Company leader speaks about E. coli outbreak

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FAPC holds food safety conference

Company leader speaks about E. coli outbreak

By Mandy Gross, FAPC Communications Services Manager

Celebrate bread-baking month

By Reneé Nelson, FAPC Milling & Baking Specialist

Adding Value to Oklahoma
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About the cover...

Will Daniels of Natural Selection Foods/Earthbound Farm spoke about his experience dealing with a foodborne illness outbreak during the recent FAPC Food Industry Trends Conference in Oklahoma City. An Escherichia coli O157:H7 outbreak was linked to Natural Selection Foods/Earthbound Farm’s fresh spinach sold under the Dole brand.
A recent article in *Fortune Small Business* reviewed the success of an entrepreneurial business in Chicago. This business has been operating for a few years, has 28 employees, and last year, its sales were more than $16 million. Its gross margins are strong, and it indicated the continued success has been anchored in care and attention to its customers. In the article, the business reinforced the idea of investment versus profits, investment of ideas, investments in a sound marketing strategy, investments in time with customers, and the wise use of reinvestment profits.

This entrepreneurial business is not different from any successful business endeavor. There must be an investment to launch the business, usually in the form of money, ideas, marketing, and hard work, and there must be a continued investment in managed work, managed reinvestments of cash, a continued flow of great ideas, and attention to customers.

This year, the FAPC celebrated its 10-year anniversary. An economic impact study was completed to evaluate the 10 years of service to Oklahoma and to discover what impacts the FAPC has had on Oklahoma’s economy. The results were impressive.

The total (direct, indirect, and induced) employment impacts for Oklahoma were more than 52,000 full-time jobs, while the total (direct, indirect, and induced) sales revenue impacts for Oklahoma were more than $6 billion annually. When FAPC clients were asked about the direct affect of education and training programs and technical assistance given by the FAPC, they confirmed well more than $92 million in sales revenue of their businesses had been impacted by these services of the FAPC. When the direct, indirect, and induced multipliers were applied to get the full effect of these FAPC services, more than $300 million in sales had been affected by these education and training programs and by technical assistance given to them.

When considering investments made in the FAPC and the return on investment demonstrated by this economic impact study, results have exceeded the expectations and hopes of the founders of the FAPC. The late Sen. Bob Kerr of Altus, Oklahoma, truly was the champion for the FAPC and had high expectations of the effects of this center on the food and agribusiness sectors of Oklahoma. When comparing the cost to Oklahoma of the investment, approximately $45 million, of these first 10 years at the FAPC and the economic impacts realized, $6.3 billion sales revenue and 56,000 jobs, Sen. Kerr would have been very pleased. Indeed, Oklahoma made a sound decision to invest in the FAPC.

The FAPC held a national food safety conference that focused on regulatory changes, food safety issues and solutions, and food traceability technologies.

About 75 food industry representatives attended the conference held in Oklahoma City on September 13-14.

The FAPC partnered with the Oklahoma Department of Public Health, the Oklahoma Department of Agriculture, Food and Forestry, the Oklahoma Department of Commerce, and the Charles B. Browning Endowed Professorship to hold the event.

“FAPC research and development focuses on food safety and effective pathogen interventions from raw and cooked food products to minimize food safety risks,” said Chuck Willoughby, FAPC business and marketing relations manager and conference chair. “We were pleased to offer a national conference that encouraged discussion and collaboration about food intervention strategies.”

The two-day conference featured three keynote sessions, and participants heard from 13 national food industry leaders. The speakers included Armia Tawadrous, Joseph Baca, Doug Powell, Stanley Gilliland, Douglas Ware, Peter Muriana, Lori Marsh, Linda Harris, William Daniels, Yifen Wang, Gary Smith, Elizabeth Nutt, and Kristy Bradley.

In the summer 2007 issue of *fapc.biz*, the “About the cover...” section referred to microalgae as seaweed. Macroalgae are known as seaweed, not microalgae. The editorial staff regrets this error.
he one thing a food company dreads the most is getting a call from its state’s health department about a possible foodborne illness outbreak caused by one of its products.

In many cases, companies are not willing to speak about outbreaks; however, some companies focus on communications to manage through a crisis.

That is exactly what Natural Selection Foods, located in San Juan Bautista, California, did when an *Escherichia coli* O157:H7 outbreak was linked to its fresh spinach sold under the Dole brand.

“One of the first things we did was notify our key stakeholders, which included customers, media, employees, growers, vendors, and government,” said Will Daniels, quality, food safety and organic integrity vice president for Natural Selection Foods/Earthbound Farm.

Daniels recently spoke during the Food Industry Trends Conference in Oklahoma City, sponsored by the FAPC, Oklahoma Department of Public Health, the Oklahoma Department of Agriculture, Food and Forestry, the Oklahoma Department of Commerce and the Charles B. Browning Endowed Professorship. The conference focused on regulatory changes, food safety issues and solutions, and food traceability technologies.

“Food processing establishments face dozens of possible crises or unexpected events that can cause the public to lose its trust in the company and the products produced,” said Jason Young, FAPC quality management specialist. “By preparing for a crisis in advance, companies can contain and minimize losses.”

Daniels said on September 14, 2006, the company received a call from the California Department of Health Services about a possible *E. coli* O157:H7 outbreak. The first thing the company did was activate its incident management team to decide the next step.

“With information still coming in from the Centers for Disease Control and the FDA, we opted to go to a voluntary recall because it was the right thing to do for our customers and public safety,” Daniels said.

After notifying the company’s key stakeholders, the company followed its incident management plan. This plan consisted of guiding principles for appropriate communications responses to the customers, media and employees; an effective mechanism for assessing the seriousness of the incident; and a basic checklist and tools to ensure the company’s response was coordinated and conducted properly.

Daniels explained the company used the “5 R’s”
“Food safety has always been an integral part of our business. Our systems have consistently been at the top of the industry, but we believe that even the best food safety standards require continuous improvement.”

Regret
It was important for the company to express empathy to the victims of the E. coli outbreak, Daniels said. The company immediately sent letters to its customers with information on the product recall.
“We worked with the media to get a message out about contaminated products and instructions of how to handle them and set up a 1-800 number for customers to call about questions and claims,” Daniels said.

Responsibility
Since public safety is the top priority of the National Selection Foods/Earthbound Farm, the company worked with investigators to find the source of the outbreak. Daniels encouraged other food companies that if they are involved in a foodborne illness outbreak, it is the best interest of the public and the food company to give the investigators the information they need to find the source.
“Food safety has always been an integral part of our business,” Daniels said. “Our systems have consistently been at the top of the industry, but we believe that even the best food safety standards require continuous improvement.”

Restitution
Following the outbreak, the company was committed to taking care of the needs of its customers.
“We made an offer early on to reimburse any out-of-pocket medical expenses from anyone who had been affected by the outbreak,” Daniels said. “We gave our retail customers specific assurance that we would give full credit for recalled products and offered to cover cost of returning product and disposal.”

Resolution
National Selection Foods/Earthbound Farm has invested in a Quality Assurance and Organic Integrity Program, which Daniels was named vice president.
“We’ve enhanced our food safety program to unprecedented levels in the produce industry,” Daniels said.
“We’re committed to continually improving it as food safety science advances.”

The company has formed a food safety advisory panel that includes some of the country’s leading food safety scientists to help develop its entire food safety program, Daniels said.

Other programs that have been added or reviewed include a seed-to-harvest plan for enhanced good agricultural practices, raw product test and hold program, enhancements in the packing facilities, and finished good test and hold program.
The company is using the data from its test and hold program to better understand how to prevent outbreaks.

Reform
Daniels said Natural Selection Foods/Earthbound Farm must define a pathway forward. This includes recognizing E. coli O157:H7 exists in the company’s environment and pathogens in raw materials are a hazard likely to occur.
“We must test as a processor to detect, so we can prevent,” Daniels said.
Recognizing the rich association of baking bread in the home with the health and security of family life, Congress designated November as National Family Bread-Baking Month through Senate Joint Resolution 163. This resolution authorized President Ronald Reagan to issue Proclamation 5739.

There is no question that in any size city in the United States, the busiest of its constituents can be a parent with a young family. Family and home life can be hectic.

Laurie Colwin, author of More How Cooking: A Writer Returns to the Kitchen, encourages people to evaluate how they use their time.

“These days family life (or private life) is a challenge, and we must fight for it…We must march into the kitchen, en famille or with a friend, and find some easy, heart-warming things to make from scratch, and even if it is but once a week, we must gather at the table,” Colwin said.

Celebrate the month of November by baking bread with your family and friends. Teach those around you. Use this month as a foundation to increase your family’s awareness of the nutritional benefits of enriched grain foods. In honoring the centennial celebration of statehood, create a tradition of home-bread baking!

**RECIPE**

**Dish:** Buttermilk Whole Wheat Bread

**Ingredients:**
- 1 ½ cups flour (all-purpose)
- 3 cups whole-wheat flour
- 2 tbsp. brown sugar
- 2 tsp. baking soda
- 2 tsp. salt
- ¼ cup shortening
- ¼ cups buttermilk
- ½ cup warm water
- 2 packages yeast

**Method:**
Pour lukewarm water in a bowl and sprinkle yeast on top; set aside for 5 min. In a small saucepan add buttermilk and shortening. Heat until shortening is melted. Do not overheat. Set aside until lukewarm. In a large bowl combine white flour, 1 cup of whole-wheat flour, brown sugar, baking soda & salt. Pour in yeast mixture and buttermilk mixture. Mix for a few minutes. Add remaining whole wheat flour, ½ cup at a time. You may want to put dough on a floured surface and knead in the whole-wheat flour. Knead for about 8 minutes until smooth and elastic. Place into a greased bowl, turning dough to coat all sides. Cover with plastic wrap until it doubles in size. Punch down dough. Cut dough into two loaves and place in loaf pans. Cover and allow to double in size. Place in oven at 425 degrees Fahrenheit for 35-40 minutes. Cool on wire rack.
The recent study conducted by Justin McConaghy, former graduate student, and Rodney Holcomb, FAPC agribusiness specialist, showed FAPC has had a significant economic impact in the state since opening in January 1997.

During its first 10 years, the FAPC has assisted more than 1,000 Oklahoma clients through 3,000 technical and business projects.

The study, conducted in 2006, reported 343 responding businesses had total sales exceeding $1.9 billion and provided about 8,700 full-time and 325 part-time jobs for Oklahomans.

The combined direct, indirect, and induced economic contributions of these companies through other local businesses, such as the service and transportation industries, were more than $6.3 billion generated and 52,000 jobs.

Several respondents also provided information about business operations before and after receiving assistance from FAPC. The study indicated 2.1 percent of these companies’ full-time positions and 1.5 percent of part-time positions were created between the time the firms received assistance from FAPC and 2006. In that time, companies providing sales information experienced 16.95 percent sales growth.

Of these job and sales increases, the firms attributed 157 total jobs and almost $93 million in sales directly to FAPC assistance. The direct, indirect, and induced impacts these companies directly attributed to FAPC assistance were $308 million and 800 jobs.

These results affirm the FAPC is meeting its mission. In short, the FAPC has been successful in “Adding Value to Oklahoma.” Looking to the next 10 years, the faculty and staff at FAPC are dedicated and driven to continue providing invaluable service to Oklahoma and its value-added agricultural industry.

To maximize the potential of its efforts, the FAPC worked closely with the Oklahoma State University Foundation to create the Product Innovation Fund.

Increasingly, state funds are constrained to support the needed work of the FAPC. The Fund is designed to enable the FAPC to accomplish its objectives with increased financial support from private donors.

The Fund was launched in June 2003 with an in-house employee drive that experienced a 100 percent participation rate. The objective is to raise $2.625 million by June 2008.

Donors can contribute to the Fund in many ways, based on the recommendations and guidelines of the OSU Foundation.

The various components of this fund include products and process development, industry employee training and education institute, food safety and security, industry waste and biofuel programs, and FAPC central fund.

To date, the Fund has received just more than $500,000 in contributions from the Oklahoma value-added industry and from private individuals. In the coming months, efforts to meet the June 2008 objective will be increased through various means of communication to FAPC’s stakeholder base, the clients who have benefited from its services and the employees dedicated to fulfilling the FAPC mission.

For more information visit www.fapc.biz/fund/ or e-mail chuck.willoughby@okstate.edu.

Visit www.fapc.biz/fund/ to help plant the seed for 10 more years of success.
According to the Renewable Fuels Association (RFA), the number of ethanol plants almost doubled between 1999 and 2006, resulting in a rapid increase in the U.S. production capacity (www.ethanolrfa.org/industry/statistics).

Ethanol production was about 4.3 billion gallons in 2006. Although this ethanol production level was about 40 percent higher than that in 2000, it still represents less than 3 percent of the U.S. gasoline requirement.

Considering the U.S. goal for the renewable fuel industries is to reach 7.5 billion gallons (about 99 percent is ethanol) by 2012, no single plant or biomass source will be sufficient to meet feedstock demand for biofuel production.

Ethanol can be produced from any type of grain that contains starch/sugar. According to the RFA, about 11.7 percent of the corn and 11.3 percent of the sorghum supply were used for ethanol production in 2004, and these percentages are expected to increase coupled with production capacity increases.

Today, 95 percent of ethanol production is based on corn, and only 5 percent is produced from sorghum. A few ethanol production operations also use wheat and barley as feedstock.

In the long term, production of renewable transportation fuels will require a reliable supply of biomass grown specifically for the biofuel industry.

Production and processing capabilities are the two parameters that determine suitability of a feedstock for biofuel production.

Grain sorghum has the potential to be one of the crops dedicated to feedstock for biofuel production because of its high productivity, drought tolerance, established production systems, and its genetic diversity.

Currently, sorghum is underutilized probably because of its lower digestibility and relatively lower ethanol yield compared to corn. However, sorghum varieties with improved protein and starch digestibility have been developed.

Recently, scientists at the U.S. Department of Agriculture, Agricultural Research Services Grain, Forage, and Bioenergy Research Unit in Lincoln, Nebraska, have received U.S. Plant Variety Protection on a new sorghum variety, Atlas bmr-12, which contains lower levels of lignin than traditional sorghum and scores higher fiber digestibility (Agricultural Research, September 2007, USDA-ARS).

These properties can potentially lead to improved yields for conversion of sorghum to ethanol.

Starch is the major component of sorghum (75 percent). Sorghum also contains numerous phytochemicals, which promote good human health.

Sorghum cultivars have a wide range of seed colors, from white to dark brown, depending on the presence of phenolic compounds in the seed coat. Phenolic compounds possess antioxidant activity and may offer similar benefits attributed to fruits and vegetables.

Tannins, which are believed to cause weight loss in animals, are commonly associated with sorghums; however, more than 99 percent of sorghum currently produced in the United States is tannin-free.

It has been suggested sorghum tannins may be utilized to alleviate obesity in the North American population. It is believed that sorghum tannins bind to food proteins and carbohydrates converting them into insoluble complexes that cannot be broken down by digestive enzymes.

Tannin-free sorghums have a similar energy profile to corn. In many other parts of the world where pests and diseases are ongoing problems for crop production, tannin sorghums are still grown in significant quantities because they are more tolerant of such conditions than the tannin-free varieties.

Sorghum is one of the most important cereal crops in the world. The United States is the largest producer of grain sorghum.
In many parts of Asia and Africa, sorghum has traditionally been used in food products. However, in the United States, the main use is in animal feed.

White sorghum products are used to a small extent as a substitute for wheat in products for people allergic to wheat gluten. White-food sorghums are used in products, such as expanded snacks, cookies, and ethnic foods and are gaining popularity.


However, sorghum production has been robust during the last two years. About 8 million acres of grain sorghum was planted in 2006. The 2007 grain sorghum production forecast is 475 million bushels.

Oklahoma ranks sixth in the United States in terms of grain sorghum production. The panhandle and north-central Oklahoma are the major grain sorghum-producing regions in the state.

Some sorghum also is grown in northeast and southwestern Oklahoma. Currently, grain sorghum is used as livestock feed either in Oklahoma or shipped out-of-state. The Oklahoma grain sorghum production forecast for 2007 is 12 million bushels. The yield is expected to be 57 bushels per acre.

About 210,000 acres of grain sorghum will be harvested in Oklahoma this year.

The state’s first ethanol plant, the Spaceport Fuel facility, was dedicated this year (www.oda.state.ok.us/forms/ogc/ogc-ethanololded.pdf). Production of up to 5,000 gallons per day of ethanol using both corn and sorghum is planned.

Finally, sorghum, which is one of the most drought-tolerant cereal crops currently under cultivation, fits well into Oklahoma cropping systems. Sorghum produces about 33 percent more biomass per unit water used compared to corn.

Utilization of sorghum stover as lignocellulosic feedstock for biofuel production also is being researched.

Considering that water scarcity is becoming an important issue for world populations, sorghum presents an excellent potential as a biofuel feedstock.

It also offers alternatives for extraction of high value health beneficial compounds and production of specialty foods for people suffering from gluten intolerance.
Botulinum outbreaks, though rare, are considered very serious because they have among the highest fatality rates of any foodborne illnesses. Along with the severity of the illness on the patients, they carry high hospital costs for recovery as well as subsequent litigation costs, especially when commercial products are involved.

For these reasons, Food and Drug Administration and U.S. Department of Agriculture-regulated foods that involve processing to eliminate the potential for botulinum intoxication require the evaluation by a recognized process authority to ensure the safety of the process.

The FAPC provides such process analysis by the expertise provided by William McGlynn, the resident horticultural processing expert who provides evaluations for local companies that use his recommendations to gain FDA process approval.

The close ties and associations that FAPC has with the Oklahoma Department of Health and Department of Agriculture, Food, and Forestry ensure that lines of open and frequent communication occurs regularly to provide assistance to food companies as needed.

Botulinum outbreak

Several cases of foodborne botulism were reported in both Indiana and Texas in July. An epidemiological investigation revealed all persons involved had consumed various brands of Castleberry’s hotdog chili sauce from Castleberry Food Co. in Augusta, Georgia.

During an investigation of one of the people who got sick, the investigators identified Botulinum toxin type A in the person's blood serum and in the remaining chili mixture from his home.

When a fifth case was identified in California, the recall was widened to include all product dates for 91 types of canned chili sauce, chili, and other meat products produced at the facility where these products were made.

Botulinum toxin is produced during the process of spore germination. Botulinum spores are very heat stable and are readily found in many soils; therefore, any food product grown or associated with soils pose a potential problem for botulimum poisoning.

This includes all vegetables grown in soil and meat products derived from animals that may have had soil contamination associated with them.

This can include dirt caked on the hides of meat production animals from which spores can be transferred onto meat carcasses during slaughter. These spores can be carried along during subsequent fabrication.

Processed meats that are heated and vacuum-packaged are rendered safe by use of a “curing agent,” or sodium nitrite, that prevents spores from germinating.

Problems have historically been associated more with home-canned vegetables that are processed incorrectly leading to botulimum foodborne poisoning, i.e. botulism.

First outbreak linked to a commercially processed product in more than 30 years

It is surprising that this outbreak was associated with a commercial process.

The Centers for Disease Control has noted that in the past 55 years, 92 percent of botulism outbreaks have been associated with home processing.
Processing knowledge of what conditions are required to inactivate spores in processed foods using retorts, such as large commercial pressure-cookers, is well known.

FDA requires all processors to have their process examined by a processing authority to ensure safety of the food being processed.

The Centers for Disease Control has noted that in the past 55 years, 92 percent of botulism outbreaks have been associated with home processing.

To help reduce the incidence of botulism resulting from home processing, the FDA has suggested modified conditions for sensitive home-processed items, such as heated garlic-in-oil salad condiment to include lemon juice for acidity and storage in the refrigerator instead of at room temperature in the pantry.

Both FDA and USDA-FSIS have identified deficiencies in the commercial process at Castleberry’s processing facility, which insufficient temperature and/or pressure can result in survival of botulinum spores.

Without additional control by acidity, high sugar, and low moisture if kept at moderate temperatures, spores can germinate and produce botulinum toxin in the food item.

**Human illness**

Illness by foodborne botulism is from the consumption of pre-formed botulinum toxin in the food.

There are seven toxin types—A, B, C, D, E, F, and G—but types A, B, E, and F are the ones most associated with human botulism.

Botulinum toxin is a paralytic agent that can result in varying degrees of paralysis that may be first noticed by lethargic activity in the patient followed by paralysis of facial or body muscles.

During general transmission of stimuli by the nerves, neurotransmitters are released at the nerve endings that cross to the next nerve cell and propagate the neural impulses. Botulinum toxin prevents the release of the neurotransmitters resulting in paralysis by preventing neural input that is required for many normal body functions.

Patients are given anti-toxin vaccine to neutralize the toxin in their bodies, and they are often placed on mechanical ventilation to help them breath.
Restaurant marketing, part three

Making the sale

The previous two articles in this series, featured in the Spring 2007 and Summer 2007 editions of fapc.biz, laid the groundwork for why food businesses should consider marketing to restaurants and how to prepare for the initial meeting with foodservice decision makers. This third installment of the “Marketing to Restaurants” series ventures into that first meeting.

Pros and cons
The restaurant industry is growing in depth and breadth. This means more opportunities for food businesses to enter the market. This also creates a higher premium on quality.

Restaurants are prepared to pay for high quality, so small food businesses are often able to capitalize on better margins. Because branding is de-emphasized to the end consumer, food suppliers can save money on expensive label design and graphic arts.

Once a food item is on a menu, it tends to stay there. Like their customers, restaurants are creatures of habit.

Disadvantages include the challenges of distribution and delivery. There is no substitute for delivering the right product at the right time. Failure to do this will dissolve any relationship between a food vendor and a restaurant.

The large volume can pose great challenges for smaller food suppliers, and payment may not arrive for weeks or months.

Furthermore, success in foodservice is not the best launching pad for building retail sales. Even very successful food suppliers will typically not enjoy brand recognition with the end consumer.

Preparing for the sale

When a food business determines that supplying to restaurants is a viable marketing avenue, that business must do some preliminary research before calling on its potential customers.

Choosing the right concept initially will save significant costs by eliminating many dead-end sales calls.

The food supplier also must understand and anticipate industry and genre trends and how market evolution will affect the food items it has to offer.

Food businesses may choose to work through a middleman—a broker or distributor who can help establish the relationship with a restaurant. The business may cut out the middleman and establish relationships on its own dime.

The decision is based on the type of relationship and the cost tradeoff of having the middleman involved versus the time needed to firmly establish the relationship.

The ability to communicate with the buyer, anticipate the buyer’s needs, and build a solid relationship will greatly impact success.

The seller must develop an understanding of the buyer’s key personnel, the kind of food that is served, what the menu is like, and the nature of the clientele.

The food business also must know itself intimately, specifically how products will be packed and sold, the volume that could be provided, frequency of delivery, as well as pricing information.

It must know how to clearly communicate the benefits it will bring to the restaurant.

These benefits may include supporting a local business; getting a fresher, higher quality, better tasting product; or the ability to provide for the specific needs of the restaurant, and are conveyed on price sheets and “leave-behind” marketing material. Nutritional information also should be readily available.

Contact must be made with the person in charge of food procurement. This should be done by appointment. Dropping in on restaurant managers without an appointment is a huge mistake.

The decision maker may be the kitchen manager, chef, or general manager, but most often buying decisions are made from a central operational office.

The key in any case is to be prepared for the meeting and make the sale.
The sale

At this point, you have considered the opportunities of marketing to restaurants. You know the aspects of a good marketing plan and how to create that plan using research.

There are some strategies for selling products and establishing relationships still to be considered. What differentiates your product from the next guy’s? What do you have to offer? To answer these questions, it is necessary to understand a bit about restaurant management.

Restaurant success is tabulated in dollars, not surprisingly. The key components are sales and costs. A manager’s salary, and future with the company, is tied more closely to these numbers than a manager in possibly any other industry.

Sales must increase over the prior period, while costs must meet targets. Hitting goals will double or triple the manager’s salary.

Managers believe they have little control over sales. They usually believe sales building activities like advertising and promotions originate outside the walls of their business.

The manager’s contribution to sales is running an efficient operation, so it is no wonder that from the top down, every manager makes decisions based on costs.

The manager is most concerned with two categories of costs: food and labor. In practice, these costs perform inversely to each other. Food cost can be slightly lowered by increasing labor.

Consider that restaurants are on tight deadlines for the food they prepare. While managers are evaluated on costs, workers are evaluated on timeliness.

Prep must be done by a certain time to ensure food is available for customers, and plates must be prepared within a threshold time to ensure those customers will return in the future.

Sometimes laborers cut corners to meet deadlines. More available labor reduces the stress of preparing food and increases attention to detail.

This leads to higher quality and reduced waste, translating into lower food cost. Of course, there is only so much labor that can be effectively thrown at this problem.

On the other hand, raising food cost can have a great impact on reducing or eliminating labor. This is where a food vendor can seize an opportunity.

A food business should offer the restaurant manager a product that will be consistent from unit to unit, case to case, delivery to delivery, and season to season.

If the food item arrives as a heat-and-eat item, the restaurant manager needs to know his labor cost should be immediately reduced.

He also should understand reduction in labor is a reduction in liability and liability insurance, as well as payroll taxes. There is also a reduction in training time, which is important because of the high turnover among restaurant employees.

To further diffuse concerns of raising food costs, a food vendor can and should present products priced by the serving rather than by the unit or case. A case price can be staggering, but if the product is high quality and goes a long way, the price per serving may only be an increase of pennies of food cost.

It may be possible the quality difference is substantial enough that the restaurant can increase menu prices slightly and recover the cost difference.

Sell yourself first…

The restaurant is doing business with you, not your product. A restaurant manager must be secure in knowing you will bail him out when there is an issue with your arrangement.
Is the customer always right?

An issue of mistaken identity

Ask most anyone, expert or otherwise, how to be successful in marketing, and inevitably, you will be fed some version of the rhetorical cliché that became the title for the marketing section of Joel Kurtzman’s MBA in a Box. That title, “Find Out What They Want and How They Want It and Give It to ‘Em Just That Way,” aptly summarizes the main theme of nearly every lecture given and thesis written on the topic.

In all probability, every able-bodied worker in every industrialized nation has been told the customer is always right. It is just as probable that this advice was being offered by a superior or mentor in response to some recent disagreement between the advisee and a customer.

Since the vast majority of the workforce does not possess an MBA, a manager can hardly be faulted for disseminating this vital knowledge of timeless customer correctness.

After all, at some point in that manager’s work history, he had a superior that was kind enough to let him in on this invaluable marketing creed. Someday, the most recent beneficiary of this knowledge will have the chance to pass it on as well, and the maxim will remain evergreen.

Not surprisingly, I also had managers at every level reinforce this message. When I let a bad work day linger after hours, I was similarly counseled by those closest to me.

If my friends and family knew nothing else about marketing, they knew how much deference to award a customer.

The problem was I knew the system at work. I understood sales. I was right, which meant the customer must have been wrong—at least on occasion. So, the customer cannot always be right. Right?

Life imitates art

After so many years of business management, operations, and instruction, I became convinced of the fallacy of “the customer is always right.” But recently, enlightenment came, as enlightenment often does, in the form of a television sitcom.

During one particular episode, the star of the show wanted to add on to his house. He hired a contractor to handle the project. The star described his lofty expectations for the addition.

The exchange was expectedly entertaining, but what struck me was the deep truth of the contractor’s response.

The contractor explained up front that every customer wants three things: price, quality, and speed. He then explained the customer can only really expect two of the three.

The customer can get it fast and cheap, but it will be low quality; the customer can have high quality at a low price, but it will take a long time; or the customer can expect high quality and fast results but at a higher price.

FAPC clients are, in most every case, unique and distinct from one another. Yet, the business and marketing strategy that results from cooperative efforts consistently falls into one of these categories—price, quality, or speed. Obviously for food businesses, speed is more appropriately considered as volume.

Price and Volume

This is the traditional economic model for big business. It is the end goal of many businesses that are currently operating under one of the other two paradigms.

High volume at a low price is the embodiment of economy of scale. Many large food businesses fall into this category. A business that is successful in its implementation of this model will not be easily ousted from supermarket shelves.

These businesses are usually very visible and accessible on the retail end. The products are present in every major grocery outlet. They often
have a strong commercial advertising presence as well. In foodservice and institutional foods, the strong branding is not always necessary, although in most cases, even those food suppliers are very effectively branded.

Volume is the key to success in this model. Rarely can a business begin as a competitor on price and survive at low volumes, although startup businesses with enough capital investment can start with both price and volume.

Even a well-backed startup will face immense pressure to deliver. Therefore, the price and volume paradigm is more suited towards larger, established businesses.

The drawback for this model is lack of quality. This is not to say that all mass-produced foods are of low quality, but they are rarely of the highest quality. Obviously, these products may be of high quality relative to other price/volume competitors. However, there always will be market opportunities for smaller, more agile companies to find a small niche.

**Quality and Volume**

Most small and niche market food businesses fall into this category. These companies tend to focus on some aspect of their product that not only sets them apart from the crowd but also is legitimately unique in the market.

This could be using the very finest ingredients, or one novel ingredient, or perhaps a particular practice in production or manufacturing. This represents the quality aspect.

Volume is less important in this model than in the price/volume model. Success hinges on quality. Not simply high quality, but quality that is consistently higher than the competition over time. And not simply quality of product, but a strong message of that quality portrayed in the product and company branding.

This holistic message of quality is important because, unlike businesses in the price/volume model, businesses in this category could lose shelf space to competitors in either of these categories.

A large corporation could lowball the business, forcing the price point below the business’s floor price or creating such a price disparity that the typical shopper can no longer justify the price.

This is where volume has an effect. Even though volume is less critical than quality, it still provides some economy of scale.

Other quality/volume businesses can take facings from another similarly positioned business by more effectively communicating the quality of their products.

Consumers making purchasing decisions based on quality rather than price are going to choose the product of higher quality, which really means the business that best communicated that message and fulfilled its promise. In this case, volume makes little difference.

**Price and Quality**

While this model is appropriate for trade industries and service industries, it has almost no relevance to food manufacturing.

The basic premise behind the price/quality expectation is that, if you contract for great quality at a bargain price, you will be last in line to get what you need from the contracted business.

If businesses could all have the highest quality for the lowest price, they would. Then businesses would all market price and volume.

Of course, every customer and business is looking for a combination of price and quality. During any negotiation or purchase decision, the buyer tries to maximize the price/quality curve.

**Upon reflection**

As it turns out, customers cannot always get what they want. It follows that customers can be wrong, doesn’t it?

Actually, I now understand the customer is always right. It is incumbent upon businesses to carefully identify their target market and understand what those customers want.

Consumers always will choose to have price, volume, and quality if they can, but most understand there are tradeoffs.
What ingredient was described as especially dear to the gods by the philosopher Plato? This same ingredient was called a “divine substance” by the poet Homer.

The answer can be found in this quotation by Jean De Marcounille in 1584, “The sacredness and dignity of salt! This mineral is like unto the four elements—earth, air, fire, and water. So universal, so necessary to life, it is the fifth element.”

One of the oldest known food additives is salt, and people have a love-hate relationship with it. People desire its flavor and function in foods but are concerned about its impact on their health.

However, simply choosing to remove, reduce, or replace the salt in a product formulation may be easier said than done because salt often provides function beyond simply enhancing a food’s flavor.

Forms

Food-grade salt is defined by the Food and Chemicals Codex based on its purity, which may range from 99.8 percent to 99.95 percent, depending upon its source and how it is processed.

Table salt is comprised of mostly sodium chloride (NaCl), but it also may contain small amounts of other chemical compounds including calcium chloride (CaCl₂), magnesium sulfate (MgSO₄), and potassium chloride (KCl), along with small amounts of copper and iron.

In order to achieve higher levels of purity, these compounds must be removed. Verifying the purity of salt is important because the associated compounds and trace metals can cause problems in certain food applications.

For example, calcium and magnesium can interfere with the emulsion in margarine, they can cause off-flavors and colors in mayonnaise, and they can cause cloudy brines in glass-pack pickled vegetables.

Commercial salt may contain food additives not necessarily present in table salt. It may contain an anti-caking agent, such as sodium ferrocyanide, which as the names suggests helps prevent salt crystals from caking or clumping together. This happens when salt is repeatedly exposed to high (more than 75 percent) and low (less than 25 percent) relative humidity.

This repeated wetting and drying results in the salt re-crystallizing, which causes the individual crystals to weld together. Commercial salt also may contain free-flowing agents, which help prevent the salt crystals from getting wet. The free-flowing agents accomplish this by preventing the salt crystals from coming in contact with each other or by actually absorbing the moisture. A common free-flowing agent is tricalcium phosphate.

Many of the physical characteristics of salt can be modified to best suit a particular application. For example, the crystals of table salt are cube-shaped; however, two forms of commercial salt, Alberger and dendritic, are commonly manufactured.

Salt produced using the Alberger or grainer method forms a hollow crystal that is shaped like a quadrilateral pyramid, while salt produced using the dendritic method forms a porous star-shaped crystal.

The size of the salt crystals also can be modified. They can be produced in sizes that range from a diameter of about 4 microns, for a pulverized salt that ensures quick solubility, to a diameter of more than 1,000 microns, for a coarse salt that can be applied to products such as pretzels.

Apprehension

The sodium content of food is a concern for many health-conscious
consumers, particularly those worried about hypertension and cardiac disease.

While there are additional factors, such as age, genetic disposition, and race, that also influence the onset of these diseases, the National Heart Lung and Blood Institute, American Heart Association, and the 2005 U.S. Dietary Guidelines for Americans recommend that healthy people consume no more than 2,300 milligrams of salt daily.

Under the best of circumstances, reducing the concentration of salt in a food might prove to be challenging for product developers because most consumers demand full-flavored foods. However, it becomes even more difficult in foods where salt provides added functionality.

**Multipurpose**

Salt can be very effective in controlling microbial growth through influencing the osmotic pressure of a food, lowering the water activity of a food, or a combination of both. At low concentrations, salt can slow the growth of microorganisms, and at high concentrations, it can kill some microorganisms. This ability can be used to help in the preservation of food and also to control fermentation processes.

Foods like pickles and processed meat use salt as a preservative where it inhibits the growth of disease-causing and/or spoilage microorganisms. Other foods, such as cheese, use salt to control the amount of acid produced by lactic acid bacteria during fermentation to help control the product’s final flavor.

Salt also provides functionality in other products. It can help to provide uniform grain and texture in baked products by strengthening wheat gluten in the dough, and it can help increase yield in meat products by increasing the water-binding capacity of protein.

**Substitutes**

Alternatives are available for product developers who want to reduce the sodium content of their products. For example, low-bulk density salt, which is simply standard sodium chloride and because of its processing has less sodium by volume, might be a suitable replacement.

Another alternative is potassium chloride, which is commonly used as a salt substitute. However, it can be bitter and can boost metallic notes in a product’s flavor.

Wixon Incorporated, located in Saint Francis, Wisconsin, has attempted to overcome this by creating a product called KClean Salt, which is made from a blend of equal parts sodium and potassium chloride and also a “proprietary taste modifier technology,” which the company claims helps to mask the bitter off flavors associated with potassium chloride.

According to the company, the product is appropriate for topical application. It should be mentioned that the use of potassium chloride as a salt substitute in foods bound for the international market may require extra attention from the manufacturer because some countries may limit or even disallow its usage.

Flavor enhancers, such as hydrolyzed vegetable proteins and autolyzed yeast extracts, also are ingredients that can be used to help increase a food’s savory flavor while reducing its sodium content. However, these ingredients can have distinct flavors of their own that may be imparted to the food.

Salt is vital to the production of many foods and to human health. The issue is one of degree. Formulating products that retain the distinct flavor provided by salt while reducing the concentration of sodium is challenging.

This is particularly true for products that require salt’s functionality. Unfortunately, there is no single replacement available that can mimic all of salt’s characteristics under all circumstances.

However, consumer health concerns are not going away. Formulators may need to rely on an entire system of ingredients to successfully reduce or replace salt in their products, and consumers may need to be more accepting of low sodium foods that do not match every characteristic of their full salt counterparts.

References:

- Sodium Shakeout: Salt and Health, Food Product Design, June 2007
- Sodium Shakeout: Savory With Less Salt, Food Product Design, June 2007
- The Many Benefits of Salt, Food Product Design, October 1994
The past few food processing articles have discussed steps to follow when preparing a recipe for commercial processing. The salsa example has seldom strayed from the primary theme of “cost.” Focus on cost will continue as X Border Brand Salsa, or XBBS, moves closer to manufacturing its salsa.

The initial plan is that XBBS will process salsa in its own facility as nobody else could make it as good as XBBS can or be trusted with the recipe.

XBBS has followed the FAPC Client Success Path starting with the Basic Training Workshop and subsequent steps through prototype production, including recipe scale-up and process development.

The scaled recipe is now in a spreadsheet format, broken out in columns showing percent and batch size of 25, 50, and 100 gallons.

The client’s first reaction was, “Are you sure this will work? It just does not feel like real cooking. How do I correct it in case the taste lacks a little something? I adjust it all the time at home if I think it needs a little more salt, garlic, is to thin or whatever, in order to make sure each batch is exactly the same.”

Here is where “hands-on” in the kitchen must turn to “trust” and the discussion shifts to explain variation, using consistent ingredients and processing methods.

The day has arrived to work out the process and a 25-gallon batch is planned, and processing steps are explained. If all goes well, the finished product will be used for customer sampling and market evaluation.

The folks from XBBS arrive with ingredients, jars, lids, several different brands of canned tomatoes, and lots of onions and peppers to clean and chop. In addition, the cilantro was left at home.

The first issue is the tomatoes are two different brands and only one brand fits the final salsa ingredient label. The second issue is the local stores do not have enough cilantro. The plan is changed to make only 10 gallons, and the spreadsheet is adjusted for a 10-gallon batch.

The third issue arises when measuring cups and spoons suddenly appear when we get ready to start weighing ingredients.

After again reviewing how the spreadsheet was calculated, the scale wins, and the cups and spoons are put away to use another day.

So far, it has been a typical first day in shifting a product from the kitchen to a production scenario.

Explaining the advantages of using partially and/or fully prepared vegetables can wait until XBBS become more comfortable with large-scale processing. It then will become a cost-saving opportunity.

Ingredients have all been weighed, placed in a steam-jacketed kettle, and the heat is turned on.

The first question from XBBS is, “How much does one of those cost?”
A ballpark price is given and after a period of disbelief, the next remark is, “What is it, a Porsche design?”

The cooking continues while temperature is monitored with a digital thermometer.

“Where do you get one of those and how much do they cost? We never thought about checking the temperature – we just cooked our salsa until it was done.”

When the salsa is at proper temperature to optimize shelf life, it is weighed to check yield and transferred to a volumetric piston filler that is controlled by pressing a foot switch.

Again, the reaction is, “Wow - how much does one of those cost?”

XBBS is given control of the foot switch, and jars are filled, lids and safety seals are applied, and the jars are ready for labeling.

The first 5.25 cases of product have been produced. This is very close to the projection of 5.33 cases from a 10-gallon batch.

The final step is to hold a sample for pH monitoring to assure it meets Food and Drug Administration regulations.

The scaled recipe and process has been tested, and the finished product has been passed as “not bad” by XBBS.

The processing observations and happenings for the day are reviewed and a standard operating procedure, or SOP, document is prepared or updated to include any changes or tweaks that were made to the recipe and process.

The SOP is a stepwise instruction on how to produce 18-ounce jars of XBBS brand salsa. If the SOP is followed for future batches, it is likely they also will be considered “not bad.” The SOP should include the recipe, process and specifications, or reference, for all ingredients, packaging, and other materials used.

A process batch check sheet also has been made to document all ingredients have been added in the proper amount and critical process steps have been met.

At the end of the day, some trust has been earned, and XBBS now appears more open to consider other options.

“This manufacturing equipment costs a lot of money, and we may have to rethink our business plan to take a closer look at cost and marketing. What can we use besides a confidentiality agreement to protect our recipe? Tell us about Oklahoma co-packers.”

Co-packing will be discussed in the next issue as the trail of XBBS salsa is followed from concept through reality.
Where do we measure? What do we measure? What does it mean?

Establishments must ask these questions when identifying the best methods to evaluate and track production lines and processes.

Effective management of an organization depends on defining, gathering, and analyzing information that provides feedback on current performance and projecting future needs.

The concept is embodied in Management by Fact², a core value of the Baldrige Award, as defined in the excerpt from the 2007 award criteria.

Management by Fact²,³
The measurement and analysis of performance is important to organizations.

These measurements should come from business needs and strategy and supply important data and information about processes, outputs, and results.

Performance management includes several types of data and information: customer, product, and service performance; comparisons of operational, market, and competitive performance; supplier, workforce, cost, and financial performance; and governance and compliance.

Some example areas that data could be divided into to facilitate analysis are markets, product lines, and workforce groups.

Analysis refers to extracting larger meaning from data and information to support evaluation, decision making, and improvement.

Analysis entails using data to determine trends, projections, and cause and effect that might not otherwise be evident.

“Analysis supports a variety of purposes, such as planning, reviewing your overall performance, improving operations, accomplishing change management, and comparing your performance with competitors’ or with ‘best practices’ benchmarks.”

Without data, you are just another person with an opinion.”⁵
Anonymous

The selection and use of performance measures or indicators are main considerations in performance improvement and change management.

These measures or indicators selected should best represent the components that cause an improved customer, operational, financial, and ethical performance.

“A comprehensive set of measures or indicators tied to customer and organizational performance requirements provides a clear basis for aligning all processes with your organization’s goals. Through the analysis of data from your tracking processes, your measures or indicators themselves may be evaluated and changed to better support your goals.”

Data

All establishments have processes that can be measured. The difficult part is identifying what to measure and what data needs to be collected.

The question should not be how to collect data, but rather how to collect useful data?

Most organizations have several types of data which to choose; however, much of it may have little value or is measuring the wrong things.

Some questions to ask: What do I want to know? How often to collect the data? Which machine, operator, and/or shift? How do we know if the data is contaminated?

There are different data types, such as variable or attribute, and the establishment needs to set parameters to ensure accuracy and the relevant process is represented. Good decisions can only be made from accurate data.

Analysis

Statistical analysis is the science of turning data into information to be analyzed.

Many statistical analysis techniques are simple yet powerful, such as looking at how data from a process varies over time.

Ensuring the data measures what it is intended requires understanding the purpose of the data. What decisions will an establishment make on the analysis of collected data?

Company performance reviews should be supported by the statistical analysis of trends, organizational projections, comparisons to best practices, and to help set priorities for use of resources.

Not only should the normal operational data be used for analysis, but also customer, financial, market,
and competitive data are identified by establishments using the Baldrige criteria.

Basic quality tools used for analysis include cause and effect diagrams, flowcharts, check sheets, histograms, Pareto diagrams, scatter diagrams, and control charts.

These simple tools are used to create visual representation of the data. Most data sets do not make sense at face value, but by adding statistics and basic quality tools, the information is presented in a visual way that can be easily interpreted.

**Benchmarking**

Are we the best we can be? Companies that use the Baldrige criteria are striving for continuous improvement. These companies do not measure and analyze their processes to compare how the process is doing over time, but they have an internal desire for achievement and being as good as or better than competitors.

This desire is achieved by benchmarking, “an improvement process in which a company measures its performance against that of best-in-class companies, determines how those companies achieved their performance levels, and uses the information to improve its own performance.”

Benchmarking areas include strategies, operations, processes, and procedures.

**Knowledge management**

How do we gain knowledge? It is critical for an establishment to comprehend the data.

Category 4 of the Baldrige criteria recognizes for companies to continually improve they must not only have data but also analyze the data and then share the data.

The management and employees of a company would not be able to gain knowledge if all the data, graphs, charts, and other statistical information are filed away in folders and binders.

The information gained from data must be made available to all personnel to gain knowledge of a process.

We cannot improve a process if we do not know or have knowledge of what the process is currently producing.

“No amount of insight can keep a company ahead if it is not properly distributed where it’s needed.”

Transformation of data is where raw data must be processed into information, which creates a foundation for knowledge.

Knowledge, built from experience, values, and the correct information, is used to make informed decisions and is the basis for wisdom.

An establishment’s performance measurement system must be aligned and managed through the strategic plan.

Organizations should carefully plan their measuring and analysis systems and the methods to move this knowledge through the organization to the relevant personnel. Organizations’ primary focus should be on using knowledge to add innovative solutions that add value for the customer and organization.
VALUE ADDED

What does it mean?

I was raised in my father’s grocery store in the late 40s and early 50s. Almost all grocery stock came in bulk quantities. Potatoes and sugar came in 100-pound bags, flour came in 50-pound bags, and candy came in 25-pound containers. To make these products affordable and usable to our customers, we would repackage products into smaller, more convenient, and more affordable units.

One day a case of Duncan Hines cake mix appeared. I didn’t know where to place it on the shelf, so I asked my dad. He said to put it with the cake ingredients (flour, shortening, etc.) and then added that it would not sell because it costs 8 cents more than making it from scratch.

His whole purpose for being in business was to make a profit by providing good quality products at a bargain price. He did not recognize the consumer was starting to look for ways to save time and have a product that was easier to use without making preparation mistakes.

During the 1960s, I worked in the canned meats division of Hormel Foods. The company had a great assortment of products that were fully cooked in shelf-stable containers, offered in portioned controlled units at affordable prices.

Spam was the profit and volume leader at the time, and still remains so today. Hormel Foods still understands the value of maintaining contemporary products, and there is a constant effort to improve the product line. Spam is now available in at least five different varieties for various consumer needs. I believe Spam is one of the best examples of a value-added meat product that the meat industry has ever experienced.

It is absolutely important to evaluate and decide what is truly considered a value-added product and what is likely to succeed.

In my opinion, the key components of the value-added concept for food products are 1) Is it more convenient for the consumer? 2) Is it cost effective for the consumer? 3) Can the manufacturer make a reasonable profit, and will the manufacturer get paid for adding value to the product?

The hard part of applying these principles is the creation of an infrastructure and a culture in the company that embraces the entrepreneurial approach of value-added thinking. Manufacturers must have insightful employees who know the needs of their customers, even when the customer cannot identify them. The employees of a food manufacturer who are committed to value-added processing also must keep up with new technology in equipment, ingredients, and processing.

Most importantly, they must have the passion to improve the product. This passion is not easily captured in employees, and it must be seen and enacted by manufacturing management. This passion must begin with management; it must be continuously emphasized in all aspects of work, and employees must see the management actively involved with it.

Sometimes adding value is just simply asking the customer how the manufacturer can improve. A great example is the FAPC grain products program.

The FAPC assisted the Oklahoma Wheat Commission in a partnership with Mexican millers to gain sales of Oklahoma wheat based on specific quality attributes of the wheat as they relate to specific milling and baking needs in the Mexican market.

I conclude by saying most manufacturers are guilty of thinking their present product is as good as it needs to be. However, there are ways to make it better, and if we do not continually search for these improvement, the competitive food manufacturing world will pass us by.
The restaurant is only as good as its preparation. Fittingly, marketing to restaurants is no different.

True, based on sheer volume, the food business may find itself in a position to significantly scale up operations and then would be able to service the potential contract, but such escalation takes a great deal of time and funds may not be immediately available even with the restaurant’s backing.

Closing this deal
Marketing to restaurants can be a viable, even lucrative, business strategy. The food business must understand and balance the pros and cons of marketing to restaurants, develop a research-based strategy, and prepare for meetings with restaurant decision makers.

At the sales call, sell the business as a whole. Emphasize the quality culture and business ethics that will permeate the relationship.

Next, sell the cost benefit of the product in terms of overall cost savings to the restaurant. Back up this commentary with visual aids, such as mock plate builds, cost analysis per serving, and point of purchase materials with the restaurant’s logo. Do not overcommit your business. Maintain realistic expectations of what you can deliver.

If it is within production capabilities, be as precise as possible about how much can be delivered and when, taking into account seasonal demand. If it is more than your business can handle, evaluate the opportunity to grow. If the benefit is mutual, the restaurant will be anticipating your product in the future.
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