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FISH4DOGS CATCHES SUCCESS

Jill Angell of Fish4Dogs, p. 22

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On the cover: Jill Angell, marketing manager of Fish4Dogs, with Digby.

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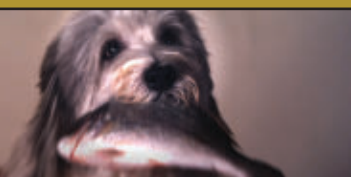
Watch Jill Angel describe Fish4Dogs's rapid expansion and Antonio Teixeira Miranda Neto discuss sustainability in Brazil at www.petfoodindustry.com/MediaList.aspx.

PowerPoint: **More marketing power**

Check out Robert Wheatley's Petfood Forum 2010 presentation at www.petfoodindustry.com/MarketingPower.aspx.

Research: **Satiety in pets**

Dig deeper on this topic with the research behind satiety studies at www.petfoodindustry.com/Research_Notes/5926.html.



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Something to Chew On

Debbie Phillips-Donaldson

Get more

Access more results from Mars' pet owner survey at www.petfoodindustry.com/6105.html (scroll to the bottom of the page).

Making the case for pets



More and more experts think the benefits to humans of owning pets can be quantified and backed by scientific research.

THOSE OF US who love, live with and/or work with pets know intuitively the many benefits they bring to people. But can those benefits be quantified and backed by sound, scientific research?

More and more experts seem to think so. About this time last year, global petfood giant Mars Petcare announced that its Waltham Centre for Pet Nutrition was teaming up with the Eunice Kennedy Shriver National Institute of Child Health and Human Development, part of the US National Institutes of Health (NIH), to study whether animals have a tangible effect on children's well-being.

In fact, this August NIH issued a "funding opportunity announcement"—government-speak for a grant application—for the study of the impact of human-animal interaction on child health and development. So if your company works

with any universities or other organizations doing research in this area, you can direct them to <http://grants.nih.gov/grants/guide/rfa-files/RFA-HD-12-105.html>.

AT THE END of September, Mars unveiled its latest initiative in this area. Power of Pets is a collaboration with YMCAs in five US cities to promote the benefits of pet ownership to human health. (For more information, see www.petfoodindustry.com/6042.html.)

At the same time, Mars released results of a study of 1,000 US pet owners on exercising with pets and other aspects of human health they believe their pets confer. Some highlights:

- Improving their overall well-being was the main reason respondents gave for having a pet, with 66% choosing it; 61% also said they

wanted companionship;

- Half of the respondents said it's more important to maintain a positive relationship with their pet than with their best friend. Women were more likely to say this than men, 53% to 46%;
- 95% said they have a very strong emotional connection to their pet, and 63% said they're extremely attached to their pet; and
- Respondents reported a gamut of positive emotions associated with their pets, such as happiness (83%), love (70%), calmness (65%), excitement (31%) and even invigoration (18%).

YOU MIGHT BE thinking: Of course a huge company like Mars can throw its vast resources behind research like this. But it's not alone.

Recently the American Pet Products Association (APPA, www.americanpetproducts.org), which represents hundreds of petfood (and other pet) companies of varying sizes, announced a similar initiative. APPA is partnering with Dr. Alan Beck at Purdue University and the Human Animal Bond Research Initiative (HABRI, www.habri.org) with the main goals of creating a central database for research and encouraging the US Congress to provide resources to NIH so it can allocate money toward such research.

What does this mean for petfood? It may seem like preaching to the choir. Yet in the September issue of *Pet Business* magazine, Bob Vetere, president of APPA, made this case: "The fastest growing demographics in the US population (Hispanic, Black, Asian and children) represent some of the lower incidences of pet ownership. Left unchecked, this does not bode well for such a vibrant industry."

If that's true, then it may make sense for all of us to start making the case for the benefits of pet ownership in our marketing, promotions and communications. ■

Debbie Phillips-Donaldson is editor-in-chief of *Petfood Industry* magazine. Email her at dphillips@wattnet.net.



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Industry News

Quick hits

- NSF International was named a US Environmental Protection Agency (EPA)-recognized certification body and laboratory for EPA's ENERGY STAR program.
- Bluewave Marine Ingredients' JV operation received GMP certification from SGS company.
- Zuke's appointed John Hart as company president and Michael McCarthy as the company's marketing director.
- Provimi Group appointed Michel Cup as chief financial officer and corporate compliance and risk officer for the company.

Petfood sales expected to rise

Global petfood sales are forecast to rise 2.5%, according to a recent Euromonitor report.

The trend of pet humanization has consumers purchasing higher-premium products for pets they view as children, reported industry leaders Mars and Nestle. The Euromonitor report expects Brazil to overtake Japan as the second-largest market in 2015.

Pet humanization is most pronounced in the US where sales in the petfood industry, which is triple the size of its baby food industry, are expected to grow by 1.5%. The report says Western Europe is following this trend, too, with the Chinese petfood market growing close to 5%.

New Petfood Industry App available

Petfood Industry's new iPhone and iPad App, which can be downloaded free from Apple's App Store, gives readers full access to the magazine, interactive features and news and product feeds from PetfoodIndustry.com.

With the App, you can choose between seeing thumbnails of a page, a full page or enlarged text versions of stories. It also allows you to link directly to advertising information and videos, as well as access RSS feeds from Petfood-Industry.com, easily bookmark and share stories with colleagues and search current and past issues.

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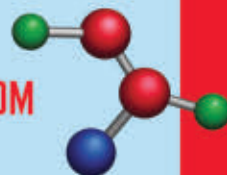
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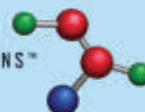
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Bocce's Bakery

www.bocesbakery.com

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For Consumers

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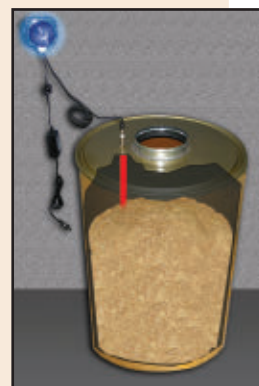
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For Manufacturers

allowing for energy savings, according to the company. Outside air and exhaust air are handled in separate units connected with piping.

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Allpax Products Maintainer software automatically tracks and alerts personnel when critical retort components are scheduled for maintenance.

Maintainer also provides retort room personnel with quick access to machine documentation, maintenance tech

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Watch Jill Angell, co-founder and marketing manager of Fish4Dogs, describe how the company is expanding rapidly beyond its UK base. Visit www.petfoodindustry.com/5304.html.

Fish offers a number of advantages to a dog's diet, says Jill Angell, including improvements in skin and coat condition, mobility and digestion.

JUST THE FACTS

Headquarters:

Worcestershire, UK

Officers: Jill Angell, founder and marketing manager; Graham Smith, CEO; Dominic Ebery, sales manager

Sales: Parent company FKRA has annual turnover of €232 million (US\$323.5 million)

Brands: Fish4Dogs, Fish4Puppies, Fish4Cats

Distribution: Pet stores and distributors in 30 countries in Europe and Asia, plus the US (treats)

Facilities: Worcestershire. Parent company FKRA is based in Stavanger, Norway, with Fish4Dogs part of its Arctic Petfoods Division

Employees: 25, including a show team for UK championship shows, sales, marketing and customer service. Parent company FKRA has 390 employees

Websites: www.fish4dogs.com, www.fkra.no

Fish4Dogs catches success in the market

By Stefania Pes

The UK petfood company's rapid growth is powered by its distinctive key ingredient, word-of-mouth marketing and geographic expansion

WORCESTERSHIRE, A BEAUTIFUL

county in the heart of England, may be best known for the famous sauce. But thanks to the rapid, truly international growth of Worcestershire-based petfood company Fish4Dogs, will the region soon be known for something else?

In the six years since it launched, Fish4Dogs has created its place in the global pet market and consolidated the positive perception of its distinctive feature: using omega-rich fish as the main ingredient in all its products. "This feature provides a clear point of difference with other brands of petfood," says Jill Angell, current marketing director and a company co-founder.

THAT POINT OF difference stems from the professional history of Angell

and her husband, Robert, combined with their shared love for companion animals. Fish4Dogs was the brainchild of the couple, both former consultants for more than 15 years in the human grade seafood processing industry.

The Angells started by making treats for their elderly Great Dane, baking fish skins in their own kitchen. Seeing how much these treats helped their dog's mobility and coat condition, they realized the potential for a dog food based on fish. In 2004, they, along with other private shareholders, formed the company.

"There are a number of advantages to fish in a dog's diet," Jill Angell explains. "Fish is naturally high in nutritionally essential omega-3, which is an important aid to coat and skin condition as well as a way to maintain joint mobility. Our



From the initial fish-skin treats, the Fish4Dogs product range has expanded to include kibble for dogs, puppies and cats, other treats, salmon mousse and salmon oil—all with fish as the main ingredient.

more than happy to pass on.”

The company has also relied strongly on people it calls opinion leaders and on the large amount of research and communication that goes on between dog owners, Angell explains. “This is why we invest heavily in promoting through the breeder and show community, with a major stake in championship shows and breeder clubs. These key opinion leaders have become powerful ambassadors for the brand.”

THE SECOND KEY driver to growth has been geographic expansion. From its very early days, Fish4Dogs has supplied both its domestic market and exports, with the export business really starting to take off in early 2008. Today, over half of Fish4Dogs’ business comes from sales in Europe and Asia—a total of 30 different countries.

“We started six years ago with only two-and-a-half staff,” says Angell.

“Recently, a new CEO, Graham Smith, has been appointed by the board, bringing our staff total to 25.”

products, based on total or very high inclusion of high-quality fish, show an amazing impact on the overall look and outward health of the dog even within a short period.

“Fish protein is also a high-quality, easily digestible protein, with around 80% digestion compared to 50% to 60% for some low-quality meats,” she continues. “This ease of digestion makes fish an excellent food for dogs with delicate digestions as well as senior dogs whose digestive systems are starting to slow down.”

GOOD NEWS SPREADS fast. Soon the new fish treats were in demand in pet stores all over the UK and then around the world. In late 2006, the brand went from the kitchen in

the Angells’ house to the factory, extending from just treats into a complete food line.

“One of the key drivers behind the rapid growth of Fish4Dogs has been the power of word of mouth,” Angell

Today, over half of Fish4Dogs’ business comes from sales in Europe and Asia.

says. “The high level of omega-3 in our products gives fast and visible improvements to the dog’s coat and mobility. This visible effect proves to the owner that these products work as promised, a message consumers are

In late 2007, Fish4Dogs went into partnership with Norwegian farming cooperative FKRA, which provided support for the company’s development. In 2010, FKRA took a controlling interest as co-founder Robert

FISH4DOGS

Angell stepped down. FKRA's deeper involvement is intended to bring its significant manufacturing experience to bear, including a new 12 million Euro (US\$16.6 million) state-of-the-art production facility for petfoods based at its headquarters in Stavanger, Norway.

Expansion is not over, as the company plans to open up new markets and intensify its presence in underserved territories such as the US, Eastern Europe and Australia. The strategy also includes working more closely with current distributors and investing in more international sales managers to continue the doubling of sales every year. ■

Stefania Pes is a writer and pet market research specialist for Mediatic (www.mediatic.it) based in Italy.

Lots of fish—for cats, too

Unlike other petfood products with fish as the main protein source, Fish4Dogs uses only fish and no chicken or other low-cost meat ingredients for bulk, the company says.

Another common feature of Fish4Dogs recipes is simplicity. The ethos is to use a few high-quality natural ingredients—with fish as the key one—and no artificial colors, additives or preservatives. The company also strives to be known for the high fish content of its products: over 55% fish for adult dog foods and over 70% for puppy food.

The product line includes:

- Finest Fish Complete, a fish and potato kibble in Salmon, Whitefish and Puppy varieties;
- Working Dog Complete kibble in Fish, Salmon and Sardine flavors;
- Sea Jerky, made simply from baked fish skins with a rough texture that helps remove tartar from dogs' teeth. The treats are also low in calories at 113 per 100g, the company says, equating to 2.5 calories per treat for the best-selling starter pack;
- Sea Biscuits, a natural alternative to more processed products;
- SOS Salmon Oil, a pure oil rich in omega-3 and other essential fatty acids;
- Finest Salmon Mousse, made from 99% salmon and 1% seaweed extract, a complementary food to be mixed with the main food. This dog "dessert" or treat is often used to encourage fussy or convalescing dogs to eat or is mixed with softened puppy kibble to make a weaning porridge; and
- Fish4Cats, a complete line developed with the same ethos and high-quality ingredients as the dog products. It includes Finest Fish 4 Cats Complete, Star Fish Cat Treats, Finest Salmon Mousse 4 Cats and SOS Salmon Oil for Cats.

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More hot tips!

Want to learn more about marketing petfoods and treats in our adaptive and forward-thinking market? Check out Robert Wheatley's presentation on marketing with emotional significance at www.petfoodindustry.com/MarketingPower.aspx.

Your goal as a business is NOT to acquire customers to make more money. Your goal is to use money to acquire and keep happy pet parents.



By Robert Wheatley

Best practices in building brand equity, constructing a compelling value proposition and understanding the emotional triggers that drive purchase decisions

WE ARE WATCHING the evolution of the petfood business as the market continues to experience fundamental change. The informed pet parent has emerged: spending more while challenging brands on their commitment to better nutrition and seeking credible validation on the quality of ingredients.

Competitive strategies must evolve: As more brands start competing in the natural and organic premium segment of the business, added pressure will come on optimizing brand uniqueness and differentiation. Business models may

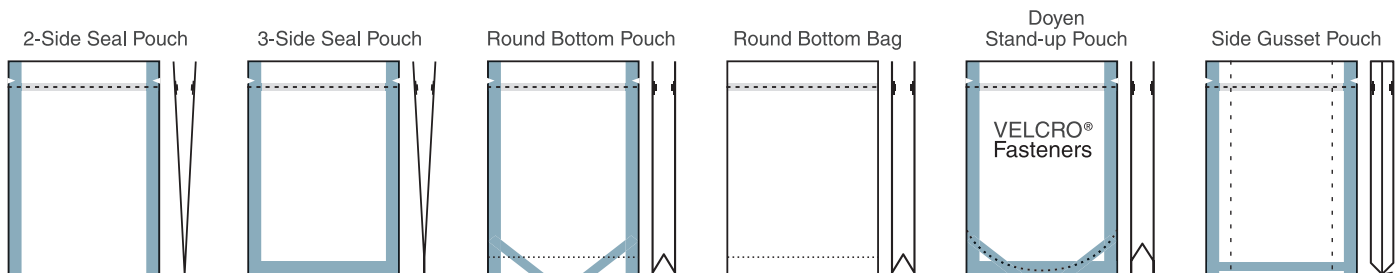
need to be structured for what lies ahead: Consumers will hold brands accountable for their nutritional integrity, thus putting pressure on managing ingredient sourcing costs and balancing issues with what the market wants. Are you ready?

THESE CONDITIONS WILL place increased demands on petfood organizations to fully invest in the development of stronger and more relevant brands and require new thinking about go-to-market strategies. Let's take a look at the bigger issues:

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The vast majority of this early “trading up” segment growth has come from high-income households (US\$100,000+). Saturation is inevitable and so it’s likely that the middle of the market will eventually follow the early adopters as the business matures. This will invite more competition at the premium end.

This will require small- and medium-sized brands to refocus themselves from push (sales) driven business strategies to marketing



The goal is to fight rampant “sameness” among competing brands by pushing the envelope on brand uniqueness.

models (brand development): Brands must pull consumers to the shelf and work to drive emotional qualities and differentiation. A strong brand is your most important asset. Period.

THE JOB NOW for every brand in the game is to mine consumer insight with a goal to acquire greater understanding of your users: their interests, habits, passions and concerns. Why they buy

your brand. What they think they are paying for. This information is vital to constructing a compelling brand value proposition—one that optimizes your collection of functional, financial (not just about price), intangible (perceived) and emotional (feelings) benefits. This analysis then informs marketing strategy and communications plans. The goal is to fight rampant “sameness” among competing brands

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by pushing the envelope on brand uniqueness.

Today what is equally true is this unshakeable fact: The product is the

marketing. Thus tools such as brand positioning and social media are just that—ways to connect with consumers more meaningfully and effectively. The

product and its integrity remain at the forefront of your ability to grow and sustain a loyal customer base of those who know, trust and respect you.

In the world of social media where conversations drive perception, brand reputations can be successfully built by remaining faithful to the premise that superior pet nutrition can support a value proposition consumers will continue to pay for. To quote one of the greatest legends in the history of brand building, David Ogilvy, who weighed in on the matter of respect for what the customer knows, "The consumer is not a moron, she is your wife."



Robert Wheatley is the CEO of Wheatley & Timmons Inc.



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Get more in-depth online

Dig deeper on this topic by checking out the research behind satiety studies.

Check out www.petfoodindustry.com/Research_Notes/5926.html.

Current literature regarding satiety has mostly focused on humans and human models, but there has been some evaluation of different nutrients for satiety in dogs and cats.



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Satiety in dogs and cats

Brittany M. Vester Boler, PhD

What does the recent evaluation of different nutrients for satiety reveal about dogs' and cats' diets?

SATIETY IS A complex process that involves both neuronal and hormonal signals to the brain. Through this complicated system, our bodies relay to our brain long-term signals (e.g., how often to eat) and short-term signals (e.g., when to stop eating a meal).

Examples include stretch receptors in the stomach, which signals to the brain that we are full. Hormonal signals include those that tell our brains we are hungry versus full. Ghrelin is a hormonal signal that increases before meals and decreases following consumption of a meal in many species. Hormonal signals that tell us we are full include glucagon-

like peptide-1 (GLP-1), leptin, peptide YY (PYY) and cholecystekinin (CCK).

CURRENT LITERATURE REGARDING satiety has mostly focused on humans and human models, but there has been some evaluation of different nutrients for satiety in dogs. The literature in dogs has focused on changing the diet macronutrient profile (protein, fat, fiber concentrations) or evaluation of the macronutrients themselves. This research may be used to help pets lose weight, decrease negative behaviors associated with putting your pet on a weight loss diet or, preferably, to prevent weight gain.



A combination of high-protein, high-fiber diets may provide the most benefit to controlling satiety and weight gain/loss.

Dr. Kelly Swanson's group evaluated the changes in hormone concentrations after a dose of one macronutrient (chicken=protein, maltodextrin=carbohydrate, lard=fat, water=control) in adult dogs (Lubbs *et al.*, 2010). While the authors noted no difference in post-prandial ghrelin concentrations, the GLP-1 concentrations tended to be elevated in dogs fed lard. It was also noted in this work that satiety hormones are highly variable throughout the day, and therefore, more sensitive tests for these hormones may be needed.

Different types of ingredients that provide a predominate macronutrient (e.g., beef versus chicken) may affect satiety differently. We recently evaluated different protein sources—beef, chicken, pork, salmon and pollock (Vester Boler, 2010). While we were able to influence satiety hormones and plasma AA in the dog after a protein pre-meal, we

Dietary fiber may provide more benefits than gut fill alone.

were unable to influence food intake. Numerically, dogs consumed the least amount of food after consumption of a salmon or chicken pre-meal. This corresponded with many responses noted with decreased glucose and ghrelin and increased insulin, GLP-1 and several plasma amino acids. This may indicate that each protein source should be evaluated individually.

ANOTHER WAY TO affect satiety is by stimulating stretch receptors in the stomach. Gastric distension by a meal or experimental means will decrease subsequent meal intake in dogs (Pappas *et al.*, 1989). This idea of “gut fill” is one mechanism by which feeding a high-fiber diet is expected to be satiating. The animal must consume a greater amount of food to meet its caloric need.

Dietary fiber, however, may provide more benefits than gut fill alone, as fibers that are able to be fermented in the large bowel may also affect satiety hormones. Dr. Guido Bosch evaluated test diets containing 8.5% cellulose (non-fermentable) or 8.5% beet pulp + 2% inulin (fermentable) (Bosch *et al.*, 2009). The authors assessed voluntary food intake by feeding the same diet six hours after the morning meal of the test diet. Voluntary food intake tended to be lower in dogs fed the fermentable fiber diet. Neither diet in this experiment affected the gut hormones tested (glucose,

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SATIETY

insulin, PYY, GLP-1 or ghrelin) as was expected.

A combination of high-protein, high-fiber diets (HPHF) may provide the most benefit to controlling satiety and weight gain/loss. Voluntary food intake of a commercially prepared HPHF diet was lower compared to a high-protein or high-fiber diet alone (Weber *et al.*, 2007). The two high-fiber diets, however, contained different types of fiber sources, which complicate the results.

UNFORTUNATELY, VERY LITTLE data regarding satiety in cats has been published. Many of the satiety hormones are reported to respond similarly to how they do in humans

and other species, including ghrelin (Ida *et al.*, 2007), leptin (Vester *et al.*, 2009) and CCK (Backus *et al.*, 1995). Their response, of both hormones and food intake to different macronutrients, however, is not yet reported in the literature.

A further complicating matter is that steroid hormones play a large role in the influence of satiety hormones. Cats and dogs that are spayed or neutered are at an increased risk for becoming obese, and it has been well documented that many animals will reduce energy expenditure and increase food intake following the surgery (Belsito *et al.*, 2009; Lund *et al.*, 2006). Administering estradiol to cats after spaying decreases food intake



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Another way to affect satiety is by stimulating stretch receptors in the stomach, according to research.

(Cave *et al.*, 2007), which indicates loss of estrogen, leads to changes in satiety signals in cats as well. This is an obvious area of research that needs to be explored further considering the large numbers of dogs and cats that are spayed or neutered. ■

Brittany M. Vester Boler, PhD, is a postdoctoral research associate with the Department of Animal Science at the University of Illinois.



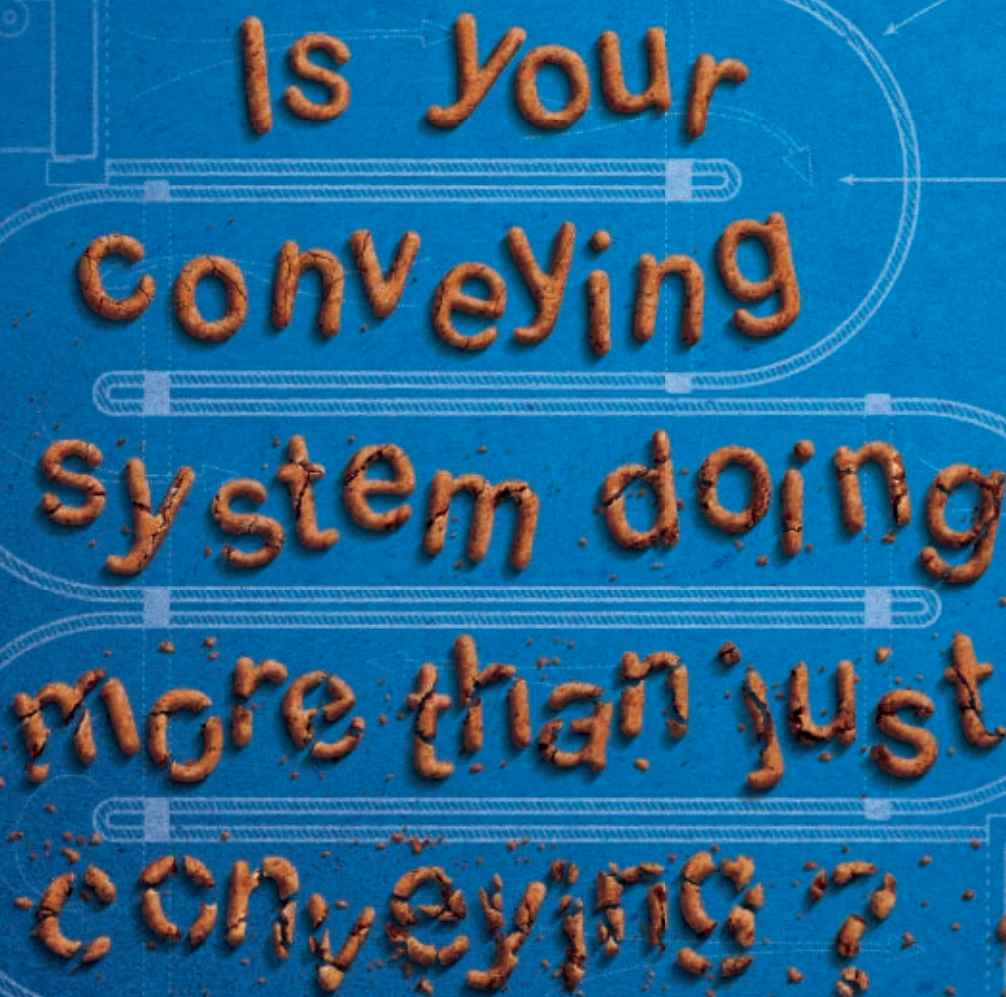
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Check out more ways to make your company a carbon-footprint-friendly manufacturer with information from Jacques Wijnoogst's PowerPoint presentation on sustainability of petfood at www.petfoodindustry.com/CarbonFriendly.aspx.

Not only is it important for the future of the industry to learn to adapt, it's also important to let consumers know your company is working hard to make "green" changes to your production lines and manufacturing facilities—not just your packaging and ingredients.

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Reducing your carbon footprint

By Jessica Taylor

Ways to save on utilities and other costs while reducing the amount of waste and emissions from your plant



CUTTING BACK ON the amount of waste, pollution and damage we do to the Earth on a daily basis as individuals can seem like a daunting task, but when you try applying those same practices to your manufacturing processes, it can seem insurmountable. Not only is it important for the future of the industry to learn to adapt, it's also important to let consumers know your company is working hard to make "green" changes

to your production lines and manufacturing facilities—not just your packaging and ingredients. Let's explore how some companies are reducing their carbon footprint with new technologies while assuring pet parents that their products (and practices) are ones they can continue to trust.

LPS Industries is a vertically integrated flexible packaging converter powered by renewable energy. "Packaging manufactured with solar power is an attribute that is attractive to our customers with a corporate commitment to sustainability, especially those whose goods are sold at retail," explains Charles Ardman, VP of marketing. "A supply chain partner with a comple-



Kathabar Dehumidification Systems offers Twin-Cel, a liquid desiccant energy reduction system for buildings that utilizes energy previously lost to the environment.

mentary sustainability commitment that has a real, measurable impact on the environment can meaningfully differentiate a product on the retail shelf in the eyes of the customer."

In June 2010, LPS announced it had completed the largest Solyndra solar panel rooftop installation in the US, a 704.34kW system. The installation will provide 25% of the power for the 165,000-square-foot manufacturing facility and is part of a larger commitment to reduce energy consumption and produce packaging products in the

most sustainable manner.

Industrial hot water heating can be a major energy and cost outlay for petfood processors and manufacturers. Reducing that energy usage is good for the company's bottom line,

the environment and the public. An easy-to-use calculator that estimates the energy used for specific process conditions, developed by Hydro-Thermal, is now available at www.hydro-thermal.com/calc/htesc.htm.

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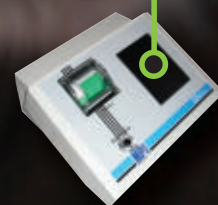
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The calculator uses sound thermodynamic assumptions and formulas to estimate the energy used for specific process conditions and compares the required energy of a heat exchanger with that of a direct steam injection three-way valve. Users can input their process flow rates, needed output temperature, fuel costs and other data directly into the calculator.

A comparison of the energy usage is shown side by side for each heating technology.

Kathabar Dehumidification Systems offers Twin-Cel, a liquid desiccant energy reduction system for buildings that utilizes energy previously lost to the environment. Twin-



Total Alimentos retains a native forest equivalent to 192,000 square meters in addition to practicing reforestation with native trees such as jatoba, mahogany, ypê yellow peróbar rosa, cedar and others.

Cel is a total energy device that transfers both temperature and moisture between the airstreams and allows for greater energy savings than the recovery of sensible heat only. These systems reduce the utilities required to condition outside air for a building,

according to Kathabar.

One petfood manufacturer focusing heavily on its environmental impact is the Brazilian company Total Alimentos. Currently, 100% of the water discharged from the production of its petfoods is treated and returned to the environment under appropriate conditions of reuse. Investments of US\$1 million provide equipment and environmental control

processes, from advanced treatment of waste by filters to the chimneys of steam-generating systems used in manufacturing. All waste generated by the plant is destined for composting or producing organic fertilizer for products such as fruit and coffee. ■

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Petfood Insights

David A. Dzanis, DVM, PhD, DACVN

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Read more of Dr. Dzanis' columns online at www.petfoodindustry.com/petfoodinsights.aspx.

Chickens: new opportunity for the pet treat industry?



Treats for chickens (as opposed to chicken treats for dogs and cats) are becoming popular.

RECENTLY, A COMMENTARY in the op-ed section of a local newspaper proclaimed chickens to be “the new black.” Apparently, keeping poultry has become increasingly popular among the less agriculturally inclined in the US, not only in the suburbs but with the big city folk, too.

Now, I’ve kept a relatively small flock of chickens and other fowl for many years, generally enough to keep my family as well as a few others perpetually in stock with fresh eggs. However, this new breed of poultry enthusiast has scaled back the hobby much further, often keeping only two or three hens in a fairly small space but treating them much more as pets than for utilitarian purposes.

In response to this growing market of people with pet chickens, manufacturers are coming out with products to accommodate their particular needs. Among such products are smartly designed but compact coops and enclosures that easily fit in a backyard of the most modest dimensions. Feeders and other equipment now can be purchased in a variety of boutique colors. Toys, costumes and even diapers for your pet chickens are now available.

WHILE MOST POULTRY feeds and supplements are still sold on the basis of their nutritive value, treats for chickens (as opposed to chicken treats for dogs and cats) are becoming popular, as well. I would expect the major livestock feed manufacturers to retain most of the market with respect to provision of the mainstay components of the pet chicken’s ration (e.g., nutritionally complete mash or crumbles, scratch grains, oyster shells).

However, like other pet owners, pet chicken owners appear receptive to value-added niches

such as vegetarian, natural and organic (the latter for the perceived health benefit to the chicken, not necessarily to adhere to requirements for organic egg production). Also, there have long been supplement products on the market intended to help in the nutrition, health or productive capacity of flocks large and small. The pet chicken treat market, though, appears open at this time.


Currently, most chicken feeds, including treats, are primarily available through feed stores. However, I have seen some pet stores as well as the pet departments in discount stores carrying food items for poultry. I would think pet chicken owners would be more inclined to purchase a pet chicken treat at one of these outlets while shopping for items for their other, more traditional pets rather than making a special trip to the feed store. Thus, there would appear to be opportunities to distribute pet chicken treat items through the same channels as other petfoods and treats.

THE INGREDIENTS SUITABLE for a chicken treat are notably different from what normally goes in a typical dog or cat treat. Commercial products I’ve seen for this purpose include seeds, nuts,

Chickens have a decidedly poor, if not virtually nonexistent, sense of taste.

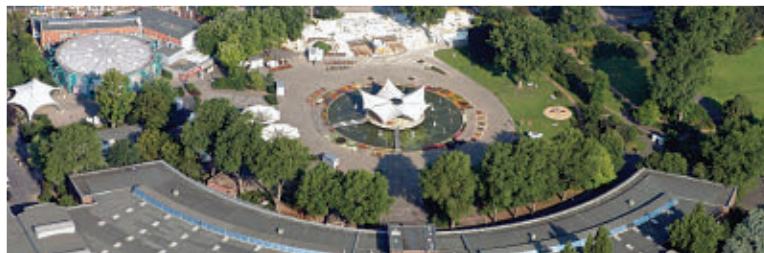
dried fruits and insects such as mealworms. Manufacturers of bird food and other specialty petfood may be more capable of handling these types of ingredients. From my experience, most

Dr. Dzanis is a writer and consultant on nutrition, labeling and regulation. Tel: +1.661.251.3543; email: dzanis@aol.com.



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chickens seem eager to peck at almost anything you give them but appear most inclined to eat common fruits and vegetables, baked goods and breakfast cereals.

A definite consideration in formulating a chicken treat is the fact that

items, any hard baked or extruded item larger than they can swallow will likely go to waste.

EVEN THOUGH THEY may be thought of as pets, labeling of chicken treat products would need to adhere to

to poultry feed labels in the general regulations that would supersede any applicable petfood labeling require-

Pet chicken owners appear receptive to value-added niches such as vegetarian, natural and organic.

chickens have a decidedly poor, if not virtually nonexistent, sense of taste. Thus, they primarily rely on visual and textural cues to determine what is food. In other words, don't depend on flavor additives to augment acceptability of chicken treat products. Also, of course, chicken have no teeth, so while they can peck and tear at soft

the general Association of American Feed Control Official (AAFCO) Model Regulations, not the AAFCO Regulations for Pet Foods and Specialty Pet Foods. It is unlikely that the AAFCO definition for "specialty pet" would (or should) apply in this case, and even if it did there are existing labeling requirements specifically applicable



Keeping poultry has become increasingly popular among the less agriculturally inclined in the US, as well as with the author.

ments. Thus, the label format, particularly the guarantees, would need to follow that prescribed for non-pet poultry feeds. ■

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Greg Aldrich, PhD

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Calcium carbonate: safe, effective, economical for pet diets



This is the ingredient most often used for vital calcium fortification.

CALCIUM IS A vital nutrient for growth and sustained pet health. It is a principal structural component of bone and teeth, facilitates blood clotting binding-proteins, serves as a key conductor of nerve signals, initiates muscle contractions, activates select physiological enzymes and buffers pH changes.

Because of these critical roles, it is important that the diet contain sufficient amounts of calcium. However, the calcium content of common ingredients used in pet diets (outside of incidental bone) is often inadequate. This makes supplementation necessary. The ingredient most often used to fill the gap is calcium carbonate.

What is calcium carbonate? It is one of those invisible low-tech components of our modern world that is used in a broad array of everyday products with little fanfare. While the name—calcium carbonate—may belie its origin, it is no “cooked-in-the-lab” synthetic compound. Rather, it is a readily available, inexpensive, naturally occurring mineral that literally lies right under our feet.

AT THE ELEMENTAL level, calcium carbonate (CaCO_3) is a strangely unique polymorphous molecule that can occur in at least three different crystalline forms (e.g., calcite forms a trigonal crystal, aragonite a rhomboid and vaterite a hexagonal crystal). The calcite form is the dominant structure in nature and is found mostly in chalk, limestone or marble. While chalk and marble have their limited applications, limestone is the form with the greatest array of uses.

Limestone is a sedimentary rock formed either

from direct precipitation of calcium carbonate from (sea) water or from ancient oceanic organisms (corals, sponges, foraminifers and algae) that settled to the sea floor. These calcium carbonate deposits accumulated into layers and were compressed by billions of pounds of pressure over millions of years until they became rock. Today, limestone is found in relative abundance throughout the world in stratified rock formations.

Calcium carbonate from limestone has a number of industrial applications in paint, paper, ceramics and metals. It is the starting material for the production of other calcium products such as “lime” (CaO), hydrated lime (CaOH), calcium chloride (CaCl) and calcium sulfate (CaSO_4). It is used to modify soil pH in farming and is the reason your water may be “hard.”

Calcium carbonate has pharmaceutical applications in antacids (e.g., Tums) and as a phosphate binder for the treatment of conditions

While the name may belie its origin, it is no “cooked-in-the-lab” synthetic compound.

such as hyperphosphatemia. Also, when finely ground, it is the abrasive used in toothpaste and is an oft-used tableting aid for dietary supplements and medicinal pills. So, calcium carbonate is an ingredient you experience almost every day in one form or another.

Dr. Greg Aldrich is president of Pet Food & Ingredient Technology Inc.

CALCIUM ALLOWANCES IN dog and cat diets are recommended from as low as 0.29% for maintenance to as high as 1.2% for growth and reproduction (dry matter 4,000 kcal diet; NRC, 2006). Further, the ratio of calcium to phosphorus should be between 1:1 and 2:1 to avoid imbalances and antagonisms. Calcium is

commonly merchandised for pharmaceuticals, food and feed with more than 98.5% calcium carbonate, the yield of calcium exceeds the 38%. So, while they may be defined differently with regard to calcium content (33% vs. 38%), “ground limestone” and “calcium carbonate” are for all practical purposes the same ingredient.

It is one of those invisible low-tech components of our modern world that is used in a broad array of everyday products.

relatively non-toxic in high doses, but imbalances relative to other minerals can lead to depressed intake and growth in cats and skeletal developmental issues in dogs when Ca levels exceed >2.3% of the diet (NRC, 2005).

Calcium absorption and maintenance of circulating levels is tightly controlled by the actions of vitamin D and parathyroid hormone. Utilization of calcium sources is further influenced by phosphorus, gastric pH, age, calcium source, phytates, oxalates, fatty acyl “soaps” and imbalances and (or) interference from other minerals such as iron, aluminum and magnesium (McDowell, 1992).

So, a number of non-ingredient factors can influence the utilization of dietary calcium. While there is limited data available regarding supplemental calcium sources for companion animals, there is ample applicable data in swine, where bioavailability of calcium from ground limestone and (or) calcium carbonate is effectively 100% (Soares, 1995).

IN THE REGULATORY world, “ground limestone” and “calcite” are defined as acceptable sources of calcium carbonate with a minimum calcium composition of 33% and “calcium carbonate” (the ingredient) is defined as more than 38% calcium (AAFCO, 2010). Since ground limestone is

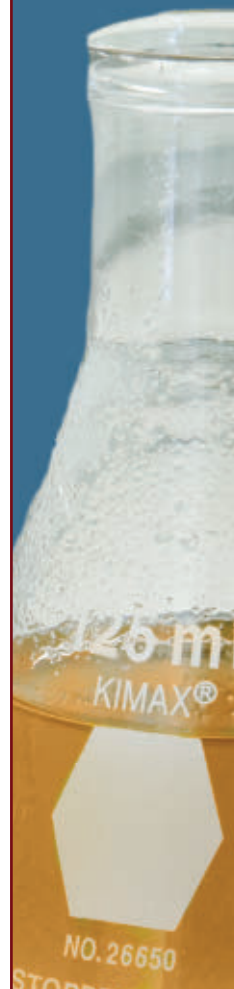
But, not so quick! They aren’t exclusively calcium and carbonate. Because ground limestone and (or) calcium carbonate are earthen compounds, they are not “chemically pure” like synthetic compounds. As such, they may contain trace amounts of other nutritionally important minerals such as sodium (~0.06%), magnesium (~0.05%), manganese (~2,779 ppm), iron (336 ppm), copper (24 ppm) and selenium (0.07 ppm). In addition, it is incumbent upon suppliers to provide assurance that arsenic, fluoride, lead and other potentially toxic minerals are below harmful levels.

DEPENDING ON THE calcium level of the core ingredients in the formula, the amount of calcium carbonate and (or) ground limestone added to petfoods generally falls into the range of 0.1 to 1.5%. In the market, it is available as white to gray in color and is found in various particle sizes from coarse granules to a flour-fine powder. It has good flow characteristics and handling is straightforward.

Calcium carbonate from ground limestone is an easy-to-use, safe, effective and economical source of calcium fortification for most dog and cat diets (and is good for their humans, too). ■

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Nutrient and energy intake in Amazon parrots

Segregation and feeding behavior might alter ingredient and nutrient composition of the multi-component diets commonly fed to parrots. First, the nutritional impact of segregation was assessed when multi-component diets were temporarily stored in food containers that were replenished before completely emptied and birds were fed from the upper layer. The most detrimental effect was a vast decrease in mineral supple-

ments, leading to a decrease in calcium-to-phosphorus (Ca:P) ratio.

Next, a feeding trial was performed on six yellow-shouldered Amazons (*Amazona Barbadensis*) in which the nutritional impact of parrot-specific feeding behavior was assessed as well as the influence of additional fruit provided next to the seed mixture. Profound selective feeding behavior and dehusking of seeds resulted in a vast increase in energetic density by up to 64% in the ingested fraction. The already suboptimal Ca:P ratio further deteriorated. Providing fruit next to the seed diet significantly lowered voluntary energy intake without compromising adequate protein intake.

Despite efforts of nutritionists to formulate multi-component seed diets to approximate estimated, species-specific requirements, nutritional composition of the food actually consumed can vastly deteriorate due to animal and management factors. Offering fruit next to a seed-based diet effectively reduces voluntary energy intake and can hence be applied to abate obesity.

Source: I.D. Kalmar *et al.*, 2010. Effects of segregation and impact of specific feeding behavior and additional fruit on voluntary nutrient and energy intake in yellow-shouldered amazons (*Amazona barbadensis*) when fed a multi-component seed diet ad libitum. JAPAN online July 2010. doi: 10.1111/j.1439-0396.2010.01026.x

Key concepts

- **Nutrient and energy intake in parrots**
(JAPAN online July 2010. doi: 10.1111/j.1439-0396.2010.01026.x) Despite efforts to formulate diets to approximate species-specific requirements, nutritional composition of the food actually consumed can vastly deteriorate due to animal and management factors.



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GROUP MANAGER – INNOVATION & PRODUCT DEVELOPMENT

Department: R&D
Location: Terminal Island, CA

Major Responsibilities:

- Provides high level management to lead both wet and dry product development activities
- Provide the product and packaging technical leadership necessary to manage key company growth and innovation development projects through commercialization, utilizing both internal and external resources
- Supports and participates in market research / marketing programs and
- possess the insights necessary to bring technology in product/package industry to deliver consumer relevant innovations.
- Must continuously strive to apply industry knowledge to help deliver efficiencies in conversion, packaging cost, and improved product and package quality.

Additional Expectations:

- The “expert or specialist” in his/her area of expertise (i.e. extrusion, processing, formed product)
- Ability to use a resource both within Pet Food R&D and outside of the research functions

Education/Experience Requirements:

- Advanced applicable degree (i.e. Food Science, Baking Science)
- Bachelor Degree with equivalent experience in a food related field.
- 10 years or more experience in food product //process development

Title:
SENIOR ASSOCIATE –TECHNOLOGIST I

Department: R&D
Location: Terminal Island, CA

Major Responsibilities:

- To carry out cat and dog food research projects leading to the development of new product or modifications of present products

Additional Expectations:

- Must be able to travel by plane
- Must be capable of travel for extended periods
- The ability to perform as a team leader
- Must be able to work in a factory environment dealing with equipment and raw ingredients
- Must be able to conduct plant tests and product/production commissioning
- Physical labor (some lifting and maneuvering around of equipment in plant locations)

Education/Experience Requirements:

- Bachelors Degree in Food Science, Chemistry, or Biology
- 3-5 years of relevant experience within the food industry

Title:
MANAGER, R & D (Innovation & Strategy)

Department: R&D
Location: Terminal Island, CA

Major Responsibilities:

- Provide technical management and support of Pet Food Research & Development activities that will lead to the long term development of new and improved products
- Create an innovation pipeline of projects, products and processes in conformance with DLM Pet Foods long term strategy
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Additional Expectations:

- The “expert or specialist” in his/her area of expertise (i.e. extrusion, processing, formed products)
- Ability to use a resource both within Pet Food R&D and Leadership, Teamwork,
- Managing changes, Developing Self & Others, Strategic Thinking, and Business Planning & Results

Education/Experience Requirements:

- Bachelor Degree in Food Science, Chemical Engineering, or related field, or equivalent experience in a food or agricultural related field
- 8-10 years of relevant experience in Pet Food research and product development

Title:
Research Fellow I

Department: R&D
Location: Terminal Island, CA

Major Responsibilities:

- Technically guide development of new products or modifications of present product
- Serve as an expert technical resource to Pet Food Operations and/or Research & Development
- Manage highly technical special projects as required and reports to the R&D Manager

Additional Expectations:

- The “expert or specialist” in his/her area of expertise (i.e. extrusion, processing, formed product)
- Ability to use a resource both within Pet Food R&D and outside of the research functions

Education/Experience Requirements:

- B.S. Degree with 15 to 20 years of pet food experience
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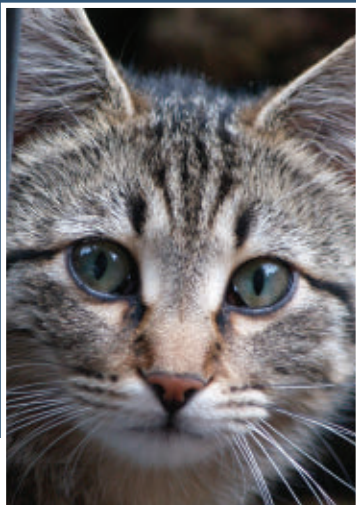
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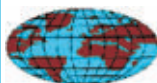
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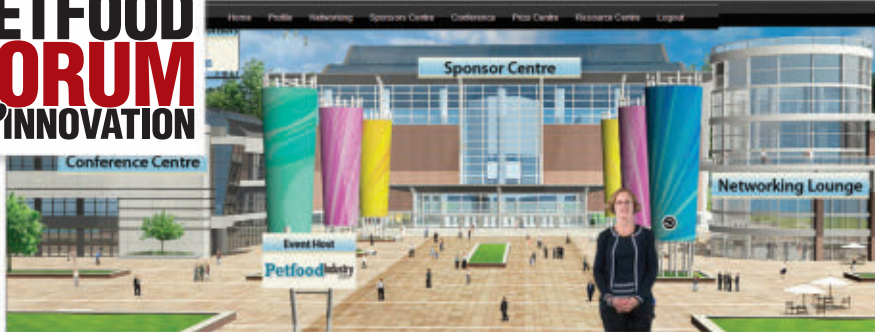
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Industry Calendar

See more

Find out what industry events are approaching. Go to PetfoodIndustry.com.

November

S	M	T	W	T	F	S
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7	8	9	10	11	12	13
14	15	16	17	18	19	20
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28	29	30				

- AFIA's Annual Equipment Manufacturers Conference, November 4-6, 2010. Lowe's Ventana Canyon Hotel, Tucson, Arizona, USA. To register, please visit www.afia.org or email vpedrotty@afia.org.



- Chapman University Extended Education Short Course Analysis Session, November 6, 2010. One University Drive, Orange, California, USA. For details, visit www1.chapman.edu/enhance/FoodScienceMainPage.htm or contact Carla Wiesmuller, (949) 341-9863 or wiesmull@chapman.edu.

- Cantox Workshop: How to Utilize the New GRAS Process for Animal Food Ingredients, November 9, 2010. Four Points by Sheraton, Chicago O'Hare Airport, Chicago, Illinois, USA. More details are available at www.cantox.com/pdfs/food/CTXFG0641%20-%20CVM%20GRAS-Full%20Conference%20Brochure.pdf.

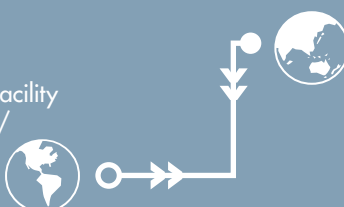
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23/ 30	24/ 31	25	26	27	28	29

- AAFCO Mid-Year Meeting, January 17-20, 2011. Tradewinds Island Grand, St. Pete's Beach, Florida, USA. To register visit www.aafco.org or call +1.800.808.9833.
- 21st Annual Practical Short Course on Feeds & Pet Food Extrusion, January 30-February 4, 2011. Texas A&M University, College Station, Texas, USA. For more information, please email mnriaz@tamu.edu or check out www.tamu.edu/extrusion.

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- AFIA Webcasts: Controlling *Salmonella* in Your Facility and Management Considerations for *Salmonella*/Microbial Control are available for download at www.afia.org.



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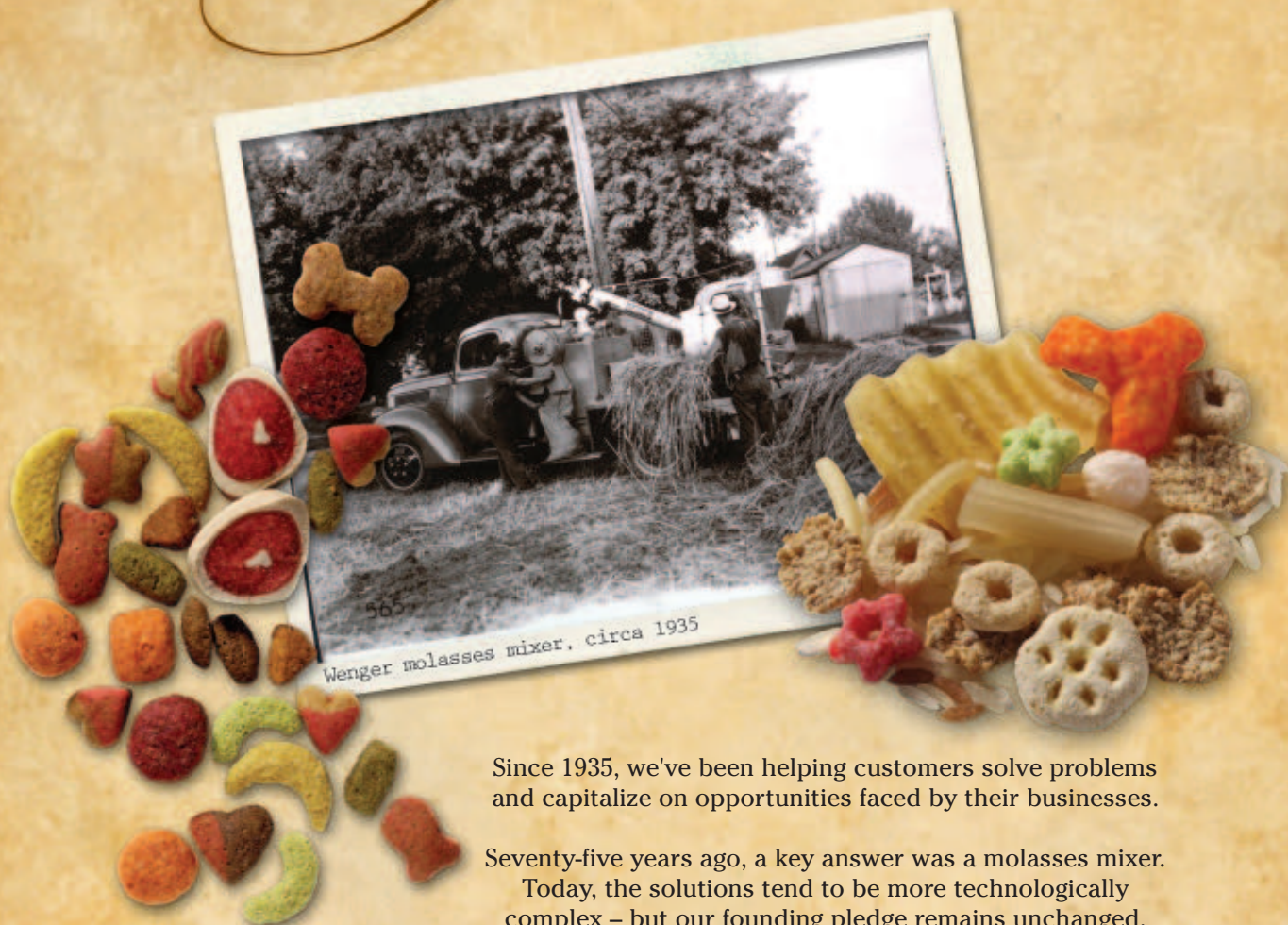
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