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Periodicals

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# Food Protection Trends

**Science and News** from the International Association for Food Protection



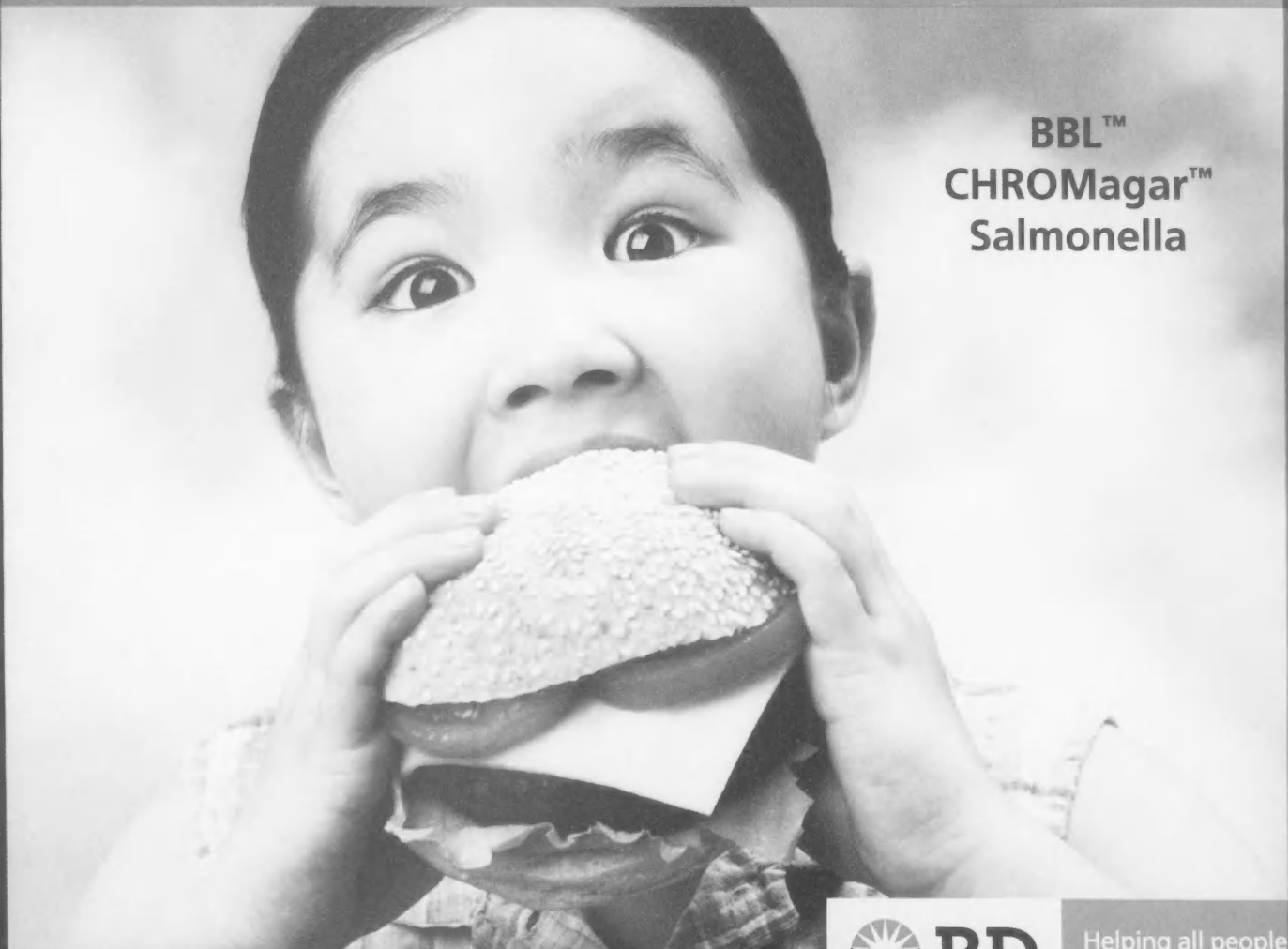
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Rose, Bonnie E. 2001. Isolation and identification of *Salmonella* from meat, poultry, and egg products in Microbiology laboratory guidebook, 3rd ed., Food Safety and Inspection Services, U.S. Department of Agriculture, Washington, D.C.

U.S. Food and Drug Administration. 2003. Bacteriological Analytical Manual (online), AOAC International, Gaithersburg, MD.  
International Organization for Standards (ISO). Microbiology of food and animal feeding stuffs – Horizontal method for the detection of *Salmonella* spp., 4th Edition, ISO 6579:2002.

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# FOOD PROTECTION TRENDS

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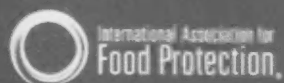
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## “PERSPECTIVES” FROM YOUR PRESIDENT

As I write my first column, I want to convey to you how honored I am to serve as your President for the coming year and how seriously I take the responsibilities of this position. The International Association for Food Protection is widely acknowledged as the premier food safety organization in the world. This recognition was not quickly or easily achieved. How did we get to where we are today and what can we as an organization and I as your President do to continue to strengthen our organization?

The steady leadership, hard work, and continuity provided by our Executive Director David Tharp and the eleven talented members of the Des Moines office staff have been and will continue to be critical to the success of the organization. The extraordinary leadership of past members of the Executive Board must also be acknowledged. I want to acknowledge the dedication and service of past Board members and those who I have had the honor and pleasure of working with for the past three years. In particular, I want to recognize the talent and vision of Jeff Farber, Frank Yiannas, and last year's President, Gary Acuff. I can only hope to represent the organization as well and accomplish as much as they did in their terms as President. I also must acknowledge you, the members of IAFP. The over 3,200 members, from at least 50 countries, are the true strength of the organization.

To achieve the stated mission of IAFP “to provide food safety professionals worldwide with a forum to exchange information on protecting the food supply,” the



By **STAN BAILEY**  
PRESIDENT

***“The International Association for Food Protection is widely acknowledged as the premier food safety organization in the world”***

IAFP Constitution and Bylaws require that there be equal representation from Academia, Government and Industry on the Executive Board and on all committees. This balanced approach is, in my opinion, one of the key strengths of the organization. As I begin my year as President, I have a unique perspective on these three professional areas that contribute to food safety. I am an

Adjunct Graduate Faculty Member at the University of Georgia and Kansas State University. In January of 2008, I retired from the US Department of Agriculture, Agricultural Research Service after 34 years of service as a senior research scientist. I then joined private industry as the Director of Scientific Affairs for bioMérieux Industry. Actively participating in each sector has allowed me to experience the challenges that each face and the strengths that each bring to IAFP.

One of the first things we talk about in new officer orientation is that as Board members, we must make decisions that are for the good for all of IAFP, not just our University, Agency, or Company. Fortunately for IAFP, many of the best from each sector have been willing to donate their time and talents and vision to the organization in order to move food safety forward both in the United States and around the world. The combination of extraordinary staff and dedicated and visionary Board members have been responsible for the growth and stature that IAFP has achieved. I pledge to do my best in my year as President to continue this tradition.

What are our challenges and how will we continue to grow and improve? I will address many of these areas in my columns in the coming months. This month I want to focus on the International aspect of IAFP. Our name has long identified us as an *International* organization, but it is only in recent years that we have actively worked to make IAFP truly inclusive for the whole world. The global nature of today's food supply will require food safety knowledge and training to be shared around the world. What better forum than IAFP?

The IAFP Annual Meeting draws attendees from many countries. In addition, we now host annual meetings each year in Europe, and beginning in 2008, we will host an additional meeting in some other region of the world each year. The Fourth European Symposium on Food Safety will be held on November 19–21, 2008 in Lisbon, Portugal. The European Organizing Committee has established an exceptional program this year, and I urge you to attend. The Brazilian IAFP Affiliate in combination with the International Commission on Microbiological Specifications for Foods organized and hosted a very successful meeting attended by approximately 400 people in Campinas, Brazil in May, 2008. We are in the early stages of planning an Asian meeting to be held in Korea in 2009. In addition, for the second year, we are co-sponsoring a meeting in Beijing, China in September 2008.

The IAFP Foundation is also supporting the international growth of IAFP. In 2008, in addition to two travel scholarships for students from North America, the Foundation sponsored scholarships to students from Australia, Sweden, Ethiopia, and South Korea. The Foundation also provides financial support to the Audiovisual Library, from which videos and other materials are shared around the world, and to pay for shipments of our Journals to the FAO who then distribute these Journals to developing countries. To further our mission, we are working on the possibility of providing travel support to food safety faculty from developing countries who, without this support, would not be able to afford to travel to the IAFP meeting.

We are working hard to make sure that committee memberships and leadership positions are well

represented by our membership from outside of North America. The Affiliate Council Chairperson serves on the Executive Board of IAFP and for two of our last three years this representative has been from outside of North America.

As you read this column, we will have completed another successful Annual Meeting in Columbus, Ohio. For those who were able to attend, you can now let the rest of the world in on our little secret. Columbus is a wonderful city with an excellent conference center and great areas for hospitality. We look forward to seeing you in Grapevine, Texas, July 12–15, 2009 for another great IAFP meeting.

I value and welcome your input. If you have additional thoughts on how we can continue to strengthen the International component of IAFP or on any other issue, feel free to contact me at any time.

*95th Annual Meeting*



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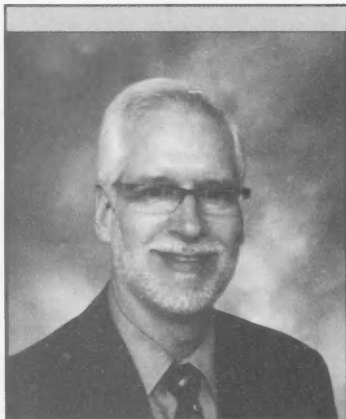
## “COMMENTARY” FROM THE EXECUTIVE DIRECTOR

**T**his month, a little about a number of different things.

It is hard to believe that when you read this column, IAFP 2008 will be completed! I am writing today, just one day prior to travelling to Columbus for the meeting. Needless to say, it has been a stressful few weeks leading up to our largest meeting of the year! Many additional groups now try to schedule meetings at our Annual Meeting because “all the right people” are already going to be there. This is good for IAFP and good for our Annual Meeting.

More than one company now uses our meeting as the place to gather their worldwide food safety team for annual training and update meetings. There are still requests coming to our office for small to medium meetings people are trying to schedule in Columbus! What appears to be plenty of meeting space today turns out to be somewhat limited three to four years later when our meeting actually takes place. Because of that, we have had to turn down a few requests for these ancillary meetings.

Recently, we were reviewing cities and locations for our 2012 Annual Meeting. It is difficult to project growth in the Annual Meeting and this year proves one of the reasons why. The economy in the United States has affected many industries and the food industry in general, and food safety specifically is no exception. Earlier in the year, our registration numbers were tracking very well



By **DAVID W. THARP, CAE**  
EXECUTIVE DIRECTOR

***“Our new Member dues structure made a huge impact on increasing our Membership base”***

in comparison to prior years and even to last year when we met in Disney World. Of course the final outcome for registration will not be known for sure until the October issue goes to press, but right now, we are tracking at our 2006 and 2005 levels for attendance. Based on the economy and other factors involved, we will be very happy to see similar attendance to those years! So, we want to protect ourselves with ample meeting

space, but not “purchase” too much space which causes us excess charges.

Much of IAFP’s financial success is pinned on the Annual Meeting. It is a revenue generator that can assist us in keeping our Member dues and additional fees for journals to a minimum. Having said that, our new Member dues structure made a huge impact on increasing our Membership base. We have now increased our Member base by 200 since introducing the new structure and there are more joining each month. Review the new Member listing on page 664 to see evidence of IAFP’s growth! Many of these new Members joined to take advantage of a lower registration rate for IAFP 2008, but that is one of the great benefits of being an IAFP Member!

We want to point out the Student Travel Scholarship recipients this year. There were six students selected for this honor with two studying in the USA, one each studying in Australia, Sweden, Korea and Ethiopia. There were close to 70 applicants for the 2008 scholarship, which helps to generate extreme student interest in IAFP. Fortunately, the IAFP Foundation sees the direct benefit of this program to the long-term health of IAFP.

The last item I wanted to cover this month is the change in IAFP Officers. Stan Bailey now becomes our President, while Gary Acuff moves to Past President. Isabel Walls joins the Board as Secretary

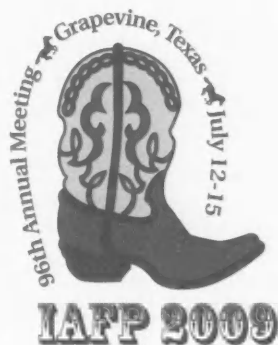


while Vickie Lewandowski and Lee-Ann Jaykus move up to President-Elect and Vice President, respectively. Roger Cook joins as the Affiliate Council Chairperson. It is a pleasure to work with each of your elected leaders in making decisions for the best interest of IAFP. We, as an organization, are fortunate to have Members who are willing to give

their time to the Association in return for knowing they have helped the organization prosper.

Prosper it has! We have done very well over the past 15 years in making great strides as an organization. Financially, we have built the General Fund with reserves to help us through

the harder economic times that we are presently encountering. We all hope this is short lived, but only time will tell. Be assured, the IAFP Board and staff are taking steps to keep IAFP financially healthy for the long-term. After all, we are approaching 100-years old and we want the organization to be alive and well to celebrate its 200-year anniversary too!



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# Controlling *Staphylococcus aureus* on Beef and Sheep Carcasses in Australia

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## SUMMARY

National baseline studies of the microbiology of Australian meat have indicated moderate levels of *Staphylococcus aureus* on carcass and boneless meats. A recent study of retail meat showed prevalence and concentration of the organism had increased from those at the abattoir and boning (fabrication) room levels. An investigation of handling processes in beef and sheep abattoirs and boning rooms established that there has been a radical increase in the use of gloves by operators. Introduced primarily for occupational health and safety reasons, the wearing of a disposable glove beneath a cut-proof and/or a chain mail glove has effectively eliminated *S. aureus* from carcasses at some abattoirs. At other plants, where glove use is not universal, *S. aureus* prevalence and concentration has been reduced compared with levels established by the last national baseline study (2004). However, investigations at one plant showed that even a small number of operators without gloves can lead to *S. aureus* being isolated from 80% of carcasses at a mean  $\log_{10}$  concentration of 1 CFU/cm<sup>2</sup>.

## INTRODUCTION

The first national baseline study of the microbiological status of Australian meat (10, 11) found *Staphylococcus aureus* at levels of concern. The study led to investigations (1, 9) that identified *S. aureus* on carcasses as of human, rather than animal, origin. The association between *S. aureus* and humans is well known, with Stewart (8) stating that 10–40% of healthy adults are nasal carriers. Unpublished data from experiments conducted on the slaughter floor and in the boning (fabrication) room have suggested that use of gloves by staff appeared to reduce levels of *S. aureus* on meat (C. Orr, personal communication).

These investigations took place during a period of radical change in the Australian meat industry with the implementation of the Pathogen Reduction Final Rule, also known as 'the MegaReg' (2). All slaughter and boning facilities began to implement HACCP-based quality assurance plans and to improve refrigeration. However, although the second national baseline study (6, 7) established that improvements had occurred in levels of indicator organisms such as Aerobic Plate Count (APC) and *E. coli* prevalence, *S. aureus* prevalence was little changed.

A peer-reviewed article

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**TABLE 1. Prevalence and concentration of *S. aureus* on chilled beef (3) and sheep (4) carcasses, in frozen boneless beef (3) and sheep meats (4), and on chilled ground beef and diced lamb for retail sale (5)**

	Beef			Sheep		
	Carcass	Boneless	Ground	Carcass	Boneless	Diced
Prevalence (%)	28.7 <sup>a</sup>	20.3 <sup>b</sup>	28.1 <sup>b</sup>	23.4 <sup>c</sup>	32.7 <sup>b</sup>	22.5 <sup>b</sup>
Mean log <sub>10</sub> CFU/cm <sup>2</sup> or/g	0.34	0.80	2.18	0.93	1.14	2.34
Standard deviation	0.70	0.32	0.95	0.65	0.65	0.86
90th percentile	1.36	1.00	3.74	1.85	2.16	3.63
95th percentile	1.56	1.74	4.23	2.14	2.51	4.02
Maximum	2.96	2.32	4.63	2.63	3.38	4.48

<sup>a</sup>Limit of detection 0.08 CFU/cm<sup>2</sup>

<sup>b</sup>Limit of detection 10 CFU/g

<sup>c</sup>Limit of detection 0.33 CFU/cm<sup>2</sup>

The third national baseline study of carcasses and boneless meat (3, 4) confirmed *S. aureus* on 15 and 20% of chilled sheep and beef carcasses, respectively, with concentration exceeding 2 log units CFU/cm<sup>2</sup> on some carcasses. On boneless beef and sheep meat, its prevalence was 2% and 16%, respectively, with mean concentration 1.5 log units CFU/g and 1.7 log units CFU/g, respectively.

The first national retail study of red meat (5) similarly found high prevalence of *S. aureus* on ground beef and diced lamb samples. Although limits of detection differ, when the prevalence and concentration of *S. aureus* on carcasses, boneless meat and retail meat were compared (Table 1), significant (1–2 log units) increases in retail products became an issue that the industry considered should be investigated.

The fact that *S. aureus* is perceived as a poor competitor against the spoilage microflora, coupled with its inability to multiply significantly at temperatures colder than 10°C (8), pointed toward either temperature abuse and/or excessive contact with the hands of food operators in the dressing-boning-retail continuum as causes of increased levels at retail. Accordingly, separate investigations were begun to locate sources of contamination with *S. aureus* at the abattoir/boning room and at the retail level. The present paper

reports on the findings of the former investigation in abattoirs and boning rooms.

## MATERIALS AND METHODS

### Design of the study

Examination of data gathered in the third baseline study indicated that some processing operations produced meat with low prevalence and concentration of *S. aureus* while the reverse was obtained at others. Accordingly, an investigation was undertaken between October and November, 2006 at five abattoirs. At each, observations were made of how operators handled carcasses and meat cuts and samples were taken for microbiological analysis.

### Sampling of beef and sheep carcasses

Selection of carcasses and subsequent sampling was performed by a team of trained technicians. Individual carcasses were selected for sampling by use of a systematic-random approach. Briefly, of the total lot of carcasses accessible to the technicians, one was sampled at regular intervals until the required number of carcasses was attained. Separate polyurethane sponges (Whirlpak speci-sponge, Nasco, USA) moistened with buffered peptone

water were used to sample each site of the selected carcass, a composite sample being taken by sponging a 100 cm<sup>2</sup> area at each of the butt, flank and brisket regions of beef, and a 25 cm<sup>2</sup> area at each of the midloin, flank and brisket of sheep, as detailed in the Mega Reg method (2).

### Sampling of freshly exposed areas of sheep carcasses

Using a Whirlpak sponge moistened as described above, a technician sponged each side of the freshly exposed carcass from immediately below the hindquarters to the brisket, using one side of the sponge for each half of the carcass. It was estimated that a total area of 3000 cm<sup>2</sup> was sampled. Similarly, the entire hindquarters were sponged with one sponge to a level just below the tail; it was estimated that a total area of 1500 cm<sup>2</sup> was sampled.

### Direct plate sampling of the hands of operators

Operators were requested to place the front and the back of each hand onto the surface of a Petri dish (14.5 cm diameter) containing Baird Parker Agar (BPA).

### Transport of samples to the laboratory

All samples were packed in insulated containers with chiller packs for trans-

**TABLE 2. Prevalence and concentration of *S. aureus* on chilled carcasses at plants A-E**

Plant	Baseline 3		Present survey	
	n	Prevalence (concentration*)	n	Prevalence (concentration*)
<i>Beef</i>				
A	41	58.5 (0.97)	25	0
B	31	51.6 (1.06)	25	0
<i>Sheep</i>				
C	71	17.0 (1.90)	25	80 (1.0)
D	30	63.3 (1.50)	25	32 (1.23)
E	30	43.0 (1.30)	25	20 (0.84)

\*Mean log<sub>10</sub> count/cm<sup>2</sup> of positive samples

portation to an ISO17025-accredited laboratory for testing. Upon arrival at the laboratory, samples were held at 2–4°C until examination, which was always on the day after sampling.

#### Determination of Total Viable Count (TVC), *E. coli* and coagulase-positive staphylococci

Buffered peptone water (25 ml) was added to the sponge bag, which was squeezed by hand 10 times. Serial dilutions were prepared in 0.1% peptone water, using 1 ml aliquots. For TVC, duplicate Petrifilm plates (3M, Sydney, Australia) were prepared according to method AOAC 990.12 and incubated at 35°C/48 h, after which the colonies were counted and the count/cm<sup>2</sup> recorded. Generic *E. coli* were estimated by placing 1 ml aliquots of both the initial solution and appropriate dilutions onto duplicate *E. coli* Petrifilm (3M, Sydney, Australia) and incubating at 35°C for 48 h. Colonies were counted as per the manufacturer's instructions and AOAC method 991.14.

Coagulase-positive staphylococci on carcasses were determined using Australian Standard method AS1766.2.4, in which 0.5 ml aliquots were spread onto dried plates of Baird Parker agar (Merck, Melbourne, Australia) and incubated at 37°C for 48 h. Colonies with typical morphology (grey-black, shiny, convex colony with a narrow entire margin surrounded by a zone of clearing) were picked off the

plate for coagulase testing with BHI broth and then rabbit plasma.

## RESULTS AND DISCUSSION

### *S. aureus* on beef and sheep carcasses

In Table 2 are presented summary data for prevalence and concentration of *S. aureus* on chilled carcasses at five plants, selected because of the high prevalence of *S. aureus* on their carcasses as established in Baseline 3. In the interim, at beef plants A and B disposable gloves had been introduced and were worn by all operators at the time carcasses were sampled in the present study. As indicated in Table 2, *S. aureus* was not detected on any of the 25 samples from each plant, compared with over 50% prevalence in Baseline 3.

At sheep plants D and E, disposable gloves are optional but were worn by a majority of operators, and this may be responsible for the reduction in prevalence and concentration of *S. aureus* in the present study, compared with Baseline 3. At plant C gloves were worn by all slaughter floor operators except for those involved in freeing the fleece by manual punching, and by staff at final inspection. Prevalence was much higher in the present survey than in Baseline 3, although the concentrations were lower. Accordingly, further investigation was undertaken to estimate contamination incurred at punching and final inspection.

### *S. aureus* on freshly exposed surfaces after punching and final inspection

At the "punching" station the operator separates a small area of fleece at each shoulder, called a "pocket," then plunges his fist downwards to separate the fleece from underlying tissue. The process is called "pocket and punch" and involves the operator plunging his fist and arm beneath the fleece at least to his elbow. After the fleece on each side has been punched, the operator pulls back on the fleece to release it from shoulder to rump.

In the present study, the punched area on each side of the freshly exposed carcass was sponged immediately after the operator had completed pull-back. The *S. aureus* count was determined on a total of 15 carcasses; the organism was isolated from all carcasses mean log 0.45 log CFU/cm<sup>2</sup> and varying -0.08 to 1.0 log CFU/cm<sup>2</sup>.

At plant C, it was noted that carcasses were inspected at the end of the process by two operators, neither of whom wore gloves. Inspection involved significant handling of the rump and hind legs as operators turned, held and palpated the body during inspection. To adduce whether *S. aureus* had been transferred during inspection, carcasses were transferred to the retain rail and the entire hindquarters were sponged to a level just below the tail. Ten carcasses were sampled and *S. aureus* was isolated from

**TABLE 3. *S. aureus* counts (log<sub>10</sub> CFU/plate) from the front and back of each hand of operators at the punching station during sheep carcass dressing**

Operator	Front of hand	Back of hand
1	3.32	2.90
	2.96	3.34
2	2.56	3.32
	3.04	3.08
3	1.45	3.90
	3.56	3.90
4	3.11	3.45
	3.51	3.08
Mean	2.94	3.37

all 10 hindquarters, with a mean log<sub>10</sub> of 0.17 CFU/cm<sup>2</sup>, counts ranging from log<sub>10</sub> -0.89 to 0.83 CFU/cm<sup>2</sup>.

It was noted that at operations post fleece removal at plant C, all operators wore disposable gloves and operators did not handle the hindquarters. It is believed that the final inspection procedures were responsible for contaminating hindquarters, either directly from the hands of the inspectors or via cross contamination from the flanks and briskets.

#### Prevalence and numbers of *S. aureus* on the hands of punching operators

Plates of Baird Parker Agar (BPA) were prepared using large (14.5 cm<sup>2</sup>) Petri dishes that were large enough for the operator to press the entire hand onto the agar. Four operators who were undertaking punching placed the front and back of each hand on a BPA plate. For each operator, four plates were used (2 hands × front × back of hand). The data (Table 3) confirm that each operator carried *S. aureus* on both surfaces of both hands, with around 3 log units *S. aureus* being transferred to the press plate.

It should be emphasized that the four operators involved in punching fleeces were diligent in washing their hands and arms with soap and water between each

body and that there were excellent facilities for this task. However, it was also noted that they bore numerous small nicks and abrasions on their hands, possibly due to contact with grass seeds protruding through the fleece ("seedy sheep"). It is commonly believed that *S. aureus* is especially prevalent in wounds, particularly if these are kept moist. It was not possible to sample the hands of either operator involved in final inspection.

It seems clear from the present study that a relatively small number of operators may cause widespread contamination of carcasses, particularly when they handle tissues that are still warm. From Table 2 it can be seen that, with six operators at plant C undertaking punching and final inspection with their bare hands, *S. aureus* was recovered from 20/25 (80%) of chilled carcasses. It should be noted that slaughter and dressing operations at plant C have been designed primarily to minimize fecal contamination and, with 2/25 (8%) carcasses positive for *E. coli*, the prevalence at plant C was much lower than the national average of 33% established in Baseline 3.

Observations show that manual punching and pull back of the fleece minimize roll-back and therefore minimize contamination of the freshly exposed carcass. Unfortunately, manual punching can also lead to contamination with

*S. aureus*, particularly when the knuckles and back of the hand of operators suffer small nicks that occur when "seedy" sheep are punched.

This poses the question: can manual punching, which is common, especially for lambs, be done without contaminating with *S. aureus*? It was learned that at least one plant equips operators involved in punching with a cut-resistant glove, covered by an elbow-length disposable glove. While this is done primarily for Occupational Health and Safety reasons, it minimizes contamination with *S. aureus*. Interrogation of data from this plant in the third baseline study indicated that *S. aureus* was isolated from 32% of sheep carcasses in the first sampling and on 0/19 carcasses in the second sampling; the latter sampling was done after the mandating of glove use by all personnel.

Although the recent introduction of gloves in some Australian abattoirs is primarily linked with operator safety, it is clear that wearing disposable gloves beneath cut-proof and/or mesh gloves also minimizes contamination with *S. aureus*. The extent to which control at the abattoir level passes to the retail level is the subject of a separate investigation, but the introduction of gloves on slaughter floors and in boning rooms is likely to have a major influence on retail levels of *S. aureus*.

#### ACKNOWLEDGMENTS

We are grateful to management and staff of the meat processing companies who participated in the present study, which was financed through the SAFE-MEAT food safety R&D program, with matching funds provided by the Australian Government.

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# Fatal Food Allergy Reactions in Restaurants and Food-service Establishments: Strategies for Prevention

CHRISTOPHER WEISS\* and ANNE MUÑOZ-FURLONG

Food Allergy & Anaphylaxis Network, 11781 Lee Jackson Hwy., Suite 160, Fairfax, VA 22033, USA

## SUMMARY

Food allergy is an increasing food safety and public health issue that affects about 4 percent of the United States population, or 12 million Americans. Severe allergic reactions caused by foods account for about 30,000 emergency room visits and 150–200 deaths annually in the United States. A significant number of fatal and near-fatal reactions are caused by restaurant food. Negligence on the part of the victim and/or the restaurant staff is generally the key contributing factor.

This article addresses 29 fatal allergic reactions, occurring from 1994 to 2006, caused by food served in or provided by restaurants or other food service establishments. Information on these fatalities was obtained via a reporting registry maintained by the Food Allergy & Anaphylaxis Network (FAAN). A FAAN representative used a structured questionnaire to obtain information about patient demographics, the food ingested, symptom progression, treatment, emergency medical response, history of allergic reactions, and contributing factors such as asthma. This article offers strategies to help prevent such tragedies in the future.

## INTRODUCTION

Food allergy is an increasing food safety and public health issue, affecting about 4% of the United States population, or 12 million Americans. There are 6.9 million Americans allergic to seafood (9) and 3.3 million allergic to peanuts and/or tree nuts (8). Severe allergic reactions caused by foods account for about 30,000 emergency room visits and 150 to 200 deaths each year in the United States. (12). The most severe type of allergic reaction is called anaphylaxis.

Eight foods account for 90% of food allergy reactions: milk, eggs, peanuts, tree nuts (e.g., walnuts, almonds, and pecans), fish (e.g., salmon, halibut, and cod), shellfish (e.g., shrimp, crab, and lobster), wheat, and soy. Although the vast majority of reactions are triggered by ingestion of the food allergen, reactions can also occur from inhalation of cooking fumes/vapors.

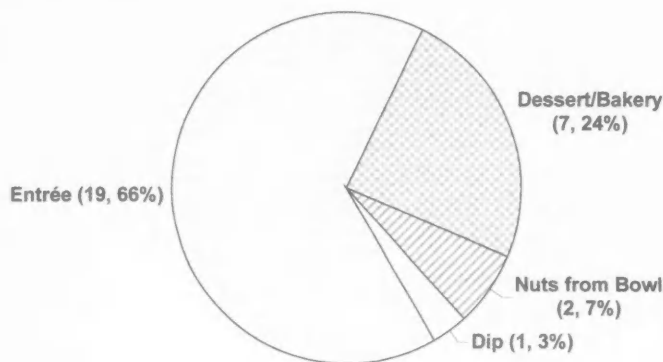
There is no cure for food allergy; strict avoidance of the offending allergen is the only way to prevent a reaction. Avoidance can be difficult, because trace amounts of a food allergen may be enough to cause a reaction. Food allergy reactions are always unexpected; individuals believe they are eating a safe food.

A significant number of food allergy reactions are the result of food served in or provided by restaurants and other foodservice establishments such as school cafeterias, food court vendors' operations,

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**FIGURE 1.** Restaurant food items (number, percentage) responsible for 29 fatal allergic reactions



and catered events. Sadly, most of these reactions could have been prevented by due diligence on the part of the consumer and/or the restaurant staff.

Food-allergic individuals sometimes fail to identify themselves to restaurant personnel, and sometimes eat a food item that may in fact contain an allergen. Additionally, restaurant employees are sometimes ill-equipped, through lack of training, to understand the serious nature of food allergy, to read ingredient labels, and to avoid cross-contact during food preparation. Through an analysis of 29 fatal food-allergic reactions caused by restaurant food, strategies emerge that can help restaurateurs prevent such tragedies in the future.

Ample research demonstrates the prevalence and severity of food-allergic reactions caused by restaurant food, as well as the need for better education and training on the part of restaurant and food service personnel. Of the 5,149 registrants in the United States Peanut and Tree Nut Allergy Registry, 14% reported reactions associated with restaurants and other food service establishments. Researchers studied more than 150 such episodes and found that the establishments most commonly involved were Asian restaurants (19%), ice cream shops (14%), and bakeries or doughnut shops (13%) (5).

Other researchers conducted an Internet-based survey of 51 patients with food allergies and found that 18% of the reported reactions occurred in restaurants (4). Investigators in Ireland conducted chemical analyses and found that about 21% of restaurants (13 out of 62) pro-

vided meals that could possibly have triggered a fatal reaction in an individual with peanut allergy. In each case, the restaurant staff had asserted that the meal was suitable for someone with a peanut allergy (6). Researchers who examined hospital discharge records and fatal anaphylactic reactions in the United Kingdom found that foods with "hidden" allergens and meals at restaurants were particularly dangerous for patients with food allergies. They concluded that restaurants present major risks for individuals with food allergy (11).

In a study of more than 100 members of the Anaphylaxis Campaign, the major British patient resource group for individuals who have suffered severe allergic reactions, restaurants were implicated in 14% of the reactions (10). Findings from a survey of 100 restaurant personnel in the United States, including managers, chefs, and wait staff, showed that one-quarter of the respondents incorrectly indicated that removing an allergen from a finished meal (e.g., removing nuts from already prepared food) was safe, and one-quarter incorrectly indicated that consuming a small amount of an allergen would be safe (1).

In a survey of more than 426 attendees at educational conferences hosted in 2001 by the Food Allergy & Anaphylaxis Network (FAAN), almost half (47%) of the respondents reported that they had had an allergic reaction to food served in or provided by a restaurant. The allergens identified as most often responsible were milk (26%), peanuts (19%), and tree nuts (11%). However, in 23% of the cases, the allergen was unknown.

In subsequent FAAN surveys conducted in 2004 ( $n = 479$ ) and 2006, ( $n = 627$ ) about one-third of the conference attendees reported similar incidents. Of those responding to the 2006 surveys, 44% reported that they had been told by restaurant staff that the establishment was unable to provide a safe meal, 24% reported impolite or rude treatment by restaurant staff because of informing staff of the food allergy, almost 10% were prevented from bringing their own "safe" food into the restaurant, and almost 10% were asked to leave a restaurant because of their food allergy.

## METHODS

The Food Allergy & Anaphylaxis Network (FAAN), with support from the American Academy of Allergy, Asthma & Immunology (AAAAI), established a reporting registry to investigate the circumstances surrounding food allergy fatalities. The registry does not represent a systematic or complete accounting of all fatal food-induced reactions in the United States. From 1994 to 2006, a total of 63 such fatalities were studied. An initial study of 32 of these fatalities was published in the *Journal of Allergy and Clinical Immunology (JACI)* in 2001 (2). A follow-up study of the 31 additional fatalities appeared in *JACI* in early 2007 (3).

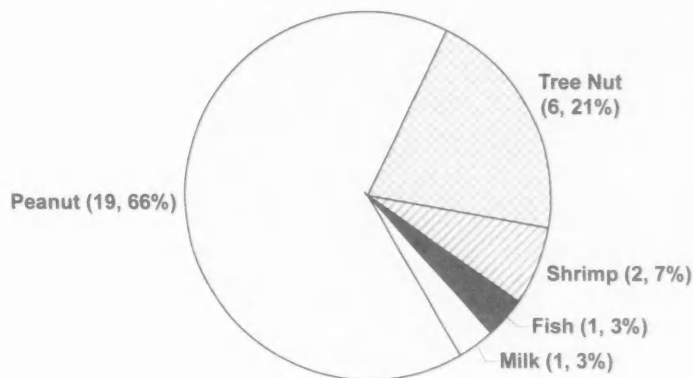
To investigate the circumstances surrounding each fatality, a FAAN representative contacted a family member or acquaintance and a structured questionnaire that addressed issues such as the type of food ingested, the progression of symptoms, emergency treatment, patient history, and contributing factors. Investigating these tragic events helps provide lessons for avoiding similar tragedies in the future.

## RESULTS

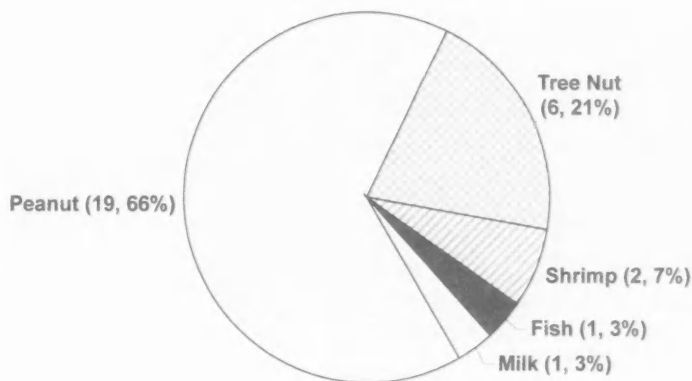
Nearly half of the 63 fatalities (46.0%,  $n = 29$ ) were caused by food from a restaurant or some other food service establishment, including sit-down restaurants, fast food establishments (including mall food courts), university dining halls, school cafeterias, ice cream shops, and catered functions. Packaged food items (typically dessert or candy items) were responsible for 27% (17 of 63) of the



**FIGURE 2.** Age of individuals (number, percentage) who experienced a fatal reaction to restaurant food



**FIGURE 3.** Allergens implicated in fatal reactions to restaurant food (number, percentage)



deadly reactions. About 13% (8 of 63) of the fatalities were caused by homemade food items (i.e., items prepared from scratch) such as homemade cookies. The source of the offending food could not be determined in nine of the events because of lack of information.

Of the restaurant food items that caused the 29 fatalities, two-thirds were entrees, roughly one-quarter were dessert or bakery items, and the remaining items included nuts from a bowl and dip (Fig. 1).

This report reviews the 29 fatal reactions that were the result of food provided by restaurants/foodservice establishments. Close examination of these 29 fatal food

allergy reactions reveals significant lessons both for restaurant and food service personnel and for individuals affected by food allergy.

## DISCUSSION: STRATEGIES FOR RESTAURANTS

### Identify food allergens early

Individuals with food allergies generally identify themselves clearly to restaurant staff as having a food allergy. Individuals often call the restaurant ahead of time to discuss the establishment's ability to manage food allergies, and many individuals carry a "chef's card",

a wallet-sized card that can be given to the waitstaff, kitchen staff, or manager. The card generally contains food allergy information and a list of ingredients that the individual needs to avoid.

However, food-allergic individuals sometimes fail to bring their food allergy to the attention of the restaurant staff. The individual may have eaten safely at the establishment in the past and simply assumes their meal will be safe. To illustrate, an 18-year-old female university student ordered an apple dessert, which she had eaten safely in the past, at a university dining hall. However, the dining hall had recently changed the ingredients by adding nuts to the dessert. Not being aware of this change resulted in her death.

Restaurants can embrace a policy whereby personnel inquire of the customer as to any food allergies. Other potential strategies include the posting of a food allergy alert, on the restaurant wall, on the menu, on the table, etc. This notice would alert customers to inform the waitstaff of any food allergies.

### Pay special attention to food-allergic teenagers and young adults

Research shows that teenagers and young adults often exhibit risky eating behaviors despite their food allergy (7). These individuals sometimes do not want to call attention to their food allergy or simply "take a chance" by daring to eat something they are not sure about.

About half of the 29 victims were under the age of 20 (Fig. 2). One of the victims, a 14-year old, female, died from peanut contained in an egg roll she had obtained from a mall food court.

### Never underestimate the serious nature of food allergy

Restaurant personnel need to understand that food allergy is a condition that can kill within minutes. Unfortunately, a significant part of the population believes that food allergies are fictitious, and/or they confuse food allergy with food intolerance (which is not deadly). A food intolerance, such as lactose intolerance, involves a digestive enzyme deficiency and can result in abdominal pain, gas, and bloating. A food allergy, on the other hand, occurs when the immune system reacts to a certain food by creating

IgE antibodies, which results in the release of histamines and other chemicals that adversely affect the respiratory system, the circulatory system, or the skin. A good method to remind restaurant staff of the severity of food allergies is posting a food allergy awareness poster in the kitchen and staff areas.

### **Do not convey ingredient information to the food-allergic customer unless completely certain**

Sadly, a number of fatal reactions involved restaurant personnel providing incorrect information concerning ingredients. For example, an 18-year-old woman was told by a college cafeteria worker that a dish contained pecans, when the dish actually contained walnuts. Another victim, a 33-year-old woman, had asked her waitress numerous times whether her entrée contained peanuts, and the waitress had repeatedly told her that it did not.

### **Beware of cross-contact during food preparation**

Because trace amounts of an allergen can trigger a life-threatening reaction, kitchen staff needs to learn how to avoid cross-contact between allergenic and non-allergenic ingredients. One fatality resulted from shrimp coming into contact with a man's chicken entrée. Shared utensils, preparation areas, and cooking oil are commonly the source of contact between allergens and non-allergenic food.

### **Pay special attention to peanuts and tree nuts**

Although there are eight major food allergens, all of which can trigger a life-threatening reaction, research shows that peanuts and tree nuts cause a significant percentage of deadly reactions. Of the 29 fatalities, peanuts accounted for 19 (66%), and tree nuts 6 (21%) (Fig. 3). The remaining events were triggered by shrimp, fish, and milk.

### **Periodically train restaurant staff on food allergy issues**

Understandably, staff training is inconvenient because of factors such as turnover, language, scheduling, and avail-

ability. However, it is recommended that restaurant managers arrange for their staff to receive basic information periodically about food allergy, i.e., recognizing the signs and symptoms of a reaction, reading ingredient labels, and preventing cross-contact during food preparation.

Numerous educational resources are available, notably *Welcoming Guests With Food Allergies*, a training program developed by FAAN in cooperation with the National Restaurant Association. This program, which is available in English and Spanish, provides the tools to train restaurant staff to safely prepare and serve food to guests with food allergies. The program can be downloaded free of charge via the FAAN website, [www.foodallergy.org](http://www.foodallergy.org).

### **Call 911 immediately in the event of an allergic reaction**

Upon suspicion that a customer (or staff member) is experiencing a food-allergic reaction, it is imperative to call 911 immediately and clearly communicate the allergic reaction to the operator. This will help ensure that appropriate emergency personnel respond to the scene.

### **Recognize the signs and symptoms of an allergic reaction**

The signs and symptoms of a reaction include a tingling sensation in the mouth, swelling of the tongue and the throat, difficulty breathing, hives, vomiting, abdominal cramps, diarrhea, drop in blood pressure, and loss of consciousness. Symptoms typically appear within minutes.

### **Recognize that epinephrine (adrenaline) is crucial**

Prompt administration of epinephrine (adrenaline) is crucial to surviving a life-threatening allergic reaction. Epinephrine is generally prescribed as an auto-injector device (EpiPen® or Twinject®), and it is recommended that allergic individuals carry their prescribed device with them at all times. Sometimes, individuals experiencing a reaction will self-inject or will ask a friend or family member to administer the device. Otherwise, the epinephrine is generally administered by emergency medical personnel.

### **Become familiar with local policies concerning Emergency Medical Technicians (EMTs) and epinephrine**

The availability of epinephrine from emergency 911 personnel is not uniform across the nation. Not all ambulances are equipped with the medication, and in many states only certain types of EMTs (Paramedics, or EMT-Intermediates) are authorized to administer the medication in the field. When calling 911, then, it is crucial to communicate to the operator that an allergic reaction is occurring.

Epinephrine availability from EMTs takes on greater urgency when considering that many of the victims were not in possession of their prescribed epinephrine at the time of the reaction. In fact, in only two of the 29 fatalities was epinephrine administered in a timely manner, i.e., within minutes. In most of the fatal events, epinephrine was either not administered at all (45%,  $n = 13$ ), or was administered late (24%,  $n = 7$ ).

### **CONCLUSIONS**

All of the fatal food allergy reactions reported in this paper could have been prevented. In some instances, there was clear failure on the part of the allergic individual to take proper precautions.

In other instances, there was inappropriate behavior on the part of restaurant personnel. Generally, the behavior involved customers being misinformed about the ingredients of a particular dish. In the remaining instances, the facts surrounding the fatal events were unclear. In most of these cases, efforts to contact family members were unsuccessful, so information about the events could not be appropriately obtained. Certainly, with increased education and training for both restaurant and food service personnel and the allergic individuals themselves, future fatalities can be prevented.

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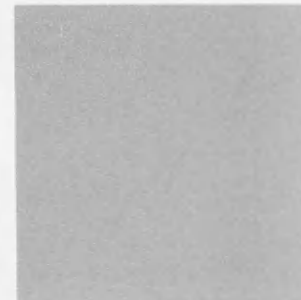
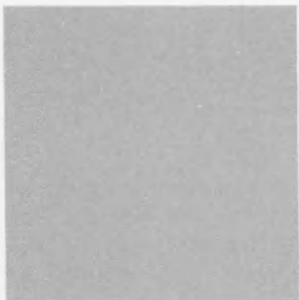
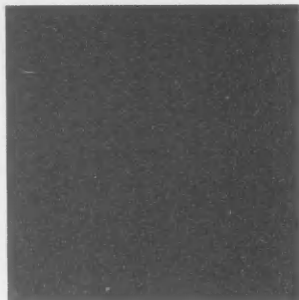
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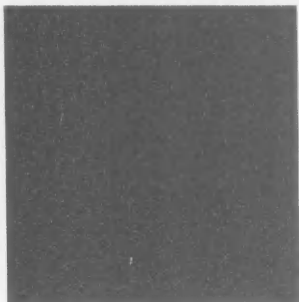
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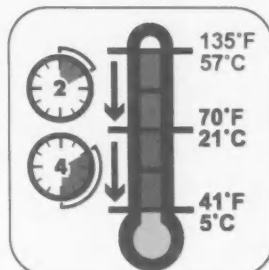
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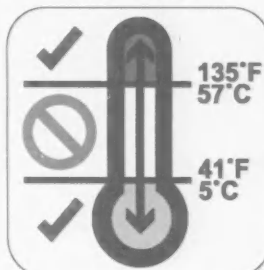
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St. Louis

**Derek B. Petry**

Triumph Foods  
St. Joseph

**Chris Richey**

bioMérieux, Inc.  
Hazelwood

**Mark Schindler**

bioMérieux, Inc.  
Hazelwood

**John Shultz**

bioMérieux, Inc.  
Hazelwood

**Matthew Vuylsteke**

bioMérieux, Inc.  
Hazelwood

**Dustin Walker**

bioMérieux, Inc.  
Hazelwood

## NEBRASKA

**Timothy Anderson**

University of Nebraska-Lincoln  
Lincoln

**Andreia Bianchini**

University of Nebraska-Lincoln  
Lincoln



# NEW MEMBERS

**Nageswara R. Korasapati**  
University of Nebraska-Lincoln  
Lincoln

**Luciano Maradona**  
MBA Poultry  
Tecumseh

**Ryan Talley**  
University of Nebraska-Lincoln  
Lincoln

**Carol Valenzuela**  
University of Nebraska-Lincoln  
Lincoln

## NEW JERSEY

**Larry D. McKillip**  
Burger Maker, Inc.  
Carlstadt

**Angela Thompson**  
FMC Corporation  
Princeton

## NEW YORK

**Shelley Laue**  
Cornell University  
Ithaca

**Tanya Pierik**  
Cornell University  
Ithaca

## NORTH CAROLINA

**Suzanne Robertson-Currie**  
bioMérieux, Inc.  
Durham

## OHIO

**Allen Banks**  
BioHygienix  
Cincinnati

**Donna Bear**  
Nestle Quality Assurance Center  
Dublin

**Lori Benz**  
Silliker, Inc.  
Columbus

**Silvia de Lamo-Castellvi**  
The Ohio State University  
Columbus

**Ron Gaither**  
The Kroger Co.  
Cincinnati

**Elizabeth Grasso**  
The Ohio State University  
Columbus

**Tim Hansen**  
CleanerFood, Inc.  
Waite Hill

**Robert Himes**  
Himes Vending, Inc.  
Columbus

**Anthony Hodgson**  
AVI Foodsystems, Inc.  
Warren

**Larry Holbert**  
Ohio Department of Health  
Columbus

**Jeff Jahnes**  
Nestle Quality Assurance Center  
Dublin

**Setsuko Kamotani**  
The Ohio State University  
Columbus

**Ken Lee**  
The Ohio State University  
Columbus

**Zachary Moore**  
Q Laboratories, Inc.  
Cincinnati

**Ralph E. Neller**  
JohnsonDiversey  
Cincinnati

**Emmanuel Remy**  
Alchemy Systems  
Columbus

**Annalise Romine**  
Nestle Quality Assurance Center  
Dublin

**Carol Sivey**  
Nestle Quality Assurance Center  
Dublin

**Dan Smieszek**  
Silliker, Inc.  
Columbus

**Stacy L. Street**  
JohnsonDiversey  
Cincinnati

**Brei Vandermark**  
Nestle Quality Assurance Center  
Dublin

**Christopher Webb**  
The Kroger Co.  
Cincinnati

**Adam Weber**  
Nestle Quality Assurance Center  
Dublin

**Benjamin D. Williams**  
Jones-Hamilton Co.  
Walbridge

**Gayeon Won**  
The Ohio State University  
Wooster

**Kate Wood**  
Silliker, Inc.  
Columbus

**Bayleyegn Molla Zewde**  
The Ohio State University  
Columbus

**Yu Zhang**  
The Ohio State University  
Columbus

## PENNSYLVANIA

**Marg Benson**  
Giant Eagle, Inc.  
Allison Park



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## NEW MEMBERS

**Matthew D. Moore**

Cornell University  
Horsham

**TENNESSEE****Chayapa Techathuvanan**

University of Tennessee  
Knoxville

**TEXAS****Samwel Rao**

Texas Tech University  
Lubbock

**UTAH****Eli Powell**

Idaho Technology Inc.  
Salt Lake City

**Kelly Winterberg**

Idaho Technology Inc.  
Salt Lake City

**VIRGINIA****Linda Ziglar**

Frozen Food Foundation  
McLean

**WASHINGTON****Jae-Hyung Mah**

Washington State University  
Pullman

**Rico R. Suhalim**

IEH – Laboratories & Consulting  
Group  
Bothell

**WISCONSIN****Jeff C. Acker**

Schreiber Foods  
Green Bay

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## NEW SUSTAINING MEMBERS

**I Priority Biocidal, LLC**

Dan Galloway  
Fort Worth, Texas

**Malt-O-Meal Company**

Dave McBeain  
Northfield, Minnesota

# UPDATES

## **New Positions for Key Personnel at Eriez Magnetics**

**E**riez® Magnetics announces the appointment of Andy Lewis to the newly created position of vice president – international. Andy joined Eriez in 1976 and has served as managing director of Eriez–Europe since 1995.

According to President and CEO Tim Shuttleworth, “In his new role, Andy will manage all of Eriez’s affiliate companies/regional headquarters except for the Eriez–CPT businesses in Canada and Brazil. From his base at Eriez–Europe, Andy will lead the sales and business development of Eriez’s affiliates and serve as chairman, Eriez–Europe.”

Also, Paul Fears has been appointed to the position of managing director, Eriez–Europe reporting to Andy Lewis. Mr. Fears joined the company in 1989 as marketing executive. His most recent assignment has been as marketing director of Eriez–Europe.

## **Sara Goetz Named Chemistry Laboratory Supervisor at Q Laboratories, Inc.**

**S**ara Goetz has been promoted to chemistry laboratory supervisor at Cincinnati-based testing laboratory, Q Laboratories, Inc. Ms. Goetz has worked as a chemist at Q Laboratories, Inc. since 2001, and previously served as group leader of the analytical chemistry department. As chemistry laboratory supervisor, Ms. Goetz

will be responsible for overseeing all functions of the chemistry department, including, sample flow-through, analyst training, updating technological capabilities, optimizing the services offered by the lab and formulating and implementing future growth strategies and planning.

## **Bettcher Industries Appoints Anderson Regional Sales Representative**

**B**ettcher Industries, Inc. announces the appointment of Charles R. ‘Robbie’ Anderson as regional sales representative. In this position, Mr. Anderson will be responsible for sales and service activities for Bettcher’s Whizard® Trimmer and AirShirz® scissors product lines. He will support customers in the southwest region of the United States, including Colorado, Arizona, New Mexico, West Texas and Southern California.

Robbie Anderson has more than 20 years experience in the meat industry, including managerial, operations and quality control positions in processing plants with such companies as Hamilton Meats in California and Maverick Ranch in Colorado. He has also worked on the retail side of the industry in meat department management positions at various Albertsons- and Kroger-owned store outlets in California. In addition to his managerial and supervisory background, Mr. Anderson is certified in meat cutting and holds HACCP and several other food and safety certifications.

Commenting on Anderson’s appointment as a regional manager, Larry Bettcher, president, stated, “We’re pleased to welcome Robbie to Bettcher Industries. His background and skills across the full spectrum from processing to retailing relates to the multi-faceted needs of our meat industry customers today. This understanding, as well as his hands-on knowledge of our product line will serve our customers in the southwest region well.”

## **Pres Lawhon Appointed President and General Manager of Dobby, Inc.**

**B**osch Packaging Technology, a supplier of packaging and processing technology in the food, pharmaceutical, and confectionery industries, has appointed Pres Lawhon president and general manager of Dobby, Inc. In this role, he will be responsible for all business activities in North and South America related to Bosch’s packaging machinery. Dobby’s technology portfolio includes horizontal flow wrappers, robotics, cartoners, bag closers, and vertical-form-fill-seal equipment with applications across the food, confectionery, and pharmaceutical industries.

Mr. Lawhon holds a degree in mechanical engineering and has over 17 years of experience in executive management within the Bosch Group. He joins Dobby from Pacifica Brakes International, a Bosch company, where he was vice president of North American operations.

## CDC Investigation of Outbreak of Infections Caused by *Salmonella* Saintpaul

The CDC is collaborating with public health officials in many states, and the US Food and Drug Administration (FDA) to investigate an ongoing multi-state outbreak of human *Salmonella* serotype Saintpaul infections. An initial epidemiologic investigation in New Mexico and Texas comparing foods eaten by persons who were ill in May to foods eaten by well persons identified consumption of raw tomatoes as strongly linked to illness. A similar but much larger nationwide study comparing persons who were ill in June to well persons found that ill persons were more likely to have recently consumed raw tomatoes, fresh jalapeño peppers, and fresh cilantro. These items were commonly, though not always, consumed together, so that study could not determine which item(s) caused the illnesses.

Recently, many clusters of illnesses have been identified in several states among persons who ate at restaurants. Most clusters involve fewer than 5 ill persons. Three larger clusters have been intensively investigated. In one, illnesses were linked to consumption of an item containing fresh tomatoes and fresh jalapeño peppers. In the other two, illnesses were linked to an item containing fresh jalapeño peppers and no other of the suspect items. Other clusters are under active investigation. The accumulated data from all investigations indicate that

jalapeño peppers are likely to be a major cause of this outbreak. Fresh serrano peppers and fresh tomatoes remain under investigation. Investigators from many agencies are collaborating to track the source of the implicated peppers and other produce items.

An FDA laboratory detected *Salmonella* Saintpaul with the outbreak strain fingerprint pattern in a sample of jalapeño pepper obtained from a distribution center in McAllen, Texas. The distributor is working with FDA to recall the contaminated product in the United States. The peppers were grown in Mexico; investigators are working to determine where they were contaminated.

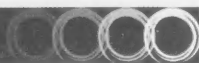
Since April, 1,251 persons infected with *Salmonella* Saintpaul with the same genetic fingerprint have been identified in 43 states, the District of Columbia, and Canada. These were identified because clinical laboratories in all states send *Salmonella* strains from ill persons to their State public health laboratory for characterization.

The outbreak can be visually described with a chart showing the number of persons who became ill each day. This chart is called an epidemic curve or epi curve. The average number of persons who became ill between May 20 and June 10 was 33 per day. The average number of persons who became ill between June 11 and June 20 was 19 per day. The outbreak appears to be ongoing, but with fewer new illnesses each day. Illnesses that occurred recently may not yet be reported due to the time it takes

between when a person becomes ill and when the illness is reported. This takes an average of 2–3 weeks.

Only 6 persons infected with this strain of *Salmonella* Saintpaul were identified in the country during April through June of 2007. The previous rarity of this strain and the distribution of illnesses in all US regions suggest that the implicated food is distributed throughout much of the country. Because many persons with *Salmonella* illness do not have a stool specimen tested, it is likely that many more illnesses have occurred than those reported. Some of these unreported illnesses may be in states that are not on today's map.

Health officials have worked continuously since late May to investigate this outbreak. CDC has sent 29 people to the field to work with other public health officials. The investigation is complex and difficult. One difficult aspect is that people often have difficulty remembering exactly what foods they ate, and remembering specific ingredients in those foods is even more difficult. Although laboratory testing of foods might help identify the source, perishable foods that were consumed by ill persons are often not available to test. When food items are mixed together and consumed in the same dish, all the items may be statistically linked to illness. In that case, determining by statistical means which item caused the illness can be difficult or impossible. Tracing suspect produce items back to processors and growers is an integral part of the effort to identify a single source and a possible means of contamination.



## FDA Finds *Salmonella* Strain on Jalapeno Pepper

More than 1,200 Americans have gotten sick and two people have died after eating produce contaminated with *Salmonella* Saintpaul. With an investigation spanning many weeks, food safety regulators have had a challenging time trying to track suspected tomatoes and peppers up or down the supply chain, hampered by paper records and repacking practices that effectively hide the identity of produce in the distribution chain.

FDA announced an important breakthrough in the case: A jalapeno pepper from a Mexican farm -- repacked at a Texas distribution facility -- has been found with the identical strain fingerprint of *Salmonella* as the human victims.

Though we still do not know where or how the contamination occurred, what we do know is traceability tools that Congress adopted in the 2002 Bioterrorism Act were significantly watered down by the Bush Administration. In fact, in 2003, food industry lobbyists had special behind-closed-doors access when the Bush Administration was vetting new anti-bioterrorism regulations aimed at protecting the food supply from intentional contamination. Provisions stripped from the regulations, like requirements for distributors to record lot or code numbers, and requirements for record availability in 4 to 8 hours, might have been helpful nailing down this *Salmonella* outbreak much earlier.

At the time, the industry complained that strong provisions were overly burdensome, and the Administration watered down the regula-

tions in response. Those complaints must seem quaint compared to the hundreds of millions of dollars this one outbreak has cost American growers, processors, and retailers.

It's time for Congress to step in and enact meaningful FDA reform legislation. Though time is short, Congress should act before another outbreak occurs to give FDA strong traceback authority, mandatory process control systems all the way back to the farm, and mandatory recall. The Bush Administration has consistently failed to put public health ahead of the complaints of industry lobbyists. Congress should not wait for more evidence that the agency doesn't have the tools it needs.

## USDA Will List Retail Stores Receiving Recalled Meat and Poultry Products

Secretary of Agriculture Ed Schafer has announced that beginning next month, USDA will begin listing retail stores receiving meat and poultry products involved in Class I recalls -- those of the most serious concern to public health. For some recalls, specific product information useful to consumers is not available to help identify recalled products that may still be in their home. This announcement provides a 30 day notice after the rule is published in the Federal Register before the process of listing retail stores takes effect.

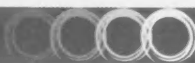
"The identity of retail stores with recalled meat and poultry from their suppliers has always been a missing piece of information for the public during a recall," said Mr. Schafer. "People want to know if they need to be on the lookout for

recalled meat and poultry from their local store and by providing lists of retail outlets during recalls, USDA's Food Safety Inspection Service will improve public health protection by better informing consumers."

USDA's Food Safety Inspection Service (FSIS) will post on its Web site a list of retail stores that receive products subject to Class I recalls, the highest risk category, generally within three to ten business days of issuing the recall release. A Class I recall is one that involves a reasonable probability of serious health consequences or death for those with weakened immune systems. Retail stores include supermarkets or other grocery stores, convenience stores, meat markets, wholesale clubs and supercenters. FSIS will not identify distribution centers, institutions or restaurants, since they prepare food for immediate consumption without packaging that is identifiable or available to consumers.

During the recall process, FSIS personnel verify that the recalling firm has been diligent and successful in notifying its customers of the need to retrieve and control recalled products and that the customers have responded accordingly. During the recall effectiveness checks, FSIS compiles a list of subsequent recipients as the recalled products are traced through each level of distribution to the retail level. The list of retail stores and locations compiled by FSIS personnel during this process will be posted on the FSIS Web site [www.fsis.usda.gov](http://www.fsis.usda.gov) and shared with state and local public health officials where the retail stores are located.

Recall announcements from FSIS always include the name of the establishment recalling the meat or



poultry, the reason for the recall, a description of the recalled product, any identifying product codes, the recall classification and contact information at FSIS and the company involved. The additional information releasing the names of retail stores receiving recalled meat and poultry will improve the consumers' ability to identify and discard or return the products they may have purchased and may still have in their home by checking the list of stores and locations.

On July 17 the final rule "Availability of Lists of Retail Consignees During Meat or Poultry Product Recalls" published in the Federal Register, and was effective on August 18, 2008.

## FDA Launches Fellowship Program to Develop Pipeline of Scientists, Other Professionals

The US Food and Drug Administration (FDA) has announced it is launching a two-year fellowship program aimed at attracting scientists, engineers and health professionals to the agency. The FDA Commissioner's Fellowship Program will provide participants with advanced training in the scientific analysis involved in the safety and regulatory decisions unique to the agency's mission.

"Attracting the best scientists to FDA helps us make timely decisions and give doctors and patients helpful and accurate advice about treatment options. And timely decisions encourage more investment in developing new drugs and better medical devices," said Deputy Secretary of Health and Human Services Tevi D. Troy. "The FDA Commis-

sioner's Fellowship Program will not only bring great fellows in the door, but encourage them to make FDA their career."

Applicants are being considered for the first entering class of the program, which will begin in October 2008. The agency is seeking physicians, microbiologists, chemists, statisticians, pharmacists, biomedical engineers, nutritionists, veterinarians and other science professionals. Applicants should have a doctoral degree in medicine or another scientific field; engineers must have at least a bachelor's degree. Between 30 and 40 applicants will be accepted for the first entering class.

"The FDA is a science-based regulatory agency, and to fulfill our mission over the coming decade we will need to recruit thousands of highly skilled scientists and others with specialized and relevant expertise," said Frank M. Torti, M.D., M.P.H., principal deputy commissioner and chief scientist. "The FDA Commissioner's Fellowship Program is designed to attract these people to the FDA and provide them with in-depth knowledge of the science that underpins regulatory decisions as we meet the challenges of both globalization and rapid changes in science and technology."

The FDA Commissioner's Fellowship Program will include coursework and extensive hands-on experience in FDA regulatory science including regulatory review opportunities. More than 20 courses and seminars will be offered on topics including FDA law, ethics and decision making, biostatistics, clinical trial design, population science and epidemiology, risk assessment, international activities, budgeting and operations, leadership, and public policy. A full listing of courses is available at <http://www.fda.gov/commissionersfellowships/default>.

htm. The courses will be taught at the agency's new, state-of-the-art campus at White Oak, MD, and at other facilities by senior FDA staff and faculty from universities in the region.

During the first semester, each fellow will identify an in-depth research project to be completed during the program, allowing each fellow to explore a specific area of interest under the guidance of a senior FDA scientist who will serve as a preceptor. Fellows will devote about 70 percent of their time to the scientific project and 30 percent to coursework.

More information about the FDA Commissioner's Fellowship Program and instructions for applicants are available at <http://www.fda.gov/commissionersfellowships/program.html>.

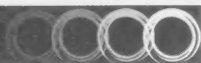
## New Zealand Government Launches Food Safety Plan

The Government of New Zealand has launched a food control plan which it says will provide an easy-to-follow safety system for service and catering businesses.

Food Safety Minister Lianne Dalziel said it would operate through local councils and was being released ahead of food safety legislation the Government is working on.

The plan provides operators of cafes, restaurants, clubs, bars and catering businesses with a practical food safety management system. A series of information sheets cover each step in the food production and handling process.

Businesses joining the plan, which is voluntary, will receive a range of supporting resources to help them keep food safe.



## Community Water Fluoridation Now Reaches Nearly Seventy Percent of United States Population

Nearly 70 percent of US residents who get water from community water systems now receive fluoridated water, according to a study by the Centers for Disease Control and Prevention.

The proportion of the US population receiving fluoridated water, about 184 million people, increased from 62.1 percent in 1992 to 69.2 percent in 2006, said the study in this week's Morbidity and Mortality Weekly Reports.

"Community water fluoridation is an equitable, cost-effective, and cost-saving method of delivering fluoride to most people," said Dr. William Maas, director of CDC's Division of Oral Health. "We've seen some marked improvements; how-

ever, there are still too many states that have not met the national goal. The national goal is that 75 percent of US residents who are on community water systems be receiving fluoridated water by 2010."

Fluoride, a naturally occurring compound in the environment, can reduce or prevent tooth decay. Adding or maintaining tiny levels of fluoride in drinking water is a safe and effective public health measure to prevent and control tooth decay (dental caries). The second half of the 20th century saw a major decline in the prevalence and severity of dental caries, attributed in part to the increasing use of fluoride. Based upon studies and a systematic review, the US Task Force on Community Preventive Services reported that fluoridation resulted in a median 29.1 percent relative decrease in tooth decay.

The report, "Populations Receiving Optimally Fluoridated Public Drinking Water—United States 1992–2006," provides the most recent information on the status of fluoridated water by state.

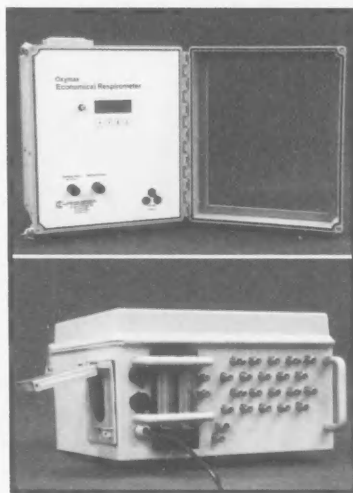
The report says the percentage of people served by community water systems with optimal levels (which are defined by the state and vary based on such things as the climate) of fluoridated water ranged from 8.4 percent in Hawaii to 100 percent in the District of Columbia. Twenty-five states and the District of Columbia have met or exceeded national objectives, while 25 states need improvements. Three states (Colorado, Delaware and Nebraska) that previously reached the national objective dropped below the target by 2006.

During 1998–2006, CDC developed the Water Fluoridation Reporting System (WFRS), a Web-based method to support management of state fluoridation programs and to collect these data. The state has administrative oversight on water fluoridation and CDC relies on state dental or drinking water programs to provide fluoridation data, including populations served, fluoridation status, fluoride concentration, and fluoride source for individual community water systems.

[www.foodprotection.org](http://www.foodprotection.org)



# INDUSTRY PRODUCTS



Columbus Instruments

## Columbus Instruments' New Oxymax ERF Field Respirometer

Columbus Instruments' new Oxymax ERF field respirometer, with its sturdy water-tight field enclosure, is an ideal solution for respirometry experiments on soil, water, and sludge in the lab or in the field. Using precise gas analyzers for oxygen and carbon dioxide, the head space gas exchange is measured directly in up to 10 different samples. With its rugged and compact design, it can be used in a laboratory with limited bench space or taken on site. In the lab, it connects to your Windows compatible PC for experiment configuration and data collection/presentation (software included). The Oxymax ERF can then also be carried on site, in stand alone operation, powered by a gasoline AC power generator for unattended operation. The Oxymax ERF can aid in the identification of contaminated

sites; and then, turn right around and aid in the bioremediation effort by monitoring respiration of samples with different micro-nutrients, inoculum, etc.

**Columbus Instruments**  
614.276.0861  
Columbus, OH  
www.colinst.com

## Eriez® E-Z Tec® XR-21 X-Ray Inspection System Delivers High Quality Inspection for a Wide Range of Packages and Materials

The XR-21 Series Cabinet Inspection System from Eriez® exhibits exceptional performance in identifying contaminants, scanning for missing or broken products, and detecting packaging voids, making it an essential tool to help guarantee product and packaging integrity.

The E-Z Tec® XR-21 Systems are ideal for use with virtually any packaged items and continuous bulk product flows that travel by conveyor. The XR-21 System is capable of handling products up to 12 inches wide and can inspect at variable speeds.

The advanced design of the XR-21 System includes a 15" touch full color screen display that accesses the industry-standard Windows XP interface and displays real-time images and diagnostic data. The XR-21 System automatically analyzes product variations to continuously achieve optimum sensitivity throughout production.

USB and RJ-45 connectors are conveniently located on the outside of the cabinet for easy connectivity to USB devices and Ethernet.

The XR-21 is available in multiple configurations to meet specific application requirements.

**Eriez**  
888.300.ERIEZ  
Erie, PA  
www.eriez.com

## Romer Labs® Introduces New Fumonisin Detection Methods

Romer Labs® highlights its expertise in mycotoxin analysis and introduces new products for the analysis of Fumonisin.

The company's newly improved AgraQuant® Fumonisin ELISA test kit stands out with shorter incubation time and new, highly specific monoclonal antibodies. Additionally the USDA's Grain Inspection, Packers and Stockyards Administration (GIPSA) recently has verified the performance of the AgraQuant® Fumonisin and approval was granted for official use at US National Grain Inspection Facilities (FGIS 2008-106). The AgraQuant® Fumonisin is a very simple ELISA test kit that quantifies Fumonisin within a range of 0.25 and 5 ppm in grain, DDGS (Distillers Dried Grains with Solubles) and other commodities.

For reference laboratory analysis, Romer Labs® has developed a new immunoaffinity column (IAC) which employs monoclonal antibodies for Fumonisin B1, B2 and B3. The FumoniStar™ IAC and the MycoSep® 231, a rapid one-step clean-up column, offer a wide range of applications for the analysis of Fumonisin in different matrices. BIOPURE reference materials for Fumonisin B1, B2 and B3 include traceable liquid calibrants, ready-

Be sure to mention, "I read about it in Food Protection Trends!"

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## INDUSTRY PRODUCTS

to-use standard mixtures, matrix reference material and stable isotope labeled calibrants to complement Romer Labs® comprehensive portfolio of reference testing supplies.

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Union, MO

[www.romerlabs.com](http://www.romerlabs.com)



LEDCO

### LEDCO Releases TuffHub, Groundbreaking New Network Hub

LEDCO, a company known for its innovative solutions in mobile computing, announced that it has officially released the TuffHub, the industry's first MIL-STD-810F vibration tested USB/Ethernet hub. The TuffHub is USB 2.0 certified, making it easy to add peripherals such as GPS, scanners, card readers, and printers. In-vehicle video can also be added via a RJ45 Ethernet port.

The TuffHub is the first of its kind to meet and exceed MIL-STD-810F, a standard developed by the Department of Defense. The TuffHub is ideal for in-vehicle use and has been validated against automotive OEM standards by LEDCO to perform in mobile vehicle environments where harsh vibration, power surges and electromagnetic interference play havoc on non-

rugged devices costing companies expensive downtime.

The TuffHub is housed in a shock-resistant, self-extinguishing case with strain-relieved ports that prevent accidental disconnects, and components that can operate to temperatures as high as 180°F or as low as -20°F. In addition, the TuffHub's streamlined design is simple to mount in tight quarters, such as small boat cabins, dashboards, or out-of-the-way warehouse spaces.

Other features include:

- A best-in-class, five-year warranty
- Inline fuse protection
- EMI/RF filtering
- A voltage regulator that protects peripherals from damage during over-voltage, engine cranking and voltage spikes.

**LEDCO**

734.656.4100

Plymouth Township, MI

[www.tuffhub.com](http://www.tuffhub.com)

### VeriPRO™ Earplug Attenuation Verification Software Highlighted in New Howard Leight Microsite

Sperian Hearing Protection has launched a special microsite for its new VeriPRO™ earplug field verification software. VeriPRO allows safety managers to get an accurate real-world picture of employees' hearing protection. Utilizing sophisticated software with a user-friendly interface, VeriPRO determines the Personal Attenuation Rating (PAR) of the earplugs each employee uses regularly on the job and can help managers determine whether employees require additional fit training or different style earplugs.

The new VeriPRO microsite provides visitors with a tour de force of the program, including back-

ground on the program's function and development, as well as research and best practices related to VeriPRO usage. A slideshow walks visitors through its program set-up and functionality, and a downloadable brochure provides a handy take-away reference. The Research section features PDFs of studies performed by the Howard Leight Acoustical Laboratory in San Diego, CA, on topics such as "Assessing Fit Effectiveness of Earplugs." The Resource Center provides a direct link for VeriPRO clients to additional program information.

Unlike typical audiometric tests, which measure the softest level at which a listener can hear a tone, VeriPRO utilizes a relative measurement of hearing level. The loudness of a tone in one ear is balanced to a tone in the opposite ear at a known level. This "loudness-balance" method allows an accurate hearing test to be performed with the employee's own earplugs, with normal background noise levels found in a typical office or worksite – no special sound booth or accommodations are needed.

VeriPRO calculates the amount of attenuation at each frequency in each ear and displays a Personal Attenuation Rating for each ear. VeriPRO reports allow managers to initiate corrective measures, such as individual fit training, and help companies ensure compliance with OSHA standards. Personal Attenuation Ratings will also help Hearing Conservation program managers in transitioning to the EPA's expected NRR change from a fixed number to a range.

**Sperian Hearing Protection, LLC**

800.430.5490

San Diego, CA

[www.howardleight.com](http://www.howardleight.com)

Be sure to mention, "I read about it in Food Protection Trends"!



Nilfisk-Advance

### Nilfisk-Advance Says OSHA Recommends Industrial Vacuums as Part of a Solid Maintenance Plan

When thinking about explosive materials, there are many things that come to mind—gasoline, gun powder, paint, etc. Rarely does one ever think about sugar dust, an organic material that with the right conditions and a small spark can create a devastating explosion equivalent to that of a bomb.

Earlier this year, the Imperial Sugar refinery in Port Wentworth, GA tragically experienced this first hand; unfortunately they are not alone. In the past 10 years, more than 120 industry employees have been killed by 300 similar dust explosions across the country.

Although lawmakers have for years been urging OSHA to develop industry-wide standards on combustible dust in the workplace, none currently exist. Still, there are measures that can be taken to dramati-

cally reduce, if not eliminate, the risk of a deadly explosion, and a solid maintenance plan that includes an explosion-proof industrial vacuum is the first step in the right direction.

When collecting combustible food dust, explosion-proof vacuums (EXP) are a must. In fact, not using one can actually add to potential dangers. With so much at stake, plant managers should be informed about their purchase as not just any vacuum will do the trick. An EXP must be made of non-sparking stainless steel and be equipped with a special enclosed motor that will prevent potential explosions within the vacuum. If you're in the market for an electric model, approval by a nationally-recognized testing agency such as CSA is a must. This means the machine exceeds a strict set of industry standards and is approved for use in Class I, Division I, Group D and Class II, Division I, Groups F and G, meeting the National Fire Protection Agency's recommendations for picking up combustible food dust.

In environments where electricity is unavailable or undesirable, intrinsically-safe pneumatic models are also available for collection of hazardous materials. Currently, testing agencies do not exist for air-operated vacuums, but still look for models that are properly equipped for hazardous locations and meet the requirements use in Class I, Division I, Group D and Class II, Division I, Groups F and G environments.

It's no secret that industrial vacuums are a great method for controlling dust. Unlike mops and brooms or compressed air, industrial vacs efficiently collect and maintain

dust and debris. And even explosion-proof vacuums can be equipped with a variety of conductive accessories for thorough cleaning of floors, machinery, and hard-to-reach areas like ceilings and overhead pipes. In addition, HEPA-filtered vacs can prohibit hazardous dust from re-entering the air through the exhaust.

Picking the right vacuum often raises a lot of questions, especially when it comes to disaster prevention, and dealing with a vacuum manufacturer that is knowledgeable and available to answer your questions will help the process run smoother. Don't be afraid to request an on-site visit from the vacuum manufacturer. A thorough facility assessment will allow them to get a close look at your individual application before making a recommendation. Some companies will even offer free machine demos and post-sale machine training.

As displayed in Georgia and in plants all across the US, the term "maintenance" oversimplifies the role an industrial vacuum system plays in today's manufacturing processes. The proper system can protect an organization's most valuable asset – its employees.

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### Russell Finex Self-Cleaning Filter System That Eliminates Plant Production Stoppage

Manufactured at the Russell Finex plant, the Eco Filter is a self-cleaning system that inte-

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grates directly into the pipeline and completely eliminates the need to change filter bags or clean filtration baskets. The filter element is kept continuously clean, ensuring optimum filtration efficiency. Because of its self-cleaning design, cleaning the filter between batch runs is quick and easy with minimal disruption during production changeovers.

The Eco Filter fits neatly into existing production lines, in many instances adding significant capacity without requiring excessive space. Because it's totally enclosed, it also prevents outside pollutants from contaminating product and protects operators from any fumes or spillage.

**Russell Finex, Inc.**  
704.588.9808  
Pineville, NC  
[www.russellfinexusa.com](http://www.russellfinexusa.com)

### ABB New Enclosed Liquid-Cooled Frequency Converter

ABB's new drive for wind turbines combines advanced technology with totally enclosed cabinet construction. The active and passive power-converting components and controlling electronics are liquid-cooled and enclosed by the cabinet construction with no air inlet or outlet openings. This ensures that harsh ambient conditions do not infiltrate the cabinet – and the electronics are stabilized; the environment inside the cabinet is protected against dust, salt and extreme temperatures. The new converters are offered as part of ABB's wind turbine drive family, and the model number is ACS800-77LC.

"This converter, which transfers AC power from the turbine

generator through to the utility or transmission switchgear, also can be configured in various ways to optimize the number of power modules needed, as a function of the wind power or turbine speed/velocity to the generator," notes Ari Hedemaki, product line manager for the product line, ABB Low Voltage Drives, North America. "This modular, parallel converter/inverter module configuration also enables wind turbine owners to optimize efficiency – and the system is completely redundant, in that the converters will continue to operate at partial load, even if one of the inverter modules in the system goes offline for some reason."

From 1.5 MW upwards, a full converter system can be configured from two or three individual subsystems, which can be operated together, or one at a time. This approach not only provides redundancy, but also the freedom to choose the optimum location of the frequency converter within a turbine system.

The liquid-cooled converter is available for full converter systems with permanent magnet or asynchronous generators, and for doubly-fed asynchronous generators covering powers up to 5 MW as standard. Higher ratings are engineered according to customer demand.

The liquid-cooled converter is equipped with the latest software and hardware developments to support the grid compliance of an individual turbine in any given locale. Compliance with local grid codes is essential and highly dependant on the functionality of the frequency converter. ABB has extensive experience in providing converters that support compliance of wind turbine

with grid codes such as E.ON, R.E.E and FERC Order 661.

The new products are available with output ratings in the 1 to 5 MW range. As a result, the drive can be factory-installed by the turbine manufacturer or OEM, avoiding costly and time-consuming work on site. Scalability means that the same modules can be used for different turbine designs, allowing easier maintenance and servicing, and reduced training needs.

Direct Torque Control (DTC) is used to provide fast and accurate speed and torque control, without the need for pulse encoder feedback from the shaft. DTC offers a number of benefits, including robust operating characteristics, high availability and reliability, and high-quality output with low harmonics. Thanks to DTC, the drives maintain good output quality in different wind conditions that vary from light to gusting, and they also tolerate fluctuations in the power network. The use of DTC also helps to decrease audible noise from the generator, which reduces the overall environmental impact. Electrical and reactive power can be controlled independently.

PC-based tools make commissioning and service operations straightforward. In addition to the normal fieldbus communications options, a built-in intelligent Ethernet module permits remote maintenance, monitoring and even control. Diagnostic routines can be performed via the Internet or a telecoms line, and the module can trigger alarms in the event of a malfunction. Remote access helps to reduce maintenance costs and minimize downtime.

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# COMING EVENTS

## OCTOBER

- **1-2, Mexico Association for Food Protection with State University of Puebla International Congress of Food Safety**, Puebla, Mexico. For more information, contact Fausto Tejada Trujillo at 52.222.455.9601; E-mail: ftejada@siu.buap.mx.
- **7-8, Advanced HACCP Training for Meat and Poultry Producers**, Athens, GA. For more information, contact University of Georgia Food Science Extension Outreach Program at 706.542.2574 or go to [www.EFSonline.uga.edu](http://www.EFSonline.uga.edu).
- **9-11, Current Developments in Food and Environmental Virology Symposium**, Pisa, Italy. For more information, call 39.050.2213644 or go to [www.cost929-environet.org](http://www.cost929-environet.org).
- **12-16, 2nd ASM Conference on Beneficial Microbes: Beneficial Host-Microbial Interactions**, San Diego, CA. For more information, call ASM at 202.737.3600 or go to [www.asm.org](http://www.asm.org).
- **13-15, HTST Workshop**, Murfreesboro, TN. For more information, call 205.595.6455, ext. 229 or E-mail: [henry.randolph@raiconsult.com](mailto:henry.randolph@raiconsult.com).
- **19-22, 8th Joint Meeting of the Seafood Science and Technology Society and the Atlantic Fisheries Technology Conference**, Wrightsville Beach, NC. For more information, call 252.222.6334 or go to [www.seafoodlab.cmast.ncsu.edu/sst\\_aft2008/](http://www.seafoodlab.cmast.ncsu.edu/sst_aft2008/).
- **19-22, 28th Food Microbiology Symposium "Current Concepts in Foodborne Pathogens and Rapid and Automated Methods in Food Microbiology,"** University of Wisconsin-River Falls, River Falls, WI. For more information, call 715.425.3704 or go to [www.uwrf.edu/food-science](http://www.uwrf.edu/food-science).
- **25-28, American Society for Microbiology's Annual Interscience Conference on Antimicrobial Agents and Chemotherapy**, Washington, D.C. For more information, go to [www.icaac.org](http://www.icaac.org).

- **25-29, American Public Health Association Annual Meeting**, San Diego, CA. For more information, go to [www.apha.org](http://www.apha.org).
- **27-30, Dairy Technology Workshop**, Birmingham, AL. For more information, call 205.595.6455; E-mail: [henry.randolph@raiconsult.com](mailto:henry.randolph@raiconsult.com).
- **28-29, AIB International's Principles of Inspecting and Auditing Food Plants**, Atlanta, GA. For more information, call 785.537.4740 or go to [www.aibonline.org](http://www.aibonline.org).
- **28-30, North Dakota Environmental Health Association Annual Conference**, Radisson Inn, Bismarck, ND. For more information, go to [www.ndeha.org/conference](http://www.ndeha.org/conference).

## NOVEMBER

- **3-6, Better Process Control School**, University of Arkansas, Fayetteville, AR. For more information, go to <http://www.uark.edu/depts/ifse/bpcsrev1.html>.
- **5-6, Alabama Association for Food Protection Annual Meeting**, Birmingham, AL. For more information, contact G. M. Gallaspy at 334.206.5375; E-mail: [ggallaspy@adph.state.al.us](mailto:ggallaspy@adph.state.al.us).
- **5-6, Pasteurizer Operators Workshop**, Penn State University, University Park, PA. For more information, call 814.865.8237, or go to <http://conferences.cas.psu.edu/>.
- **5-7, The Dairy Practices Council® Annual Conference**, Kellogg Hotel and Conference Center at Michigan State University, East Lansing, MI. For more information, call 732.203.1947 go to [www.dairyprc.org](http://www.dairyprc.org).
- **9-13, Process Expo 2008**, McCormick Place, West Hall, Chicago, IL. For more information, go to [www.fpsa.org](http://www.fpsa.org).
- **11-14, FIL-IDF World Dairy Summit and Exhibition**, Mexico City. For more information, go to [www.fil-idf.org](http://www.fil-idf.org); E-mail: [MLebeau@fil-idf.org](mailto:MLebeau@fil-idf.org).
- **13-14, 2008 Sino-American Flexible Packaging and Film Development Symposium Call for Papers**, Hua Ting Hotel and Towers, Shanghai, China. For more information, go to [www.tappia.org/s\\_tappi/doc\\_events.asp](http://www.tappia.org/s_tappi/doc_events.asp).
- **17-19, Basic HACCP: A Food Safety System**, University of California-Davis, Da Vinci Bldg., Davis, CA. For more information, call 800.752.0881 or go to [www.ucdavis.edu](http://www.ucdavis.edu).
- **18-21, New Zealand Association for Food Protection with New Zealand Microbiology Society Annual Meeting**, Christchurch, New Zealand. For more information, contact Lynn McIntyre at 64.3.351.0015.
- **19-21, IAFP's 4th European International Symposium on Food Safety**, Lisbon, Portugal. For more information, contact the Association at 800.369.6337 or go to [www.food-protection.org](http://www.food-protection.org).
- **19-21, The ILSI Europe International Symposium on Food Packaging**, Prague, Czech Republic. For more information, call 32.2.771.00.14 or go to <http://europe.ilsil.org/events/upcoming/4thfoodpckg.htm>.
- **20, Ontario Association for Food Protection's 50th Annual Meeting**, Mississauga Convention Centre, Mississauga, Ontario, Canada. For more information, contact Gail Seed at 519.463.6320 or go to [www.ofpa.on.ca](http://www.ofpa.on.ca).

## IAFP UPCOMING MEETINGS

JULY 12-15, 2009  
Grapevine, Texas

AUGUST 1-4, 2010  
Anaheim, California

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# COMING EVENTS

- **20–21, Advanced HACCP: Verification, Implementation and Other Challenges**, University of California-Davis, Da Vinci Bldg., Davis, CA. For more information, call 800.752.0881 or go to [www.ucdavis.edu](http://www.ucdavis.edu).
- **25–28, VII Workshop on Rapid Methods and Automation in Food Microbiology**, Bellaterra, Barcelona, Spain. For more information, E-mail: [marta.capellas@uab.cat](mailto:marta.capellas@uab.cat) or go to <http://quiro.uab.cat/workshopM-RAMA>.

## JANUARY

- **4–10, Ice Cream Short Course**, Penn State University, University

Park, PA. For more information, call 814.865.8237, or go to <http://conferences.cas.psu.edu/>.

- **18–24, ILSI 2008 Annual Meeting**, Wyndham Rio Mar Beach Resort and Spa, Rio Mar, Puerto Rico. For more information, contact Donna Tschiffely at 202.659.0074 ext. 114; E-mail: [dtschiffely@ilsi.org](mailto:dtschiffely@ilsi.org).
- **24–25, Ice Cream 101**, Penn State University, University Park, PA. For more information, call 814.865.8237, or go to <http://conferences.cas.psu.edu/>.
- **25–28, NMC 48th Annual Meeting**, Westin Hotel, Charlotte, NC. For more information, go to [www.nmconline.org/meetings.html](http://www.nmconline.org/meetings.html).
- **27, Silliker Scientific Seminar – Assessment and Perspectives for**

**European Union Regulations**, Lyon, France. For more information, contact Catherine Macret at [Catherine.Macret@silliker.fr](mailto:Catherine.Macret@silliker.fr).

- **28–30, IPE/IFE 2009**, Georgia World Congress Center, Atlanta, GA. For more information, go to [www.ipe08.org](http://www.ipe08.org).

## FEBRUARY

- **4–6, CIES International Food Safety Conference**, Barcelona, Spain. For more information, contact Marjo Jarvinen at 33.1.44.69.84.82 or go to [www.ciesfoodsafety.com](http://www.ciesfoodsafety.com).
- **24–27, 6th ASM Biodefense and Emerging Disease Research Meeting**, Baltimore, MD. For more information, go to [www.asm.org](http://www.asm.org).



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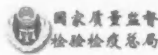
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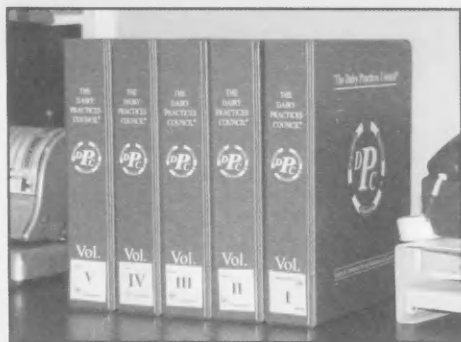
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- 45 Gravity Flow Gutters for Manure Removal in Milking Barns
- 46 Dairy Odor Management
- 48 Cooling Milk on the Farm
- 49 Pre- & Postmilking Teat Disinfectants
- 50 Farm Bulk Milk Collection Procedures
- 51 Controlling the Accuracy of Electronic Testing Instruments for Milk Components
- 53 Vitamin Fortification of Fluid Milk Products
- 54 Selection of Elevated Milking Parlors
- 54S Construction Materials for Milking Parlors
- 56 Dairy Product Safety (Pathogenic Bacteria) for Fluid Milk and Frozen Dessert Plants
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- 59 Production and Regulation of Quality Dairy Goat Milk
- 60 Trouble Shooting Microbial Defects: Product Line Sampling & Hygiene Monitoring
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- 62 Resources For Dairy Equipment Construction Evaluation
- 63 Controlling The Quality And Use Of Dairy Product Rework
- 64 Control Points for Good Management Practices on Dairy Farms
- 65 Installing & Operating Milk Precoolers Properly on Dairy Farms
- 66 Planning A Dairy Complex - "100+ Questions To Ask"
- 69 Abnormal Milk - Risk Reduction and HACCP
- 70 Design, Installation & Cleaning of Small Ruminant Milking Systems
- 71 Farmers Guide To Somatic Cell Counts In Sheep
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- 75 Direct Microscopic Exam of Milk from Small Ruminants (training CD)
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- 91 HACCP - SSOP's and Prerequisites
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- 93 HACCP - Principles 2 & 3 Critical Control Points & Critical Limits
- 97 Direct Loading of Milk from Parlor into Bulk Tankers
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- 100 Food Safety in Farmstead Cheesemaking
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- 103 Approving Milk and Milk Product Plants for Extended Runs
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- 106 On Farm Anaerobic Digesters "100+ Questions to Ask"

IAFP has agreed with The Dairy Practices Council to distribute their guidelines. DPC is a non-profit organization of education, industry and regulatory personnel concerned with milk quality and sanitation throughout the United States. In addition, its membership roster lists individuals and organizations throughout the world.

For the past 38 years, DPC's primary mission has been the development and distribution of educational guidelines directed to proper and improved sanitation practices in the production, processing, and distribution of high quality milk and milk products.

The DPC Guidelines are written by professionals who comprise six permanent task forces. Prior to distribution, every guideline is submitted for approval to the state regulatory agencies in each member state. Should any official have an exception to a section of a proposed guideline, that exception is noted in the final document.

The guidelines are renown for their common sense and useful approach to proper and improved sanitation practices. We think they will be a valuable addition to your professional reference library.

If purchased individually, the entire set would cost \$442.00. We are offering the set, packaged in five looseleaf binders for \$330.00.

**IF PURCHASED ON CD, take a 10% discount plus FREE shipping world wide.**

To purchase this important source of information, complete the order form below and mail or fax (515-276-8655) to IAFP.

Please enclose \$330.00 plus \$17.00 shipping and handling for each set of guidelines within the U.S. Outside U.S., shipping will depend on existing rates. Payment in U.S. \$ drawn on a U.S. bank or by credit card.

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E-Mail: info@foodprotection.org  
Web Site: www.foodprotection.org

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- F2060 Frozen Dairy Products
- F2070 The Cerber Butterfat Test
- F2080 High-Temperature, Short-Time Pasteurizer
- F2090 Managing Milking Quality
- F2100 Mastitis Prevention and Control
- F2105 Milk Hauling Training
- F2110 Milk Plant Sanitation: Chemical Solution
- F2120 Milk Processing Plant Inspection Procedures
- F2125 Ohio Bulk Milk Hauling Video
- F2130 Pasteurizer Design and Regulation
- F2140 Pasteurizer Operation
- F2150 Processing Fluid Milk
- F2180 10 Tips to Dairy Quality

## ENVIRONMENTAL

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- F2021 Egg Production
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- F2030 Fabrication and Curing of Meat and Poultry Products
- F2035 Emerging Pathogens and Grinding and Cooking Comminuted Beef
- F2036 Cooking and Cooling of Meat and Poultry Products
- F2037 Food for Thought - The GMP Quiz Show
- F2039 Food Irradiation
- F2040 Food Microbiological Control
- F2045 Food Safety Smart - HACCP and Its Application to the Food Industry (Part 1 & 2)
- F2060 Food Safe Series II (4 videos)
- F2080 Food Safe Series III (4 videos)
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- F2090 Food Safety: An Educational Video for Institutional Food Service Workers
- F2095 Food Safety for Food Service Series I - Now You're Cooking
- F2100 Tape 1 - Food Safety for Food Service: Cross Contamination
- F2101 Tape 2 - Food Safety for Food Service: HACCP Hygiene
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- F2104 Tape 5 - Food Safety for Food Service II
- F2105 Tape 1 - Basic Microbiology and Foodborne Illness
- F2106 Tape 2 - Handling Knives, Cuts, and Burns
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- F2110 Tape 4 - Sanitation
- F2111 Food Safety is No Mystery
- F2120 Controlling *Salmonella*: Strategies That Work
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- F2126 Food Safety Zone Video Series
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- F2129 Tape 3 - Food Safety Zone: Personal Hygiene
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- F2170 The Heart of HACCP
- F2172 HACCP Training for Managers
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- F2265 A Day in the Dele Service: Selection, and Good Safety
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- F2270 Best Control in Seafood Processing Plants - Preventing Foodborne Illness
- F2271 Preventing Foodborne Illness
- F2280 Principles of Warehouse Sanitation
- F2290 Product Safety and Shelf Life
- F2310 Safe Food: You Can Make a Difference: Safe Handwashing
- F2320 All Hands on Deck
- F2321 The 8's: The 8's and The How Video
- F2322 Safe Practices for sausage Production
- F2325 Sanitation for seafood Processing Personnel
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- F2341 Science and Our Food Supply
- F2342 Seafood HACCP Alliance Internet Training Course
- F2350 ServSafe Steps to Food Safety
- F2350-1 Step One: Starting Out with Food Safety
- F2350-2 Step Two: Ensuring Proper Personal Hygiene
- F2350-3 Step Three: Purchasing, Receiving and Storage
- F2350-4 Step Four: Preparing, Cooking and Serving
- F2350-5 Step Five: Cleaning and Sanitizing
- F2350-6 Step Six: Take the Food Safety Challenge: Good Practices, Bad Practices - You Make the Call
- F2370 Supermarket Sanitation Program - Cleaning and Sanitizing
- F2380 Supermarket Sanitation Program: Food Safety
- F2380 Take Aim at Sanitation
- F2391 Understanding Foodborne Pathogens
- F2410 Wide World of Food Service Brushes
- F2420 Your Health in Our Hands: Our Health in Yours
- F2430 Smart Sanitation: Principles and Practices for Effectively Cleaning your Food Plant
- F2440 Cleaning and Sanitizing in Vegetable Processing - Plants Do It Well. Do It Safely!
- F2450 A Guide to Making Safe Smoked Fish
- F2451 HACCP Phased Plan Ensuring Food Safety in Retail Establishments
- F2460 Safer Processing of Sprouts
- F2500 East Track Restaurant Video Kit
- F2501 Tape 1 - Food Safety Essentials
- F2502 Tape 2 - Receiving and Storage
- F2502 Tape 3 - Service
- F2503 Tape 4 - Food Production
- F2504 Tape 5 - Warewashing
- F2504 Worker Health and Hygiene Program for the Produce Industry
- F2505 Manager Guide to Worker Health and Hygiene
- F2506 Your Company's Success May Depend on It! Worker Health and Hygiene - Your Job Depends on It!
- F2600 Food Industry Security Awareness: The First Line of Defense

## OTHER

- F2005 A Lot on the Line
- F2007 The Amazing World of Microorganisms
- F2008 A Recipe for Food Safety Success
- F2009 Basic Personnel Practices
- F2010 Close Encounters of the Bird Kind
- F2011 Available Post Harvest Processing Technologies for Oysters
- F2065 A Lot on the Line
- F2066 The Amazing World of Microorganisms
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# BOOKLET ORDER FORM

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QUANTITY	DESCRIPTION	MEMBER OR GOV'T PRICE	NON-MEMBER PRICE	TOTAL
	Procedures to Investigate Waterborne Illness—2nd Edition	\$12.00	\$24.00	
	Procedures to Investigate Foodborne Illness—5th Edition	12.00	24.00	
<b>SHIPPING AND HANDLING</b> – \$3.00 (US) \$5.00 (Outside US)		Each additional	Shipping/Handling	
<b>Multiple copies available at reduced prices.</b>		booklet \$1.50	Booklets Total	
Phone our office for pricing information on quantities of 25 or more.				

## OTHER PUBLICATIONS:

QUANTITY	DESCRIPTION	MEMBER OR GOV'T PRICE	NON-MEMBER PRICE	TOTAL
	*JFP Memory Stick – September 1966 through December 2000	\$295.00	\$325.00	
	*International Food Safety Icons and International Food Allergen Icons CD	25.00	25.00	
	Pocket Guide to Dairy Sanitation (minimum order of 10)	.75	1.50	
	Before Disaster Strikes...A Guide to Food Safety in the Home (minimum order of 10)	.75	1.50	
	Before Disaster Strikes... <i>Spanish language version</i> – (minimum order of 10)	.75	1.50	
	Food Safety at Temporary Events (minimum order of 10)	.75	1.50	
	Food Safety at Temporary Events – <i>Spanish language version</i> – (minimum order of 10)	.75	1.50	
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**WEB SITE**  
[www.foodprotection.org](http://www.foodprotection.org)

# MEMBERSHIP APPLICATION

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Company \_\_\_\_\_ Job Title \_\_\_\_\_

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IAFP occasionally provides Members' addresses (excluding phone and E-mail) to vendors supplying products and services for the food safety industry. If you prefer NOT to be included in these lists, please check the box.

## MEMBERSHIPS

	US	Canada/Mexico	International
<input type="checkbox"/> <b>IAFP Membership</b> <small>(Member dues are based on a 12-month period and includes the IAFP Report)</small>	<b>\$ 50.00</b>	<b>\$ 50.00</b>	<b>\$ 50.00</b>
<b>Optional Benefits:</b>			
<input type="checkbox"/> Food Protection Trends	Add \$ 60.00	\$ 75.00	\$ 90.00
<input type="checkbox"/> Journal of Food Protection	Add \$150.00	\$170.00	\$200.00
<input type="checkbox"/> Journal of Food Protection Online	Add \$ 36.00	\$ 36.00	\$ 36.00
<input type="checkbox"/> All Optional Benefits – <b>BEST VALUE!</b>	Add \$200.00	\$235.00	\$280.00
<input type="checkbox"/> <b>Student Membership</b> <small>(Full-time student verification required)</small>	<b>\$ 25.00</b>	<b>\$ 25.00</b>	<b>\$ 25.00</b>
<b>Optional Benefits:</b>			
<input type="checkbox"/> Student Membership with FPT	Add \$ 30.00	\$ 45.00	\$ 60.00
<input type="checkbox"/> Student Membership with JFP	Add \$ 75.00	\$ 95.00	\$125.00
<input type="checkbox"/> Student Membership with JFP Online	Add \$ 18.00	\$ 18.00	\$ 18.00
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## SUSTAINING MEMBERSHIPS

Recognition for your organization and many other benefits.		Contact the IAFP office for more information on the Sustaining Membership Program.
<input type="checkbox"/> <b>GOLD</b>	\$5,000.00	
<input type="checkbox"/> <b>SILVER</b>	\$2,500.00	
<input type="checkbox"/> <b>SUSTAINING</b>	\$ 750.00	

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\* Visa, Mastercard and Discover: See 3-digit Card ID number on the back of the card after account number.  
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All prices include shipping and handling  
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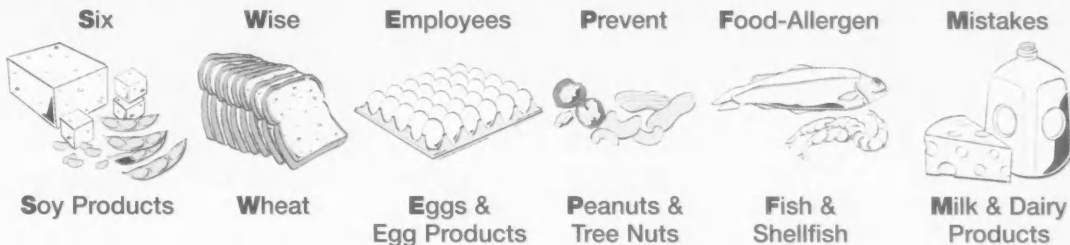
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800.369.6337 515.276.3344	515.276.8655	6200 Aurora Ave., Suite 200W Des Moines, IA 50322-2864, USA	www.foodprotection.org

# Take Action to Prevent an Allergic Reaction

## Know the Most Common Food Allergens

Just think...



## Avoiding Cross-Contact

To avoid cross-contact: wash, rinse and sanitize all utensils before each use, wash hands and change gloves before prep, and use separate equipment for customers with food allergies.



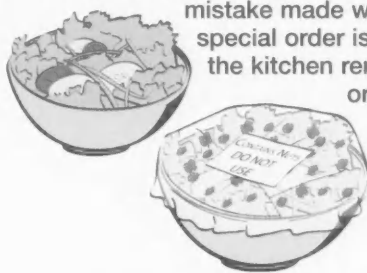
## Communicating with the Customer

Careful and effective communication with the customer and kitchen staff is the best way to protect the customer. Avoid a life-threatening situation by accurately describing dishes, identifying ingredients, and suggesting simpler menu items.



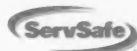
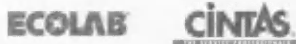
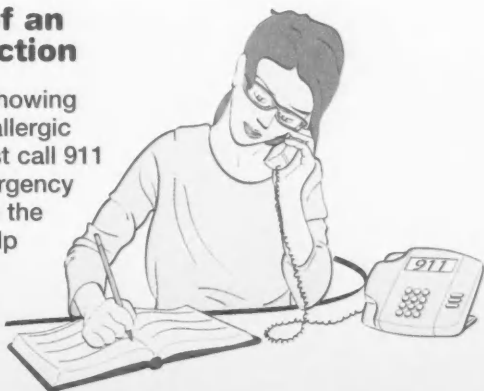
## When Mistakes Happen

The only acceptable way to correct a mistake made with a special order is to have the kitchen remake the order before it is served to the customer.



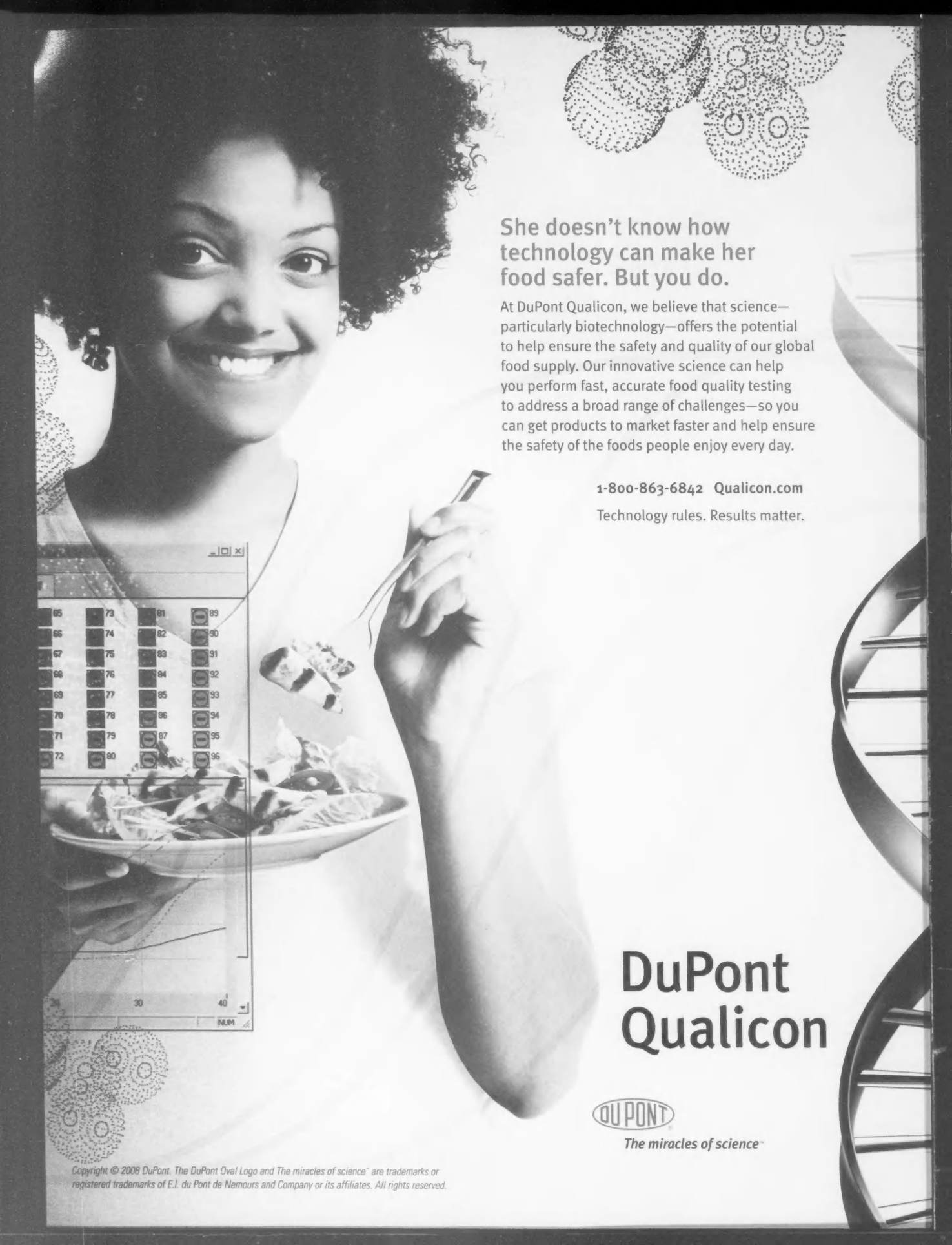
## Symptoms of an Allergic Reaction

If a customer is showing symptoms of an allergic reaction, you must call 911 or your local emergency number, stay with the customer until help arrives, and then complete an incident report.



National Food Safety Education Month®

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technology can make her  
food safer. But you do.

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