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Petro o Industry Volume 53 · Number 11

22

On the cover: Neil Thompson, president and CEO of Hill's, pictured with Izzi, Bobbi and Lani. Photo courtesy of Hill's.







Digital version available at www.petfoodindustry-digital.com

Features

Nutrition vital to Hill's | 22

By Jessica Taylor

A brand built on a history of quality and research, this top-10 petfood player wants veterinarians and pet owners to realize the importance of nutrition.

New petfood products: What comes after humanization? | 24

By Lynn Dornblaser

In developing new products, look to human foods for ideas.

Nutrition trends: Allergen-free petfoods | 30

By Jessica Taylor

Corn-free, wheat-free and gluten-free pet diets are changing the way we formulate food.

Odor reduction solutions in petfood production | 34

By Jessica Taylor

From plasma ozone reactors and chemical scrubbers to the simple chimney, how does the modern petfood plant control the distinctive smells of manufacturing?

Columns

Something to Chew On By Debbie Phillips-Donaldson | 6

Petfood Insights By David A. Dzanis, DVM, PhD, DACVN | 40

Ingredient Issues By Greg Aldrich, PhD | 44

Departments

Industry News | 10 New Products | 14 Research Notes | 46

Market Place | 48 Advertisers' Index | 51 Industry Calendar | 52



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Video: New Spring Naturals dog food line launched at SuperZoo



Rob Cadenhead, vice president of sales and marketing for Performance Pet Products, describes his company's new line of foods during SuperZoo 2011: www.petfoodindustry.com/8042.html.





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PowerPoint presentation: Odor reduction in petfood production

View Tjitze Smit's Petfood Forum Europe 2011 presentation, "Energy Recovery and Odour Reduction in Petfood Production," at www.petfoodindustry.com/8244.html.



Exclusive new products database

Find a full database of ingredients, equipment, packaging materials, test kits and other products at www.petfoodindustry. com/products.aspx. For new consumer products, visit the database at www.petfoodindustry.com/petfoodandtreats.aspx.

Community

Petfood-Connection.com What causes weight gain in dogs — and how can it be avoided?

www.petfood-connection.com/profiles/blogs/what-causes-weight-gain-indogs-and-how-can-it-be-avoided



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Something to Chew On

Debbie Phillips-Donaldson

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Humanization still driving petfood industry growth



Pet parents are continuing to treat their pets like human family members, despite the economy.

HEADING TOWARD THE end of the year, the economic news could not get much bleaker. Some pet industry professionals, such as the editors of *Pet Business* magazine, are predicting this will negatively impact holiday sales for US pet retailers (see www.petbusiness.com/articles/2011-09-30/What-Recovery).

If that's the case, you never would have seen it coming during SuperZoo in September in Las Vegas, Nevada, USA. There was a palpable buzz on the trade show floor and even a fair amount of traffic on the last afternoon. According to the host, the World PetAssociation, the show drew a record number of exhibitors—795, a 15% increase over the 2010 show—and attendees (mostly pet retailers)—12,197, a 19% jump from

last year. Overall, there were 4,716 companies represented, a full 26% jump from 2010.

As this issue goes to press, H.H. Backer's 45th Annual Pet Industry Christmas Trade Show in the Chicago area is kicking off with more than 750 exhibitors in over 1,250 booths. Both represent increases over last year's numbers of 733 and 1,216, respectively, according to show organizers. The 2010 show drew nearly 8,800 retail buyers.

HUMANIZATION, THE ENGINE that has been driving the continued growth of our industry, seems to still be humming along. Economic worries aside, new surveys and reports indicate it will continue to keep our industry on an upward curve.

One survey comes from what seems an unlikely source—CouponCabin.com, an online portal for all sorts of coupons, not just petfood products—yet offers welcome news: 68% of US dog owners surveyed said economic challenges are not affecting their dog care spending. Further,

21% of respondents spend an average of US\$100 or more per month on their dogs.

The survey was conducted online by Harris Interactive in August—certainly not a bell-weather month for the US economy—among 2,212 US dog owners. It found that they consider veterinary visits their highest dog-related expense, with 57% of respondents citing it, followed by dog food at 16%, medications at 15% and boarding at 6%. That food came in a distant second (and barely ahead of other health-related expenses) is a good sign for our industry.

US PET OWNERS ARE not the only ones who treat their pets like full-fledged family members. Recently Karen Pickwick, editor of *Pet Business World*, a UK publication, quoted some interesting statistics:

- 9% of the UK's 29 million Facebook users create pages specifically for their pets, according to the UK's largest pet insurer, and one in 10 UK pets has its own Facebook, Twitter or YouTube page; and
- Research by Mars Petcare UK shows a third of pet owners would sell a valuable possession to pay a veterinary bill, with 11% saying they would mortgage their house!

The fact that pet owners in Europe—70 million households in all—humanize their pets pays dividends for the economy and society, according to the European Pet Food Industry Federation (FEDIAF). Its new report (www.fediaf.org/facts-figures) shows pet ownership accounts for about 550,000 direct or indirect jobs throughout Europe, with 50,000 directly attributable to petfood.

Petfood in Europe is produced at 650 plants, has annual sales of 13.5 billion Euros (US\$18.3 billion) and volume of 8.3 million tons and is growing at an average annual rate of 2%, FEDIAF says. While not robust, any growth at all means pet parents continue to care for their pets like human family members, despite the economy.

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



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Industry News

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Quick hits

- Magnum
 Systems,
 a material
 handling and
 packaging
 systems manufacturer, entered
 into an agreement with Pace
 Company to
 cover the industrial markets of
 Virginia, USA.
- Animal health and nutrition company Biomin was awarded the ISO 14040 certification for efforts relating to environmental sustainability.
- HayssenSandiacre celebrated its Global Manufacturing Initiative, manufacturing Novus systems and implementing multi-site manufacturing, with a ribbon-cutting ceremony on October 10.
- D.D. Williamson unveiled a new brand identity, including replacing its name with "DDW" in the logo and a new "The Color House" tagline.
- The American
 Feed Industry
 Association
 redesigned
 the website
 Feedsearch.
 com to serve
 as a prospective guide for
 industry buyers.

Petfood Forum

FDA deputy commissioner to speak at Petfood Forum 2012

Michael R. Taylor, JD, deputy commissioner of foods for the US Food and Drug Administration, has been confirmed as a main speaker for Petfood Forum 2012. With responsibility for the safety of all food in the US, Taylor is spearheading implementation of the new Food Safety Modernization Act and will address how petfood safety fits into the overall food safety picture, plus similarities and differences between human food and petfood safety.

Taylor's colleague, Daniel McChesney, PhD, director of the Office of Surveillance & Compliance for FDA's Center for Veterinary Medicine and previously announced as a speaker, will provide specifics on new regulations stemming from FSMA that apply directly to petfood.



Michael R. Taylor, JD, deputy commissioner of foods for FDA

Registration is available for Petfood Forum, scheduled April 2-4, 2012, at the Renaissance Schaumburg just west of Chicago, Illinois, USA. If you register by February 1, you can save up to 15%. Save even more by also registering for Petfood Workshop: New Product Development, which will follow Petfood Forum on April 4-5, also at the Renaissance Schaumburg. For updates on speakers and to register, visit www.petfoodindustry.com/petfoodforum.aspx.

Registration and early-bird savings are also available for Petfood Forum Asia, which will take place February 16, 2012, at the Bangkok International Trade & Exhibition Centre in Thailand. Co-located with Victam Asia 2012, Petfood Forum Asia will feature expert speakers on the global and Asian petfood markets; trends in natural and organic ingredients and supplements; prebiotics, probiotics and synbiotics for dogs; validation of extrusion temperature as a critical control point in the petfood process; and a systemic approach to dog palatability.

You can save more than 15% on Petfood Forum Asia registration if you register by January 5, 2012. For more information and to register, visit www.petfoodindustry.com/PFFAsia2012.aspx.

Nestlé unveils solar panels at Arizona, USA, petfood manufacturing facility

Nestlé Purina PetCare unveiled the region's largest private solar panel array at its Flagstaff, Arizona, USA, petfood manufacturing facility.

The 1,900 solar panels, designed and installed by REC Solar, cover more than 70,000 square feet of the rooftop at the petfood manufacturing plant, which the company says will allow it to use Arizona's average of 300 days of sunshine per year to produce emission-free solar electricity.

"The 427-kilowatt solar PV system will produce nearly 12 million kilowatt hours of

clean, emission-free solar electricity over its lifetime," said Cary Hayes, director of business development for REC Solar. "This production volume offsets over 16 million pounds of greenhouse gases, equivalent to planting more than 40,000 trees."

To celebrate the launch of the new solar array, Nestlé Purina donated a combined US\$5,000 to two local animal welfare providers, Coconino Humane Association and Second Chance Center for Animals.



Pack Expo Las Vegas 2011 sets attendance records

PMMI, owner and producer of Pack Expo, reported that Pack Expo 2011 broke event records, with more than 26,000 attendees, 1,559 exhibitors and nearly 630,000 net square feet.

The Expo, which took place September 26-28 in Las Vegas, Nevada, USA, reported a 14.8% jump in visitor attendance with 26,084 attendees, compared to the previous show's attendance. International attendance was up more than one-third in 2011, with 4,755 international attendees. Pack Expo also saw a 17.2% jump in exhibitor personnel to 13,186. More than 1,500 companies exhibited at 2011 Pack Expo, an increase over the previous show of 36.7%, according to PMMI.

"Simply put, this is the most dynamic show we've produced in Las Vegas," said Charles D. Yuska, PMMI president and CEO. "Record-breaking only begins to describe it. Pack Expo Las Vegas 2011 brought integrated processing and packaging innovations to more than 40 vertical markets, including food, beverage, confectionery, pharmaceutical and baking and snack."

PMMI attributed the jump in attendance partially to new activities at the 2011 Pack Expo. This includes the Processing Zone, which featured processing innovations. In the Brand Zone, the first Project 2020: the Consumer Experience competition challenged companies to create the "package of the future," an award won by Directions Marketing for its Tri-Tainer petfood packaging concept.

lams kicks off Home 4 the Holidays pet adoption program

Iams Home 4 the Holidays pet adoption program kicked off its annual adoption drive in partnership with the Helen Woodward Animal Center, with the goal of finding homes for 1.5 million orphaned pets.

Iams will also donate 5 million meals to animals

in need at adoption and rescue centers through its Bags 4 Bowls program. Iams will donate meals when consumers "Like" the Iams Facebook page as



well as when they create and share a holiday card or adoption announcement on the page. The company will also donate meals with the purchase of specially marked Iams dog or cat food during the duration of the campaign, which runs though January 3, 2012.

"Each year, as many as 4 million orphaned dogs and cats are euthanized due to shelter overcrowding – that is approximately one pet every eight seconds," said Mike Arms, founder of the adoption drive and president of Helen Woodward Animal Center. "Since partnering with Iams on the adoption drive 13 years ago, we have really seen the benefit of what this program can do for orphaned animals, and the families who adopt."

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Victam, FIAAP Asia to show new petfood equipment in February 2012

Two tradeshows for the petfood industry, FIAAP Asia 2012 and Victam Asia 2012, will be held at the Bangkok International Trade & Exhibition Centre in Bangkok, Thailand, February 15-17, 2012.

During FIAAP, companies from around the world will display the latest innovations for specialist ingredients and additives used in the formulation and preparation petfoods, aquafeeds and animal feed. Victam complements FIAAP as an event featuring animal feed processing technology. The latest equipment and technologies, including valves, conveyors, elevators, bags and bagging systems, will be on display.

A number of conferences will also be held alongside the exhibitions, including Petfood Forum Asia 2012 on February 16. For more information or to register (and receive early bird savings through January 5), visit www.petfoodindustry.com/PFFAsia2012.aspx.

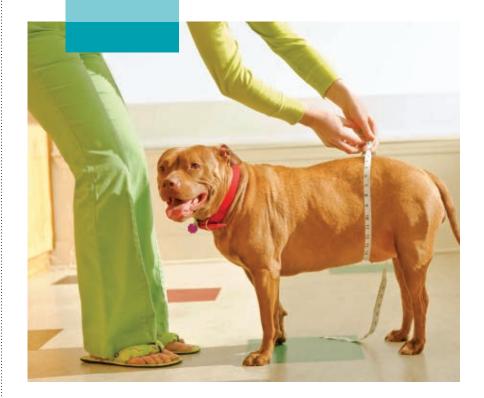
Provimi sells French petfood production plant

Provimi Pet Food sold its petfood manufacturing facility in France as the company plans to extend its reach into Germany, Poland and Romania.

Advent International-backed Provimi Pet Food sold the petfood factory to French petfood producer ATM. The sale is part of an effort by Provimi to streamline manufacturing operations throughout Europe.

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For Consumers

Caitec Oven Fresh Bites

Oven Fresh Bites from Caitec Corp. is an oven-baked food for birds. The food is made with bits of fruits, vegetables and nuts, along with oatmeal, white millet flour and sunflower meal, the company says. Oven Fresh Bites come in a small, medium and large size depending on the bird's size.



Caitec Corp. +1.888.338.2473

www.caitec.com

ZuPreem avian diets

ZuPreem avian diets include the VeggieBlend, NutBlend and FruitBlend flavors. These pelleted bird foods are designed for feeding to medium to large foot-feeding birds. Foods are available in a 3.25-pound retail size or a 17.5-pound bag.



ZuPreem +1.800.345.4767

www.zupreem.com

Salmon Paws dog treats



Salmon Paws LLC says its dog treats are made with the center cut from sockeye salmon. The treats also contain broccoli, carrots and wheatgrass and are rich in omega-3 and omega-6 oils, according to Salmon Paws. The products can be frozen for a longer shelf life.

Salmon Paws LLC +1.858.204.4622

www.salmonpaws.com

Royal Canin Starter Kibble

Royal Canin offers the Starter Kibble formula in four formulas based on the adult size of the dog: Mini, Medium,



Maxi and Giant. The food is designed to provide nutrition to mother dogs and puppies, offering pregnancy support and several texture consistencies for the mother dog's high energy needs as she begins to nurse, according to the company. All formulas also include StartComplex, a combination of nutrients that Royal Canin says promote digestive health and strengthen a puppy's natural defenses. Water can be added to the kibble to create a porridge-

like consistency to help facilitate a weaning puppy's transition to solid food.

Royal Canin +1.800.592.6687 www.royalcanin.com

Hill's Pet Nutrition Ideal Balance

Hill's Pet Nutrition Inc. offers Science Diet Ideal Balance formula for dogs. The dog food is made with all-natural ingredients, with whole grains and fresh chicken as the first ingredient, the company says. According to Hill's, Ideal Balance is free of corn and artificial colors.





Foodstuffs Pam's petfood

Foodstuffs Group offers the Pam's petfood line. The line includes cat food flavors like lamb, chicken, beef, meat and fish and jellymeat. Pam's dog food varieties include Beef & Veges, Beef & Gravy, Chicken & Veges and Lamb & Pasta. The cat and dog foods are available in cans and bags. Pam's line also includes food for birds: Wildbird mix, Canary mix and Budgie mix.

Foodstuffs Group +0800.245.114

www.pams.co.nz



For Consumers



Dog Cookies Harvest Blends

Exclusively Pet Inc. makes Exclusively Dog Cookies Harvest Blends treats for dogs. Harvest Blends come in three blended flavors: Oatmeal N'Blueberry, Peanut Butter N' Banana and Sweet Potato. The treats are free of wheat, corn and soy, the company says. The treats are available in 7-ounce packages.

Exclusively Pet Inc. +1.414.365.2933

www.exclusivelypet.com

PetPlay Petite Cuisine Appetizers

Petite Cuisine Appetizers from PetPlay Inc. come in three flavors: Light Tuna and Swordfish; Salmon and Whitefish; and Tuna, Salmon and Egg Whites. The company says the treats are all-natural with no added vitamins or minerals and also contain omega-3 fatty acids. Each flavor is packaged in a 1.9-ounce steel can with an easyopen pull top lid.

> PetPlay Inc. +1.800.293.2171 www.petitecuisine.com



The Honest Kitchen Grace formula

The Honest Kitchen's Grace formula is made for adult cats. The company says the cat food contains dehydrated humangrade turkey, eggs, pumpkin, potatoes, parsley



potatoes, parsley, dandelion greens, cranberries, rosemary, vitamins and minerals.

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WeighPack Systems Inc. +1.702.450.0808 www.weighpack.com

JWC Muffin Monster Manhole

The Muffin Monster Manhole from JWC Environmental makes it easier to install a grinder in sewage lines. This fiberglass reinforced polyester manhole has the Muffin Monster grinder that shreds troublesome solids and eliminates pump breakdowns, the company says. The height, pipe size and type of top (traffic or hatch) are customizable based on site requirements. The manhole also features a JWC immersible motor and a factory installed guide frame/access ladder.

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Trends in natural and organic ingredients and supplements —

Greg Tilford, author, consultant and teacher in the field of veterinary botanical medicine/CEO of Animals' Apawthecary Co. and Animal Essentials Inc., Montana, USA

Prebiotics, probiotics and synbiotics as functional foods for dogs—

Dr. K.B. Kore, Assistant Professor, Department of Animal Nutrition, College of Veterinary Science and Animal Husbandry, Navsari Agricultural University, India

Validation of extrusion temperature as a CCP in the petfood process—

Galen Rokey, process manager for the Pet Food Applications Group, Wenger Manufacturing, Kansas, USA

Systemic approach to dog palatability: focus on Asian market—

Laurence Callejon, innovation engineer, SPF, Elven, France

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Petfood Forum April 2-4, 2012



Petfood Workshop: New Product Development April 4-5, 2012

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Registration to attend Victam Asia is separate from Petfood Forum Asia registration. Register for Victam Asia for free online at www.victam.com. For information on hotels and travel packages, visit www.victam.com or www.bitec.net.

NOTE: Registrations will not be processed without payment; rate is determined by date payment is received. Prior to January 20, 2012, 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.



Turnkey Laser Cutting System

Spartanics says its Designers' Turnkey Laser Cutting System is ideal for the printed labels and packaging of pet products involving digital printing or digital finishing. The system controls all print and laser cutting specifications at early design stages, according to Spartanics. The system allows product developers to use Rastor Image Process software at the pre-press level to specify print and laser cutting files to finish the product. The system also enables use of bar codes to signal job changeovers and has a built-in capability to extract vector data embedded in PDF, ONYX or other formats.

> Spartanics +1.847.394.5700 www.spartanics.com

Centrifugal Impact Mill CIM-18-SS

Munson Machinery Co. Inc. offers the Centrifugal Impact Mill model



CIM-18-SS for coarse to fine (400 mesh) grinding of friable materials into controlled particle sizes as well as for de-agglomerating and conditioning

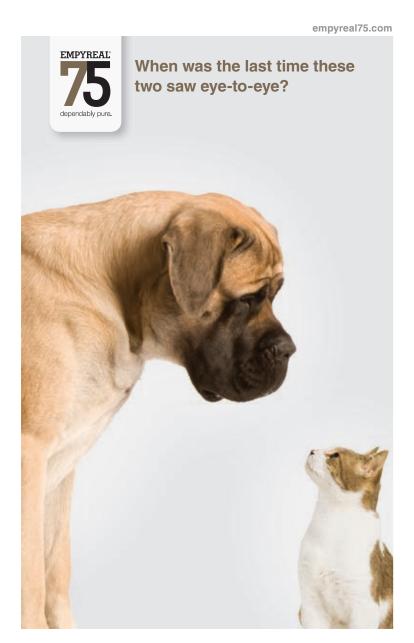
of dry solids. The machine's rotor speed is variable between several hundred rpm and 5,400 rpm, according to the company. The unit is 15 hp.

Munson Machinery Co. Inc. +1.315.797.0090 www.munsonmachinery.com

Fischbein 400 NS2 system

Fischbein LLC offers the model 400 NS2 Bag Sewing System with the Empress series model 100-2 two-needle plain sewing head.





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able operating speeds from 35 to 55 linear feet per minute, according to the company. The head's two parallel stitch lines have two-thread double lock stitches factory-set at 2.25 stitches and adjustable from 2.25 to

3.25 stitches per inch. The sewing system is mounted on a portable, height-adjustable pedestal with casters and leveling jackscrews for sewing height adjustments and bagsize changeovers.

Fischbein LLC +1.704.871.1159 www.fischbein.com



BT Series feeder/ airlock

The BT Series from ACS Valves is a blow-through feeder/airlock. It is designed to ensure optimal bulk density and throughput of hard-toconvey materials like fine powders and flakes. The BT Series has an eight-vane rotary valve design and is suitable in applications requiring pressure differentials up to 20 PSIG. Other features include an outboard bearing design and an available ACS variable frequency drive. Housings are available in cast iron or 304 or 316 stainless steel, in 8- or 10-inch round flange sizes.

> **ACS Valves** +1.800.655.3447 www.acsvalves.com

K-Sun Corp. Green Machine

K-Sun Corp. offers Green Machine label, heat-shrink tube and

bar-code thermaltransfer printer. It includes such features as a high-



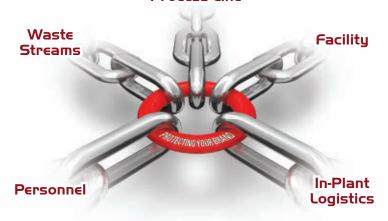
intensity backlit display, hot keys for instant selection of type styles and point sizes and Peelguard electronic tape trimmer. The unit offers 14

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fonts, seven background designs and six bar code formats. The Green Machine is available in PC or standalone models.

> K-Sun Corp. +1.800.622.6312 www.ksun.com

Romer Labs **Agrisure Viptera**

Agrisure Viptera from Romer Labs Inc. is a test for VIP3A and PMI proteins. These protein tests can be used to test seeds and grains in food for animals. The kits, along with Romer's other TraitChek and SeedChek testing products, were developed by SDIX.

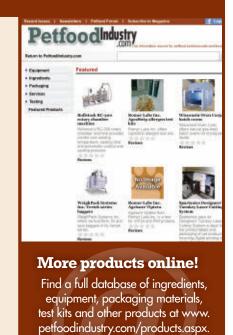
> Romer Labs Inc. +1.636.583.8600 www.romerlabs.com



QA Tru-Balance Gravity Flow sifter

The QA Tru-Balance Gravity Flow sifter series from Great Western Manufacturing includes multiple models with three to nine sieves for a wide range of products and applications. The series' flow sieve arrangement provides a large screen area. Sifters can be opened, sieves completely removed and reassembled without special tools, the company says.

> **Great Western Manufacturing** +1.913.682.2291 www.gwmfg.com



For more new consumer products, visit the database at www.petfoodindustry.com/ petfoodandtreats.aspx.



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Precise nutrition advice

Hill's Pet offers consumers an area on its website where they can find out what they need to know about common pet medical conditions like weight management, mobility, oral care and aging at www.hillspet.com/health-conditions.html.

"The expansion of the influence of nutrition is the cornerstone of the future for Hill's," says Neil Thompson, president and CEO of Hill's.

FACTS

Headquarters: Topeka, Kansas, USA

Sales: US\$2.2 billion in 2010

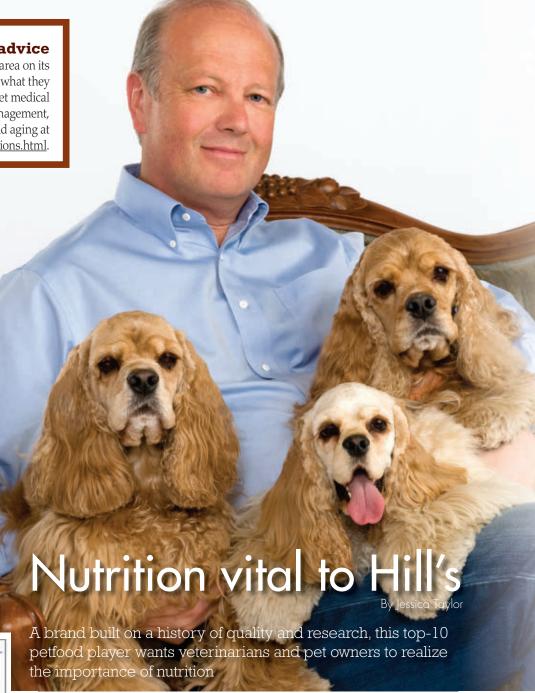
Distribution:

Hill's brands are available in more than 90 countries across the globe

Brands: Hill's Prescription Diet, Hill's Science Diet and Hill's Science Plan

Facilities: Topeka and Emporia, Kansas, USA; Richmond, Indiana, USA; Bowling Green, Kentucky, USA; Etten Leur, The Netherlands; Hustopece, Czech Replublic

Employees: About 3,000 **Website:** hillspet.com



HILL'S PET NUTRITION Inc. has an interesting nutrition philosophy and it's one the company is working on spreading to veterinarians and pet parents alike: "What's important is what the (petfood) ingredients contain, not the ingredient name." Hill's was founded by veterinarian Marc Morris Sr., who created the first therapeutic petfood for dogs, according to

the company. According to the American Animal Hospital Association, only 7% of pets that could benefit from a therapeutic food are actually on such a regimen.

AAHA also reports that 90% of pet owners want a nutritional recommendation during a vet visit, but only 15% of them perceive being given one. To close this wide gap and give veterinarians a roadmap to implementing a nutritional assessment and specific nutrition recommendation on each visit, AAHA released the *Nutritional Assessment Guidelines for Dogs and Cats* in July 2010.

Recently, Hill's developed its

that nutrition plays a huge part in the overall health of animals, and it's our job to help people understand that."

AIDING IN HILL'S nutrition pursuits are the company's extensive research

to the company.

So WHAT DOES the future look like to Hill's? "We are very interested in the link between oral care and systematic health," says Thompson. "The age-



Cats used in palatability research reside in these state-of-the-art "kitty cities" at the Hill's Pet Nutrition Center.



One of the many dogs at the Hill's Pet Nutrition Center in Topeka, Kansas, USA enjoying a Bark Park.

own Nutrition Reference Manual meant to be used as a veterinarian resource to answer questions and concerns and help initiate the often difficult and touchy subject of proper nutrition for clients' pets. "We want to sell our brands where we know consumers are receiving education on why our formulas are made the way they are," explains Neil Thompson, president and CEO of Hill's.

The *Manual* includes in-depth but concise sections on topics like lifestages of dogs and cats, feeding amounts, how to properly transition a new food into a pet's diet, helpful definitions of terms like "holistic" and "by-products," how to understand petfood labels and information about unconventional diets.

Dr. Dana Cox of Smith Veterinary Hospital had this to say about AAHA and Hill's partnership and push to make nutritional assessments part of every pet visit: "It's my strong belief and efforts in the fields of palatability and nutrigenomics. At the Hill's Pet Nutrition Center in Topeka, Kansas, USA, resident dogs and cats assist researchers in palatability tests using

solvent-assisted flavor evaporation, dynamic head space and GC-mass, spectrometry and olfactometry techniques.

In the field of nutrigenomics, gene expression "heat" maps are used to measure and regulate expressions to derive statistical analysis of diseases and the effect nutrition and diet has on them. Applied nutrigenomics were used in the research for the recently released Feline Age-Defying Science Diet formula with clinically proven results, according defying market is also very important to the future of Hill's brands." The company would also like to expand its current wet food portfolio and design the diets to be mixed and matched with their dry formulas.

But nutrition and ingredients will continue to remain the main focus of Hill's Pet Nutrition, asserts Thompson. "Closing the nutrition recommendation gap between vets and their knowledge is the first step. Informed veterinary students in the future will see nutrition as medicine and therapy, they will look for schools with a nutrition curriculum," he says. "The expansion of the influence of nutrition is the cornerstone of the future for Hill's."



Applied nutrigenomics were used in the research for the recently released feline agedefying formula with clinically proven results, according to Hill's Pet Nutrition.

Follow more product trends

To see other new petfood products and treats, check out our exclusive online database at www.petfoodindustry.com/ petfoodandtreats.aspx. You can search by product category, brand or company name as well as rate individual products.

The latest new petfood products are positioned around wholesomeness and understandability of ingredients.



New petfood products: What comes after humanization?

By Lynn Dornblaser

In developing new products, look to human foods for ideas

IT SEEMS THAT the days of humanization being only about petfood products that look just like human foods may be coming to an end. That does not mean we will not continue to see more products on the market that do, in fact, look like human food. However, the kinds of products have changed dramatically. And the focus has changed, with more products positioned around wholesomeness and understandability of ingredients.

Instead of seeing growth in, say, dog chews that look like candy bars or cat food that looks just like something you would serve your family, what we see is a more balanced, more realistic

approach to feeding pets, yet making the petfood familiar to human family members.

BEFORE WE DIVE deeper, let's look at what's going on in the marketplace. Petfood introductions, globally and in the US market, experienced a dip in the second half of 2010. That may be due in part to the economy and in part to product proliferation.

Much of the decline in the US market appears to be driven by a decrease in introductions from smaller, more niche companies.

These declining new product introductions come at a time when pet ownership is at an all-time high, with data from the American Pet Products Association indicating there are 77+ million dogs and 93+ million cats as pets in the US. According to Mintel analysis of data from a variety of sources, it appears total petfood sales (across all channels) should show modest growth this year.

With Mintel research showing 72% of US consumers consider

JUST 6

Limited Ingredient Recipe

And the sections presented and the section of the section of

Rachael Ray's Nutrish Just 6 dog food and dog treats are made with only six main ingredients (plus vitamins and minerals), the company says—a way to reach consumers with easy-to-understand ingredients and ingredient statements.

pets as part of the family, it is not surprising at all that the major claims we see in petfood introductions echo what we see in human foods. In fact, about 30% of all global petfood introductions in 2010, as reported by Mintel's Global New Products Database, carried a "no additives/preservatives" claim, while about 17% were labeled "all natural."

THE NEWEST TREND in the market



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Gain insight into how AFB develops best-in-class palatants when you read *Development of New Palatants for Felines: Design of Experiment Approach*. This overview demonstrates AFB's approach for researching diverse variables that impact palatability and how we apply the research to develop a family of superior feline palatants. Visit our website or ask your account manager for your copy.

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Toll-Free 800-526-0609 Outside the US 201-246-1000 email sales@pharmachemlabs.com appears to be products that showcase the "naturalness" of the ingredients inside. The focus is on pieces of meat, pieces

> of vegetables, in a format that purchasers can see or clearly understand.

> For example, Del Monte's Milo's Kitchen dog treats look like what they are (chicken fillets, meatballs and beef sausage slices). A clear window on the stand-up pouch lets consumers see what is inside, thus enhancing their confidence about the

Another way to look at product wholesomeness is helping consumers understand why a product is formulated as it is. A company from New Zealand called K9 Naturals offers freeze-dried raw dog food, positioned as having 100% natural, balanced nutrition. In fact, the formula is based on a traditional canine diet, "the actual diet of the Grey Wolf,



One of the newest petfood trends is with products that showcase the "naturalness" of the ingredients inside. A clear example is the Milo's Kitchen line of dog treats from Del Monte.

which shares 99.8% of its DNA with domestic dogs," the company says.

An additional expression of wholesomeness is with products

In the treat segment, which is not required to provide the same level of nutrition as complete and balanced petfoods, we see treats for cats under the brand Thrive with a single ingredient: chicken.

> that have easy-tounderstand ingredients and ingredient statements, instead of ones consumers may find difficult to comprehend (e.g., meat by-products).

Branching out from easy recipes, cooking shows and kitchen products, TV food celebrity Rachael Ray now offers Nutrish Just 6 dog food and dog treats made with only six main ingredients (plus vitamins and minerals), the company says. Those six ingredients are shown on the front of the pack.

It should be noted, however, that the actual ingredient statement does not read quite as cleanly as the package's photos may suggest, with the first six being lamb meal, brown rice, ground rice, dried beet pulp, poultry fat (preserved) (mixed tocopherols) and natural chicken flavor.

It's easier, of course, in the treat segment, which is not required to provide the same level of nutrition or meet specific nutrition standards. Thus, we see Thrive cat treats with a single ingredient: chicken.

Where do we see the concept of humanization going? Look for a continued focus on natural formulations, specific, understandable ingredients and products that balance the concept of "just like what we eat" with what is most important for pets to consume.

Lynn Dornblaser is Director of CPG Trend Insight for Mintel International (www.mintel.com).



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Corn-free, wheat-free and gluten-free pet diets are changing the way we formulate food

Because every dog and cat is unique, it's sometimes very difficult to determine what causes food-related allergies and what doesn't. Common petfood culprits include wheat, corn, rice and soy.

FOOD ALLERGY AND intolerance in dogs and cats are potentially serious problems that can result in sensitive or irritated skin, coat and ear conditions or gastrointestinal upset. Pets that have adverse reactions to food typically experience an

abnormal response to the protein in their diet. To avoid multiple visits (and bills) from the veterinarian, consumers who have companion animals with intolerance to certain ingredients are realizing it is even more important to feed the right food.

Because every dog and cat is unique, it's sometimes very difficult to determine what causes food-related allergies and what doesn't. Common petfood culprits include wheat, corn, rice and soy. Various proteins also create their share of problems in certain pets, especially those with sensitive digestive systems. If an animal is excessively itching and scratching, a lack of omega-3, -6 and -9 fatty acids can cause its skin and coat to be dry.

Assuming it's food allergies and not environmental, many vets and pet nutritionists recommend substituting a protein source. Lamb is often used for this purpose, because it's not as common an ingredient. Lamb, in and of itself, is not "non-allergic," but it's less common than chicken and beef so it enables a pet parent to introduce something new into the animal's diet, in effect, starting with a clean slate. Other unlikely protein sources include salmon, fish meal, venison, buffalo and rabbit.

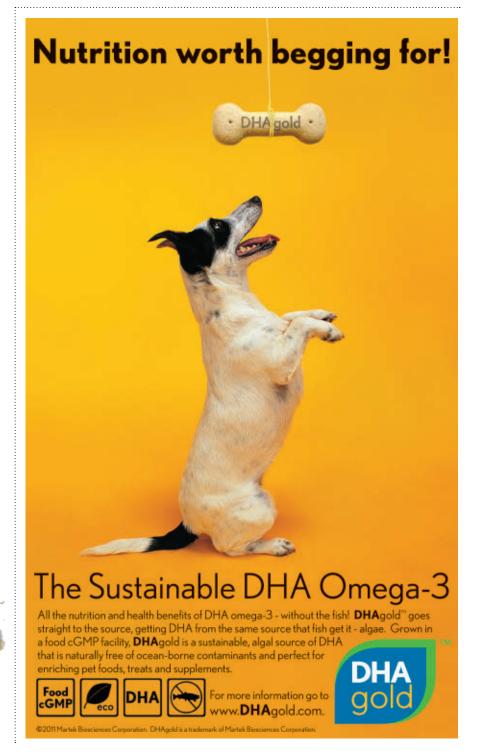
According to Sojourner Farms, makers of Sojos Natural Dog and Cat

Foods, dogs, and some cats, typically do not naturally produce the correct enzymes to

The grain-free alternative to kibble, Sojos Grain-Free Dog Food Mix (formerly known as Sojos Europa) is a wholesome pre-mix that you combine with meat and water to create a fresh, homemade dog food for dogs with sensitivities to grains.

break down certain foods, like wheat and corn. Sojourner Farms believes if consumers feed raw, "human-quality" grains, the enzyme will remain intact, and there will be no food allergies associated with the corn and wheat. Sojos doesn't contain wheat, corn or soy and uses low-gluten grains like oats, rye, barley and quinoa, the company says.

Nature's Variety introduced Instinct Limited Ingredient Diets for





The online educational portal for industry professionals.

NEW interactive petfood nutrition course: Building Blocks of Companion Animal Nutrition

This online course, developed by Linda P. Case, M.S., owner of AutumnGold Consulting, provides thorough examination of the science of companion animal nutrition and practical feeding management for dogs and cats.

Building Blocks of Companion Animal Nutrition includes:

- ✓ Six interactive modules of 35 45 minutes each
- ✓ Accompanying textbook Canine and Feline Nutrition: A Resource for Companion Animal Professionals
- ✓ Certificate of completion

Designed for petfood professionals who work in:

- ✓ Nutrition
- ✓ R&D and food science
- ✓ Quality assurance
- ✓ Quality control
- ✓ Senior level management
- ✓ Vendor assurance
- ✓ Companion animal veterinary practices



Linda P. Case, M.S.

About the Instructor

Course developer Linda P. Case, M.S., is a recognized expert in the fields of canine and feline nutrition, behavior and training, and companion animal health care. She operates AutumnGold Dog Training Center and is the author of four books, as well as numerous scientific papers and pet owner educational materials.

Case has also served as an adjunct assistant professor at the University of Illinois College of Veterinary Medicine, and lecturer and program coordinator at the University of Illinois Department of Animal Sciences.



Log on to www.wattelearning.com to learn more, sign up and gain immediate access to this course. Check back often for newly added sessions and updated offerings.



dogs and cats earlier this year. Instinct LID provide grain-free, gluten-free nutrition with one protein and one hypoallergenic starch, says Nature's Variety. The formulas are coated with an exclusive green tea antioxidant blend for added flavor and nutrition hypoallergenic starch, says Nature's Variety. The formulas are coated with blend for added flavor and nutrition and contain turkey meal/lamb meal, tapioca, canola oil, peas, coconut oil and vitamins and minerals. The diets do not contain chicken, beef, fish, eggs, dairy, grain or gluten, the company says.

Nature's Recipe offers Grain-Free Easy-to-Digest Chicken, Sweet Potato & Pumpkin Recipe and Salmon, Sweet Potato & Pumpkin Recipe for dogs. The Recipe line is completely free of grains, beef, corn, wheat or dairy products, which the company claims provides health benefits in the

Corn: the real culprit?

When it comes to ingredients in petfood, no other is more controversial than corn. It has been called a filler, a "hot grain" and a major cause of allergies in dogs and cats.

But many petfood producers say corn is a natural and wholesome ingredient that supplies essential fatty acids, protein, carbohydrates and antioxidants. In addition, according to a Hill's Nutrition review of published literature, corn was implicated in fewer allergy cases than other common protein sources such as beef, dairy products, wheat, chicken, egg, lamb or soy.

According to recent studies in various species, antioxidants in foods such as corn may potentially reduce the risk of some forms of cancer, heart disease, arthritis, strokes, atherosclerosis and cataracts and slow the aging process. While some argue corn provides no essential nutrition and is indigestible for animals once cooked or ground, others say corn is a rich source of fatty acids for healthy skin and coat, and carbohydrates supplied by corn are an important source of energy.

Have an opinion on this hot topic? Connect with other petfood professionals on www.Petfood-Connection. com, join in a discussion and compare notes with nutritionists and formulators.

form of nutrient-dense, healthy carbohydrate sources that replace grains for ease of digestion. The formulas list either salmon or chicken as the

number one ingredient, are made with antioxidant-rich fruit and vegetables and contain no artificial preservatives, colors or flavors, says the company.

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PowerPoint presentation online!

View Tjitze Smit's entire Petfood Forum Europe 2011 presentation, "Energy Recovery and Odor Reduction in Petfood Production," at www.petfoodindustry.com/8244.html.

Finding a smell solution for your petfood or treat production plant is nothing to turn your nose up at!

Odor reduction solutions in petfood production

By Jessica Taylor

From plasma ozone reactors and chemical scrubbers to the simple chimney, how does the modern petfood plant control the distinctive smells of manufacturing?

"ODOR REDUCTION IS important to stakeholders, which includes people living in the community near your plant," said Tjitze Smit of GrainTec A/S in his Petfood Forum Europe 2011 presentation, "Energy Recovery and Odor Reduction in Petfood Production." An angry mob of towns-

people showing up at your facility's door, complaining about how your business stinks, is no way to foster community spirit, much less garner popularity with local consumers. Let's sniff around for the best, most cost-effective, energy-saving methods available to petfood producers today.

The good news? When you compare aquafeed, petfood and animal feed in terms of odor, aquafeed produces the most intense aromas. There's a large drop between aqua and petfood in "extruder flash-off" when odor is emitted, but not as much as from the dryer, according to GrainTec research.

ODOR IS COMPLICATED because very often it is a cocktail of hundreds of different organic components. The weight concentration (ppm) is mostly very low, but the odor concentration (ou/m3 or DT = number of required dilutions with clean air to just become odor free) can be very high.

The odor components with the lowest concentrations cannot all be detected analytically, but the human nose may very well notice them. So by this way it is impossible to make accurate calculations or predictions on odor emission. The



Applied Plasma Physics units provide odor control that meets the high EU regulation standard, according to the company.

only way to determine odor reduction efficiencies, according to Uniqair, is with olfactometric measurements.

WHAT KIND OF odor reduction methods are available and how effective are they? Smit breaks them into these six categories:

- **1. A chimney** is not very efficient but is inexpensive and is often the logical first step toward reducing production odors.
- **2.** An ozone (plasma) reactor operates at 70-85% efficiency. GrainTec says this technology has low capital costs but is expensive to operate, while manufacturers of the equipment (like Applied Plasma Physics A/S) claim higher efficiency and lower operating costs.
- **3. Biological/chemical or seawater scrubbers** boast 70-90% efficiency but also come with both high investment and high operating costs. This odor reduction technology is mostly used in aquafeed production because those plants are usually close to the sea.
- **4. A bio filter**—like wood chip fillers—outputs a 70-95% efficiency. Often used in conjunction with a freshwater





scrubber, a bio filter requires a good deal of space to operate in and can be costly to run.

- A regenerative thermal oxidizer is certainly an expensive odor reduction alternative (high investment, very high costs to operate) but provides 90-98% efficiency.
- **6.** Total recirculation systems including a coal filter will provide 98-99% efficiency. Although an initial high-investment cost, this technology recovers and reduces thermal energy, as well as reduces odor emissions.

ONCE YOU HAVE determined what odor reduction technology is best for your company, you must implement an installation process. If you are starting from the ground up with

a brand new facility, you can build and design for odor control from the beginning. If you are Roger Mohr, director of BYNSA in Spain, however, you have to retrofit an existing factory by adding equipment—in this specific case, three Applied Plasma Physics units, one for each extrusion line, and new airflow ducts.

In Europe, Mohr and his competitors also have odor control regulations manufacturers in other parts of the world don't yet have to worry about but would be better off getting prepared for now. As it stands, the current EU standard has been written, but responsibility for regulation is up to individual countries. Eventually the regulation could be mandatory, and there's no question it's good for the community if neighbors complain about odor, local



These APP units (installed at a Nestlé Purina facility) have fans with three different speeds, based on temperature of the dryer air coming from the extrusion lines. Each unit has a cooling system, too.

authorities can crack down.

The APP units are flushed with water to clean dust deposits once a month at the BYNSA plant. They have fans with three different speeds, based on temperature of the dryer air coming from the extrusion lines. Each unit has



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FDA deputy commissioner to address link between petfood and human food safety

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- FSMA update: what and when to expect from FDA—
 Dr. Daniel McChesney, director of the Office of Surveillance & Compliance, Center for Veterinary Medicine, Food and Drug Administration
- Balancing evidence-based science with marketing desires and demands—Dr. Roger Clemens, president of the Institute of Food Technologists and chief scientific officer for ET Horn

Check www.petfoodindustry.com/PFF2012.aspx frequently as we confirm more speakers!

Featured Speaker:

Michael Taylor, JD, deputy commissioner of foods for the US Food and Drug Administration



With responsibility for the safety of all food in the US,

Taylor is spearheading implementation of the new Food Safety Modernization Act and will address how petfood safety fits into the overall food safety picture, plus similarities and differences between human food and petfood safety.

Petfood Workshop: New Product Development

April 4 – 5, 2012 Renaissance Schaumburg Convention Center Hotel, Schaumburg, Illinois USA



Immediately following Petfood Forum 2012, Petfood Workshop is a focused seminar on new product development. New products have been a driving force behind the petfood industry's continual growth, but new product development requires much more than a good idea. In this interactive seminar, learn from experts on how to successfully bring a new petfood product to market.

Speakers to include:

- Dr. Greg Aldrich on how to set and manage expectations and timelines in developing new products
- John Adams of Adams Development on idea generation: techniques for innovation and generating new product ideas, plus best practices for evaluating the ideas

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April 2-4, 2012

April 4-5, 2012



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Through February 1, 2012	US\$995	US\$740	US\$585	
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Petfood Forum group discount available to five or more attendees. For more information, e-mail OutreachRegistration@niu.edu or call +1.815.753.7922.

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a cooling system, too.

Each unit has its ow interface. according to Each unit has its own control interface, according to Mohr, but it's also part of the factory's overall PC control system. In addition, the units are connected via the Internet to APP

no maintenance, according to the company. For more information, go to www.uniqair.com.

THERE ARE NO competitive advantages to controlling odor pollution—only

costs—and you can't promote the great lengths your company goes to to provide odor reduction since the public at large already expects such strides. But it's certainly the right thing to do. And your neighbors' noses will thank you!



Once you have determined what odor-reduction technology is best for your company, you must implement an installation process. If you are starting from the ground up with a brand new facility, you can build and design for odor control from the beginning.

in Norway for remote monitoring and service, reducing cost/time if a problem arises. The APP technology falls in the Best Available Technique category under IPPC. For more information on APP, go to www.app.no/solutions/ odour-abatement.

UNIQAIR NOT ONLY recognizes the petfood industry as an important market segment for its plasma odor control systems but also knows how hard it can be to obtain regulatory approval for expansion of production, while controlling the odors from dryers, extruder air conveyers and coolers. The company has sold over 50 plasma odor control systems to the petfood and feed industry worldwide.

In October 2011, Uniquir introduced its latest innovation with cold plasma technology: PECO with Stack-Xtender for up to 98% odor control (PECO: plasma enhanced catalytic oxidation). This new plasma technology causes no impact on the production process, no chances of plugging/jamming and has little to





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Petfood Insights

David A. Dzanis, DVM, PhD, DACVN

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FDA to communicate more clearly?



Under the Plain
Writing Act of 2010,
US agencies such as
the Food and Drug
Administration
will have to use
plain English in its
communications.

While Many Petfood companies have been preoccupied with concern about the ramifications of the Food and Drug Administration Amendments Act and the Food Safety Modernization Act on their businesses, another piece of legislation appears to have gone largely unnoticed.

Briefly put, the new law says that whereas the lexicon utilized in extra-office correspondence and other communications as authored by employees (be they civil servants or contractors) and others affiliated with the Executive Branch are perceived as not fully effective in transmittal of intended information to the non-governmental populace, pursuant to HR 946 all letters, publications, documents and other mailings (but not regulations per se), irrespective of medium or format, shall heretofore be constructed so as to use verbiage most likely to convey the full and appropriate message to a recipient of assumed average educa-

tion and intellect, to be implemented and in force no later than the 13th day of October, in the year 2011.

In other words, the US federal government is now required to write in plain English!

THE STATED PURPOSE of the Plain Writing Act of 2010 is "to improve the effectiveness and accountability of federal agencies to the public" (see "Useful links"). I'm not sure, but I think I've seen similar verbiage in the texts of legislation such as the Paperwork Reduction Act of 1980, the Deficit Reduction Act of 1984 and the Internal Revenue Service Restructuring and Reform Act of 1998.

Table 1: Interpreting FDA-speak

Certain statements and correspondence from the US Food and Drug Administration require some interpretation.

What FDA says	What FDA means
Thank you for your Freedom of Information request.	We'll answer you in about a year, maybe longer, if we can find the staff necessary to find the requested docu- ments.
Thank you for your Citizen Petition.	It's not that we don't appreciate hearing your views, but we may or may not get back to you on this at all.
To preclude possible enforcement action, you must respond within 30 days.	If you do not write back in the next few months, we will be forced to send you another letter.
The Agency has not reached an independent conclusion that the substance is Generally Recognized As Safe.	We'll let you use it, but we ain't taking the responsibility!
WARNING LETTER (across top of page)	We're saying we're ready to take this to court. Do you want to take the risk that this is a bluff?
Based on FDA's consideration of the scientific evidence and other information submitted with the petition, and other pertinent scientific evidence and information, FDA concludes that there is no credible evidence to support the claim.	F&@\$ you! Stronger letter to follow if you persist.

Dr. Dzanis is CEO of Regulatory Discretion Inc. and a writer and consultant on nutrition, labeling and regulation.

As of the time of this writing, I do not see any indication of impending change to the Food and Drug Administration website. However, the Department of Health and Human Services (of which FDA is a part) appears to be gearing up to comply with the new requirements.

As evidenced by the guidance provided to agencies in implementing the act, writing plainly does not appear to be an intuitive process. Employees are being instructed to "write as you talk," which includes writing short sentences, omitting unnecessary words, using the simplest form of the verb, minimizing abbreviations and using contractions where appropriate. The government is now "we" or "us," the recipient "you."

THE GUIDANCE ALSO advises writers to avoid jargon, which it sees as "unnecessarily complicated, tech-

nical language used to impress, rather than to inform, your audience." I'm not sure if I wholly agree. In dealing with regulatory issues,

will use enforcement discretion," FDA would have to say, "While the use of this substance technically does not wholly meet the provisions of the

Useful links

Plain Writing Act of 2010 text:

http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_bills&docid=f:h946enr.txt.pdf

HHS implementation plan:

www.hhs.gov/open/recordsandreports/plainwritingact/plain_writing_act_report.pdf

"How to" plain language writing guide for government agencies: www.plainlanguage.gov/howto/guidelines/FederalPLGuidelines/TOC.cfm

as with other specific fields, use of some jargon is much more efficient, if not necessary.

For example, "enforcement discretion" succinctly iterates a specific concept. Alternatively, instead of "we

Federal Food, Drug and Cosmetic Act, based on our internal review of pertinent safety data we have concluded that it poses a minimal risk to animal/ human health when used as intended, and as such we do not anticipate

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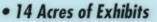
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that we will initiate or recommend enforcement action at this time, on the conditions that labeling conforms to our requirements to provide for safe use, use of the substance does

might not be a bad idea.

Much of My business consists of explaining to clients what a regulator means by certain statements in

Writing plainly does not appear to be an intuitive process.

not extend beyond the agreed upon purpose or level of inclusion and no other information is received that would have us question our original determination of safety." Which is easier to say?

On the other hand, I have seen at least one non-governmental website interpret the term "enforcement discretion" as meaning, "Petfood companies have a license to lie!" Thus, maybe some clarification correspondence (see Table 1, p. 40). I laud any effort to make communications with FDA more understandable, though I do not fear this new legislation will render my "interpretation" services wholly obsolete. The act does not apply to the writing of regulations, so do not expect much change in style from that respect. Plus, the act only affects FDA, not state feed control official offices, so I still should have lots of work!



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Niacin: key compound in pets' metabolism



Also known as vitamin B₃, this ingredient is vital for healthy maintenance of pets' nervous tissues, GI tracts and skin functions.

NIACIN WAS THE third B vitamin to be identified as a dietary essential for its role in treating the deficiency disease "black tongue" in dogs and a disease with a similar etiology, pellagra, in humans. The discovery was tied to pets and humans consuming diets nearly monopolized by grains and deficient in quality proteins.

Since the late 1930s, incidence of these diseases is almost unheard of. Today, while no significant consumer controversies are prevalent on pet enthusiast blogs or customer service hotlines regarding niacin in petfood, we can't become complacent and overlook its importance.

IN THE OLDER nutrition literature, niacin may be referred to as vitamin B_3 —for its place behind thiamine (B_1) and riboflavin (B_2) —or vitamin PP (PP for pellagra preventive factor). The term

"niacin" is actually a coined word used to describe several vitamers with biological activity associated with nicotinamide, nicotinic acid and a couple of select pyridine nucleotides.

Structurally, niacin is one of the simplest of the vitamins. Nicotinic acid is based on a pyridine ring (nitrogen-containing 6-sided ring) and a carboxyl side group (carbon with an OH and a double bonded oxygen). If the OH is replaced with an NH (amide), the molecule becomes nicotinamide.

In metabolism, niacin is converted to the co-enzyme nicotinamide adenine dinucleotide (NAD) and its phosphorylated form (NADP). The NAD and NADP co-enzymes function as electron transport intermediates in energy transfer reactions. They play a central role in carbohydrate metabolic pathways like glycolysis and the Krebs cycle, fatty acid oxidation, protein metabolism

and many other tissue specific functions. These are vital factors for healthy maintenance of nervous tissues, the gastrointestinal tract and skin functions.

DEFICIENCY SYMPTOMS ARE typically secondary to dietary insufficiency of quality meat-based proteins and manifest as anorexia, weight loss, inflammation around the mouth and throat, salivation, blood in the saliva and bloody diarrhea. The reason protein quality factors into niacin deficiency is that tryptophan can be converted to niacin in most species. However, in pet diets, tryptophan is often the first-limiting amino acid.

Further, the cat is unable to convert tryptophan to niacin. While cats possess all the biosynthetic pathways necessary for the conversion, they also possess a super-high picolinic carboxylase activity (the highest reported in the animal kingdom). This competing bifurcation in the path steals tryptophan away from niacin production in favor of acetyl-CoA and CO_2 . One can surmise that during the evolution of the cat, since the felid

Today most modern cat diets must be fortified with niacin.

diet was sufficient in pre-formed niacin from its prey, the metabolic machinery to convert tryptophan was marginalized in deference to other more critical needs. Because of this, today most modern cat diets must be fortified with niacin.

MEATS, ESPECIALLY ORGAN meats like liver, are rich sources of the pre-formed niacin-containing co-enzymes NAD and NADP. Yeast and fermen-

tation products can also provide a significant supply. Plant sources contain primarily nicotinic acid, which is not an issue by itself; but the bioavailability of nicotinic acid can be compromised in plant sources due to strong chemical bonds with peptides (e.g., the so-called niacinogens) or carbohydrates (e.g., niacytin found in wheat bran). The net result is that bioavailability in grains and oilseeds is low, ranging from 0 to 50%.

However, the bound niacin can be released by extensive cooking. For

required by the animal at only part per million levels. Thus, these white to off-white crystalline powders are commonly mixed with other vitamins into a vitamin premix. Petfood manufacturers will specify whether they prefer nicotinic acid or niacinamide in their premix depending on the type of petfood application.

Nicotinic acid is moderately soluble in polar solvents like water and alcohol but insoluble in non-polar solvents like ether. Niacinamide, on the other hand, is highly soluble in water and soluble

Deficiency symptoms are typically secondary to dietary insufficiency of quality meat-based proteins.

example, Mexican foods use a process called nixtamalization where corn is cooked in limewater (saturated calcium hydroxide). This process adds many beneficial properties to the food and also releases the niacin, but this is not a practical step for petfood production. So, the general recommendations are to ignore the niacin contribution from the base dietary ingredients or at most only consider one-third of the niacin as nutritionally available, then provide supplemental sources to fill the gap.

These supplemental dietary sources are merchandised by the primary vitamin manufacturers in the wholesale ingredients market channel. Besides modest amounts that have been promoted from so-called "green" sources, most are chemically synthesized using several routes. In general, nicotinic acid is produced by oxidation of 5-ethyl-2-methylpyridine and nicotinamide is produced via 3-methylpyridine. These compounds are derived from two carbon sources such as acetaldehyde and formaldehyde or from acrolein and ammonia.

Both nicotinic acid and niacinamide moieties of niacin are commercially available for use in petfoods. These are ultra-concentrated vitamins with nearly 100% active content that are

in ether. While niacin is supposedly an odorless, tasteless compound in its most pure state, the supplemental forms often carry with them the strong medicinal odor that one often attributes to the B vitamins.

FROM A LABELING perspective, the Association of American Feed Control Officials' *Official Publication* (2011) equates niacin with nicotinic acid and niacinamide with nicotinamide. Nutritionally, they are interchangeable, and according to AAFCO (Section 90.16), both can be lumped under the term "niacin supplement." Regardless of form, they are relatively stable in petfood processes.

One should be aware that around 75% of such a supplement will survive processing and persist for the full shelf-life of the product; so generous overages should be considered. As a practical matter, there is no safe upper limit established for dogs or cats. It has been established that niacin is toxic at levels in excess of 350 mg/kg body weight per day for most animals (NRC, 1987). So, in the end, it is important to be liberal with supplementation because a deficiency can be devastating and a substantial margin of safety exists should excess be included.

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Protein requirement for lactating cats

The Nutrient Research Council recommendations for cats for energy and protein during gestation and lactation are based on limited data. This

study aimed to answer if the energy requirement can be met with wet food or if the volume

is restrictive. Balance trials were conducted in 10 queens before mating, during the fourth and seventh week of gestation and during the second and sixth week of lactation. The cats were fed wet

food ad libitum, and their body composition was measured by dual-energy X-ray absorptiometry before mating, after parturi-

tion and after weaning. Eight of 10 cats had increased body fat content and lean body mass during gestation. The weight loss during lactation led to a loss of lean body mass, but only six cats lost body fat of widely differing amounts. The queens' dry matter intake was consistent with that of queens fed ad libitum with dry food. The cats lost lean body mass during

lactation and had negative protein balances in the second

week of lactation, which seems to be physiological. Nevertheless, the protein recommendations for lactation seem to be too low.

Source: B. Wichert et al., 2011. Cats during gestation and lactation fed with canned food ad libitum: energy and protein intake, development of body weight and body composition. JAPAN online August 2011. doi: 10.1111/j.1439-0396.2011.01214.x

Key concepts

- Protein requirements for lactating cats (JAPAN online August 2011. doi: 10.1111/j.1439-0396.2011.01214.x) This study aimed to answer if the energy requirement can be met with wet food or if the volume is restrictive.
- How diet change affects canine microbiomes (Intern J App Res Vet Med 9: 278-283) The proximate analysis suggests the potential for reduced digestibility, higher fiber content or resistant starches as potential causes for shifts in fecal pH and microflora.
- Amino acid profile of scarlet macaw chicks (JAPAN online August 2011. doi: 10.1111/j.1439-0396.2011.01218.x) The lower crude protein and amino acid densities could result from a combination of differences in the essential AA composition of the body tissues and other factors.
- How fatty acids affect adipokines in cats (AJVR 72: 1259-1265. doi: 10.2460/ ajvr.72.9.1259) EPA may ameliorate the decrease in adiponectin and the increase in insulin and triglyceride concentrations in obese cats.

How diet change affects canine microbiomes

Many dietary factors influence fecal output and consistency, including digestibility, fiber and resistant starches. To better understand how dietary change can influence the microbiome and fecal characteristics, we performed a feeding trial using two different foods in six dogs. Dogs were fed Food A, which contained bacterial fermentation products, or Food B for 28 days, then switched to the other food for 28 days.

Food A resulted in a significant decrease in fecal pH and quality and an increase in daily defecations. Fecal floral analysis revealed significant increases in Lactobacillales and Clostridiales VII and decreases in Erysipeolotrichales and Coriobacteriales family microorganisms when the dogs ate Food A.

While we have yet to determine the specific component in Food A responsible for this dramatic shift in fecal pH and change in fecal microflora, the proximate analysis suggests the potential for reduced digestibility, higher fiber (soluble and insoluble) content and/or resistant starches as potential causes.

Source: J.J. Wakschlag et al., 2011. Negative fecal characteristics are associated with pH and fecal flora alterations during dietary change in dogs. Intern J App Res Vet Med 9: 278-283.

Amino acid profile of scarlet macaw chicks

Hand rearing of neonates is a common practice for the propagation of psittacines. However, nutritional requirements for their growth and development are not well understood and malnutrition is common.

We analyzed the amino acid (AA) profile of the crop contents of 19 free-living scarlet macaw (Ara macao) chicks, 19-59 days old. Predicted metabolizable energy (PME) density was 16.9 MJ/kg dry matter and true protein (total AA protein) was 8.3 g/MJ PME. Crude protein (CP) was 10.0 g/MJ PME, lower than the requirements of 0- to 12-week-old

leghorn chicks but not different than the requirements of growing budgerigars (*Melopsittacus undulatus*) and lovebirds (*Agapornis spp.*).

The mean concentrations of leucine, isoleucine, threonine, lysine and methionine on a PME basis were below the minimum requirements of 0- to 12-week-old leghorn-type chicks. The calculated PME density of the samples did not vary with age. However, there was a significant negative correlation between the average age of the chicks and lysine concentration.

The lower CP and AA densities compared with poultry could result from a combination of differences in the essential AA composition of the body tissues, adaptations that allow the birds to grow on low-protein food sources and suboptimal nutrition of these free-ranging chicks.

Source: J. Cornejo *et al.*, 2011. Predicted metabolizable energy density and amino acid profile of the crop contents of free-living scarlet macaw chicks (*Ara macao*). *JAPAN*

online August 2011. doi: 10.1111/j.1439-0396.2011.01218.x

How fatty acids affect adipokines in cats

The aim was to determine associations between serum concentrations of omega-3 polyunsaturated fatty acids and concentrations of adiponectin, leptin and insulin in 56 healthy, adult, client-owned cats. Body condition score (BCS) was determined and blood samples were collected after food was withheld for 12 hours.

Significant interaction effects between BCS and serum concentrations of eicosapentaenoic acid (EPA) were detected for the analyses of associations between EPA and serum concentrations of adiponectin, insulin and triglyceride. Cats were categorized into nonobese (BCS 4 to 6, n=34) and obese (BCS 7 to 8, n=21) groups. Serum concentrations of EPA were directly associated with concentrations of adiponectin and

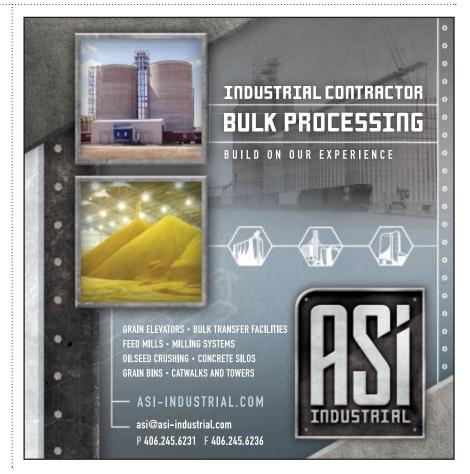
inversely associated with concentrations of insulin and triglyceride in obese cats and directly associated with concentrations of leptin and inversely associated with concentrations of adiponectin in nonobese cats.

Serum concentrations of docosahexaenoic acid (DHA) were directly associated with concentrations of adiponectin in obese cats. No significant associations between serum concentrations of DHA or alpha-linolenic acid were detected in the analyses for all cats. Female cats had higher serum concentrations of adiponectin and lower concentrations of glucose than did male cats.

EPA may ameliorate the decrease in adiponectin and the increase in insulin and triglyceride concentrations in obese cats.

Source: M. Mazaki-Tovi *et al.*, 2011. Effect of omega-3 fatty acids on serum concentrations of adipokines in healthy cats. *AJVR* 72: 1259-1265. doi: 10.2460/ajvr.72.9.1259

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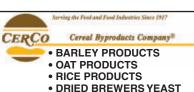
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🔀 Nestlé PURINA

Nestlé Purina is a premier global manufacturer of pet products, with North American headquarters in St. Louis, Missouri. Due to changes and upgrades, we have used (and sometimes new) packaging and process equipment for sale from various North America Nestlé companies including Nestlé Purina, Nestlé Foods and Nestlé Waters, such as: pouch makers, grinders and can fillers.

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Ad Index

3D Corp Solutions LLC	Kemin Nutrisurance Inc5 www.kemin.com
Acadian AgriTech35 www.acadianagritech.com	Lonza Inc13
ADF-Amer Dehydrated Foods	Martek Biosciences div. of DSM31 www.DHAgold.com
AFB International	Neogen Corp25 www.neogen.com
American Feed Industry Assn41 www.afia.org	Novus Nutrition Brands LLC7 www.novusint.com
Ameri-Pac Inc39 www.ameri-pac.com	Peel Plastic Products LtdC2 www.peelplastics.com
Applied Plasma Physics ASA15 www.app.no	Pharmachem Laboratories
ASI Industrial47 www.asi-systems.com	Premier Tech Chronos43 www.premiertechchronos.com
Bemis Company Inc	Roquette America Inc11 www.roquette-animalnutrition.com
Corporate Project Services45 www.corporateprojectservices.com	Summit Ridge Farms12 www.srfarms.com
DSM Nutritional Prods Ltd42 www.dsm.com	The Peterson Co21 www.thepetersoncompany.com
Empyreal 75	Trouw Nutrition USA LLC1 www.trouwnutrition.com
Extru-Tech Inc	Victam Intl bv33
Horizon Systems Inc20 www.horizonsystemsinc.com	Wenger Manufacturing Co
Intl Ingredient Corp35 www.iicag.com	

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Industry Calendar

See more

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

	S	M	T	W	T	F	S
			1	2	3	4	5
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November	20	21	22	23	24	25	26
N	27	28	29	30			

■ Implementing & Auditing ISO 14001 and OHSAS 18001, and the Basis for Sustainability — It's All Connected, November 7-9, 2011. SpringHill Suites Marriott, Orlando, Florida, USA. For more Information, please go to www. newslow.com.

- "Establishing a HACCP Program for the Feed Industry" Short Course, November 7-10, 2011. Kansas State University, Manhattan, Kansas, USA. To register, please visit www.afia.org.
- Internal Auditor Training, November 10-11, 2011. SpringHill Suites Marriott, Orlando, Florida, USA. For more Information, please go to www.newslow.com.
- The 15th Annual China International Pet Show (CIPS), November 16-19, 2011. Import & Export Fair Pazhou Complex, Guanazhou, China. For more information and to register, go to www.cipscom.com.

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<u>a</u>	29	30	31				





- International Feed & Poultry
- Global Pets Forum 2012,
- India International 6th Pet tute of Scientific
- Feeds and Petfood Extrusion College Station, Texas. For more

Online events

■ Mocon Inc. has announced its 2011 Free Webinar Series month until December 10, 2011. To view class details and registration informa-



■ The Powder and Bulk Online Training Center Flow. All of these web-only classes are avail







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