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Petfood Industry

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iPhone and iPad App, p. 10

The future of petfood and supplements

Small animal and bird products roundup

Testing for toxins

VIRTUAL PETFOOD

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Feature company

TAKING TREATS TO THE NEXT LEVEL

Carol Jones-Adams of Overby Farm, p. 24

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Dettooolndustry Volume 52 • Number 10

Digital version available at www.petfoodindustry-digital.com

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On the cover: Carol Jones-Adams, partner of Overby Farm,

with Lucy.





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www.youtube.com/user/petfoodindustrytv

Online exclusives

Q&A: More from Overby Farm

Find out how this small family business started and where it's going next at www.petfoodindustry.com/OverbyFarmQA.aspx.

Videos: Food for critters

Watch videos from Interzoo 2010 with makers and suppliers of food for small mammals and birds at www. petfoodindustry.com/TV/Manufacturers/5483.html.

Research: Pet supplements roar!

Read a comprehensive article by L. Phillips Brown, DVM, at www.petfoodindustry.com/PetSupplements.aspx.



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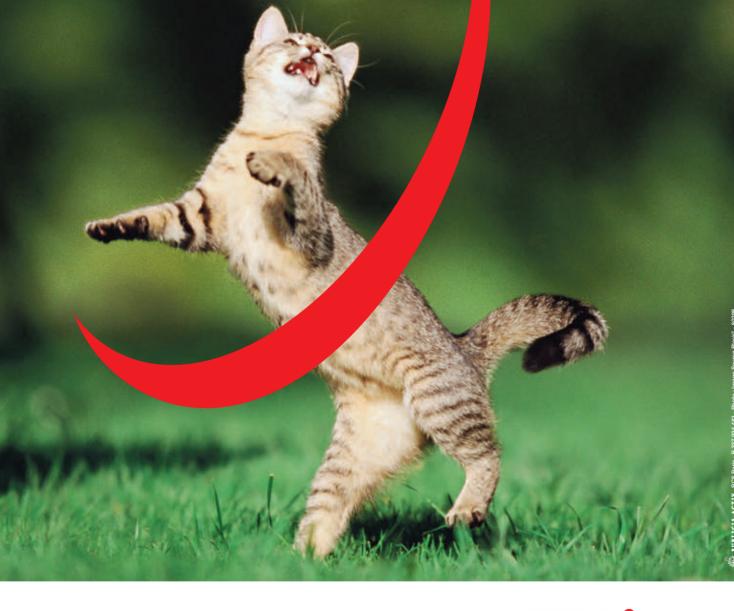
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Something to Chew On

Debbie Phillips-Donaldson

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Get more information at the new <u>PetfoodIndustry.com</u>.

Joining the App revolution



Petfood Industry is launching an App for the iPhone and iPad. Should you be doing the same for your brand? **ONCE UPON A** time, not all that long ago, a mobile phone did what its name said: It let users talk on the phone while on the move, away from the house or office.

Soon most of these phones gained the capability to also send text messages, take photos and play music. And now more and more people around the world have so-called smart phones—devices like the iPhone, Blackberry or Droid that enable users to not only make phone calls and enjoy entertainment-oriented activities but also check email, surf the Web and download Apps that do just about everything except change the tire on a car or cook dinner. (Just wait, those Apps might be available soon.)

 According to various studies, the adoption of smart phones has been growing globally, from an 11% increase

in Italy last year to 36% in the US, 48% in Germany and 70% in the UK (see http://mashable .com/2010/08/26/smartphone-adoption-trends). While penetration is still fairly low—about 17% globally, the same in the US and up to highs of 23% in Spain and 28% in Italy—as the number of smart phones purchased increases and, presumably, prices decrease (let's hope the same can be said for the cost of subscription plans, too), we can expect those rates to rise.

THAT OPENS THE door to the development of even more Apps for every imaginable function and type of user. *Petfood Industry* is now doing its part for petfood professionals by launching an App for the iPhone and iPad, along with an enhanced version of our mobile reader that also works on other smart phones.

The App, which can be downloaded free from Apple.com or iTunes.com, gives readers full access

to the magazine, interactive features and news and product feeds from our newly redesigned website, PetfoodIndustry.com. The App allows you to:

- Choose between seeing thumbnails of a page, a full page or enlarged text versions of articles;
- Link directly to more content, features, advertising information and videos, as well as access RSS feeds from PetfoodIndustry.com;
- Easily bookmark stories, share stories with colleagues and search current and past issues; and
- Link to our social networking site, Petfood-Connection.com (which also has its own App). The mobile Web reader gives readers many of

these same features on other mobile devices, such as a Droid or Blackberry, simply by pointing the device's browser to www.petfoodindustry-digital. com. Again, you can choose between a graphic or easy-to-read text version of each article.

JUST THINK, MANY pet owners probably use smart phones and Apps, too. Apple's iTunes store, which boasts well over 150,000 Apps, includes dozens of pet-oriented ones. You can also find some pet Apps listed at www.petfood-connection. com/profiles/blogs/top-phone-apps-for-pet-lovers, including one from Eukanaba called Off Leash that lists the five dog parks closest to your location (or any zip code) and provides directions.

Other petfood companies probably have Apps, but no doubt there are plenty of opportunities still available to use an App to build awareness—and possibly sales—of your brand. For example, if your brand is not available at many retailers yet, perhaps you can have a "food finder" App developed, where users receive directions to the nearest outlets selling your products. Or perhaps you can partner with a retailer like PetSmart, which has its own App promoting sales on featured products.

The sky—or should I say cyberspace—is the limit for reaching current and potential customers via mobile devices.

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

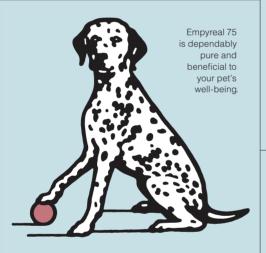


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Why not give your pet food a **competitive edge** to compete in the crowded pet food marketplace. Add the innovative ingredients of **3D Corporate Solutions**. They'll blow you away.

Industry News

Quick hits

- Nutri-Vet redesigned its brand with colorcoded bottles and labels and new conditionspecific products.
- The Nestle Purina petfood facility in Jefferson, Wisconsin USA, celebrated 100 years of continuous operation at its location.
- Guide Dogs for the Blind Inc. formed a partnership with Natural Balance Pet Foods.
- Norwood Marketing Services appointed Rinteco as its distributor in Ecuador.
- PMMI announced the 2010 inductees to the Packaging Hall of Fame: Robert Dodrill, Rollprint Packaging Products; Edwin Landon, Landon, Farrey & Associates: Michael Richmond, PhD, Packaging & Technology Integrated Solutions LLC; and Bill Zito, Enercon Industries Corp.

Petfood Industry iPhone and iPad App released

Petfood Industry has launched an App for the iPhone and iPad, along with an enhanced version of our mobile reader that also works on other smart phones. The App, which can be downloaded free from Apple.com or iTunes.com, gives readers full access to the magazine, interactive features and news and product feeds from our newly redesigned website, PetfoodIndustry.com.

The App allows you to link directly to more content, features, advertising information and videos, as well as access to RSS feeds from PetfoodIndustry.com. You can now easily bookmark stories, share stories with colleagues and search current and past issues, and link to our social networking site, Petfood-Connection.com (which also has its own App).

The mobile Web reader gives readers many of these same features on other mobile devices, such as a Droid or Blackberry, simply by pointing the device's browser to www.petfoodindustry-digital.com. For more information, visit www.petfoodindustry.com/Apps.aspx.



Iditarod veterinarian to keynote Petfood Forum 2011



Learn about the thrill of the Iditarod from Timothy A. Hunt, DVM, during Petfood Forum on April 12, 2011. Dr. Hunt has not only worked the legendary race as a veterinarian but has run it himself. Dr. Hunt

operates a small-animal veterinary practice in Marquette, Michigan, and is an avid musher who has competed in numerous events throughout North America and Europe. In 2005, he launched his own line of dog food—Dr. Tim's Pet Food—due of the lack of high-quality feeds on the market for the hard-working Alaskan Husky and has since

PetfoodForum

introduced additional formulations.

Petfood Forum 2011 will take place April 11-13 at a new venue, the Renaissance Schaumburg (about 10 miles from Chicago's O'Hare Airport). It will be followed April 13-14 by Petfood Workshop: Safety First. Registration for both events is now available with savings of 15% if you register by February 15 and an additional discount off Petfood Workshop registration if you also register for Petfood Forum. Visit www. petfoodindustry.com/PFF2011.aspx#tab_1.

Learn more

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For Consumers

Healthy Bones dog treats



Dick Van Patten's Natural Balance Pet Foods Inc. offers its Healthy Bones line of dog treats with added vitamin E and zinc to help support optimum skin and coat health. The oven-baked treats are available in Turkey, Oatmeal, Cranberry; Oatmeal, Chicken, Pumpkin; Sweet Potato, Salmon, Apple (grainfree formula); Lamb, Quinoa, Carrot; and Trout, Wild Rice, Spinach. Healthy Bones are available in small breed and regular sizes.

Dick Van Patten's Natural Balance Pet Foods Inc. +1.800.829.4493 x145 www.naturalbalanceinc.com

Eagle Pack Canned Dog formulas

WellPet LLC Eagle Pack Canned Dog formulas come in turkey, beef, chicken and lamb and are fortified with vitamins and minerals. Formulated for all lifestages, Eagle Pack's wet foods can be fed as a complete meal or in addition to a dry diet. Ground flaxseed and olive oil are included for a glossy coat, according to the company.



WellPet LLC +1.978.289.5500 www.wellpet.com

Pork Chomps Crunchy Bones



Scott Pet Inc. has a line of granulated pork chews, Pork Chomps Crunchy Bones. Made of pork skin, the Crunchy Bones are easy to digest, according to the company. The product is available in bacon and chicken flavors.

> Scott Pet Inc. +1.866.678.2466 www.porkchomps.com

Nature Select bird food

Witte Molen Nature Select bird food contains eggfood to improve the scent, in varieties specific to parakeets, budgerigars and canaries. The formulas also were designed with a balance of vitamins,



minerals and carbs for each type of bird, the company says. Witte Molen +31.416.358.300 www.wittemolen.com

Pure Sweet Potato puree

Pure Sweet Potato supplement from Nummy Tum Tum Pet Products is US Deparment of Agriculture certified organic and made in the US, according to the company. Also available in pumpkin puree, the sweet potato puree has a suggested serving size of 1 tablespoon per 10 pounds weight daily.



Nummy Tum Tum Pet Products +1.800.644.7462 www.nummytumtum.com

Organic, grain-free, vegan dog treats

Max & Ruffy's offers a certified organic, vegan, grainfree treat line for dogs. Flavors include Powerhouse: Sweet Potato & Alfalfa flavor, the Kelp Highway: Butternut



Squash & Kelp flavor and Five-Star Blueberry. The treats are hand baked in small batches without the use of preservatives, additives or artificial colorings or flavorings and are packaged using a biodegradable bag insert inside a recyclable paperboard box, according to the company.

Max & Ruffy's +1.703.465.4481 www.maxandruffys.com

Buddy Biscuits

Cloud Star Corp. offers Buddy Biscuits. These dog treats are free of corn, soy, sugar, salt and egg, according to the company. They are available in bacon & cheese, roasted chicken, molasses, peanut butter, veggie and sweet potato flavors. The treats come packaged in 1-pound or 10-pound boxes.

Cloud Star Corp. +1.800.361.9079 www.cloudstar.com

For Consumers

Twiny cookie

Pet Treats Ltd. offers Twiny



cookie. This boneshaped dog snack prevents bad breath and helps clean teeth, according to the company. The treat is made of a milk-flavored outer layer with calcium and a chlorophyll

center with mint flavoring. The cookies are also available in a sugar-free variety.

Pet Treats Ltd. www.pettreatsltd.com

Dog treats for fresh breath

In Clover offers Grin Daily treats. The dog treats are designed to promote fresh breath, tartar control and healthy digestion, according to the company. They are available in a licorice



flavor. The company recommends feeding one treat per day to dogs. In Clover +1.303.581.9619

www.inclover.com

PetAg Catslim



PetAg offers Catslim, a meal replacement and food supplement designed to help cats over the age of 4 maintain a proper weight. It is available in 6-ounce and

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keynote speaker Timothy A. Hunt, DVM, who has not only worked the legendary race as a veterinarian but has run it himself. Dr. Hunt operates a small-animal veterinary practice in Marquette, Michigan, and is an avid musher who has competed in numerous events throughout North America and Europe. In 2005, he launched his own line of dog food - Dr. Tim's - due of the lack

of high-quality feeds on the market for the hard-working Alaskan Husky and has since introduced additional formulations.





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NOTE: Registrations will not be processed without payment; rate is determined by date payment is received. Prior to February 15, 2011, attendee registration fees are refundable minus a cancellation fee; contact OutreachRegistration@niu. edu or +1.815.753.7922. Substitution of registered personnel at no charge. Watt Media reserves the right to substitute speakers and change schedule as necessary. If anyone in your party requires special assistance, please contact us.

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Room availability is limited: reservations will be handled on a first come, first served basis.



For Manufacturers

cleaning. In less than five minutes, the assembly slides out, allowing for cleaning and maintenance, according to the company. Equipped with VFD motors, two-speed bulk and dribble settings are designed to ensure bag fill accuracy. The belt feed scale is available in Simplex or Duplex configurations, with a variety of bag clamp designs.

> Hamer Inc. +1.800.927.4674 www.hamerinc.com

Flexible packaging machinery

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AlliedFlex Technologies Inc. +1.941.923.1181 www.alliedflex.com

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Bucket conveyor, elevator system

Gough Econ offers the Elecon bucket conveyor and elevator system, designed to move material in three directions for flexibility in planning a material handling system within a production facility. The multi-axis system is well suited for applications requiring gentle handling, the company says. It uses cantilevered buckets that move vertically, horizontally and can turn any direction up to 90 degrees without having to transfer the load being conveyed. The multi-axis capability is the result of a chain design and cantilevered wedgeshaped buckets that come together and overlap at the load station.

> Gough Econ +1.800.264.6844 www.goughecon.com

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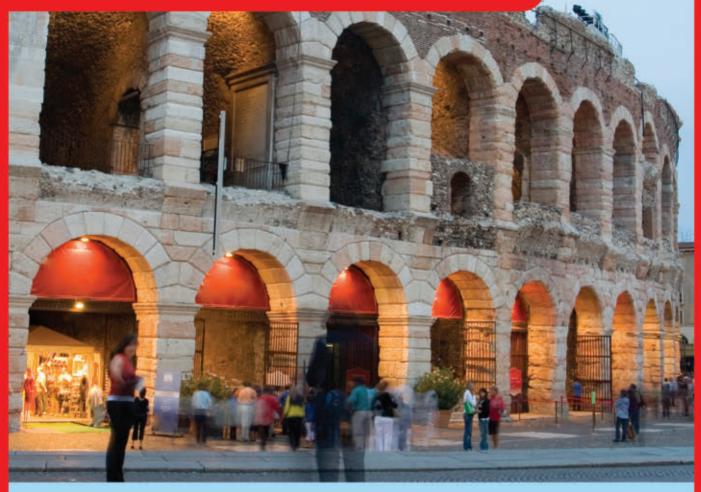
the company. The gyratoryreciprocating motion of the near-horizontal screen surface is



designed to give undersize material maximum opportunity to pass through the mesh openings without the loss of near-size material. Screeners range from one to five screen surfaces.

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Guide to



Learn the latest advances in our industry and interact with peers from around the world—all online

WHAT INNOVATIONS ARE happening in petfood that could help you continue to drive your business forward? Find out by signing up for Virtual Petfood Forum: Innovation on October 21. You can learn from experts and network with industry peers and leading suppliers from around the world—all for free and without leaving your office or home.

Think of Virtual Petfood Forum as an online event where petfood nutrition, safety and regulatory, production and packaging professionals along with veterinarians, nutritionists, technical consultants, sales professionals, C-level executives, business owners and buyers can engage in real-time interaction via chats, group chats, E-mails, Twitter or the exchange of electronic business cards.

Plus, this event will feature five industry experts sharing their knowledge on:

■ Innovation in nutrition and ingredients by Serge Boutet, agronomist



and manager of petfoods and nutrition for Mondou Ltd. in Canada. Boutet has focused his career on

developing unique petfood products, which in his mind starts with innovative ingredients. In fact, he says his suppliers often come to him first with their new ingredients.

■ Innovation in petfood packaging by Scott Whiteside, PhD, associate



professor of the Department of Packaging Science and associate director of the Center

for Flexible Packaging, both at Clemson University. Dr. Whiteside works with numerous companies on food and packaging issues. He believes some of the most innovative packaging in recent years has been happening in petfood, and he'll share some of his favorite examples.

Innovation in marketing: exploring social and online media by Julie Lenzer Kirk, CEO and chief muse



of Path Forward International, which works with businesses and entrepreneurs to help

them improve, grow and succeed. Lenzer Kirk is a regular on Twitter and uses it, along with other social networking formats, to connect with her clients and help them market their companies and products.

 Innovation in petfood processing by Mian Riaz, PhD, director of the Food Protein R&D



Center at Texas A&M University. Dr. Riaz and his team hold several extrusion seminars

each year, including one focused on petfood, and keep up-to-date on the latest advances in equipment, processes and techniques.

Innovation in petfood safety by James Marsden, PhD, Regent's



Distinguished Professor of Food Safety and Security and associate director of the

Biosecurity Research Institute, both at Kansas State University. His research has focused on the safety of food products, particularly controlling dangerous bacteria and other contaminants in meat, and he's now applying that research to petfood.

Registering for Virtual Petfood Forum: Innovation gets you access to these live presentations—including live Q&A with each speaker—plus the sponsor center and networking lounge. You can enter and leave the event throughout the day as your schedule allows—or, if you can't participate at all on October 21, you can access an archive of the event for 90 days afterward. Visit www.wattevents.com.

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Read more about Overby Farm online

Read a Q&A with Carol Jones-Adams at <u>www.petfoodindustry.com/</u> <u>OverbyFarmQA.aspx</u>.

Carol Jones-Adams (shown here with Lucy) and her husband and business partner, Bob Adams, started making cherry-based functional dog treats after using tart cherry concentrate in their own food.

JUST THE FACTS

Headquarters: Leland, Michigan, USA

Officers: Carol Jones-Adams and Bob Adams, partners; David Adams, sales manager; Lesley Healy, office manager: Mary Ellen Kripke, bookkeeper

Sales: Expects to exceed US\$1 million in 2011

Brands: Hip Bones, Hip Bones Jr., Hip Flex, Hip Flex Feline

Distribution: Throughout the US and online

Facilities: Uses contract manufacturer

Website: www.overbyfarm.com

Overby Farm takes treats to the next level

This small family business prepares to introduce innovative, functional formulations beyond its signature cherry products

A GROWING BODY of research shows that in humans, tart cherries can act as an antioxidant and help people suffering from various conditions and forms of inflammation (see www.choosecherries.com).

"Our family found relief from arthritis and gout through cherry concentrate, and that got the ball rolling," says Carol Jones-Adams, describing how her functional treat company, Overby Farm, was born. "Working with researchers at Michigan State University (MSU) who patented their anti-inflammatory discoveries in tart cherries, then with veterinarians there, really helped us. Our own desire to produce something beneficial for our pets was the 'aha' that began it all in 2004."

The fact that Jones-Adams and her

family have a farm in Leelanau County, Michigan, USA—also known as "cherry capital of the world"—was another contributing factor. At the time, she was trying to ensure that her teenagers, who wouldn't eat breakfast, still received good nutrition by making them smoothies with cherries and other healthy substances. Soon she extended the blending of ingredients to making bone-shaped treats for the family's dogs, Abigail and Lucy.

Jones-Adams and her husband and business partner, Bob Adams, were so impressed with how their dogs reacted to the treats that they started discussing taking them to the market. He was working with MSU on another project at the time, Jones-Adams says, and found out about the university's patents with tart cherries.

"We licensed the patents for the companion animal market and started investigating how we could work with the veterinary department at MSU," Jones-Adams says. "We started formulating products and came out with Hip Bones about five years ago."

UNDER THE LOGO on the Overby Farm website, you'll see a phrase that sums up the company's stake in the pet treats market: "an invitation to natural joint health." Besides the Hip Bones functional dog treats, Overby Farm also offers a smaller version, Hip Bones Jr.; Hip Flex, chewable supplements for dogs that include cherries, blueberries and cranberries; and Hip Flex Feline, chewable nibs for cats. All the products contain other functional ingredients such as flax seed, fish oil and glucosamine.

"What we try to do is have our lines work well together," says Jones-Adams. "The idea came as we started learning about processing parameters;

Online extra!

For more research on the benefits of cherries for humans, visit <u>www.choosecherries.com/Uploads/</u> Documents/8589194263810869558.pdf/.

Powerful pigments

The anti-inflammatory power of cherries comes from anthocyanins, according to research in human food. "These plant pigments are more than coloring agents. They also contain an array of healthpromoting benefits," wrote Marilyn Sterling in Nutrition Science News (see www.chiro.org/nutrition/ FULL/Anthocyanins.shtml). "Anthocyanins are antioxidant flavonoids that protect many body systems. They have some of the strongest physiological effects of any plant compounds."

You can't glean this type of information from the packaging or marketing for Overby Farm products or any other treats or petfoods using similar ingredients, because current US regulations don't allow such health claims for petfood products. "In our niche, regulation and claims are under constant surveillance-a necessary aspect of any industry and welcomed for the safety of our pets," says Carol Jones-Adams. Overby Farm is a member of the National Animal Supplement Council, a group of companies that voluntarily adhere to higher standards of compliance and transparency with regulatory agencies to ensure the safety and quality of their products.

"Much of what we learn regarding how diet can help the body heal itself are discoveries we are unable to advertise and talk about due to the regulatory environment, albeit well-intentioned and necessary," she continues. "To that end, it is more important than ever that consumers continue to educate themselves about ingredients and bio-availability so they really understand what is in their food and their pets' food." we realized that anytime you bake a treat, you're going to lose a certain amount of the active ingredients. We do gear up the actives with our baked treats, but we also wanted to have a more efficacious, pure supplement type product, and that's when we came out with Hip Flex. It starts with whole frozen cherries, then adds the cherry concentrate—the closest to the tree that we can get."

THAT APPROACH TO the market has paid off. Though still just a very small family business—after graduating from MSU, son David joined the company in 2008 as sales manager— Overby Farm will exceed US\$1 million in sales in the US alone in 2011, Jones-Adams says, the first time the company has hit that mark. "We feel like we have had our nose to the grindstone since the beginning," she adds. "We've been approaching this as the little engine that could.

"Now we're ready to take the company to the next level," Jones-Adams continues. "We believe we've learned about the industry in the last five years, we've learned a lot about formulating and working with the necessary players in the marketplace."

After nearly a year of R&D, the company is preparing to launch a range of new products that will double its offerings within the next year:

- A wheat-free version of Hip Bones;
- A line of Veggie bones; and
- New packaging for Hip Flex and Hip Flex Feline (bottles, in addition to the pouches already used).

The new Hip Bones are intended for dogs with allergies to wheat, Jones-Adams says. "We've had wheat in Hip Bones because with tart cherry, you need some sort of 'stick factor' to keep the treat together. But we recognize there's a large percentage of the animal population that's allergic to wheat or has some type of reaction. So we're trying to respond to a request we've heard in the marketplace."

In developing Veggie Bones, the focus has been on cruciferous vegetables like broccoli and cauliflower. based on recommendations from the nutritionist at MSU who advises the company. "We want to make sure it's a very 'green' bone," Jones-Adams says. "And I think we'll be



adding a few others for fun, for health, like pumpkin and sweet potato."

educated about what nutrition can do for them and their pets, as the science

We've been approaching this as the little engine that could.

OVERBY FARM HAS an exclusive relationship with a global fruit and vegetable global processor in northern Michigan. "He's been moving down a path toward human nutraceuticals. We are the companion animal compatriot to that," Jones-Adams says. "As we see people becoming more

After nearly a year of R&D, Overby Farm is preparing to launch a range of new products that will double its current offerings (shown here) within the next 12 months.

and the information become more available-and through our work with MSU and other like minds we have ioined with—it's absolutely incredible what's available and what we can do.

"It's time now to get up on a mountain and start shouting, have people really know about us," she continues. "We're ready to start rolling at a faster pace now. We're ready to launch into a whole new level of the business. We're excited "

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Watch video online!

Check out Edo Paymans, sales and marketing manager for Nutrievo, as he explains how the company worked with a leading zoo to develop its new custom OptiBird foods, on display at Interzoo 2010 at <u>www.petfoodindustry.com/TV/</u> <u>Manufacturers/5483.html</u>.

Small animal and bird products roundup

By Jessica Taylor

Internationally the small animal and bird market is teeming with innovative, healthy and marketable products that deserve a spotlight

Very often the small animal and bird sector of petfood is overshadowed by the rapidly growing and ever-adapting-tothe-human-food-market that is dog and cat food. Although these tinier creatures have smaller mouths to feed, their pet parents' appetites for innova-

tive, healthy and fun products for their hamsters, gerbils, ferrets, chinchillas, rabbits and birds continue to be ravenous. Internationally, the small animal and bird market is becoming increasingly important as young adults are waiting longer to get married and start families, residing longer in small apartments and cityscapes that are often a friendlier environment for small caged mammals and birds.

According to Euromonitor Inter-

national, from 2004-2009 total sales of petfoods made for animals other than dogs and cats grew by 21.5% internationally and are expected to grow by more than 5% by 2014 (see Figure 1, p. 32). No longer producing just the typical fare you might find at a feed store—like a bale of hay and a tub of sunflower seeds—manufacturers of small companion animal foods and

treats are working hard to bring fresh, often ador-

Hugro has an astounding offering of petfoods, treats, litters and accessories for small animals and birds that includes colorful graphics and packaging.



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able and highly marketable products to market. Instead of turning our spotlight on kibbles, bits and freshly canned fish, let's peruse the creative offerings manufacturers for small animals and birds are bringing to the international table.

has recently developed a new Opti-Bird line in conjunction with experts at Utrecht University in the Netherlands. The bird food is described as an ultra premium, everyday diet for adult birds and is offered in four different mixes for Small, Medium,

WITTE MOLEN RECENTLY introduced Nature Select Bird, a premium petfood with an enticing smell for birds. This petfood has been developed especially for birds and contains Witte Molen eggfood, which gives a lovely smell to the food that is

Figure 1. Sales and growth of other petfood by region, 2003-2014

From 2004-2009 total sales of petfoods made for animals other than dogs and cats grew by 21.5% internationally and is expected to grow by more than 5% by 2014.

	Sales in US\$ millions			% total growth		% CAGR*	
Region	2003	2009	2014	2004-09	2009-14	2004-09	2009-14
World	\$3,302	\$4,174	\$4,389	21.5	5.1	4.0	1.0
Asia Pacific	\$337	\$339	\$339	3.8	0.0	0.7	0.0
Australasia	\$93	\$117	\$112	20.9	-4.5	3.9	-0.9
Eastern Europe	\$36	\$51	\$56	35.2	9.5	6.2	1.8
Latin America	\$255	\$529	\$663	63.0	25.3	10.3	4.6
Middle East/Africa	\$14	\$19	\$21	26.4	7.6	4.8	1.5
North America	\$612	\$663	\$697	9.4	5.1	1.8	1.0
Western Europe	\$1,955	\$2,456	\$2,502	21.0	1.8	3.9	0.4

*Compound Annual Growth Rate

All data courtesy Euromonitor International

BRANDENBURCH, PRODUCER OF

easily digestible cereal products and a key supplier to companies making food for small mammals and birds, has recently introduced the New Generation line of food products for rabbits, guinea pigs, chinchillas and small rodents like hamsters and rats. The New Generation food offers extruded ingredients that are available in different shapes, colors and tastes, but all have the same quality and nutrition, according to Brandenburch. The extruded products-like carrots, beets, maize, wheat and rice-can be sold as mixers or blended together to make specific formulas.

NUTRIEVO, SUPPLIER AND 🚄 maker of private label bird foods,

Medium+ and Large. The Opti-Bird formula is unique because it is not made up of extruded food but contains crumlets, specially shaped

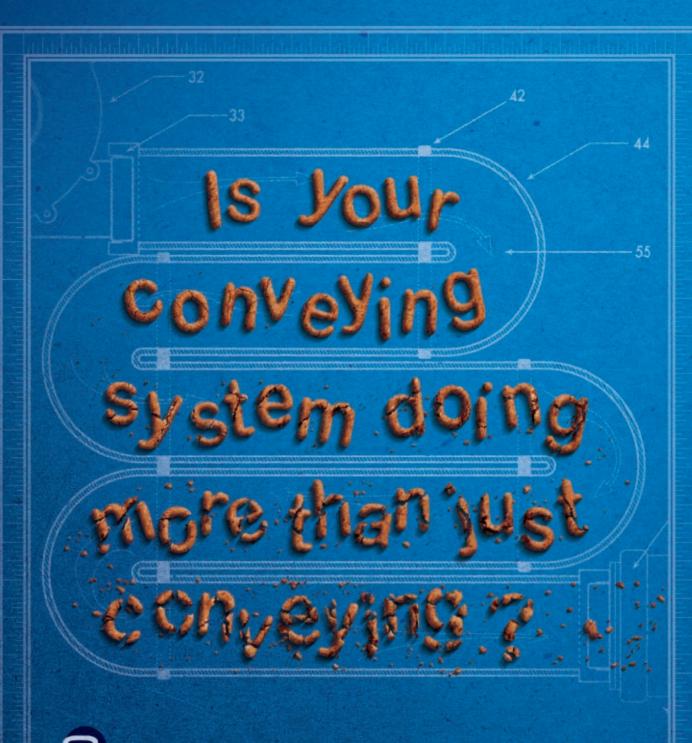
More video online!

Justin Verstappen, general director of Brandenburch, shows the ingredients his company is displaying at Interzoo and describes the product development and other services offered to producers making petfood for small animals at www.petfoodindustry.com/TV/ Suppliers/5499.html.

pellets with high-quality fruit and seeds, according to Nutrievo. The crumlets are a more natural product and ensure a good combination of structure and fibers for better digestion in birds, the company says.

pleasant both for the animal and the pet parent, according to the company. Witte Molen also claims this is the first bird product on the market that specifically targets the animals' sense of smell. The premium mixture is available internationally and is offered in parakeet, budgerigar and canary formulas.

GERMAN-BASED HUGRO HAS an astounding offering of petfoods, treats, litters and accessories for small animals and birds that includes colorful graphics and packaging, the use of sustainable products such as hemp in its small animal litters and bedding and unique products like "dressings" and "bio-extracts" to top petfoods with. The dressings are actually



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 liquid feed supplements for rabbits, rodents and birds. High-quality cold-pressed vegetable oils are used to produce the product, according to the company, and it is suitable for all low-fat-fed animals because it boosts energy, especially for birds, whose diet is often very one-sided with oils and fats. The Hugro dressing is composed of essential fatty acids like unsaturated linoleic acid, which is an essential component in boosting the

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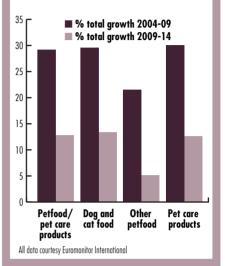


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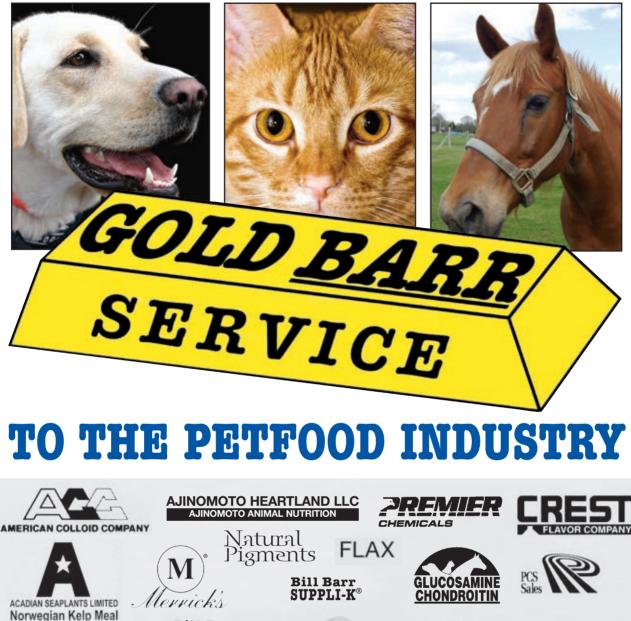
Figure 2. Sales and growth of other petfood vs. pet products

Though their growth rate is slowing, plenty of innovative, nutritious products for small mammals and birds are flooding the market.



immune system and aids in pain and inflammation defense.

CEDE IS A worldwide leader in eggfood for birds and has distinguished itself from other bird food producers by processing fresh chicken eggs into a nutritious egg cake, according to the company. Chicken eggs are a very important source of high-quality animal protein that is necessary for healthy feathers, a shiny coat and the best breeding results for the birds, CeDe says. A batter is made from eggs, flour and sugar and is baked via a computer-controlled oven, ensuring a good microbiological quality to the end product, according to CeDe literature. After the egg cake is cooled, it is crumbled, dried and sifted into different sizes. The final product is then packaged and sold in a plethora of premium varieties that includes food for budgies, finches, canaries and song birds.







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Read Dr. L. Phillips Brown's entire comprehensive article, "Pet supplements roar!" at <u>www.petfoodindustry.com/</u> <u>PetSupplements.aspx</u>.

Pet products that are well formulated and contain ingredients that target the specific physiological (and even psychological) needs of today's pets are enticing to an entire population of pet parents.

What the future holds for petfood and supplements

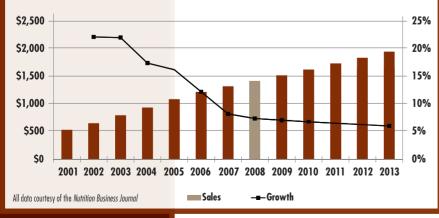
By Jessica Taylor

As the nutraceuticals and functional ingredients market grows, will strict regulations stifle its climb?

NUTRITIONAL SUPPLEMENTS FOR pets have become a fast growing business, as pet owners seek out health products for

Figure 1. US pet supplement sales: 2001-2013

As steadily as the supplement market has grown, the regulatory gray area surrounding supplements for companion animals continues to constrict the market.



their cute companions that mimic those they use for themselves. Petfood supplement products are also adapting to the uncertain economy by addressing the allimportant issue of palatability. No longer just available in pill form, nutraceuticals and functional ingredients are appearing in toppers, gravies, foods and treats. Pet products that are well formulated and contain ingredients that target the specific physiological (and even psychological) needs of today's pets are enticing to an entire population of pet parents.

As STEADILY AS the supplement market has grown (see Figure 1), the regulatory gray area surrounding supplements for companion animals continues to constrict the market. Will regulation changes need to happen for this market to continue to gain?

With a worldwide recession still clinging to consumers' coat tails, what compels pet owners to pay a premium for supplements? "Pet owners purchase supplements to ensure their pets receive the proper nutrition, which might be lacking in off-the-shelf petfoods," explains Dr. L. Phillips Brown, DVM, vice president of R&D for Nutri-Vet Animal Health Care Products. "Even though a plethora of lifestyle and lifestage petfoods are marketed, some veterinarians worry that such foods provide only basic protein, fat and fiber, plus a few vitamins and minerals." Other drivers behind consumers with critters searching out functional ingredients for their pets include:

The growing elderly pet population.

Older animals are prone to many of the same types of chronic conditions that plague elderly people, including cancer, cardiovascular disease, arthritis, cataracts and even thinning hair. Pet owners often choose supplementation to help maintain health and ease age-related aches and pains in their aging companions.

Rising veterinary healthcare costs.

Just as consumers are looking to reduce their own healthcare costs by purchasing natural foods and nutritional supplements, they are equally interested in taking charge of the health of their dogs, cats and other companion animals by purchasing products that promote health and vitality.

The perception of natural ingredients as safer alternatives to pharmaceuticals. Organic Pet Superfood is a line of whole-food pet supplements specifically formulated to help stimulate pets' immune systems, using natural and organic therapies, according to the company.





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don't compare to the potential adverse reactions of pharmaceuticals.

Dietary supplements for animals such as vitamin and mineral products have been marketed for many years. Most of these products include

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ingredients that are approved food additives, generally recognized as safe (GRAS) substances or ingredients listed in the Official Publication of the Association of American Feed Control Officials (AAFCO), according to the Food and Drug Administration (FDA).

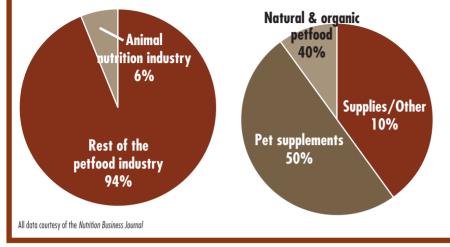
A FEW YEARS ago it was feared that over-the-counter sales of animal supplements would be prohibited because they were often positioned as curative rather than preventive. Today, FDA accepts the marketing of oral supplements for animals provided there is a "recognized benefit, purpose or utility" and they are not a substitute for a "complete and balanced" diet or represented to prevent or cure disease. In 2001, manufacturers and suppliers of nutritional supplements for companion animals and wildlife joined together to form the not-forprofit National Animal Supplement Council (NASC), a self-policing body that works closely with FDA's Center for Veterinary Medicine and AAFCO to establish regulatory guidelines that are fair, reasonable, responsible and nationally consistent and serve the best interests of animals.

According to a Nutrition Business Journal survey, 74% of respondents were not satisfied with current regulations of pet supplements and said they needed improvement. When asked what they thought the most crucial issue that will affect the growth of the animal health and nutrition industry in the next several years was, answers varied. Some highlights include:

- Regulation and misleading claims;
- Consumer education and establishment of trust:
- Continued media coverage of the importance of animal health and nutrition;

Figure 2. Breakdown of the animal nutrition market compared to the rest of the pet industry

The animal nutrition industry only makes up about $\overline{6\%}$ of the entire US\$45 billion pet industry, but within that small nutrition sector, pet supplements make up exactly half of all products.



- Recommendations by vets; and
- More affordable non-drug therapies for prevention and healing.

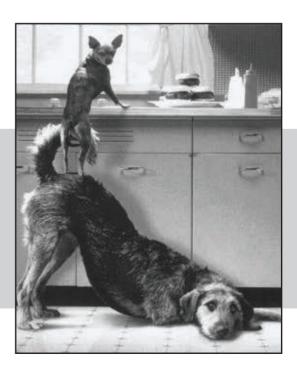
FOLLOWING THE LEAD of human dietary supplements for conditions that include cardiovascular, bone and joint, eye and cognitive health, conditionspecific pet supplements are one of the fastest growing segments in the pet nutraceuticals market. Supplements that benefit pet joint health, skin and coat condition and anxiety are showing the most growth.

Pet owners are demanding animal supplements and retailers are responding by focusing on quality, selection and a willingness to educate themselves on the science behind condition-specific supplements. As a result, pet supplements are easier to find and easier to understand. The increased emphasis on "healthy" products by mass marketers, independent retailers and large pet specialty stores, coupled with the new standards of quality implemented by the NASC, is further boosting awareness (and credibility) of animal supplements.

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Technology for petfood contaminant testing is changing for the better. Technical advancements are unfolding as government policymakers devise new frameworks for ensuring petfood safety.

Testing for toxins

What you need to keep your manufacturing line clean, safe and

By Jessica Taylor

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"Expanding the capacity to test for contaminants by upgrading the technology is logical," explains Mark Kuracina of Applied Biosystems.



contaminant-free

AND the testing labs hired by them are under increasing pressure to take petfood testing to a new level. How should expectations for petfood testing be raised and enforced in the global ingredients supply chain? How can your company better safeguard against product contamination? And perhaps most importantly, how can public confidence in the petfood products you produce

PETFOOD MANUFACTURERS

be maintained with advanced scientific proof to support it?

"Companies and government agencies need to monitor more food products and raw materials from an increasing variety of new sources—which may face contamination linked to storage issues or the use of pesticides or other substances, which are banned in one country but allowed in another," explains Mark Kuracina of Applied Biosystems. But what does he recommend? "Expanding the capacity to test for contaminants by upgrading the

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Bio-Rad Laboratories iQ-Check[™] Salmonella II kit has recently received AOAC approval for real-time PCR detection of Salmonella from wet cat food and dry dog food.

technology is logical." The good news is that the technology for petfood contaminant testing is changing for the better. Technical advancements are unfolding as government policymakers devise new frameworks for ensuring petfood safety.

TAKE, FOR EXAMPLE, Perten Instruments' Micro Mirror module. The module is a sample presentation system for the DA 7200 that enables analysis of extremely small samples. The Micro Mirror module is designed for small sample amounts such as kernels, seeds and powders or meals. More small, handheld devices for accurate and easy-to-read test results are the family of sample adapters for the patented i-Lab analyzing spectrometer from MicroOptix Technologies. The i-Lab performs measurement and analysis of liquids and solids in the visible light range of 400-700 nanometers, according to the company.

The Teledyne Tekmar Atomx Automated VOC Sample Prep System combines an autosampler and purge and trap into a single instrument for the analysis of volatile organic compounds, with the ability to perform methanol extractions. The system features the Extractasol cleanup step to reduce carryover or cross contamination.

Buchi Corp. offers the NIRMaster, a standalone FT-NIR spectrometer with hygienic design for petfood and feed applications. It is available in food-grade polymer and stainless steel housings (both in protection class IP54 and IP65). Its polarization interferometer provides high sensitivity and robustness.

PROCESSORS AND PACKAGERS in the petfood industry face certain challenges, including detecting contaminants, detecting damaged or missing products and identifying



Viacam's Vertu reader is designed to provide more accessible mycotoxin testing to producers who rely on early detection.

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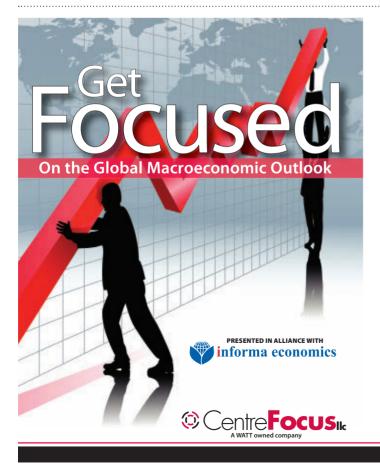
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The i-Lab performs measurement and analysis of liquids and solids in the visible light range of 400-700 nanometers, according to MicroOptix Technologies.

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at www.mt.com/XrayTechnology, explains the technology and its specific application to the industry, as well as demonstrates that X-ray provides capabilities not available in metal detectors or vision systems.

Over 23,000 tons of petfood were recalled between 2006 and 2008, according to a study conducted by the Centers for Disease Control and Prevention. Bio-Rad Laboratories iO-CheckTM Salmonella II kit has recently received AOAC approval for real-time PCR detection of Salmonella from wet cat food, dry dog food, stainless steel, plastic, ceramic and concrete. This represents a Performance Tested Method matrix exten-



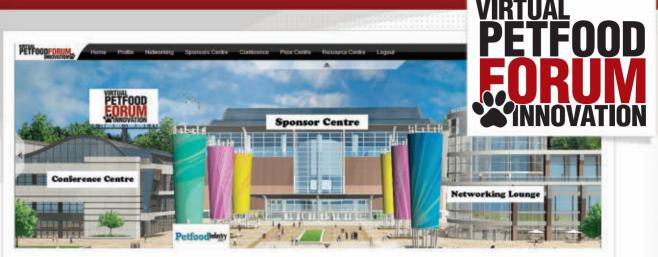
Buchi Corp. offers the NIRMaster, a standalone FT-NIR spectrometer with hygienic design for petfood and feed applications.

sion for the iQ-Check Salmonella II kit, which is currently approved for raw chicken, raw beef, eggs, cantaloupe and peanut butter.

Vicam offers Vertu, a digital lateral flow technology for quantitative mycotoxin screening. The Vertu reader is designed to provide more accessible mycotoxin testing to producers who rely on early detection to protect from contamination. Results are in parts per billion or parts per million.

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More news from AAFCO



At its annual meeting, AAFCO addressed ingredient definitions, petfood safety matters and certified organic petfoods. **LAST MONTH, I** reported on the activities of the Association of American Feed Control Officials (AAFCO) Pet Food Committee during its annual meeting in Portland, Oregon, USA, in early August. This month I cover items that occurred outside of the Pet Food Committee session but still may affect petfoods.

INGREDIENTS: Wheat gluten is an ingredient that was falsely implicated as a causative agent in the 2007 melamine-related petfood recall. As it turned out, the purported "gluten" was wheat flour purposely spiked with melamine to falsely increase apparent protein content. Regardless, the incident raised the question as to why wheat gluten was not AAFCO-defined.

At the meeting, the Ingredient Definitions Committee (IDC) discussed a proposed new definition for "vital wheat gluten." The "vital"

terminology refers to an ingredient processed so it retains its viscoelasticity, a property key to its technical function in petfoods. Apparently, a "devitalized wheat gluten" definition is also in the works. No action on the proposal was taken at this meeting.

IDC did vote to delete "charcoal" as an official feed term. Charcoal has been included in petfoods, perhaps most frequently in dog biscuits, for

FDA Salmonella information

The FDA announcement with a link to the complete draft guidance is available at www.fda.gov/AnimalVeterinary/NewsEvents/ CVMUpdates/ucm220829.htm. Electronic comments on the draft will be accepted until November 1, 2010, at www.regulations.gov (Docket No. FDA-2010-D-0378). decades, with the feed term used as the ingredient name. However, reports of concerns regarding contaminants such as dioxins prompted a reconsideration of this use of the term. With the deletion of the term (assuming the board of directors and full membership agree), continued use of charcoal as a petfood ingredient would require a petition for a new feed ingredient definition.

PETFOOD SAFETY: The US Food and Drug Administration (FDA) announced the availability of draft guidance regarding *Salmonella* in animal feeds. Briefly, a decision for enforcement action against a livestock feed contaminated with *Salmonella* will primarily depend on whether the serotype is pathogenic in the intended species. However, where there is increased likelihood of direct human contact (e.g., petfoods, petting zoo feeds) and subsequent increase in public health risk, contamination with *Salmonella* of any serotype is potentially actionable.

Model Good Manufacturing Practice (GMP) Regulations for Feed and Feed Ingredients (including petfoods) are now in the AAFCO *Official Publication*. At the meeting, the Feed Manufacturing Committee discussed how these regulations compared to other documents. It was reported that upon review, no conflicts between the GMPs and AAFCO's verification program for hazard analysis critical control points (HACCP) plans (www.aafco.org/Portals/0/HACCP/ haccp_2010.pdf) could be found.

Also, FDA intends to institute its own GMPs for animal feeds as required under the FDA Amendments Act of 2007. At this time, it is expected that FDA's proposed GMPs will complement, but not conflict with, AAFCO's regulations. However, a formal comparison was not conducted. It was suggested that AAFCO review and comment on FDA's proposal when it is published in the Federal Register next year.

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

Organic petfood update: An

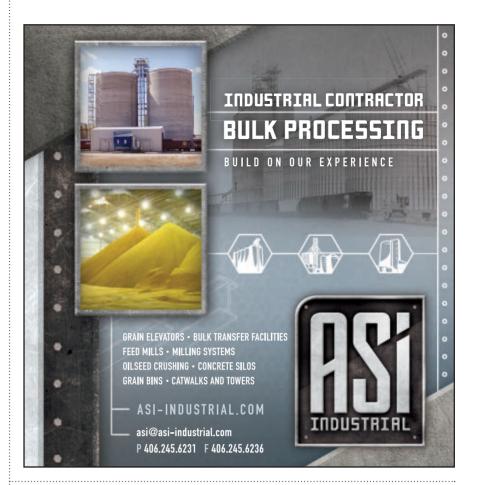
industry representative gave a report on the response to the US Department of Agriculture's (USDA) concerns regarding use of synthetic ingredients such as vitamins, minerals and other trace nutrients like taurine in certified organic petfoods (see "Trouble brewing for organic petfoods," *Petfood Industry*, May 2010). The industry report can be found at www.aafco.org/ Portals/0/Public/organic_pet_food_ update_aug_2010.pdf.

It was reported that discussions have prompted USDA to give higher priority to promulgating regulations to specifically apply to organic petfoods. The industry has indicated its intent to work on development of petitions to get more petfood-specific ingredients on the National List. It is hoped these actions will help support the request for an adequate transition period whereby certification and distribution of these products are not disrupted.

LABEL MATTERS: The Model Bill & Regulations Committee discussed, but did not act on, the proposal amendment to the model petfood regulations to change the means by which guarantees on specialty petfood labels are made. When enacted, guarantees would be required to be in the same units as currently required for dog and cat food labels instead of livestock feed labels (e.g., mg/kg vs. ppm, IU/kg vs. IU/lb). Because this would require a change of many specialty petfood labels, at issue now is verbiage to follow the proposal that would provide an ample grace period to allow for a smooth transition. The topic will be revisited at the "midyear" meeting in January.

The

Discussion is continuing in the Feed Labeling Committee on replacing crude fiber in the guaranteed analysis with a more nutritionally meaningful measurement. At this time, talk has focused on livestock feed labels. However, this initiative to amend required guarantees could eventually affect the labeling of petfoods as well.



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Ingredient Issues

Greg Aldrich, PhD

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Is L-carnitine beneficial in 'diet' petfoods?



Home feeding studies would help determine if this ingredient is a practical tool for combating pet obesity. **L-CARNITINE IS A** supplemental amino acid (ingredient) commonly found in low-fat, "light" or so-called diet foods for both dogs and cats. For the most part, the body produces an adequate amount of carnitine (L-isomer metabolite) to fulfill its role in the conversion of fatty acids into usable energy. So, what do we know about supplemental L-carnitine? Does adding it to the diet benefit weight control?

THOUGH L-CARNITINE MAY be a relatively new ingredient to most petfood purchasers, carnitine has been recognized for more than a century. It was first isolated from meat extracts (thus the Latin prefix *carni-*) in 1905 and a few years later was shown to be a growth factor for the meal worm (*Tenebria molitor*) for which it was subsequently branded vitamin BT. Given that

most mammals are able to produce carnitine in sufficient quantities, it never became a full-fledged vitamin. However, there are times when it may be beneficial or even conditionally essential.

Carnitine is a quaternary amine (beta-hydroxygamma-trimethylammonium butyrate) that is synthesized in the liver and kidney using peptide bound lysine as a starting material. The peptidyllysine is then methylated by three methionines to form trimethyllysine, which is cleaved apart by an ascorbic acid dependent hydroxylation to yield carnitine (the L-isomer). Coenzymes and cofactors such as nicotinamide, vitamin B₆ and iron are also involved. This resulting compound is hygroscopic and readily soluble in water. It can be found in the circulation, major organs and muscle as both free carnitine and esterified to various acyl compounds.

BECAUSE CARNITINE IS stored in muscle, the

food sources with highest concentrations are meats. For example, beef and lamb levels are reported at approximately 600 to 2,000 mg/kg, chicken at about 50 to 100 mg/kg and organ meats like kidney and liver at approximately 20 mg/kg carnitine (Mitchell, 1978). Carnitine concentrations are much lower in milk, vegetables, nuts and yeast (about 5 to 20 mg/kg). Bioavailability of carnitine from the diet ranges from the mid-50% to 80% and is somewhat dependent on the adaptation of the individual to the dietary carnitine source.

Supplementation with commercially produced L-carnitine is available to make up for gaps after accounting for endogenous production, conservation by the kidney and dietary sources. Unlike endogenous production, commercial chemical synthesis produces an all-racemic mixture of Dand L-carnitine. Only the L stereoisomer can be utilized for beneficial purposes; the D-isomer can cause serious side effects. Thus, modern chemistry

Because carnitine is stored in muscle, the food sources with highest concentrations are meats.

hasn't been the answer for commercial production of this compound.

Instead, virtually all commercial L-carnitine is derived from fermentation by specially selected bacteria (e.g., US Patent No. 5,028,538). The resulting L-carnitine ingredient is a white crystalline powder or granule and is generally available (per definition) as 97% L-carnitine with a stated maximum amount of the D-isomer of less than 0.5%.

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

WHAT PURPOSE DOES carnitine serve? Long-chain fatty acids cannot directly enter into the mitochondria for conversion into energy. They require a special transporter or shuttle. That shuttle is carnitine.

The first step in shuttling the fatty acid into the mitochondria starts in the cell cytoplasm where the "free" fatty acid gets connected to coenzyme A in a thiolase catalyzed reaction. Then a specialized acyl-transferase exchanges the CoA moiety for a carnitine to form a fatty acyl-carnitine. In this form, carnitine ferries the long-chain fatty acids into the mitochondria for utilization via beta-oxidation. A separate acyl-transferase is then required for transport of carnitine and spent acyl compounds back out of the mitochondria and into the cell cytoplasm.

BECAUSE OF THIS ability to improve the utilization of fatty acids for energy and shuttle spent compounds out of the mitochondria, supplemental L-carnitine has found a number of applications in medicine:

- Hemodialysis in late stage kidney failure;
- Improvements to male fertility;
- Improvements to insulin sensitivity in type II diabetics;

- Fortification of parenteral neonatal formulas; and
- Retention of cognitive function associated with Alzheimer's disease.
 In dogs, L-carnitine supplemen-

tation has been supportive in rare carnitine synthesis disorders and extreme working conditions. However, no dietary requirement for carnitine has been identified for dogs or cats under Beagles lost more body fat than controls when supplemented with 50 and 100 ppm L-carnitine (Sunvold *et al.*, 1999).

For obese cats, supplementation with 250 mg L-carnitine led to more rapid weight loss without adverse effects (Center *et al.*, 2000). So, while not required per se, L-carnitine may provide benefits under the right conditions.

Since it is a pricey ingredient, the amount used in foods is more in line with the 'diet' research.

normal physiological conditions.

Given that carnitine supports the oxidation of fatty acids, its use in "light" or "weight loss" diets is based on the hypothesis that L-carnitine supplementation "stimulates" fatty acid oxidation without compromising muscle mass. Several studies seem to support this position.

Gross *et al.* (1998) reported that obese Beagles fed a calorie restricted diet supplemented with 300 ppm L-carnitine retained greater lean body mass. In a similar fashion, obese **L-CARNITINE IS PERMITTED** in complete dog foods at levels up to 750 ppm and in complete cat foods at levels up to 1,000 ppm. Since it is a pricey ingredient, the amount used in foods is more in line with the "diet" research (about 100 to 300 ppm). At these levels it appears supplemental L-carnitine is effective in weight management petfoods under controlled conditions. Confirmation in home feeding studies will help determine if it is a practical tool for combating the long-term obesity issues faced by today's pets.

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Key Concepts

Effects of fiber type in cats (J. Anim. Sci. 88:2978-2987. doi: 10.2527/jas.2009-2464) Pectin and fructooligosaccharides may be useful fiber sources in promoting intestinal health of the cat.

Appetite-regulating hormones in dogs

(J. Anim Sci. online August 2010. doi:10.2527/jas.2010-2938) The data show a high variability in circulating hormones and indicate that diet plays a role in insulin and GLP-1 secretion.

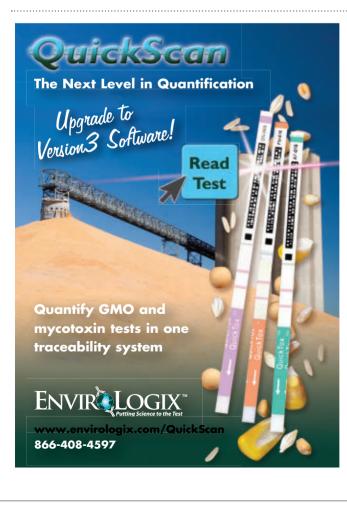
Effects of fiber type in cats

The effects of fiber type on nutrient digestibility, fermentative end-products and fecal microbial populations were studied in 12 young adult male cats that received a diet containing either 4% cellulose, fructooligosaccharides (FOS) or pectin.

Fecal indole concentrations increased when cats were supplemented with FOS. Fecal acetate, propionate and total short-chain fatty acid concentrations increased in pectin-supplemented cats. Fecal butyrate, isobutyrate, isovalerate, valerate and total branched-chain fatty acids + valerate concentrations increased with supplementation of FOS and pectin. Fecal cadaverine and tryptamine concentrations increased with supplementation of FOS and pectin. Fecal tyramine concentrations decreased in FOSsupplemented cats, while spermidine concentrations increased in pectin-supplemented cats.

Fecal concentrations of putrescine and total biogenic amines increased with both FOS and pectin. Fecal *Bifidobacterium* spp. concentrations increased and *E. coli* concentrations decreased in FOS-supplemented cats. Fecal concentrations of *Clostridium perfringens*, *E. coli* and *Lactobacillus* spp. also increased in pectin-supplemented cats.

In addition to increasing populations of





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protein-fermenting microbiota, pectin increased production of fermentative end-products associated with carbohydrate compared with protein fermentation. Pectin and FOS may be useful fiber sources in promoting intestinal health of the cat.

Source: K.A. Barry et al., 2010. Dietary cellulose, fructooligosaccharides and pectin modify fecal protein catabolites and microbial populations in adult cats. J. Anim. Sci. 88:2978-2987. doi: 10.2527/jas.2009-2464

Appetite-regulating hormones in dogs

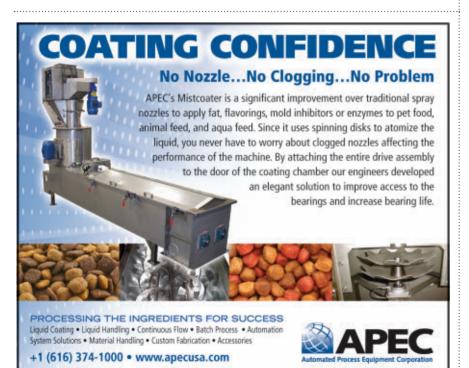
Identifying dietary effects on appetite-regulating hormones will enhance our understanding of appetite control. The objectives of this study were to identify differences in endocrine response from feeding frequency (Experiment 1) and a single dose of a sole macronutrient (Experiment 2).

A control diet supplying similar energy content from carbohydrate, protein and fat was fed to maintain ideal body weight. In Experiment 1, eight healthy adult female houndcross dogs were randomly fed once or twice daily. In Experiment 2,

dogs were randomly allotted to one of four treatments: maltodextrin. canned chicken, lard or water. Blood samples were taken measuring total ghrelin, active glucagon-like peptide-1 (GLP-1) insulin and glucose concentration.

In Experiment 1, all hormones were quite variable throughout the day, with only a couple insulin and GLP-1 differences because of feeding frequency. In Experiment 2, the maltodextrin produced a marked peak in glucose and insulin levels compared to the chicken, lard or water, resulting in elevated glucose and insulin incremental values. Lard led to elevated GLP-1 concentrations over time. Ghrelin was not different among treatments.

The data show a high variability in circulating hormones and indicate that diet plays a role in insulin and GLP-1 secretion, but more research is required to elucidate these effects. Source: D.C. Lubbs et al., 2010. Dietary macronutrients and feeding frequency affect fasting and postprandial concentrations of hormones involved in appetite regulation in adult dogs. J. Anim Sci. online August 2010. doi:10.2527/jas.2010-2938



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Industry Calendar

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- Pet South America, October 6-8, 2010. Expo Center Norte, Red Pavilion, São Paulo, Brazil. For more information, visit www.petsa.com.br or email petsa@nm-brasil.com.br.
- H.H. Backer's 44th Annual Pet Industry Christmas Trade Show & Educational Conference, October 8-10, 2010. Donald E. Stephens Convention Center, Rosemont, Illinois, USA. To register, visit

www.hhbacker.com/ ChristmasTradeshow.asp or email cfairchild@hhbacker.com.

- World Nutrition Forum, October 13-16, 2010. Salzburg, Austria. To register, visit www.worldnutritionforum.info or email organisation@ worldnutritionforum.info.
- Petailing 2010 Leadership Conference, October 27-28, 2010. The Mirage, Las Vegas, Nevada, USA.
 For more information, please visit www.petailing2010.com or email emckiernan@petbusiness.com.
- Pack Expo International, October 31-November 3, 2010. McCormick Place, Chicago, Illinois, USA.
 For more information, visit www. packexpo.com or email expo@pmmi.org.

Online events

- The Onset Energy Monitoring Online Training Course will be held in two sessions on October 12 and October 14, 2010. To learn more or to register, please visit https://www2.gotomeeting. com/register/699144291.
- Virtual Petfood Forum: Innovation will be live online on October 21, 2010. To register, please visit www. wattevents.com and check for updates at www.petfoodindustry. com. An archive of the event can be downloaded for 90 days if you have registered.
- 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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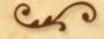
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Wenger molasses mixer, circa 1935