Willy Wonka and the jelly bean rule
See page 12
From the Director 3
FAPC to hold crisis management seminar Feb. 19 3
Naturally unnatural 4
By Jacob Nelson, FAPC Meat Processing Specialist
Schatte, Cowart appointed to Industry Advisory Committee 6
By Mandy Gross, FAPC Communications Services Manager

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Foundation Focus Team fosters recognition of private donors 7
By Chuck Willoughby, FAPC Business & Marketing Relations Manager

Second Grow: Oklahoma Biofuels Conference held 8
By Nurhan Dunford, FAPC Oil/Oilseed Chemist

E. coli O157:H7: Good bug gone bad 10
By Peter Muriana, FAPC Food Microbiologist

Willy Wonka and the jelly bean rule 12
By Corey Stone, Business & Marketing Strategist

The scoop about vanilla 16
By Darren Scott, FAPC Sensory Specialist

The search for a co-packer 18
By David Moe, FAPC Pilot Plant Manager

Baldrige criteria: Focus on workforce 20
By Jason Young, FAPC Quality Management Specialist

Creating a safer product-manufacturing environment 22
By David Howard, Unitherm Food Systems

About the cover...
The jelly bean rule attempts to prohibit foods like jelly beans, which are low in fat, from being called healthy. For novel claims, or claims for which there is no FDA directive, scientific research can often pave the way for a health claim. This article offers some basic information and insight for food businesses, especially those new startups and smaller niche food businesses.
Dr. J. Roy Escoubas

The mid-September issue of FoodBusinessNews reported the food industry in America is having a relatively good year. Almost every article related good performance for the year and an optimistic outlook for the next months.

Almost every sector reported solid earnings and in many cases double-digit growth. If there were areas of flat or declining growth, it appeared in some parts of the industry to be associated with health issues. As an example, the sweetener sector, particularly the high-fructose corn syrup (HFCS) market, has not shown comparable growth, and food marketers have been increasingly using claims indicating exclusion of HFCS from products.

According to Productscan Online, the number of new products launched in 2007 having a claim of “Containing No HFCS” has tripled when compared to those of 2006. A study by the International Food Information Council Foundation published in 2007 indicated 60 percent of Americans were trying to reduce their HFCS consumption.

There are other product and ingredient sectors that have had label exclusion claims based on consumer buying preferences. In a study by the Hartman Group, 50 percent responded they were concerned about trans fats and were actively making efforts to reduce the consumption of foods that contain trans fats. In fact, the International Foods Information Council Foundation reported 70 percent of respondents actively were consuming foods with less saturated fats and 75 percent were consuming foods with less trans fats. These statistics have increased from 2006.

The non-carbonated beverage market has continued to show solid growth. According to FoodBusinessNews, the amount of bottled water consumed by Americans has continued to increase. Currently, the bottled water market is valued at about $10 billion in the United States versus an approximate $3 billion market 10 years ago.

The consumer needs for healthier foods that are convenient, easy to prepare, portioned in ways to fit the particular consumer need, contained in safe and secure packaging, reasonably priced, and “green” are still the driving pieces for food-product innovation.

If you are having difficulty creating products that compete well for the new consumer, or if you are in need of innovative ways to improve your efficiency and profitability, call us at the Robert M. Kerr Food & Agricultural Products Center. Our technical and business faculty and staff are ready to participate with you in innovation and quality teams that will help you grow your business and improve your profitability.

FAPC to hold crisis management seminar Feb. 19

The FAPC is holding a Crisis Management Seminar on February 19, 2008, at 10:30 a.m. in room 201 of the FAPC.

The seminar will feature Will Daniels, quality, food safety and organic integrity vice president for Natural Selection Foods/Earthbound Farm in San Juan Bautista, California. Daniels and the company received some experience in crisis management when an Escherichia coli O157:H7 outbreak was linked to its fresh spinach sold under the Dole brand.

“I believe Oklahoma food manufacturers will benefit from hearing Earthbound Farm’s experience and how they were proactive in dealing with the E. coli O157:H7/ spinach outbreak,” said Chuck Willoughby, FAPC business and marketing relations manager and co-chair of the event. “There will be things from Mr. Daniels’ presentation that they will be able to take back to their companies and adapt to their systems.”

A free lunch will be provided after Daniels’ presentation. In addition, participants are invited to view research posters and listen to oral presentations that day as part of a Research Symposium sponsored by the FAPC, Institute of Food Technologists - Oklahoma, and Oklahoma Grocers Association.

There is no charge for the day’s events; however, registration is required. The deadline to register is Feb. 8, 2008, so enroll today by registering online at www.fapc.biz/pages/crisismanagementseminar.htm or calling 405-744-6071.
I believe that to comprehend our vast universe with its millions of fiery stars and frightening dark holes, we must answer the basic question, “Who created the universe?” We know that earth, which was spun off from the sun is a planet with a beginning; . . . and gained life upon its surface with static, non-thinking plants and mobile, thinking animals. To ignite the spark of life required the hand of God.

— Whitney R. Harris

The Solution

There are indications that many consumers think our food system has been severely corrupted by human interaction. Food-processing technologies, farming practices, and animal husbandry cannot escape and are equally implicated in this caper. As quickly as we recognized this problem, there came a solution to resolve this tragic predicament. This pioneering solution to our problem is reported to be so simple and unmistakably proper that we must take this course of action. We must now do all things reasonable to make our food more natural.

Definitions

You may wish to make yourself familiar with the many definitions of natural. The general theme is nature is corrupted once humans exert moderate levels of influence. Consequently, humans must not be natural. Definitions will prove important as evidenced by the food industry’s past and current attempts to define natural food systems, which may prove to be more difficult than actually complying with any definitions.

The U.S. Department of Agriculture has provided policy guidance regarding natural claims on meat labels for about 25 years. According to the original policy guidance, meat products may be labeled natural if they meet criteria addressing artificial ingredients and the processes used to manufacture the product and its ingredients. These guidelines are a complex answer to a complex question, and they may create further confusion. In an effort to define natural, the published criteria subsequently create a need to define the antonym! However, the policy memorandum remained mostly unchanged until 2005. That change was welcomed by some and quickly challenged by others.

Ingredients

Hormel Foods petitioned USDA in October 2006, and requested the agency define the term natural. The petition argues the changes made to the policy “... renders the Policy internally inconsistent and impracticable, thereby exacerbating consumer confusion and eroding the meaning of Natural claims.” Maybe the sharpest arrow in Hormel’s quiver was its challenge of the use of sodium lactate, an ingredient Hormel argued is a chemical preservative prohibited by the USDA policy for natural claims.

The Hormel petition further emphasizes the importance of prohibiting ingredients that are more than minimally processed. The policy guidance provides examples of minimal and more-than-minimal processing, although it is difficult to determine if the examples apply to the final product or to the ingredients.

I am curious if the policy or petition authors have considered water, a staple ingredient in processed meat items – both traditional and natural. It could easily be argued the water sourced from any municipal or industrial supply is more than minimally processed. Consider chlorination, ammoniation, and those processes that address turbidity concerns. Surely this water differs from anything offered directly from the clouds, rivers, streams, or oceans. Does it seem unreasonable to prohibit these processes for water used in natural meat products? Absolutely. But, can anyone objectively debate that minimal processing of water exists in modern treatment facilities?

USDA acknowledges some definitions of natural would discourage the use of certain ingredients or process aids, and a challenge exists on how to best determine a logical balance between food safety and meeting consumer demands through truthful labels. USDA even posed the question, “Are there any accommodations necessary to allow for certain operations because food processing and packaging techniques for enhancing safety may disqualify...
argue that any human manipulation of the animal growth and development process must be prohibited to fully meet a naturally raised claim. This reasoning may be more outrageous than the water discussion as evidenced by the severe economic consequences that loom for the one who offers bull steaks and boar chops.

Naturally Raised Animals

At the recent 2007 Meat Industry Research Conference, Gary Smith of Colorado State University advised that “with regard to fresh beef, the marketplace believes natural refers to conditions of animal rearing, use (or non-use) of growth promotants, components of the diet, and care and handling of animals.” Overwhelming evidence suggests the absence of growth promotants and antibiotics is heavily emphasized when entrepreneurs market products from so-called naturally raised animals. Current programs called “never” and “never ever” indicate the human practice of administering growth promotants and antibiotics does not exist.

This approach seems logical, as there is not wildlife roaming the earth whose physiology has been altered by man. By eliminating these practices, producers can now allow steers, heifers, barrows, and gilts to be more like the animals of ancient earth.

Wait...are steers and barrows eligible for naturally raised programs? Is castration of the in-tact male a practice that should be prohibited by “never ever” programs? Does a double standard exist? An absolutist may argue that any human manipulation of the animal growth and development risk associated with natural meat products. But, you should have no worries when consuming a sandwich made with all-natural ham having no artificial ingredients. The USDA allows cured products to bear the natural claim so long as the meat-curing nitrite is sourced from the bacterial reduction of nitrate, which was sourced from non-artificial vegetable powders. (Is powdered celery a more-than-minimally processed ingredient?)

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Two new members have been appointed to the FAPC Industry Advisory Committee.

The Speaker of the Oklahoma House of Representatives appointed Paul Schatte, general manager for Head Country Bar-B-Q in Ponca City, Oklahoma, and Jay Cowart, director of warehouse operations for Plains Cotton Cooperative Association in Altus, Oklahoma, to the committee.

“We are pleased to have both Mr. Schatte and Mr. Cowart on our Industry Advisory Committee,” said J. Roy Escoubas, FAPC director. “The FAPC will benefit from their experience and leadership in the food and agricultural industries.”

Schatte said he is excited to learn more about the FAPC and provide leadership and advice as part of the committee.

“Without a doubt, it’s an honor to be asked to serve in that capacity,” Schatte said. “I believe I can bring something to the table by serving on the committee, but I think Head Country can benefit as well.”

Schatte has worked as general manager of Head Country for almost nine years and is responsible for all manufacturing, marketing, and sales operations for the plant. Under his leadership, sales have almost tripled to about $6 million.

Even though the company is known for its number one selling barbecue sauce in Oklahoma, it produces other products as well, including seasonings, salsa, and marinade.

“We are all about barbecuing, but not just barbecuing,” Schatte said.

The barbecue sauce is sold in 100 percent of grocery stores in Oklahoma and has a presence in surrounding states. The company is focusing on getting its products in Texas stores.

“If we can get 5 to 10 percent of the market in Texas, we will be doing really well because of the size of the state and the love of barbecue,” Schatte said.

Schatte graduated from Concordia Teachers College in Seward, Nebraska, and earned a master’s degree in education administration from Oklahoma State University.

Cowart said he is excited about the opportunity to serve on the committee.

“I am honored to be considered,” he said. “The committee already has some cotton knowledge, but my past experience has provided me with an understanding of issues beyond just warehousing of cotton, including marketing and textiles.”

As director of warehouse operations, Cowart manages the cotton warehouse storage and shipping facilities of the Oklahoma Cotton Cooperative Association located in Altus, Oklahoma; Frederick, Oklahoma; Liberal, Kansas; and Memphis, Texas, and the Rolling Plains Cooperative Association located in Sweetwater, Texas; Hamlin, Texas; Rule, Texas; and Flower Mound, Texas.

Cowart is responsible for the management of all labor, facilities, equipment, and budgets and the forecasting and planning of cotton warehousing and shipping for customer orders.

“One of my main responsibilities is overseeing the storing and protecting of the integrity of the cotton once we receive it from the gins,” Cowart said. “Once the cotton has been purchased, I help make sure the cotton is ready for the buyer.”

Cowart attended Western Oklahoma State College and received a bachelor’s degree in agricultural economics from Oklahoma State University.
The FAPC experienced great success in its first 10 years by assisting more than 1,000 Oklahoma clients through 3,000 technical and business projects. FAPC’s recent 10-year impact study reported that of 343 responding businesses, 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.

“Companies that provided us sales information reported a 16.95 percent sales growth between the time of assistance and 2006,” said Rodney Holcomb, agribusiness economist and chair of the Charles B. Browning Endowed Professorship. “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.”

The FAPC is supported strongly by state legislative funding; however, FAPC’s faculty and staff are eager to provide even more impact to Oklahoma through expansion and enhancement of its business and technical assistance programs and as its applied research programs.

To achieve this, an increased focus on obtaining donations from industry and private individuals has been initiated through the creation of the Product Innovation Fund – a vehicle through which businesses and individuals can provide tax deductible support of the FAPC mission with donations to the OSU Foundation.

“The results of our 10-year impact study confirm we are meeting the FAPC mission and are ‘Adding Value to Oklahoma,’” said Roy Escoubas, FAPC director. “As we look forward to the next 10 years, our Foundation Focus Team, along with our faculty and staff, is dedicated to providing invaluable service to Oklahoma and its value-added agricultural industry.”

The FAPC Foundation Focus Team serves to support and enhance the programs that carry out the mission of the FAPC through the donations of individual and industry partners.

The Foundation Focus Team is currently comprised of four individuals whose purpose is to guide development and recognition of private donations to FAPC.

The team approach to this activity provides varying perspectives and wisdoms that will lead to synergistic results.

To date, the Product Innovation Fund has received more than $50,000 in contributions from the Oklahoma value-added industry and from private individuals.

Future fapc.biz issues will feature research and technical projects and other programs supported by FAPC Foundation Funds.

The Foundation Focus Team includes (left to right) Chuck Willoughby, business and marketing relations manager; Karen Smith, workshop coordinator; Mandy Gross, communications services manager; Colleen Fleming, senior financial assistant; and Kyle Flynn, meat pilot plant manager.
The first Grow: Oklahoma Governor’s Conference on Biofuels, was held October 3–4, 2006, in Norman. The conference highlighted federal and state initiatives for biomass and biofuel production.

Because of the overwhelming interest and attendance in the first conference, Grow became an annual event. The second Grow Conference was held in Oklahoma City on October 16–17, 2007.

David Fleischaker, secretary of energy, welcomed the attendees and introduced Governor Brad Henry. In his welcome speech, the Governor said, “In May of this year, I signed into law legislation creating the Oklahoma Bioenergy Center, a $40 million research collaboration to further the development of Oklahoma’s biofuels industry. With the establishment of the Oklahoma Bioenergy Center and other advancements, Oklahoma is playing a central role in reaching our national goals. Our rich native prairie grass resource, petroleum refining capacity, position at the intersection of the petroleum product infrastructure and the interstate highway system, the experience of its research community and, most important, the talent and determination of the people make Oklahoma a leader in biofuels.”

Oklahoma State University, the University of Oklahoma, and the Samuel Roberts Noble Foundation are the founding members of the Oklahoma Bioenergy Center, or OBC. Feedstock development, collection and transportation, conversion technologies, and distribution are the issues to be researched and evaluated by scientists. Ethanol from lignocellulosic material will be the main focus. Biodiesel and starch- and sugar-based biofuel production also will be examined as secondary technologies by the center researchers.

It is expected the center will provide a boost for the state’s rural and agricultural economy. The OBC is funded with $40 million during a four-year period.

Governor Henry said, “The OBC would make Oklahoma a leader in the energy arena. A thriving oil and gas industry certainly does not nullify our need to pursue other sources of energy. In fact, more and more oil companies today are making the necessary investments in alternative energy.”

Speakers from 10 states: California, Colorado, Idaho, Iowa, Indiana, Minnesota, Missouri, Nebraska, Oklahoma, Texas, and Washington, D.C., gave presentations at the Grow Conference. The new Farm Bill, biofuel feedstock development, advances in conversion technologies, fuel versus food/feed supply, biofuels, and water management were some of the issues discussed at the conference.

Terry Detrick, vice president of American Farmers & Ranchers and president of the Oklahoma Sustainable Energy LLC, discussed new opportunities for Oklahoma agriculture.

In his presentation Detrick mentioned Producers Cooperative Oil Mill, or PCOM, in Oklahoma City signed an agreement with Plains Oilseed Products Cooperative to process canola and sunflower seeds using PCOM’s currently available excess capacity in its facility. He also addressed the potential impact of Oklahoma Sustainable Energy, or OSE, on the Oklahoma economy.

OSE was established after five years of research and background
“In May of this year, I signed into law legislation creating the Oklahoma Bioenergy Center, a $40 million research collaboration to further the development of Oklahoma’s biofuels industry. With the establishment of the Oklahoma Bioenergy Center and other advancements, Oklahoma is playing a central role in reaching our national goals. Our rich native prairie grass resource, petroleum refining capacity, position at the intersection of the petroleum product infrastructure and the interstate highway system, the experience of its research community and, most important, the talent and determination of the people make Oklahoma a leader in biofuels.”

Governor Brad Henry

study. The project was funded by $1 million in grants, loans, and matching contributions. It is a joint venture with Chaparral Energy Inc., which is an independent oil and gas producer and operator headquartered in Oklahoma City.

Chaparral Biofuels LLC is a wholly owned subsidiary of Chaparral Energy Inc. According to the company brochures, Chaparral Energy Inc. has two current projects in Oklahoma: Oklahoma Ethanol in Blackwell, Oklahoma, and Mainline Fuels Ethanol in Guymon, Oklahoma. The company is involved as an investor and carbon dioxide purchaser in these projects.

Ethanol production facilities, which will be built in Blackwell, will convert 20-million bushels of corn and milo into 50-million gallons of fuel grade ethanol. This facility also will produce 176,000 tons of high protein distiller’s grain.

OSE is going to be the only ethanol plant partnering with the gas and oil industry. A sister company of Chaparral Energy Inc., Chaparral CO₂, will “capture, transport, and sequester CO₂ in depleted oil fields for enhanced petroleum oil recovery,” according to an informational sheet published by the company. Detrich referred to alternative fuels/biofuels as “companion fuels,” emphasizing the petroleum industry and biofuels industry would be stronger and more profitable by working together. Detrich also mentioned grain sorghum, “a water sipping crop,” would be one of the feedstocks used at the Blackwell ethanol production plant.

Grain sorghum produces the same amount of ethanol per bushel as corn. Oklahoma has the potential to produce as much as 28,910,000 bushels of grain sorghum, which would produce 80,948,000 gallons of ethanol. A detailed analysis of grain sorghum as a biofuel feedstock for Oklahoma can be found in the summer issue of the fapc. biz magazine.

Detrick said Oklahoma is on the verge of a new era with the present opportunities in oilseed and ethanol production. He also discussed the importance of alternative crops such as canola, sunflower, and barley as rotation crops for wheat; the positive impact of no-till practices on the environment and retention of moisture and nutrients in soil; and the availability of oilseed processing and ethanol production industry by-products as feed for beef and milk production operations.

Biofuel producers and marketers, distributors, feedstock growers and processors, researchers, farmers, local, state and federal government employees, and fleet managers were given the opportunity to exhibit their products, research findings, and services at this year’s Grow Conference.

The FAPC was one of the exhibitors at the conference. The center’s biodiesel program and sweet sorghum research were highlighted at the exhibit. FAPC faculty also presented their research at the poster session.
Testing, testing... can’t the food industry just test foods to determine if they contain E. coli O157:H7? Well, yes-and-no. The food industry does perform routine testing of susceptible foods for E. coli O157:H7. Knowing it is a serious pathogen that could be present and not testing would be negligent. The problem with testing is the incidence of contamination is infrequent and bacterial levels are so low when present that the tested portion may test negative, but contamination may be present elsewhere in the quantity of product. That is the predicament: even when the organism is there, the levels are so low that there is no way one can test enough product to ensure the remainder is completely safe. In my opinion, this seems to emphasize a food safety approach to improve process methods, such as including antimicrobials, to better eliminate the organism if it were to be there.

Background information
In recent years there has been much publicity about contaminated products and illnesses resulting from E. coli O157:H7.

Consumers may get the impression that E. coli are "bad bugs" that cause illness; yet, generic E. coli are the predominant species inhabiting people’s intestinal tracts that help to digest foods and produce vitamins.

However, there also are four groups of enterovirulent E. coli, or EEC, that include the enterohemorrhagic E. coli, or EHEC. Among the EHEC is the predominant serotype involving human foodborne illness—E. coli O157:H7.

Illness caused by E. coli O157:H7
Illness caused by E. coli O157:H7 usually manifests itself with severe bloody diarrhea and abdominal cramps. Symptoms usually start within two to five days after infection, and illnesses often will resolve themselves within 10 days.

In about 5 percent of those ill with O157:H7, more severe complications of the disease may include Hemolytic Uremic Syndrome in which toxin produced by planktonic cells in the intestinal tract is absorbed and destroy red blood cells and attack the kidney.

Young children and the elderly are more susceptible to severe forms of the illness.

Source of E. coli O157:H7
To understand the source of E.coli O157:H7, more information about the ecology of the organism is needed.

As an enteric organism, most E. coli can inhabit the intestinal tracts of animals and are a common organism shed in feces.

That is why E. coli, as well as several other enterics collectively called coliforms, often are used as indicators of fecal contamination of food or unsanitary food handling.

Coliforms may be able to survive externally if the conditions and nutrient availability are right, but they likely will not flourish to the extent they can in the intestinal tract and feces.

The presence of E. coli O157:H7 in animal intestinal tracts and feces has two major consequences that are experienced in foodborne illness outbreaks.

The first is contamination of beef carcasses during slaughter when trim is taken and used in ground beef. The second is the shedding of E. coli O157:H7 in the field near crops, which can contaminate harvested produce/fruits.

E. coli O157:H7 in the food supply
In recent years, there have been...
two major conduits for consumer illness: contaminated ground beef/hamburgers and produce such as lettuce, spinach, or fruits. The source of *E. coli* O157:H7 in both of these are related.

For ground beef, the *E. coli* O157:H7 most likely comes from contamination during slaughter when the organism is transferred from the hide onto the carcass and then into subsequently made ground beef. However, other scenarios of cross-contamination are also likely. Even contaminated ground beef can be rendered safe to eat if cooked properly.

However, fruit and produce are agricultural products that are interactive with the environment and are consumed without cooking. *E. coli* O157:H7 on produce can be acquired from contaminated feces from birds, wild animals, and food production animals; runoff from nearby contaminated fields/aquifers; use of contaminated manure as fertilizer; and other sources.

**Interventions to protect consumers**

For raw beef products, the United States Department of Agriculture-Food Safety and Inspection Service has declared the presence of *E. coli* O157:H7 as an adulterant, and raw products shown to contain this organism would have to be processed to eliminate or destroy it.

In order to reduce and prevent further episodes of contaminated products, USDA-FSIS has demonstrated a willingness to examine new technologies for microbial intervention that will hopefully reduce future outbreaks.

Similarly, on the heels of recent outbreaks with produce, the Food and Drug Administration has been working with the green leafy produce industry to bolster industry-wide efforts to improve safeguards for the industry.
illy Wonka’s world was a wondrous place, and few people would begrudge Mr. Wonka’s inventive marketing. Consumer advocates would argue, however, that claims, like Mr. Wonka’s that is recounted in the title of this article, often serve to confuse or mislead consumers about the dietary decisions they are making.

In response, the Food and Drug Administration currently implements labeling guidelines for food products. Among other things, these guidelines govern what health claims may be made on food labels.

Sam Beauregarde—whose daughter, Violet, ate Mr. Wonka’s gum and was subsequently transformed into a blueberry—would have appreciated the FDA’s “jelly bean rule.”

This rule basically attempts to prohibit foods like jelly beans, which are low in fat, from being called healthy. For novel claims, or claims for which there is no FDA directive, scientific research can often pave the way for a health claim.

This would have worked against Mr. Wonka, who observed Violet being rolled away and revealed thoughtfully, “It happens every time, they all become blueberries.”

This article is not intended to be a primer on food labeling, or even an authoritative look on health claims. Instead, it offers some basic information and insight for food businesses, especially those new startups and smaller niche food businesses that quite often approach the FAPC with labeling concerns.

All of the technical information provided in this article can be found on the FDA website, specifically at http://vm.cfsan.fda.gov/label.html, among others, or in the Code of Federal Regulations, or CFR. For a more interactive presentation of labeling requirements, contact the FAPC Business and Marketing Team.

This article is designed to give an initial overview of the legislative reasoning regarding the restriction of claims, focusing along the way on specific terms of interest to many FAPC client businesses. Following
that, the article addresses why this applies and what food businesses might consider in the alternative. Again, the FAPC Business and Marketing Team is equipped to handle those questions that delve deeper into this topic on a case-by-case basis.

**The jelly bean rule**

For many years, food companies were relatively uninhibited in their marketing of food products. Food companies were free to use the word “healthy” in any manner they saw fit. Products with little fat but a large relative quantity of salt were sometimes marketed as healthy. Candies and sweets that contained no fat could honestly make a fat-free claim, despite the obvious lack of health benefits to the consumer.

In response, the FDA instituted what has become known as the “jelly bean rule.” The rule requires that any product using the term “healthy” have at least a small percentage of some nutrient, as determined by the FDA. When definitions for “healthy” were proposed by the FDA in January 1993, there was no such provision, leading to the possibility that jelly beans, which contain no fat or sodium, could be labeled as healthy. Soft drinks would have been able to use the term as well.

For any health claim, there are general criteria claims that must be met. All information must be in one place on the label without intervening material. Intervening material is essentially a different piece of information or information in a different style or font on the label from the claim itself (reference statement permitted). For a disease or health-related condition, only information on the value that intake or reduced intake as part of a total dietary pattern may have is permissible.

All information must be complete, truthful, and not misleading, and the presentation must enable the public to understand the information and its significance in the context of a total daily diet.

For a company to use the word “healthy,” or variations on it, like “healthful,” the food must be low in fat and saturated fat and have limited amounts of sodium and cholesterol. The food also must contain at least 10 percent of the recommended daily value of one of the following: vitamin A, vitamin C, iron, calcium, protein, or fiber. In most cases, those nutrients would have to occur naturally in the food.

It is important to note this rule, as it was originally proposed, applies whether the “healthy” term is used simply as a descriptive term, or in the brand name itself. This effectively closes the door on any attempt by companies to circumvent the regulations by explicitly branding the product as healthy. The brand name “Healthy Home Cookin’” would not be permitted, unless of course, all products under the brand’s umbrella individually met the necessary standards.

Further, a food must meet the definition of “low” for fat and saturated fat, and neither cholesterol nor sodium may be present at a level exceeding the disclosure levels set forth in the Title 21 of the CFR. The food must contain less than the specified levels of certain disqualifying nutrients: fat, saturated fat, cholesterol, and sodium. In addition, the food must comply with any other definitions and declaration requirements for any specific nutrient content claims made.

The regulations also cover claims regarding diseases. These claims must indicate that disease depends on many factors and cannot quantify any

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### Minimum nutrient amounts all foods making health claims must contain

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin A</td>
<td>500 IU</td>
</tr>
<tr>
<td>Vitamin C</td>
<td>6 mg</td>
</tr>
<tr>
<td>Iron</td>
<td>1.8 mg</td>
</tr>
<tr>
<td>Calcium</td>
<td>100 mg</td>
</tr>
<tr>
<td>Protein</td>
<td>5 g</td>
</tr>
<tr>
<td>Fiber</td>
<td>2.5 g</td>
</tr>
</tbody>
</table>

*Source: [http://www.cfsan.fda.gov/~dms/flg-6c.html](http://www.cfsan.fda.gov/~dms/flg-6c.html)*

### Maximum amounts allowed for foods containing disqualifying nutrients

<table>
<thead>
<tr>
<th>Disqualifying Nutrients</th>
<th>Foods</th>
<th>Main Dishes</th>
<th>Meal Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fat</td>
<td>13 g</td>
<td>19.5 g</td>
<td>26 g</td>
</tr>
<tr>
<td>Saturated Fat</td>
<td>4 g</td>
<td>6 g</td>
<td>8 g</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>60 mg</td>
<td>90 mg</td>
<td>120 mg</td>
</tr>
<tr>
<td>Sodium</td>
<td>480 mg</td>
<td>720 mg</td>
<td>960 mg</td>
</tr>
</tbody>
</table>

*Source: [http://www.cfsan.fda.gov/~dms/flg-6c.html](http://www.cfsan.fda.gov/~dms/flg-6c.html)*
degree of risk reduction. The terms “may” or “might” must be used in a way that expresses a relationship between substance and disease. There also is a provision that a claim not be represented for infants or toddlers less than 2 years of age.

A claim on a food product that directly or by implication characterizes the level of a nutrient in the food is called a nutrient content claim. Nutrient content claims also are known as “ descriptors.” Examples given by the FDA of nutrient content claims are “low fat” or “high in oat bran.” If the regulations provide for a claim, that claim may be used in accordance with that regulation. Otherwise, the food company must submit a notification for a claim based on an authoritative statement by a U.S. government scientific body.

The CFR provides information regarding the prominence of nutrient content claims, as well as what other information might be necessary, such as disclosure statements. Disclosure statements call attention to certain nutrients in the food that may comprise a diet risk. The general rule is to not mislead a consumer. Pretty much any claim is going to require nutritional labeling.

Other notable terms

“Healthy” is not the only targeted term. A “good source” claim may be made when a food contains at least 10 percent of the “Daily Value,” or DV, for that nutrient. A “high” claim may be made when a food contains at least 20 percent of the DV. Nutrients that do not have an established DV may not make “high” or “good source” claims.

Statements about a nutrient for which there is no established daily value are allowed as long as the claim specifies only the amount of the nutrient per serving. It is not permissible to imply that there is a lot or a little of that nutrient in the food. Such a claim might be “contains x grams of omega-3 fatty acids.” These claims must be outside the “Nutrition Facts” panel.

It is important to note under the regulations statements those that do not specify an amount of a nutrient, like “contains omega-3 fatty acids” or “provides omega-3 fatty acids,” are not permitted. Such claims would be synonyms for a “good source” claim, which is not permitted for nutrients that do not have established daily values.

Likewise, a food that is normally low in or free of a nutrient may not have a “low” or “free” claim. Consider fat-free broccoli. The claim is reserved for foods that have been specially processed, altered, formulated, or reformulated in some way to at least lower the amount of nutrient in the food.

A claim may still be made that refers to all foods of that type. For instance, all broccoli would be considered fat-free, so a claim that a brand contains “broccoli, a fat free food” would be allowed. Products with no regular version may make claims if those products were specially formulated to exclude a nutrient (sodium-free meat rubs, for example). To use the term healthy, meat, poultry, and fish can contain up to 5 grams of fat per serving and per 100 grams and up to 2 grams of saturated fat. Skinless chicken and turkey breasts, pork tenderloin, and beef round meet this definition, but few other products do.

There are some allowances for relative claims or comparisons to foods to which the product is an option, as long as it is properly framed in the appropriate context.

Relative claims such as “light,” “reduced,” “less,” “fewer,” “more,” or “added,” must state “accompanying information.” This information includes the percentage or fraction by which the food has been modified, the reference food, and the amount of nutrient in the labeled food and in the reference food. The regulations are specific about where the accompanying information must be placed.

The term “fresh” generally means a food is in a raw state and has not been frozen or subjected to any form of thermal processing or preservation. Exceptions are made for waxing produce, use of pesticides, pasteurization of milk, and food safety processes such as ionization and washes. Of course, refrigeration is an allowable process.
Applying the rule

The National Food Processors Association, the lobbying group for the packaged food industry, has maintained the regulations, and the jelly bean rule in particular, are too restrictive.

To illustrate the point, green beans, raisins, and apple juice would be considered foods that could not be described as healthy because they do not contain 10 percent of the daily value for any of the positive nutrients. Understanding this, the rule contains specific exemptions, including fresh fruits and vegetables. Also, any fruit or vegetable that contained at least 10 percent of the listed nutrients in its fresh state could in a processed state be fortified and then labeled as healthy.

This means a food business could manufacture apple juice fortified with the vitamin C lost while processing the apples into the apple juice. Alternatively, companies that can make a good case for using the term healthy can appeal to the FDA.

Consumer advocates maintain the rule is not restrictive enough because it allows certain products like frozen entrees to contain more fat than is appropriate.

As detailed and seemingly restrictive as the jelly bean rule is, it does not preclude inventive, but honest marketing.

Likewise, it should not hamper new product development. In 2004, Cadbury Schweppes’ introduced 7Up Plus, a calcium-enriched soda, in the face of a growing movement to remove unhealthy choices from vending machines in public schools. Until then, the jelly bean rule had the effect of forbidding nutrient fortification, even though it was not explicitly impermissible.

The new 7Up product got around the rule by adding fruit juice to the formula and by not making any specific health claims. This is a legitimate tactic considering the school vending machines removed soda in favor for juice to begin with. This marketing is thoughtful and forward looking, but well within the rule. Such ingenuity can be applied to many other products.

Health claims are an effective marketing tool. Many entrepreneurs approach the FAPC with designs to market their new food products to health-conscious consumers. These products are often high quality and genuinely better dietary choices than their prospective competitors. Yet, some claims offered by FAPC clients are simply not feasible. In those cases, it is important to embrace the spirit of the marketing advantage without violating the textual limitations of the FDA regulations.

In other cases, where a healthy-thinking market exists but is underserved, the food business often can initially formulate its offering to meet the requirements of the jelly bean rule, thereby ensuring that advantage, at least for the short term.

Finally, the food business can follow the 7Up example, and simply make no claim while letting the nutritional information do the talking. After all, there is no FDA restriction on the sales pitch to the buyer or wholesaler. Just ask Mr. Wonka.
Whether it is a tray of hot cookies from the oven or a scoop of cold ice cream from the freezer, vanilla’s flavor and aroma are as distinct as they are popular.

Vanilla has had a long history of being used as a flavoring; however, some have even believed it could be used as a medicine or an aphrodisiac.1,2

One might guess that a spice that has inspired such a broad spectrum of beliefs and uses would have an interesting past as well ... and that would be correct.

Vanilla is native to Mexico and Central America; however, it also is grown in Madagascar, Indonesia, and Tahiti. These areas all provide the tropical climate that best suits the growth of the vanilla vine.1,2,3

The earliest people believed to have cultivated vanilla are the Totonac, who lived near an area in Mexico that is now known as Vera Cruz. According to their folklore, vanilla came from the tragic romance between a princess so beautiful she was forbidden to marry a mortal, and her all-too-earthly lover. As fate would have it, their affection was discovered and after fleeing into the jungle, they were subsequently beheaded. The spot where their blood was spilled is where the Totonac believed the first vanilla vine appeared.2

There are more than 50 species of vanilla orchid, of which only three have found their way into commercial utilization. They are Vanilla planifolia, Vanilla tahitiensis, and Vanilla pompon. Vanilla planifolia is a relatively common variety in the food industry, while Vanilla tahitiensis is more rare and expensive.3,4

Mexico was the major producer of vanilla until the nineteenth century because vanilla vines are relatively easy to grow under the right conditions, but their flowers can only be reliably pollinated in nature by a native species of bee. However, in 1841, Edmond Albius, a 12-year-old African slave in a French colony located on Réunion Island, devised a method for pollinating the flowers by hand.1,2,5

Vanilla beans are odorless and must be cured to allow their characteristic aroma to form, and several different curing methods have been developed over time.

However, they all follow these four approximate steps.

1. Wilting/killing of the beans: Stop the beans from growing.
2. Sweating: Rapid dehydration and slow fermentation of the beans.
3. Low temperature drying: Reduces the moisture content of the beans to about 25 percent.
4. Conditioning: Aging the beans for proper flavor development.

References:
5. After the beans have been cured they are then graded and bundled. It is common for extracts to be made from vanilla beans, though the beans also can be used whole or as powders. Vanilla extracts are basically made by crushing the beans, mixing them with a solution of water and ethanol, and then removing the residue from the liquid.3

In the food industry, vanilla is used most in dairy products and beverages followed by baked goods and confections. It is the most popular flavor of ice cream, and in fact, the type of vanilla that is used determines how the ice cream is categorized.1,3 From its legendary origin to its modern-day appeal, vanilla’s subtle aroma and flavor have proven to be captivating. It has been a popular additive in everything from food to pharmaceuticals, and while vanilla’s power as an aphrodisiac may be highly suspect, its powerful sway over consumers certainly is not.
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previous articles in fapc.biz

discuss steps in bringing a

food product from concept

through actual manufacturing.

XBBS, the featured company, is

now ready to begin production and

marketing of “X Border Brand Salsa.”

XBBS’s initial plan was to

manufacture the product themselves.

The strategy and business plan now

is to “outsource” processing to an

Oklahoma co-packer to reduce

“up-front” expenditures. Available

resources will be directed toward

marketing.

The FAPC pilot processing

facility produced 50 cases of salsa

for customer evaluation and market

testing. Initial results have been

favorable and market evaluation

continues.

Selecting a co-packer and staying

within projected cost estimates is the

final step of the plan to be addressed.

XBBS has made the decision

to only consider co-packers with

experience processing similar acidified

foods.

The XBBS strategy is to build a true business partnership

with the co-packer.

Also, the processor must have

documented sanitation and food

safety programs in place, as well as be

familiar with third party audits.

In addition, XBBS desire the co-

packer have the flexibility to grow

from small batches to large batches as

sales increase.

XBBS will agree to share or

negotiate cost of equipment needed for

future growth.

The expectations go beyond the

typical handshake and promise – “no

problem, we can make whatever you

want.”

The XBBS strategy is to build a

true business partnership with the co-

packer.

From the list of co-packers

furnished by the FAPC, the top three

candidates were selected by XBBS.

The selection was based on phone

interviews with co-packers and client

references.

Before visiting the potential co-

packers, a checklist was prepared as a

guide for developing the final contract.

The first co-packer visit was

to a large co-packer that processed

significant volume of product for

national and private label brands.

None of the criteria on the

discussion list were of concern and

were considered routine requirements

for doing business.

The first impression after touring

the facility was - “we hit a home run

on the first place we visited.”

However, they were not so sure

after further discussion with Vinnie

Ngyun, plant manager.

He said, “You got to commit to a

minimum 8-hour run and our slowest

line speed is 500 cases per hour. You

need 100 cases, you still get hit for the

eight hours.”

Ngyun further advised that “50

percent payment is expected up front

with the remainder due upon receipt

for new customers.”

XBBS representatives thanked

Ngyun for his time and advised – “we

will get back to you on our decision.”

Selecting a co-packer and staying within projected cost

estimates is the final step of the plan to be addressed.
A week later a visit was made to the second co-packer on the list. This plant was a medium-size operation that specialized in something, but it was hard to determine what it was.

When asked about salsa, the response from Fred, the owner, was “we did some of that last year, it was no problem, and we can sure do it again; we have a kettle, a thermometer, a scoop, and a funnel, so we should be able to do exactly what you want.”

Regarding the checklist, he said, “None of that’s a problem, but we like to keep things informal around here.”

When asked about cost, he said, “Don’t worry about it, we will treat you right.”

The XBBS response was, “We have another appointment to get to.”

The third plant visit was to a small processor that is making salsa for a local chain of Mexican restaurants. The establishment is looking for opportunities to fill excess capacity and minimum order is one kettle batch or about 20 cases.

When touring the plant, the XBBS reaction was, “We would not hesitate to bring a customer here.”

During discussion prompted from the checklist, Billy Gomez, the operating manager, said, “This is the same type of discussion and details we go through with our other customers. We like to have everything spelled out in a written contract at the start. Our mission is to grow as a processor and not get tied up in marketing.”

This was followed by the question from XBBS: “When can we get started?”

The XBBS experience in selecting a co-packer can be compared to the story of the three bears.

The visit to the first co-packer was summarized as “This co-packer is too big, and costs are too high if we pay for a full shift.”

After the second, “This co-packer is all talk and does not listen.”

Finally after the third co-packer, “This co-packer is just right; they have salsa experience, welcome small orders, and want to share our success as we grow the business.”

In selecting a co-packer, cost is important, but factors such as building relationships, trust, service, and experience cannot be overlooked for a true win-win business arrangement.

Note: People or companies quoted in this article do not represent real people or companies.
Category 5 of the Baldrige Criteria for Performance Excellence addresses key workforce practices such as creating and maintaining a high performance workplace, asking your workforce to adapt to change, and using the organizational resources to support the workforce to align with the strategic objectives and action plans.

Organizations must address and develop systems for the workforce to achieve organizational and personal success.

Engaging, managing, and developing the workforce in the twenty-first century is about embracing change.

Organizations still must work to motivate, inspire, and influence the workforce, but the complex variety of social, cultural, demographic, and technological change makes developing a high performance workforce more challenging than ever.

There is nothing more important to organizational success than highly valuing people, treating them with respect, and managing them well.

Employees are much more likely to be good performers when they like their jobs.

Joe Gibbs, professional football coach for the Washington Redskins, NASCAR owner, and humanitarian said it best, “People who enjoy what they are doing invariably do it well.”

Hawthorne Effect

A series of research activities in the early 1900s recognized the importance of human factors in motivating employees. At the Hawthorne Plant of Western Electric Company, researchers set out to maximize employee performance by adjusting the lighting, length of the workday, and length of rest periods.

Researchers were puzzled when performance stayed the same and sometimes improved whether the lighting was bright, dim, or even too bright or dark.

The conclusion to these studies showed employees improved their performance based on the fact that they felt like someone cared enough to investigate the working conditions.

Duke Okes and Russell T. Westott, *The Certified Quality Manager Handbook, 2nd Edition*, state, “This change in behavior due to being singled out for attention, now commonly called the Hawthorne effect, clearly shows the importance of human factors in motivating employees.”

Goal Setting

Goal setting is a method used to create increased productivity in employees.

Paul D. Sweeney in his book, *Organizational Behavior*, said, “Goals can be extraordinarily useful for stimulating, guiding, and directing behavior.”

Goal setting should be an ongoing practice in every organization. Once employees at all levels in the organization have their purpose clarified and challenges defined, motivation can be greatly improved.

The goal-setting process should be ongoing and developed to increase the workforce’s willingness to embrace more challenging goals.

One popular method used to establish and describe goals is called S.M.A.R.T, defined by George T. Doran in *There’s a S. M. A. R. T. Way to Write Management Goals and Objectives*. A S.M.A.R.T goal is:

- **Specific** - What do you want to happen? Focus efforts and clearly define who, what, where, when, which, and the why.
- **Measurable** - If you cannot measure it, you cannot manage it. Establish concrete criteria for the attainment of each goal. Measuring progress helps to stay on track and meet your target dates.

**Workforce Engagement**

Organizations must examine how they will engage, develop, and assess the workforce. Systems should be developed to promote high performance and meet the goals of action plans.

Workforce engagement is the capability of the work to achieve high performance. One tool used to increase performance is goal setting.
FOCUS ON WORKFORCE

• **Attainable** - Identify goals that are important to you. Attitudes, abilities, and skills are developed to reach them. Do not commit to out-of-reach goals.

• **Realistic** - This is not a synonym for “easy.” Realistic means “do-able.” It means the learning curve is not a vertical slope and the skills needed to do the work are available. A realistic project will push the skills.

• **Time bound** - Set a timeframe for the goal, such as next week or three months. Putting an end point on your goals gives you a clear target. If you do not set a time, the commitment is too vague. Without a time limit, there is no urgency.

  Although tools like goal setting and teams enhance performance, establishments must know the workforce well enough to know what inhibits motivation. Motivational killers need to be understood and further investigated.

  A technique to find inhibitors in the work is the use of a survey. Duke Okes and Russell T. Westott in *The Certified Quality Manager Handbook, 2nd Edition*, said, “Employee feedback can help understand how management systems support or hinder implementation of strategy.”

  Surveys are a useful tool to identify problems in the workforce. Organizational development needs could vary greatly, but regardless the organization, it should be a learning environment. The learning environment could be as simple as sharing information from shift to shift, communicating, and teamwork.

  The learning could be more intense, such as educating the workforce in advanced skills, technologies, and problem-solving teams. The organizations learning and knowledge management should ensure high performance work is maintained and people can recognize their full potential.

**Workforce Environment**

Trudy V.M. Gygi and Brian E. Wilkerson of WisdomNet state in their paper, *A Compelling Model for Workforce Planning*, “Organizations must align goals, strategies, initiatives, and measurements to support the elements of the business that drive results. Workforce planning should be similarly aligned. The cross-functional nature of an effective workforce planning process drives alignment horizontally across line and staff functions of an organization, as well as vertically through the management hierarchy.”

Building an effective and supportive workplace environment takes planning and those plans should align with the organizational strategic plan. Organizations need to periodically assess their workforce capability and capacity needs to not only keep good performance on going, but also to prepare the workforce for the changing needs of the twenty-first century.

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**Baldrige - Category 5 – Human Resource Focus**

The Human Resource Focus category examines how your organization engages, manages, and develops your workforce to utilize its full potential in alignment with your organization’s overall mission, strategy, and action plans. The category examines your ability to assess workforce capability and capacity needs and to build a workforce environment conducive to high performance.

5.1 **Workforce Engagement**: How do you engage your workforce to achieve organizational and personal success?

This item examines your organization’s systems for engaging, developing, and assessing the engagement of your workforce, with the aim of enabling and encouraging all members of your workforce to contribute effectively and to the best of their ability. These systems are intended to foster high performance, to address your core competencies, and to contribute to the accomplishment of your action plans and to organizational sustainability.

5.2 **Workforce Environment**: How do you build an effective and supportive workforce environment?

This item examines your organization’s workforce environment, your workforce capability and capacity needs, how you meet those needs to accomplish the work of your organization, and how you ensure a safe and supportive work climate. The aim is to build an effective environment for accomplishing your work and for supporting your workforce.
began my career in England, where Unitherm Food Systems Inc. was first established. One of my first projects was replacing the wooden tables and benches with stainless steel tables and benches at Smithfield Meat Market in London. At that time the market had not changed since Victorian days. We would arrive at 4 a.m. on Sunday mornings to offload. The scene that confronted me was like a snapshot from a Dickens story. The year was 1986. Since then, new rules and regulations have changed how food, and in particular meat, is managed across the globe.

Unitherm Food Systems Inc. in Bristow, Oklahoma, is involved in the supply of both custom processes and machinery to commercial food processors. Our customers typically are unknown to the general public and include such companies as Abbyland Foods, Cargill, Redi-Serve Foods, West Liberty Foods, and O.S.I. Group. These companies are not household names, but their customers—Subway, McDonald’s, Albertson’s, and Reasor’s—definitely are household names.

The projects we work on with our customers are “up-stream” from the retailer; the products coming out of these projects often are in planning for 18 to 24 months before the general public sees them. In the last 48 months, the predominate up-stream work that has been occurring in food production has been the trend to create a safer product-manufacturing environment. A three-pronged driving force has been behind this: product recalls, food safety legislation, and scientifically proven results.

**Product recalls**

When a client has to recall 10- to 20-million pounds of finished product because a “zero-tolerance” pathogen is suspected or found, the cost often is measured both in loss of life associated with the specific pathogen, such as *E. coli* or *Listeria monocytogenes*, and the dollar value of the product involved with the recall.

Even when there is no loss of life, the disruption to the business devastates the business plan and creates chaos for the business. The impact on the brand name and effect on the business can set the company back for years or even result in bankruptcy and the closing of the business.

Recalls have caught the attention of food processors, forcing them to do things differently.

**Food safety legislation**

The U.S. Department of Agriculture’s Food Safety and Inspection Service has passed new food safety regulations. These new regulations have caused the industry to focus on attaining specific objectives. New rules categorize food production processes into three categories with “Alternative 1” being the processes with the greatest likelihood to produce the safest food and “Alternative 3” being the lowest standard. When this occurred, the retail market responded by ensuring products they offered to consumers were produced from Alternative 1 or Alternative 2 processes.

**Scientifically proven results**

The third prong pre-dated the first two and was behind USDA/FSIS thinking in bringing new regulations to the market. The FAPC, through food microbiologist Peter Muriana, began to publish and distribute scientifically proven data that showed how everyday ready-to-eat meat products could be produced thousands of times safer than was occurring in the marketplace.
This work was so successful that it became the industry standard for treatment of pre-cooked deli meats. Today, more than 330-million pounds of ready-to-eat product is being pasteurized per month.

It should be no surprise to the reader to expect this effort to lead to safer products. This is measured in the reduction of both recalls and illnesses associated with ready-to-eat meats. In this category recalls due to finding “zero-tolerance” pathogens are a fraction of the recalls of the past.

Yet, the trend for food safety continues. There is more construction of new facilities and a wider acceptance that older facilities have passed their “sell by date.” This trend is now spilling over into other food markets, such as produce and ready-to-eat cut and packaged vegetables.

There are other areas in which the market is currently seeing growth: quality of finished ready-to-eat product and volume and diversity of ready-to-eat product.

Clients like Abbyland Foods in Wisconsin, who were only involved in the production of raw-meat materials two years ago, have now moved to the construction of a ready-to-eat further processing plant that is a state-of-the-art facility.

Unitherm Food Systems met with Abbyland Foods in October 2005 at the World Wide Food Exposition in Chicago and found that Abbyland Foods was not certain if building a dedicated facility for ready-to-eat meat products was the right thing to do.

For a privately owned company, building a food factory is a big step. This type of factory is capital intensive.

When Abbyland Foods made the decision to proceed, they built the facility to the highest food safety standard, implementing every process and food safety device Unitherm Food Systems had to offer.

Two years later, the facility has now doubled in size, and current production is sold out.

Likewise, Unitherm Food Systems worked with Dakota Turkey Growers (Dakota Provisions) in South Dakota on a new state-of-the-art facility. Today, it also has doubled in size. West Liberty Foods, a majority supplier to Subway, has just finished its third start-of-the-art facility.

The market will reward these companies for building plants that truly represent this marriage of food production with quality and safety.

These trends, already adopted in Europe and the United Kingdom, are being adopted across the United States, driven by consumer buying patterns and the desire of retailers and processors to minimize risk and market the best ready-to-eat meat and poultry products ever delivered to the market in America.

The demand for the manufacture of these high quality safe ready-to-eat meat and poultry products continues to create opportunities for growth for Unitherm Food Systems and is good for Oklahoma.