39401 Phone: 601-544-6766
IX	George Hancock	Harrison Jackson	Pearl River Stone	15151 Community Road P.O. Box 3749 Gulfport, MS 39505 Phone: 228-863-1036

Appendix D

Analytical Testing Labs for Nutritional Analysis/Labels

ABC Research Corporation
3437 SW 24th Ave.
Gainesville, FL 32607
Phone: 352-372-0436
Fax: 352-378-6483
Contact: Kathy Barry
E-mail: KathyB@abcr.com
www.abcr.com

Anresco, Inc.
1370 Van Dyke Ave.
San Francisco, CA 94124
Phone: 800-359-0920 or 415-822-1100
Fax: 415-822-6615
Contact: Jim Bell
E-mail: jimbell@anresco.com
www.anresco.com

Central Analytical Laboratory
2315 N. Causeway Boulevard
Metairie, LA 70001
Phone: 504-297-3400
Fax: 504-297-3410
Contact: John Reuther
E-mail: jreuther@centralanalytical.com
www.centralanalytical.com

Eurofins Scientific Laboratories, Inc.
345 Adams Ave.
Memphis, TN 38103
Phone: 901-521-4500
Fax: 901-521-4510
Contact: Shellie Barber
E-mail: info@eurofins.com
www.eurofins.com

Mississippi State Chemical Laboratory
P.O. Box CR
Miss. State, MS 39762
Phone: 662-325-3324
Fax: 662-325-7807
Contact: Reba Ingram
E-mail: reba@ra.msstate.edu
www.mscl.msstate.edu

NPAL Analytical Laboratories
Nestle Purina Company
Checkerboard Square
St. Louis, MO 63164
Phone: 314-982-2806 or 800-423-6832
Fax: 314-982-1078
Contact: Kathryn Phillips
E-mail: NPAL@purina.com
www.NPAL.com

Silliker Laboratories of Georgia
2169 West Park Ct, Ste G
Stone Mountain, GA 30087
Phone: 770-469-2701 or 708-957-7878
Fax: 770-469-2883
www.silliker.com

Standard Laboratory
303 Hogan Street
Starkville, MS 39759
Phone: 662-323-1611
Fax: 662-323-1611
Contact: Noel Hall

Appendix E

Label Companies — Design and Printing

Bemis Company, Inc. (printing on bags)
1401 West Third Avenue
Crossett, AR 71635-2599
Phone: 800-643-1552 or 870-364-1000
Fax: 870-364-1080
www.bemispaper.com

Bunzl Distribution USA
3525 Schneidman Road
Paducah, KY 42003
Phone: 800-626-3956 or 270-442-6371
Fax: 270-442-6131
www.bunzldistribution.com

Graphic Reproductions
250 Highpoint Drive
Ridgeland, MS 39157
Phone: (601)-899-8799
Fax: (601)-899-8575
www.graphicreproductions.net

Greco Printing Company
217 Main St
P.O. Box 177
Greenville, MS 38702
Phone: 662-378-2924
Fax: 662-378-2934

Hederman Brothers Printers
500 Steed Road
P.O. Box 6100
Ridgeland, MS 39158
Phone: 800-444-7301 or 601-853-7300
Fax: 601-853-7335
www.hederman.com

Innovex, Inc.
210 Lake Lowndes Road
Columbus, MS 39702-8854
Phone: 662-328-9537
Fax: 662-329-2927
Contact: Todd Brando
E-mail: tbrandon1@bellsouth.net
www.innovex100.com

K2 Graphic Services
(Photography & Printing)
215 NW 16th St.
Pompano Beach, FL 33060
Phone: 800-480-8650
Fax: 954-786-9313
E-mail: sales@k2graphicservices.com
www.k2graphicservices.com

Label Express, Inc.
100 Quality Lane
P.O. Box 489
Verona, MS 38879
Phone: 800-525-4354 or 662-566-7075
Fax: 800-238-4670
E-mail: info@labelexpress.net
www.labelexpress.net

Magnolia Label Company
7380 I-55 South
Byram, MS 39722
P.O. Box 7385
Jackson, MS 39282
Phone: 800-533-6309 or 601-372-5365
Fax: 601-371-8283
E-mail: maglabel@netdoor.com

McCowat-Mercer Press, Inc.
202 Riverside Dr.
P.O. Box 818
Jackson, TN 38302-0818
Phone: 800-489-3376 or (731)-427-3376
Fax: (731)-426-7679
E-mail: service@mccowat-mercer.com

Mississippi Printing Company
Rt. 1, Box 483E Airbase Road
Greenwood, MS 38930
Phone: 800-880-6477 or 662-453-8058
Fax: 662-453-8055
E-mail: sales@mississippiprinting.com
www.mississippiprinting.com

Quality Printing Company
226 South Gallatin Street
Jackson, MS 39203
Phone: 800-843-1135 or 601-353-9663
Fax: 601-960-3662
www.qualityprinting.com

Screen Graphics, Inc.
285 Union Avenue
Memphis, TN 38103
Phone: 901-527-9400
Fax: 901-521-8270
www.cclind.com/index_label.html

Wayne County News
713 Lomax Drive
P.O. Box 509
Waynesboro, MS 39367
Phone: 601-735-4341
Fax: 601-735-1111
E-mail: publisher@thewaynecountynews.com

Design Companies

Brain Storm Creative Group
2323 17th St. (39301)
P.O. Box 5751
Meridian, MS 39302
Phone: 601-693-4833
Fax: 601-693-1336
www.brainstorminc.tv

Godwin Group
P.O. Box 531
Jackson, MS 39205
Phone: 800-280-5711 or 601-355-4900
Fax: 601-960-5869
E-mail: dmitchell@godwin.com
www.godwin.com

Graphic Packaging International
Clinton Industrial Park
Clinton, MS 39056
Phone: 601-925-4500

Hammons & Assoc. Advertising, Inc.
213 Fulton St.
P.O. Box 1999
Greenwood, MS 38930
Phone: 662-453-7078
Fax: 662-453-7222
E-mail: hilda@hammons.com
www.hammons.com

Maris West & Baker, Inc.
18 Northtown Dr.
Jackson, MS 39211
Phone: 601-977-9200
Fax: 601-977-9257
E-mail: dkimball@mwb.com
www.mwb.com

Owen Advertising Studio
1009 Cedar Hill Dr.
Jackson, MS 39206
Phone: 601-362-7713

Performance Paperboard, Inc.
P.O. Box 776
Ridgeland, MS 39158
Phone: 601-856-3939
Fax: 601-856-3979

Screen Graphics, Inc.
285 Union Avenue
Memphis, TN 38103
Phone: 901-527-9400
Fax: 901-521-8270
www.cclind.com/index_label.html

Appendix F

Container Companies

Arkansas Container Company
P.O. Box 1717
Jonesboro, AR 72403
Phone: 800-527-4527
Fax: 870-268-6213
E-mail: agcquality@agcc.com
www.agcc.com

Berlin Packaging
435 E Algonquin Road
Arlington Heights, IL 60005
Phone: 800-423-7546 or 800-4-BERLIN
Fax: 800-423-7545
www.berlinpackaging.com

Berry Plastics
P.O. Box 959
Evansville, IN 47706-0959
Phone: 812-429-9522
Fax: 812-424-0128
www.berryplastics.com

Pressware International, Inc.
P.O. Box 28147
2120 Westbelt Drive
Columbus, OH 43228-0147
Phone: 800-476-4300 or 614-771-5400
www.pactiv.com

Richards Packaging
4721 Burbank Rd., Ste 21
Memphis, TN 38118
Phone: 901-360-1121
Fax: 901-360-0050
Contact: Karen Downing
E-mail: info@richardspackaging.com
www.richardspackaging.com

Tricorbraun
500 Edwards Avenue, Ste D
Harahan, LA 70123
Phone: 504-733-9293
Fax: 504-734-7091
E-mail: no@tricorbraun.com
www.tricorbraun.com

Tricorbraun
4995 Outland Center Dr., Ste 106
Memphis, TN 38118
Phone: 800-325-7149 or 901-362-8000
Fax: 901-366-1910
www.tricorbraun.com

Ultra Pac, Inc.
21925 Ind. Blvd.
Rogers, MN 55374
Phone: 800-999-9001 or 612-428-8340
Fax: 612-428-3462
www.ultrapac.com

US Can Company
98 Amlajack Boulevard
Newnan, GA 30265
Phone: 800-423-2637 or 678-423-2801
Fax: 770-254-0302
E-mail: generalsales@uscanco.com
www.uscanco.com

Appendix G

Checklist For Starting A Small Business In Mississippi

There are many issues to consider when you are thinking about starting a new business. Once the decision has been made to start a small business, use the following checklist as a guide as you go through the planning process in Mississippi:

- ❑ Request a Mississippi Entrepreneur's Tool Kit from the Mississippi Development Authority, 601-359-3593, or www.mississippi.org, or access it electronically through the Mississippi State University Extension Service Web site **www.msucares.com/business_assistance**.

- ❑ Request a copy of Mississippi Reporting Requirements for Small Businesses from the Mississippi Development Authority, 601-359-3593 or www.mississippi.org, or access it electronically through the Mississippi State University Extension Service Web site **www.msucares.com/business_assistance**.

- ❑ Check local zoning regulations with city/county officials. When applicable (such as a home-based business) also check neighborhood covenants.

- ❑ Choose a name (and logo, if desired) for the business. To protect the name and logo in Mississippi, complete an Application To Register a Trade Mark (Form F0023), which can be obtained from the Mississippi Secretary of State by calling 601-359-1633 or Online at **www.sos.state.ms.us**. U.S. Patent and Trademark Office handles federal trademark registrations. For additional information and an application form, call the U.S. Patent and Trademark Office at 800-786-9199 or Online at **www.uspto.gov**.

- ❑ Decide on the form of business ownership (sole pro prietorship, partnership, or corporation). In order to be incorporated, articles of incorporation must be filed with the Mississippi Secretary of State, 601-359-1633 or www.sos.state.ms.us. Register with the Mississippi Secretary of State if the business is a limited liability company (LLC).

- ❑ Obtain a local business permit or privilege license from city/county officials.

- ❑ Obtain any special licenses and permits that some businesses may require. You may need to meet additional regulations, as well (examples: ventures that handle or process food; child care centers). Contact the Mississippi Secretary of State for information at 601-359-1633 or **www.sos.state.ms.us**.

- ❑ Contact the IRS to obtain a federal employer identification number or EIN. Call 800-829-3676 and request FORM SS-4 or go online at **www.irs.gov**. An EIN is required for all businesses with one employee or more.

- ❑ Complete a Mississippi Business Registration Application (FORM 70-001-00-1), which can be obtained from the Mississippi State Tax Commission, 601-923-7000 or **www.mstc.state.ms.us**.

- ❑ Purchase workers' compensation insurance (required if you have five or more employees.)

- ❑ Open a DBA (doing business as) bank account for the business.

- ❑ Check on needed insurance and/or bonding coverage for business. (Note: Many homeowners' policies will not cover home-based businesses.)

- ❑ Establish prices, fees, and business operation policies.

- ❑ Write a business plan.

- ❑ Secure financing, if needed.

- ❑ Obtain copies of IRS Publication 334 (Tax Guide for Small Business), IRS Publication 533 (Self-Employment Tax), and if business is home-based IRS Publication 587 (Business Use of Your Home) by calling the IRS at 800-829-3676 or electronically at **www.irs.gov**.

- ❑ Determine record keeping requirements and set up a bookkeeping system.

- ❑ If business is home-based, set up a work area in home and obtain an answering machine and/or a phone line for business.

- ❑ Obtain business cards, stationery, forms, etc.

- ❑ Do advertising and publicity.

- ❑ Start the business!

- ❑ Additional information for Mississippi small businesses may be accessed electronically through the Mississippi State University Extension Service at **www.msucares.com/business_assistance/homebusiness/index.html#pubs** or by calling 662-325-2160.

Prepared by **FOOD AND FIBER CENTER**, Mississippi State University Extension Service

Publication 2170

Extension Service of Mississippi State University, cooperating with U.S. Department of Agriculture. Published in furtherance of Acts of Congress, May 8 and June 30, 1914. JOE H. MCGILBERRY, Director (rev-250-12-04)