Getting Started in the Specialty Food Business

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Americans are consuming more than $13 billion of specialty foods a year, reports Frost and Sullivan, a New York marketing consultant group, in the completed study "Gourmet Foods in the U.S." This report cites a 20 percent per year increase in specialty food sales over the last four years. With such an explosion in popularity, it is no wonder that there has been a nationwide surge in entrepreneurship and the development of many regional food handling and processing companies. In 1989, a statewide group of cottage industries specializing in the manufacture of gourmet foods formed Georgia's *Specialty Food and Wine Association* [Ed. Note: now called the *Georgia Specialty Food Association* – see their website at *www.gourmetgeorgia.com/*] This association was established to provide a foundation for improving the promotion and marketing of specialty foods processed from Georgia's agricultural commodities.

The definition of a specialty food is somewhat vague according to the National Association for Specialty Food Trade. Typically, specialty foods are low-volume manufactured from the highest quality ingredients to produce a uniquely marketable product commanding a high price. Specialty foods include, but are not limited to, fancy jams, jellies, sauces, relishes, nut and bakery products, confections, fine wines, exotic cheeses, specialty meats (pates, sausages, smoked turkey, salmon) and assorted beverages (natural sodas, sparkling water and teas). Specialty foods are marketed by mail order and through gourmet food stores, gift shops and deli departments of chain stores.

Many specialty or gourmet foods are not really "new" products. Instead, they consist of variations or combinations of existing products found already on supermarket shelves. Many entrepreneurs are taking an existing product and repacking it with a new name and image (Vidalia onion relish). Others are improving the old version of a product with new packaging or a brand name (Southern-style barbecue sauce). Only a

few innovators are creating a completely new product that serves an unmet need of the consumer (pecan biscuits, surimi products and buffalo wings).

Consumers are attracted to specialty foods because they have the image of being "homemade" from natural ingredients and lacking preservatives. Much of the credit for their popularity is given to the postwar baby boomers and young professionals, who are often more affluent and have more sophisticated tastes due to extensive travel. They are more likely to experiment with exotic foods and purchase "fashionable" products.

Population demographics, such as an increase in Asian-American and Hispanic-American communities, affect the development and sale of ethnic specialty food products. The development of a specialty food business is a formidable task. Expensive research must be done to derive a suitable recipe for commercial production. This is followed by tests that have to consider shelf life as well as the cost of the product. Quality has to be balanced against profits, and the final decision is likely to be based on the market for which a food item is to be produced. To be a success, it is imperative that the food product be of high quality and fill a marketing niche.

Unfortunately, many entrepreneurs have little, if any, training or education related to food ingredients, processing technology, quality control/sanitation, packaging, regulations, equipment or, most important, marketing strategy. This publication provides basic information in these areas to assist those starting new food-related businesses. It is vital that specialty food manufacturers be successful because not only do they utilize a number of Georgia commodities, bringing additional revenue to farmers, but they strengthen local economies as well.

BASICS OF FOOD PRODUCT DEVELOPMENT

Developing a successful specialty food product is not easy, and the competitive environment of the future will make it more difficult. Entrepreneurs should follow these basic steps or stages in developing new products:

- idea stage
- development
- taste paneling
- consumer sampling
- shelf life studies
- packaging
- production
- test marketing
- commercialization.

The **idea stage** involves "cloud nine" dreaming and making every effort to determine what product or products the consumer will purchase and continue to purchase. The following questions need to be answered:

- Does the product satisfy a consumer need?
- Will it return a profit?
- Will it be acceptable to consumers, wholesalers and retailers alike?
- Is it unique?
- Does it provide a new service to customers?
- Do you have the production technology to develop the product?
- Do you have the marketing skills to sell the product?
- What products will it replace or compete against?

The **development stage** involves creation of the new product. Simply being a good cook will not ensure good products for commercial marketing. Food scientists are needed to solve shelf life and safety problems of new products. They address questions such as: Is the "browning reaction" (a chemical reaction between ingredients causing a brownish surface color) a problem and, if so, can it be solved? Is light a factor in product or quality deterioration? Can texture or mouth-feel be improved? Is rancidity a problem? Will bacteria, molds, yeasts or pathogens be a concern? These questions can be answered by food scientists with a good background in chemistry and microbiology.

The **taste panel stage** should run concurrently with formula or recipe development. Using sensory evaluation test forms, an experienced panel should check quality parameters such as color, texture, appearance and flavor at various stages of product formulation to distinguish good from undesirable traits.

The **consumer sampling stage** is often neglected by small food processors, but it can give valuable information about the product's potential success. Entrepreneurs should consider displaying their new products in shopping malls and grocery stores. Shoppers would be given a sample to taste and a questionnaire about the new product to fill out on-site. This sampling can sometimes be done with the product available for sale during the sampling period if the store will cooperate. Actual sales after tasting reinforce the questionnaire. For instance, if 100 people say they "will purchase" but only five purchase the product, there may be some question about the truthfulness of the answers.

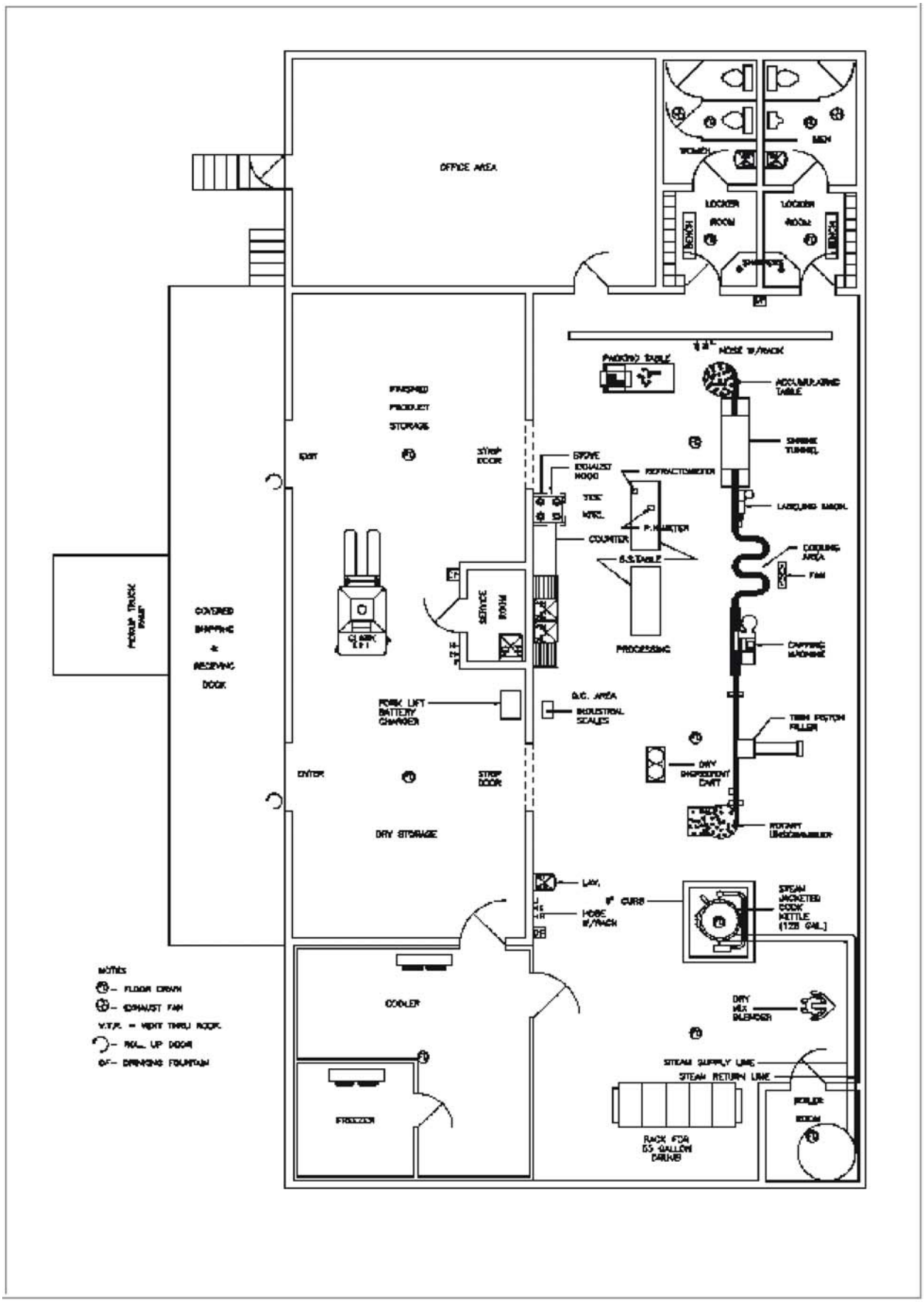

Figure 1. Blueprint of the floor plan for a commercial barbecue sauce manufacturing plant.

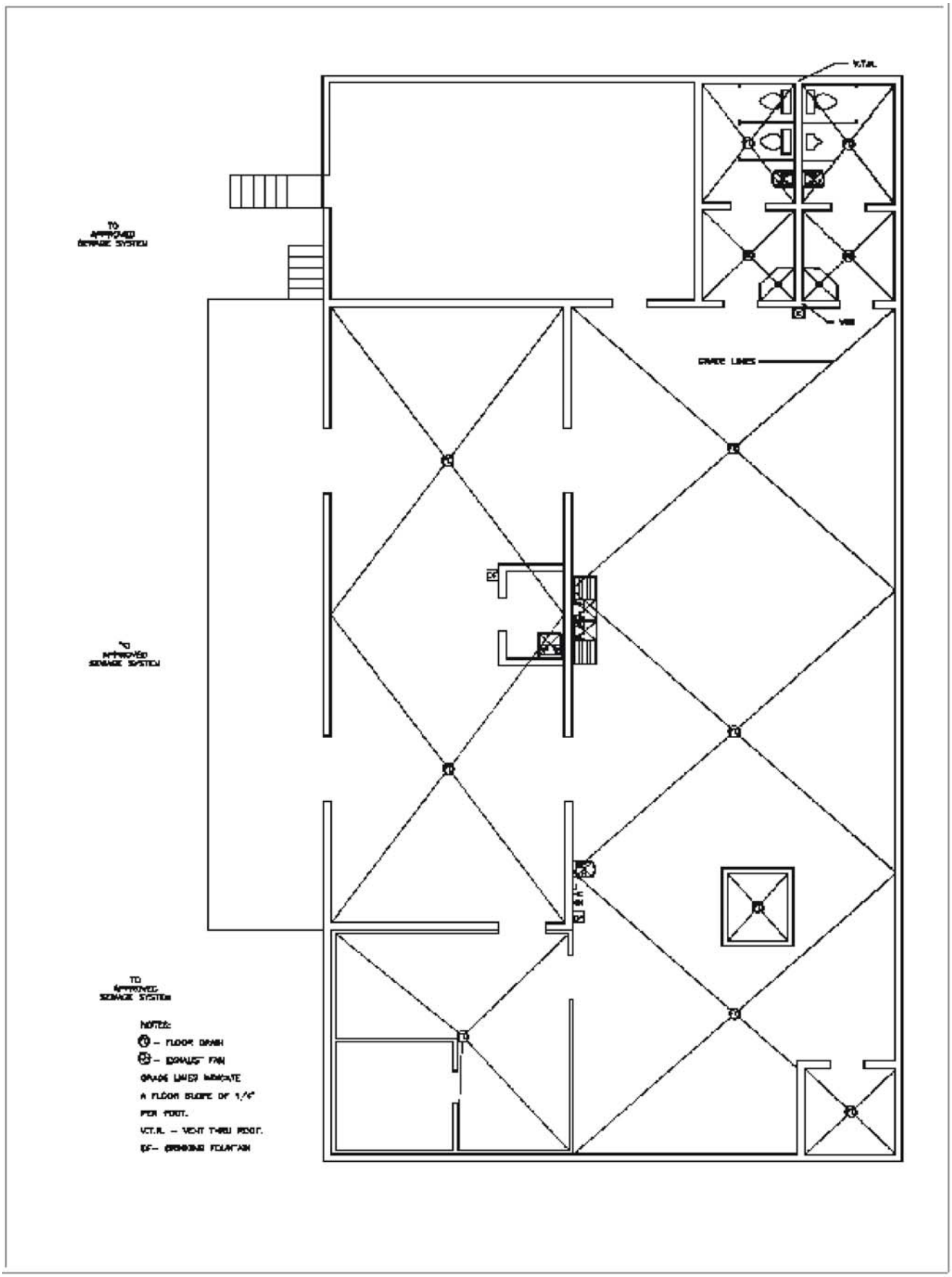

Figure 2. Blueprint of the plumbing plan for the barbecue sauce plant in Figure 1.

Commercial demand for the product should be evaluated to determine if sufficient volume can be produced and sold to make the venture economically feasible.

The **shelf life stage** is extremely important because a processor must know how long a new product will keep under a variety of temperatures and other environmental conditions. Shelf life loss may be due to chemical or microbial (bacteria, mold and yeasts) spoilage. Small firms normally have to contract with independent or consulting laboratories to have accelerated shelf life studies performed on new products. The studies are done by raising the temperature of the packaged product above normal storage conditions (110 to 120 degrees F). Although this is not as good as a prolonged shelf life study at normal temperatures (75 to 80 degrees F), it does give some indication of product shelf life. Lot codes for recall and product liability are based on these studies.

The **packaging stage** is especially important because the package often sells a new product. Consumers want colorful, attractive, conveniently packaged forms. Packaging should not impart flavor to the product or react chemically with the food. It should be resistant to tearing, lightweight and, most important, economical.

The **production stage** includes making plans for a production line to manufacture the product. Do not arrange a full-scale production line until after successfully test marketing a new product. Many entrepreneurs will have their products co-packed by an existing plant for test marketing. The production line should be set up according to a blueprint of its layout. Figures 1 and 2 show a barbecue sauce manufacturing plant. Keep in mind drainage, ventilation, waste disposal, lighting, equipment size and flow, energy conservation, safety, sanitation, ease of cleaning, storage area and compliance with government regulations. Processing controls must be established to ensure consistent quality during production as set forth by product standards (specifications). Likewise, quality control procedures must be developed to determine if the standards are being met during production and to know when to take corrective action to prevent economic losses due to deviations and to ensure product safety.

The **test marketing stage** for small processors involves introducing their new product into a limited area, such as a large metropolitan city. It is important to select a site with a population made up of many ethnic groups and income levels. If the product fails, another product can be tried. If the product succeeds, it is distributed in stages to progressively larger areas (statewide, regional, national).

The **commercialization stage** is the final step in determining the success or failure of a new product. Most small food companies sell mainly to the institutional trade, and if they sell to retail outlets, it is usually to privately owned stores or small chains. Larger chains will not take on a new food product unless it is heavily advertised by the company. The buyer for a large chain must be convinced that the product is good and that advertising exists.

For additional information on developing a marketing strategy for a new food product, contact your county Extension agent.

INGREDIENT FUNCTIONS AND SELECTION

The success of any new specialty product depends on the quality of its flavor, color and texture, its stability under various storage conditions and its safety. These factors are intimately related to the ingredients in the food product and to the physical processes and handling procedures to which it has been subjected. Often, additives may be needed to maintain or enhance product quality throughout and after processing.

What is a Food Additive?

A **food additive** is an ingredient that is added to foods to aid in processing, preservation or quality improvement. Additives should not be used to disguise faulty or inferior manufacturing processes or to conceal damage or spoilage; only the minimum amount of an additive necessary to achieve desired results should be used. Government regulatory agencies such as the FDA and USDA closely monitor the use and levels of additives in food products.

The safety of food additives is constantly being reviewed, so food processors must pay close attention to current regulatory statutes governing particular additives. Listed below are descriptions of the functional use of each group of food additives.

Acidulants are used to control tartness (by increasing the acidity) in fruit products and beverages, ensure proper gel formation in jams and jellies, and suppress bacterial and mold growth in baked goods and dairy products. Many organic acids (citric, fumaric, lactic) are used as acidulants.

Antioxidants are used to prevent or inhibit the oxygen in air from causing taste and odor changes in fatty foods. Approved antioxidants that are commonly used are butylated hydroxyanisole (BHA), butylated hydroxy-toluene (BHT), propyl gallate (PG),

ethoxyquim, and tertiary butylhydroquinone (TBHQ). Generally, no more than 0.02 percent by weight based on the fat content of the food is required. If an antioxidant is incorporated into the packaging material, no more than 50 parts per million (ppm) of the antioxidant is allowed to become part of the food.

Preservatives are chemical agents added to foods to prevent microbial growth and thus delay spoilage. Historically, natural preservatives, such as high levels of sugar, acid and salt, have prolonged the shelf life of jams and jellies, pickled vegetables, and cured meats, respectively. However, chemical preservatives, such as sodium benzoate, sorbic acid salts, and nitrites, are used to extend the shelf life of products that cannot be highly sugared, salted or acidified. A list of preservatives and their approximate limits of use in food products is shown in Table 1.

Colors are added to certain specialty foods to meet the expectation of the consumer in identifying the product (a grape-flavored drink is expected to be purple) or to enhance product color that may have been changed during processing or storage. There are two categories of color additives: certified and uncertified. Certified colors are synthetic dyes labeled (FD & C Red No. 40; FD & C Yellow No. 5) and manufactured to meet government specifications. Uncertified colors are usually naturally derived substances such as paprika, tumeric or saffron. Natural colorants may cost ten to two hundred times more than certified dyes and may have stabilization problems during product storage.

Emulsifiers permit the dispersion of tiny particles or globules of one liquid in another liquid. Under ordinary circumstances, oil and vinegar will not mix; but with the addition of an emulsifier, the ingredients will mix to form an emulsion. Emulsifiers stabilize the fat component in chocolate candy, give uniform volume to baked goods, and help disperse essential oils and flavors that would not otherwise be water soluble in relishes, pickles, beverages and candy products.

Flavoring agents are added to foods to create a desirable flavor, to supplement, modify or complement an existing flavor or to cover a less desirable flavor in a food product. These additives are available as condiments, spices, essential oils, extracts and single chemical substances. Flavor enhancers are substances that intensify or enhance the flavor of a food and are measured in parts per thousand. Flavor potentiators are potent flavor enhancers used in the parts per billion range. The most well known is monosodium glutamate (MSG), which is found in frozen meats or fish, dry soup mixes and oriental foods.

Stabilizers and thickeners provide smooth, uniform textures to food products. Small amounts of natural gums derived from tree exudates, seeds, roots and seaweed extracts are added commercially to many foods, and pectin and starch are used to process foods in the home. Stabilizers are added to milk with cocoa to prevent separation in chocolate milk. Stabilizers are added to frozen dairy desserts to increase viscosity and prevent graininess of texture. Pectin and starch are added to ensure consistent gel formation and thickness in jams, jellies and sauces.

Sequestering agents are used to set aside or segregate, in an inactive chemical form, metallic substances present in some foods. If not inactivated, these minerals will lead to discoloration, rancidity and textural breakdown in food products. The most common sequestrants are salts of EDTA (ethylenediamine-tetracetic acid). Humectants are used to keep moisture in certain foods. Glycerin, propylene glycol and sorbitol are the most commonly used humectants in the foods industry.

Humectants are used in the confectionery industry to prevent sugar crystallization and to provide a smooth, soft texture and moist, fresh taste.

Phosphates have many uses in the food industry. In beverages, they are used for acidification and for complexing minerals responsible for off-flavors or loss of carbonation. Phosphates are used as dough conditioners (they improve texture and volume) in the cereal industry. They stabilize ice cream and milk pudding emulsions. Phosphates are used as antioxidants and promote moisture-binding and tenderness in meat products.

Non-nutritive sweeteners are artificial sweeteners or sugar substitutes used in dietetic and low-calorie foods. Their unique chemical formulation gives them a sweetness potency several hundred times that of sucrose. Aspartame (*NutraSweet*®) is the most widely used high-potency sweetener in low-calorie foods and beverages today.

FOOD PROCESSING

Food preservation through processing is an extremely broad area in food science. Textbooks are written on each method of processing, including refrigeration, freezing, pasteurization, canning, fermentation, concentration, irradiation and dehydration. Only the essentials needed to acquaint one with product development are mentioned in this bulletin.

Table 1. Properties and use limits of common preservatives*

Agent	*Optimum pH*	*Target Organisms*	*Use Limits*
Sodium benzoate	2.5-4.0	yeasts and bacteria	not to exceed 0.1% by weight
Potassium sorbate	6.0 or less	molds and yeasts	not to exceed 0.1% by weight
Calcium propionate	5.0 or less	molds	not to exceed 0.3% by weight
Propyl parabens	7.0 or more	yeasts	not to exceed 0.1% by weight
Sulfites & Sulfur dioxide	4.5 or less	yeasts, molds and bacteria	depends on product
Nitrites & Nitrates	5.0-5.5	*Clostridium botulinium* spores	Nitrites: not above 200 ppm; Nitrates: not above 500 ppm

* Consult the *Code of Federal Regulations, Title 21*, for detailed information on the regulatory limits for specific food products.

Refrigeration

Mechanical refrigeration is the most common and cheapest method of preserving perishable foods. Ice is still used in addition to mechanical refrigeration to extend the shelf life of fish, seafood, poultry and some vegetables. A mechanical refrigeration system includes a closed piping system that contains refrigerant (ammonia or freon), a compressor and a condenser. Air circulation and humidity control must be regulated to achieve good product shelf life.

The use of **modified or controlled atmospheres** is a relatively new concept in food processing, whereby the atmospheric condition around the product is different from normal air. Most systems involve elevation of the CO2 levels and reduction in the O2 content in a room or package. Low storage temperature and package design as it relates to gas transmission rates are critical to the success of these systems.

Freezing

If done properly, freezing preserves foods without causing major changes in shape, size, color, texture and flavor. There are three broad methods of freezing foods commercially - in air, by indirect contact with a refrigerant and by immersion in a refrigerating medium. There are variants of each of these methods.

Air freezing, such as is used in home freezers, is the oldest and least costly method, using still air at temperatures in the range of -10 to -22 degrees F. Air blast freezers, used commercially, are operated at temperatures ranging from -22 to -50 degrees F and use rapid air flow. Consequently, air blast freezing is much quicker than air freezing.

Indirect contact freezing involves placing food on plates, trays or belts that are chilled by a circulating refrigerant and that put the product in direct contact with the cold wall but not the refrigerant itself.

Immersion freezing places the food or package directly in a refrigerating medium that can be sprayed onto the food or package. If the refrigerant comes into contact with unpackaged foods, it must be non-toxic, pure, clean, free of foreign taste, odor and color, and non-bleaching. Two broad classes of refrigerants are used for immersion freezing: liquids with a low freezing point (such as freon), and cryogenic liquids (such as compressed liquified nitrogen or carbon dioxide).

Commercial freezing operations require a high capital investment because of high equipment and energy costs.

Heating

Heating food destroys a large proportion of the microorganisms and natural enzymes that reduce shelf life. Heating will not completely sterilize a food product, so even if the food is protected from re-contamination, spoilage may eventually occur.

Blanching is a type of preservation used to inactivate most natural enzymes in fruits and vegetables by par-boiling or steaming. It is normally used before freezing and, depending on its severity, will reduce the load of microorganisms.

Pasteurization is a moderate heat treatment at temperatures below the boiling point of water. The main objectives in pasteurizing food are to destroy

pathogens and to extend shelf life. Batch pasteurization is used for liquid foods (such as milk) with mild agitation. The temperature is kept low (145 degrees F), for a treatment time of 30 minutes for milk. High temperature/short time pasteurization has largely replaced batch pasteurization for most liquid foods. As the name implies, temperatures are higher (161 degrees F) and times shorter (15 seconds) for milk.

Canning is a severe heat process using temperatures of 240 degrees F and above and is designed to render the packaged product shelf-stable. Canned foods are often considered to be sterile, but this is not true because not all bacterial spores are destroyed even at these temperatures. The shelf life of canned foods may vary from several months to several years. The exact temperature and time used for heating food depends on many factors, including the food's pH, viscosity, load of micro-organisms and possibility of bacterial spores. The processing time and temperature chosen for any product must be certified by the FDA before the product can be manufactured. The canning of low-acid foods (those with a pH greater than 4.6) requires a large capital investment.

Aseptic canning is the process of heating a liquid or semi-liquid food at a high temperature for a short time, cooling it in a sterile chamber and then packaging it in a sterile container under microbial-free conditions. The equipment and the operation are expensive.

Acid/acidified foods have a pH of 4.6 or less. Because of their natural acidity, these products can be processed at atmospheric temperatures (212 degrees F) or less, usually around 190 degrees F, and packaged while hot. Many fruits and their juices are processed in this manner. Sometimes, acids or acid foods are added to low-acid foods to yield products that have a final equilibrium pH of 4.6 or less. These foods are "acidified" and strict processing regulations have been established to ensure their safety. Relishes, most sauces and many pickled products are "acidified" and are popular items among specialty food processors.

Dehydration preserves foods by removing moisture. In dehydration, enough water is removed so that the final moisture content is one to five percent, making the food products shelf-stable. Hot air and freeze-drying are two common methods of dehydration. Freeze-drying is a form of vacuum dehydration in which the product is frozen and water is removed as vapor.

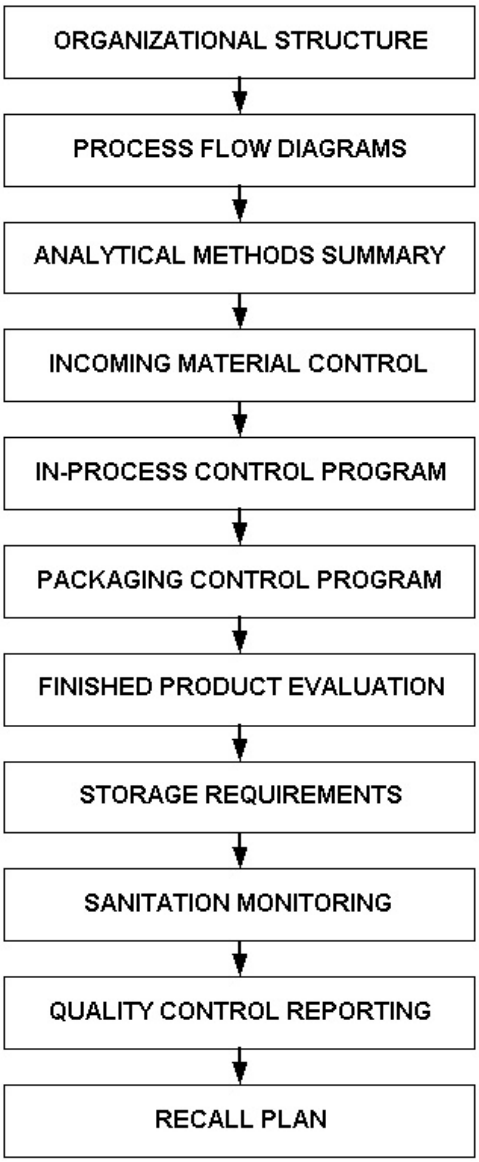

Figure 3. Key elements in designing plant quality control programs

Concentration is the method of preservation used to make jams, jellies, preserves and related products that are popular among specialty food producers. But achieving a quality product that jells properly is not always easy. The four essential ingredients for successful jelly manufacturing are fruit, pectin, acid and sugar. These ingredients must be present in the correct ratios to yield an acceptable jelled product. Some fruits, such as apples, have enough natural pectin to make a high-quality product. Others require added pectin for firming. Most processors add pectin to their formulations so they can use fully ripe fruit, reduce cooking time and increase yields. A sugar concentration of 67.5 percent solids and a pH of 3.1 are considered optimum for jelly manufacturing.

FERMENTATION

Fermentation is a very old method of preserving food in which more flavorful foods are produced from original products. Fermentation depends on proper microbiological activity. It is used to produce beer, wine, vinegar, cheese, sauerkraut and many spicy luncheon meats.

QUALITY CONTROL & SANITATION

Quality control is imperative to the successful development of any specialty food product. Eleven major steps that must be followed in developing a total quality control program for a specialty food operation are diagramed in Figure 3.

Figure 4. A HACCP systems approach to the production of Vidalia onion relish

FLOW PROCESS	HAZARD	DEGREE OF CONCERN *	CRITERIA FOR CONTROL	MONITOR & VERIFY	CORRECTIVE ACTION TAKEN
Raw Vegetables (Onion, Cabbage)					
RECEIVE	Incipient Spoilage	CCP 2	Reject marginal quality product	Visual Inspection	Change suppliers
↓					
COOL			Storage temp < 40°F	Record Temp	Lower thermostat
↓					
PEEL/CORE	Contamination from knives/ hands	CCP2	Sanitizing dips used	Observe personnel practices	Replenish sanitizer
↓					
RINSE			Chlorination of water	Utilize Chlorine test kit	Increase chlorine level
↓					
DICE	Slicer blade contamination	CCP2	Equipment cleaned	Observe cleaning/ sanitizing methods	Modify procedure
↓					
Vinegar Water / Sugar Spices	Dry ingredient contamination	CCP2	Approved vendor Proper dry storage	Require ingredient certification	Change vendors
↓ ↓					
MIX & BLEND	Kettle contamination Improper pH control	CCP1	Equipment sanitation, formulation pH < 4.5	Test acidity with pH meter	Reformulate product mix
↓					
COOK			Tem of 212°F reached for 10 mins.	Record temperature	Increase steam pressure
↓					
FILL	Glass jar contamination	CCP1	Jar cleaned before filling	Visual inspection	Remove from line
↓					
CAP	Post-process contamination	CCP2	Defect-free jars & caps	Vacuum seal evident	Re-cook if possible
↓					
STORE/DISTRIBUTE			Inventory, temp control	Case/Lot inspection	Disposal of spoilage

* CCP1 – Major Hazard requiring ABSOLUTE control to ensure food safety.
CCP2 – Minor hazard requiring frequent control to ensure shelf-life.

For a more detailed discussion of this subject, contact your county Extension agent.

Today's consumer perceives food safety as an integral component of food quality control. In addition to in-process procedures implemented to ensure consistent quality and meet product specifications, the specialty food processor must establish a food safety program to minimize health risks.

The first step in establishing such a program is a **Hazard Analysis and Critical Control Point (HACCP)** evaluation of the production process. HACCP techniques assess everything from raw ingredients to product packaging and distribution; defining the locations (critical control points) at which potential hazards (microbial, chemical and physical) may occur, and establishing a means of monitoring these points to eliminate these hazards.

Hazard analysis refers to any procedure that may pose an unacceptable health risk. A critical control point is the point in an operation at which preventive or control measures could eliminate, prevent or minimize the hazard.

Critical control points (CCPs) can be identified by a flow chart of the processing steps of the product. An HACCP evaluation of Vidalia Onion Relish is demonstrated in Figure 4. Further identification of CCPs is based on whether they are major - designated CCP1, or minor - designated CCP2, in terms of risk. Major (CCP1) requires complete elimination of the potential hazard to ensure food safety of the product. Minor (CCP2) requires hazard reduction to minimize the spoilage rate. In Figure 4, acidity control of the formulation mix is a CCP1 of Vidalia onion relish production. The pH must be uniformly maintained at less than 4.6 to ensure product safety. Continuous monitoring by sampling each batch for acidity level is necessary for absolute control. Likewise, glass jars should be inverted and cleaned to reduce the risk of glass slivers in the filled product. Less frequent monitoring by sampling is needed at CCP2 because of less severe health risks, but should be done routinely to ensure product quality and shelf life. Monitoring involves making visual observations, taking measurements, or collecting and testing samples. Results of monitoring should be recorded on quality control work-sheets. Immediate action must be taken whenever the process is out of control or the criteria for control (the product specifications) are not being met.

Sanitation in specialty food processing often determines the profit or loss of business. Sanitary monitoring is an important part of ensuring plant and equipment cleanliness. It may be accomplished by regular quantitative testing of equipment by means of microbiological surveys and qualitative testing of ingredients and products. Employee training programs on plant sanitation and personal hygiene help employees understand their role in producing a high-quality, safe product.

PACKAGING

Food packaging protects the food from the surrounding environment, thus preventing contamination, damage and deterioration. Today, convenience is a major factor in packaging. The food package also plays a crucial role in communication. In the marketing of new products, packaging conveys the nature of the food and directions for its use and it attracts and persuades the buyer. Color coordination, artistic design, ingredient labeling, portion size and safety all influence a consumer's decision to buy.

LABELS

Food labeling was originally designed by the government to protect consumers from fraud. Recent surveys indicate that consumers use labels to identify and avoid perceived health hazards rather than to seek and obtain benefits (does the product contain preservatives, fat, cholesterol?). A label consists of the "principal display panel" used to attract consumers, and the "information panel" placed immediately to the right of the principal display panel. To comply with federal and state government regulations, information on food labels is either mandatory on all food products, pro-vided voluntarily and worded according to regulation, or optional information. Each of these categories is summarized in Table 2. For more detailed information on food labeling, contact your county Extension agent.

Table 2. Food Labeling Requirements

MANDATORY	MANDATORY WORDING	OPTIONAL
Statement of liability Net quantity declaration Name/address of manufacturer Ingredient listing Manufacturing code	Nutritional labeling Grades Labeling for special dietary use Serving representations	Universal Product Code (UPC) Open dating Registered trademarks or symbols

CODING PRODUCTS

An integral part of quality control is a system for coding new food products. The product must be identifiable to the manufacturer by the year and day it was packed and by the batch number, if more than one batch is processed per day. If more than one processing facility is involved, that must also be identified. It is imperative that these codes are recorded on distribution invoices so the product can be recalled promptly if there is a problem. All cases and individual containers must be coded. The coded lots should be small enough to enable easy identification during sale and distribution.

Any method of coding that is recognizable by the processor is acceptable. Alphabetical letters are often used to identify the month a product was packed. Julian dates are used to indicate the manufacture date. An example of a code is "291J8825," where "291" indicates the 291st day of the year; "J" is the month (October); "88" is the year packed (1988); "2" is the

plant location and "5" indicates the fifth hour of the shift. Accurate record keeping of these codes allows a manufacturer to trace the cause of consumer complaints, control distribution and inventory, ensure proper product rotation and effect a recall if necessary.

REGULATIONS

Entrepreneurs must be familiar with state and federal food regulations before starting a food business. The Consumer Protection Division of the Georgia Department of Agriculture is responsible for enforcing safe food manufacture and sale at the state level. Potential processors must comply with the recommendations in the Georgia Food Act, specifically:

- Food Division Regulations (Chapter 10-7-1)
- Regulations Applicable to Processing Plants (Chapter 40-7-5), and
- Packaging and Labeling, Advertising and Presentations in General (Chapter 40-15-3).

These regulations can be obtained from the Consumer Protection Division of The Georgia Department of Agriculture, Atlanta, GA, 30334. All food products must have a label approval from this state agency before startup. For details on getting a label approved, contact your county Extension agent. Once the processing facility is built, a consumer field force sanitarian from this agency will make a compliance inspection before startup.

In addition to state requirements, most specialty foods are subject to federal regulations because products cross state boundaries during distribution. The federal agencies responsible for food safety are the FDA and USDA. A food processing operation should be designed and operated in accordance with "Good Manufacturing Practice" (GMP) regulations, which are available from the regional FDA office in Atlanta. A general outline of GMP regulations is presented in Table 3. All food plants, except meat and poultry, are subject to inspection by FDA to ensure compliance with these regulations. Specialty foods containing meat or poultry ingredients fall under the jurisdiction of USDA. As such, they should be constructed and operated according to the "*Meat and Poultry Inspection Program*." Copies of these regulations can be obtained from the state meat inspector in Atlanta, or the federal inspector in Athens, Georgia.

There are specific GMP regulations for low-acid foods packaged in hermetically sealed containers (canned foods) and acidified foods. Commercial food manufacturers are required to register each new product with the FDA and file a full description (called a scheduled process) of the processes to be employed in the manufacture of the product. Copies of these regulations, the registration form and the scheduled

Table 3. Outline of good manufacturing practice (GMP) regulations.

Personnel
A. disease control
B. cleanliness
C. education and training
D. supervision

Plants and grounds
A. grounds
B. plant construction and design

Sanitary facilities and controls
A. water supply
B. sewage disposal
C. plumbing
D. toilet facilities
E. hand-washing facilities
F. rubbish and offal disposal

Sanitary operations
A. general maintenance
B. animal and vermin control
C. sanitation of equipment and utensils
D. storage and handling of cleaned, portable equipment and utensils

Equipment and procedures
A. general
B. use of polychlorinated biphenyls in food plants

Process and controls
A. raw materials and ingredients
B. raw ingredient containers and carriers
C. ice
D. food processing areas
E. food processing equipment
F. good processing conditions and controls
G. testing procedures
H. packaging processes and materials
I. product codes
J. storage and transportation of finished products

Natural or unavoidable defects in food for human use that present no health hazard.
[Ed. Note: See 21 CFR 110 for the FDA's *Current Good Manufacturing Practices in Manufacturing, Packing or Holding Human Food* for complete details on food safety regulations.]

process form can be obtained from the regional FDA office. In addition, the processor must report any instances of spoilage; must have an established product recall plan; must have all operators of thermal-processing systems trained by attending a "Better Process Control School" at an approved university; and must maintain complete records of plant operations.

EQUIPMENT

It is not within the scope of this bulletin to describe every specific type of equipment needed to manufacture a specialty food product. However, the publishing companies listed below do provide buying guides and directories for ingredients, machinery, analytical testing instruments and other equipment.

Food Engineering Master: Ingredients, Supplies and Services
Chilton/ABC Publishing
1330 Avenue of the Americas
New York, New York 10019

Food Processing Guide & Directory
Putnam Publishing Company
301 E. Erie Street
Chicago, IL 60611

Prepared Food Buyer's Guide
Gorman Publishing Company
8750 West Bryn Mawr Avenue
Chicago, IL 60631

Figure 5. Universal product code

MARKETING

Marketing is traditionally thought of as the process of advertising, promoting and selling services and products. These are important in the development of new food products, but the first step is to define a specific market. If specialty food entrepreneurs wish to sell through retail food stores, they must have a Universal Product Code (UPC) correctly displayed on the label. Most brokers, wholesalers and retail buyers will not handle a product lacking UPC identification. It is the potential processor's responsibility to obtain a code for each product manufactured. First, request a membership form from the Uniform Product Code Council:

Uniform Product Code Council
8163 Old Yankee Road, Suite J
Dayton, Ohio 45459

Return the completed form with a check. Membership costs are based on estimated annual sales, with most new processors falling into the lowest sales category. The Council will issue you a unique five-digit manufacturer's code. It is your responsibility to assign an additional five-digit code for each product manufactured. Figure 5 details an example of the manufacturer's code and the product code.

The next step is to determine which system of distribution is best suited to you and your products. What will be your sales outlets? Options include retail food stores, specialty shops or boutiques (selling unique or gourmet food items), roadside stands, flea markets, or the front door of your processing plant.

There are several product characteristics that must be decided regardless of the method of distribution. These include price, size of container and number of containers per carton. If you plan to use retail stores, specialty shops or boutiques, you must decide on representation, sales promotions and advertising.

PRICING

Set your price based on several variables, the most important of which is the price the consumer will be asked to pay. Most retailers who sell to consumers are expecting to make a gross margin of approximately 30 percent on the product. The gross margin is the difference between retail price and cost divided by the retail price. For example, if the cost were $1.00 per unit, the retail price would be set at $1.43 to obtain a gross margin of 30 percent. The price of competitive products is the major variable that consumers will consider when examining your product. If your competitors are pricing in the $2.00 range, your product priced at $1.43 would probably be very well received. You may rationalize that your product is superior due to quality and taste, but to most

consumers, the price is the factor that makes the initial sale.

Retail price	**$1.43**
Cost to produce	**$1.00**
Difference	**$0.43**
Difference	**$0.43**
Divided by retail price	**$1.43**
Gives gross margin of 30%	

Let's examine this $1.43 suggested retail price as your product leaves the processing plant. If you sell directly to consumers, then you would receive $1.00 per unit. If your product is going into a wholesaler's warehouse, you would not receive $1.00 per unit. To maintain the $1.43 retail price, the wholesaler would sell the product to retailers for $1.00. The wholesaler expects to make 10 to 15 percent, so they would pay you between $0.85 and $0.90 per unit. If a broker is used, their normal fee is five percent, so the net to the processor would be $0.82 to $0.86.

One would expect that pricing would be based on the processor's total cost plus a margin of profit, but as the previous example shows, the price received by the manufacturer starts with setting a competitive retail price and working backward through the distribution chain.

In reality, most small processors become a price taker rather than a price setter, so it becomes essential that processors develop a very accurate cost accounting system. If this is not done, it is conceivable that the price received could be substantially less than the actual cost incurred.

BROKERS

For most new processors, the food product distribution system resembles a maze. For those who need help in presenting their product, it may be prudent to seek representation through a broker. Brokers will help you develop a retail price, promote schemes to enhance the product's acceptance, and make sales presentations to the buyers of independent wholesalers and large retail food chains. Brokers' fees are usually about five percent of all sales made in the broker's territory.

SPECIALTY BROKERS

If you seek broker representation, you may consider discussing your product with a "specialty" broker. These brokers specialize in representing products that fall into the specialty categories (relatively low volume products). The products may be gourmet foods, products produced by small processors who do not wish to enlarge their operation, or new products that do not suit the volume requirements of mass merchandisers.

There are fewer specialty brokers than "general" food brokers, who usually represent large national firms having well-known brand products. To locate the specialty broker nearest you, contact:

National Association of Specialty Food Brokers
One Central Avenue
Tarrytown, New York 10591

NEW PRODUCT PRESENTATION

If your product is directed toward retail food stores, the key is acceptance from either a buyer of the food chain or an independent wholesaler. The decision to stock an item is made by the buyer, and part of the decision process is based on the "new product

Table 4. Factors to consider in new product presentation

- Size of container
- Containers per case
- Case weight and cube
- Palletizing arrangement (cases per layer and number of layers)
- Case cost (delivered and picked up at your plant
- Payment terms (for example, 2% cash discount if paid in 20 days; net due in 30 days
- Promotional allowance
- Quantity discounts
- Advertising allowance
- Minimum order quantity
- Maximum order quantity
- Slotting allowance
- Present distribution in the trade area
- Amount of product liability insurance
- Delivery time in working days
- Uniform product code number
- Sales guarantee
- Current product advertising – media and dates
- Coupon program
- Method of shipping
- Introductory allowances
- Swell allowance (damaged goods)
- Price protection
- Product taxability
- Vendor spoils policy
- Pull date information (if applicable)
- Suggested retail price

presentation." There are several basic items that buyers must know about the product before making their decision. These are listed in Table 4.

Major factors to be considered are: introductory and promotional allowance, advertising allowance, slotting allowance and product liability. Be prepared for buyers to ask for all these allowances on a new, untested product.

Introductory and promotional allowances are expected of new products and may be formulated in different ways. The two most popular means are "free" goods or a "cents off" program. "Free goods" means that for every "x" number of cases ordered, one case is given free. "Cents off" is a discount off the processor's unit price on all products bought during the period. Most retailers ask for terms in contract form.

Advertising allowances are fees stores charge per item to stock new products in their warehouse or on retail shelves. The best shelf position is eye level to the consumer. Some products fail because of poor position.

Product liability insurance is a necessity. Buyers will not consider a product unless a policy is presented. Most expect the policy to be for at least one million dollars.

Another factor important to a buyer is the product's current distribution in retail stores. This resembles the "chicken and the egg dilemma" because if the product were in distribution, you wouldn't be in the buyer's office seeking shelf space. Nonetheless, there are some things that you can do to show buyers your product has been accepted by consumers.

First, seek out a local independent retailer who is willing to let you put your product in his store. You can encourage cooperation by giving them the initial stock and a guarantee that you will remove the product if it doesn't meet sales expectations. Cooperation should be further enhanced by putting on in-store demonstrations. You or a member of your staff should put on a demonstration consisting of offering bite-sized samples to customers. Such demonstrations are usually done on Friday and Saturday and a promotional price is often made available, as a discount off the regular price or a "buy one and get one free" offer.

After the demonstrations, you should go into the store at least twice weekly to monitor sales and make sure the product display is in order. Sales should be accurately measured for four to six weeks so they can be related to your broker and prospective buyers.

In summary, developing and marketing a new specialty food is a time-consuming and risky task. The ultimate criterion is product quality. The entrepreneur must ask himself two questions before proceeding with such a venture:

(1) Can the cost of producing quality be justified by a profitable return? – and
(2) Is the target market going to faithfully purchase it over time?

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ADDITIONAL READING

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