Robotic rationale • Smarter sales calls • Market watch

June 2006

Petfood Industry

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Packaging Trends

➤ Convenience ➤ Intelligence
➤ Humanization ➤ & more, p.14

Petfood Industry
June 2006 Volume 48, Number 6

Features

Departments

BY TIM PHILLIPS, DVM

What you want

Results of a survey of Petfood Forum 2006 attendees

This year, we had a market research company survey attendees and exhibitors at Petfood Forum. The researchers talked with 72 attendees and 38 exhibitors. We recently received the survey results.

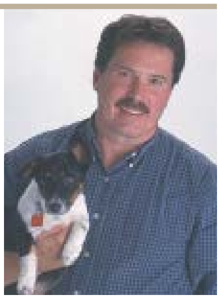
Top 10 topics

Attendees were asked about 32 different topics they might like to see at Petfood Forum symposium. Here are the most popular topics, with the percentage of respondents that are interested.

1 ➤	Ingredients	84%
2 ➤	New product intros	75
3 ➤	Competitor information	75
4 ➤	Palatability	74
5 ➤	Market research	74
6 ➤	US regulations	73
7 ➤	Nutrition	71
8 ➤	New start-ups	69
9 ➤	Purchasing decisions	67
10 ➤	Mergers and acquisitions	67

Should exhibitors put more emphasis on talking with marketing and management types?

— Tim Phillips



Exhibitors' opinions

Of the exhibitors, 94% had a positive overall impression of Petfood Forum; 100% were satisfied with the Petfood Forum staff; 85% were positive towards the Chicago-area venue; and 76% were satisfied with attendee traffic in the exhibition area.

Attendee feedback

Of the attendees in our random sample, 91% had a positive overall impression of Petfood Forum; 92% thought the length of the event should remain the same; and 89% were positive toward the variety and scope of the companies exhibiting at Petfood Forum.

Decision makers

During the first day of lectures at Forum, I talked with the marketing VP of a large superpremium petfood company. He made the point that, "Suppliers should target petfood company marketing people, because they drive the purchasing decisions." He went on to say that many exhibitors focus most of their efforts on purchasing people who "tend to say no."

We're listening—speak up

Petfood Forum 2006, April 3-5, attracted 952 petfood people from 30 different countries. Next year Petfood Forum will be at the Hyatt O'Hare in Chicago, Illinois, USA, April 16-18, 2007. Topic and speaker ideas are welcome (E-mail me at Phillips@wattmm.com or call +1.815.734.5644). Focus will be in Chicago, April 18-19, 2007. Again, topic and speaker ideas are welcome.

Dr. Phillips is the editor of Petfood Industry *magazine. He can be reached at Tel: +1.815.734.5644, E-mail: phillips@wattmm.com.*

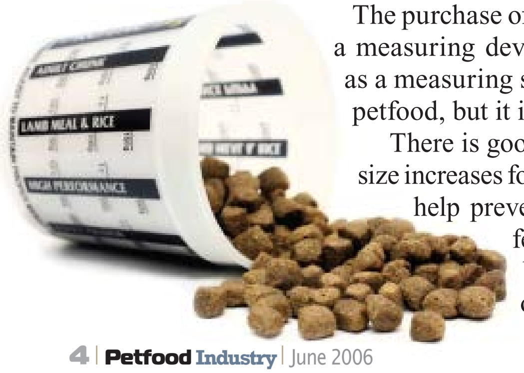
Soapbox

***"A cup is not a cup."*—Sean Delaney, DVM, DACVM**

Please provide a measuring cup! "To some people, a cup may be a true 8-oz. cup; to others, it is a 64-oz. big gulp cup. A cup is what's convenient, whatever the pet owner thinks a cup is," noted Dr. Sean Delaney, a speaker at the *Focus on Palatability* symposium in April 2006. This common error means obesity for many pets.

The purchase of most laundry detergents includes a measuring device—as part of the packaging or as a measuring scoop. The same should be true of petfood, but it is not.

There is good evidence that increasing portion size increases food intake. Petfood companies could help prevent pet obesity by providing clear feeding guidelines and supplying in-bag measuring cups and gradations on cans and pouches.



Industry News

PFI statement on avian influenza

Pet owners in the US do not need to change their pet's food over concerns of avian flu transmission. The H5N1 strain of avian influenza that has caused much concern in Asia and Europe has not been found in the United States. Commercial petfood made by members of the Pet Food Institute (PFI), the national trade association representing US dog and cat food companies, poses no avian influenza risk.

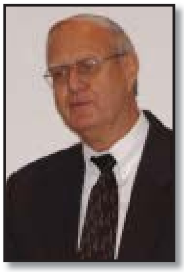
Due to the discovery of avian influenza, sometimes called "bird flu," in cats in a few foreign countries, many US pet owners have questions about the disease and how it might impact their pets and petfood. Commercial petfood made in the United States is processed at temperatures that inactivate all viruses, including avian influenza. Therefore, there is no danger to dogs and cats from eating commercial petfood containing any poultry ingredients.

"There is no danger from any type of commercial petfood," according to Nancy K. Cook, PFI vice president of Technical and Regulatory Affairs. "Pet owners feeding dry, canned or semi-moist food, as well as treats, do not need to worry about bird flu from any of these products," she adds.

The US Centers for Disease Control and Prevention (CDC) has also offered advice to pet owners. The CDC recommends that cat owners keep their pets indoors and not permit them to have contact with wild birds. Dogs should be leashed when outside and neither dogs nor cats should be fed raw poultry products. This disease has only been found in cats outside the US that consumed raw poultry or dead birds and no infections have ever been reported in dogs.

Pearl caps career with dedication of ACREC

On March 27, 2006, surrounded by Clemson University faculty, elected officials from the state of South Carolina and leaders from the animal and rendering industry, Dr. Gary Pearl dedicated the Animal Co-Products Research and Education Center. The ACREC is charged with advancement of science and technology, consumer protection, environmental stewardship, education and development of market opportunities for rendered animal co-products. It is the culmination of a collaboration and cooperation between industry, state government and academia.



Dr. Gary Pearl

Dr. Pearl, the retiring president of the Fats & Protein Research Foundation, was instrumental in bringing the key parties to the table to make such a prospect possible. Before this effort, there was no place in the northern hemisphere dedicated to rendering research. With Dr. Pearl's retirement, administration of the program will fall to the ACREC governing board, chaired by Dr. Calvin L. Schoulties of Clemson University, and board members from Clemson University and the rendering industry.

The center will be housed at Clemson University with a multi-disciplinary team of faculty and student researchers working on real and present issues encountered by the rendering industry. Beyond this collaboration, the development of a rendering pilot plant and laboratories dedicated to rendering research are in the planning stages. The Center is directed by Dr. Annel Greene, professor of Animal and Veterinary Sciences.

Hill's petfood sales growth announced

Colgate-Palmolive Company has announced strong worldwide sales and unit volume growth for first quarter 2006, with every operating division delivering volume increases. Worldwide sales and unit volume, as reported including divestments, grew 4.5%. Excluding divestments, worldwide sales and unit volume grew 7.0%, on top of 7.5% volume growth in the year ago quarter. Hill's (13% of company sales) petfood sales and unit volume grew 7.0% and 5.5%, respectively, to a first quarter record level and the best volume increase in twelve quarters. Positive pricing of 4.5% offset the unfavorable foreign exchange of 3.0%. Operating profit increased 6% to a record level during the quarter.

Innovative new products contributing to growth in the US specialty retail channel during the quarter include Science Diet Lamb Meal & Rice Recipe Large Breed dog food, Science Diet Lamb Meal & Rice Recipe Small Bites dog food and Science Diet Indoor Cat food. In the US veterinary channel, sales of Prescription Diet j/d Canine and the relaunch of Prescription Diet d/d Canine and Feline continue to exceed expectations. Internationally, growth was strong led by Australia, Taiwan, Belgium, Germany, Italy, Denmark, Israel, South Africa and the United Kingdom.

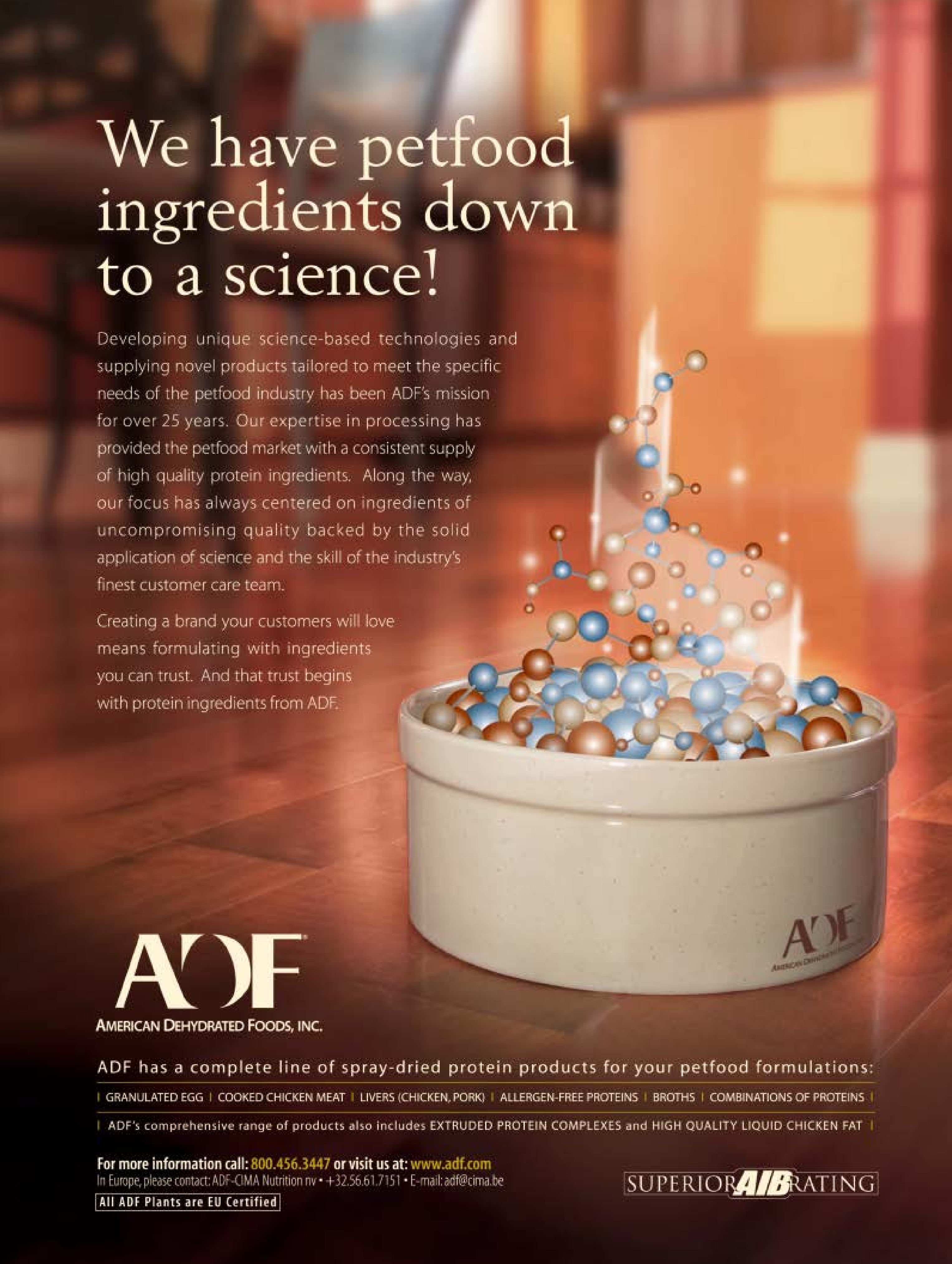
Omega Protein welcomes Schneider

Schneider

Omega Protein welcomes Chris Schneider as its new sales manager for the aquaculture and petfood industries. Schneider's background includes eight years as a senior buyer for Doane Pet Care in addition to three years with SF Services.

Mars to acquire Doane Pet Care Company

Mars, Incorporated and Doane Pet Care Company, a Nashville, Tennessee, USA-based private label manufacturer of dry petfood, announced April 26, 2006 that Mars has entered into an agreement to acquire Doane's parent corporation,


We have petfood ingredients down to a science!
Developing unique science-based technologies and supplying novel products tailored to meet the specific needs of the petfood industry has been ADF's mission for over 25 years. Our expertise in processing has provided the petfood market with a consistent supply of high quality protein ingredients. Along the way, our focus has always centered on ingredients of uncompromising quality backed by the solid application of science and the skill of the industry's finest customer care team.
Creating a brand your customers will love means formulating with ingredients you can trust. And that trust begins with protein ingredients from ADF.
ADF
AMERICAN DEHYDRATED FOODS, INC.
ADF has a complete line of spray-dried protein products for your petfood formulations:
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| ADF's comprehensive range of products also includes EXTRUDED PROTEIN COMPLEXES and HIGH QUALITY LIQUID CHICKEN FAT |
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Doane Pet Care Enterprises, Inc., from Teachers' Private Capital, the private equity arm of Ontario Teachers' Pension Plan. The acquisition by Mars will not include Doane's European business, which is being sold to a third party. Closing of the transaction is subject to required regulatory approvals, and is expected to be completed within the next several months.

"The acquisition of Doane by Mars is an important part of our strategy to strengthen and grow our pet care business in North America," according to Bob Gamgort, North American president for Mars. "The addition of Doane's US operations will provide production capacity to accelerate our innovation pipeline and operating flexibility to better respond to our customers' needs," said Gamgort.

Current Doane president and CEO Doug Cahill will manage the newly-combined Mars North American pet business in Nashville. "The combination of Mars' brands, science and innovation with Doane's supply chain excellence will significantly improve Mars' business performance and competitive position," said Cahill. According to a report by CCNMatthews, the combination of the Mars Pet business with Doane's 20 plants and two distribution centers in the United States will create a more efficient, geographically-distributed network which will enable Mars to respond more rapidly to shifts in consumer demand and customer needs.

S&M NuTec signs deal with Mars

Mars Inc. has signed an agreement to acquire S&M NuTec LLC, the North Kansas City, Kansas, USA-based manufacturer of Greenies® dog treats, for an undisclosed price. The transaction is subject to regulatory approval. As reported by the *Kansas City Star*, in written statements, Christopher D. Brandt, general counsel for S&M NuTec, and Alice Nathanson, a spokeswoman for Mars, confirmed the agreement.

Nestlé: First-quarter 2006 sales strong

Peter Brabeck-Letmathe, chairman and CEO of Nestlé, commented recently on the company's first quarter sales results for 2006. He said: "Nestlé had a strong start to the year. Our food and beverage business was once again the driver of our growth, with every region contributing. The input cost environment deteriorated during the first quarter, including for key food categories, which required us to further increase prices. Given our higher pricing and the fact that we will be up against a stronger base for the balance of the year, I am able to confirm our guidance for 2006 of organic growth between 5 and 6%, as well as a continued improvement of the EBITA margin in constant currencies." The PetCare division achieved 6.8% organic growth, with Europe the key driver, at 9.0% organic growth.

Midwest Ingredients introduces consulting division

Midwest Ingredients recently announced the launch of a new consulting division. The new consulting division focuses on all aspects of baked products and dry petfood. For the last 11 years, Midwest Ingredients has provided a system for distributing a wide variety of food, feed and by-products throughout the continental United States and Canada. The Midwest Ingredients website, www.midwestingredients.com, provides company information, as well as content beneficial to individuals and companies in the agriculture food and feed industry. To contact Midwest Ingredients, E-mail: ruthi@midwestingredients.com or call +1.309.385.1035.

Extrusion research center in Pakistan

Dr. Mian N. Riaz, Head, Extrusion Technology Program and Graduate Faculty of Food Science and Technology Program at the Food Protein Research and Development Center, Texas A&M University, and Dr. Faqir M. Anjum, Director, Institute of Food Science and Technology, University of Agriculture Faisalabad, Pakistan, have received a grant of US$709,000 to establish an Extrusion Center at the University of Agriculture in Faisalabad, Pakistan.

The two-year award is from the Pakistan-US Science and Technology Cooperative Program (National Academy of Sciences, US Agency for International Development (USAID) and Higher Education Commission of Pakistan). The selection process was highly competitive, with only 11 awards given for 112 proposals.

The present project will establish the Center for Excellence in Extrusion Technology. This Center will facilitate teaching, research and product development for students. Moreover, this project will strengthen cooperation between two nations in the field of research and development, through close collaboration between scientists from both nations. The Extrusion Center will also provide educational support to private and government entities.

International pet conference

The International Pet Conference launches in 2006. The theme of the conference, from November 14-15, 2006, in Frankfurt am Main, is "International pet retailing—where are the new challenges to be found for the pet business?" The conference is being organized jointly by the trade magazine *PET in Europe* and Management Forum.

Leading representatives from trade and industry have been invited to speak at the conference. The Pet World 2006 trade show will also take place in conjunction with the conference. Further information contact: Dähne Verlag GmbH, Ralf Majer-Abele, Tel: +44.7243.575.230, Fax: +44.7243.575.200, E-mail: maj@daehne.de, Website: www.PET-global.com, www.PETonline.de, www.daehne.com.

JIM MANN, B.S. CHEMISTRY
Problem solver with superhuman dedication
Kemin Technisales Team

After hurricanes devastated the U.S. fishmeal industry, this mild-mannered scientist took to the skies to solve the problem.

Packaging Trends

The packaging industry responds to consumer demands

BY ALEXIS STASSINOPOULOS, PhD

Consumer demand for pet products and services is expanding into almost every area which has typically been reserved for human consumption. The petfood packaging industry has responded to the requirements set by this trend of pet "humanization" and the corresponding demands of pet owners. This trend is moving fast in the European Union, Japan and other high-income countries. Even in developing countries, there are segments of the population which follow the same trends. The relation of the humanization trend to the family income level is well documented by sociologists and anthropologists. It coincides with the fast economic growth observed in various countries. Food packaging is the main customer of the packaging industry, covering more than 50% of its global turnover.

>>Global packaging's future

A detailed and authoritative picture of the packaging sector worldwide is explained in a recent study published by the World Packaging Organization (www.worldpackaging.org) and PIRA International entitled *The Future of Global Packaging Markets.*

A section in the WPO/PIRA packaging report is devoted to new packaging material developments. The study covers 51 countries around the world with a total turnover approaching

US$500 billion. A very important section of this study is the analysis of the key drivers and trends in packaging which will dominate the market. In Figure 1, the views of the respective national packaging member organizations for the next five-year period are summarized. The same trends dominate the petfood packaging sub-sector.

>>Packaging innovations

Parallels indicate that petfood packaging follows the same rules and practices as the trends in packaging for human food. Pet and human food packaging develop along the same lines and make use of the present and future developments in packaging science and technology. High-performance packaging has been developed with strong barrier characteristics and processing efficiency. Active and intelligent packaging design gives better protection to both the product and user, and improves environmental performance and supply chain efficiencies.

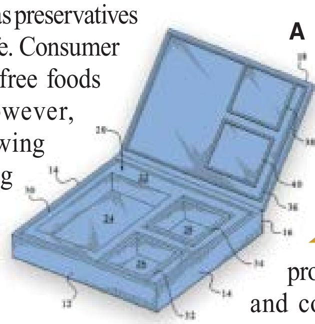
The following describes some of the trends coming in the future for petfood packaging:

•High barrier materials: Developments in barrier material technologies are creating new packaging design opportunities. Such materials include BOPP films, ethylene vinyl alcohol (EVOH), polyvinylidene chloride (PVdC), metallocene polymers and liquid crystal polymers. There are many current and imminent breakthroughs in materials such as nanocomposites, aluminum oxide (AlOx) and silicon oxide (SiOx) coatings, liquid crystalline polymers (LCPs) and "ormocers" (organically-modified ceramics). These various materials can be combined to optimize many aspects of performance through the use of new processing technologies like co-extrusion, coating and plasma deposition techniques.

•Active packaging: Active packaging encompasses a wide range of packaging technologies which perform an active function beyond the passive barrier and mechanical protection functions. Oxygen scavengers are among the most well-known forms of active packaging. These are used in food packaging to prevent the oxidation of oils and fats and the growth of aerobic microorganisms, and in this way increase the product shelf life. Problems arising from excessive oxygen levels can include decomposition of contents, unpleasant odors and flavors, lost freshness, nutritional degradation and also discoloration. Another category of active packaging is the creation of modified gas atmospheres, which preserve products better than the normal air composition. The modified gas atmospheres require the proper barrier packaging.

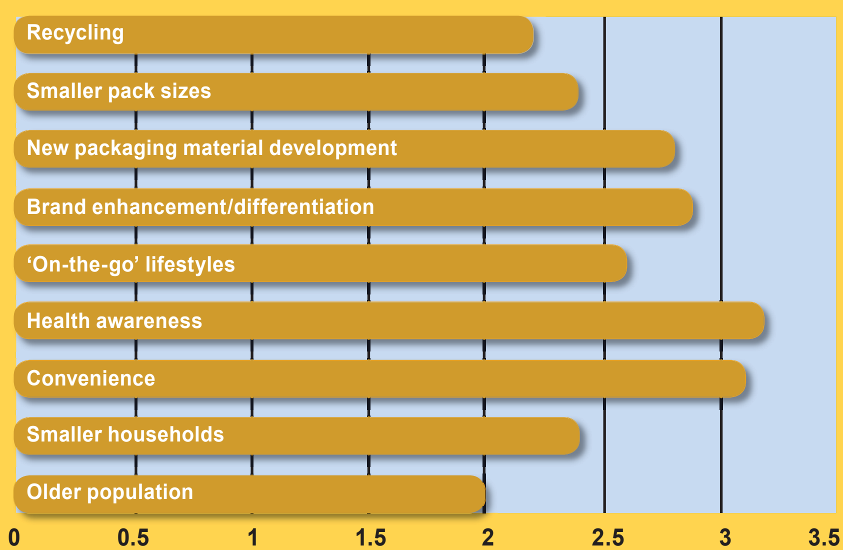
•Antibacterial packaging: Antimicrobial compounds are often used as preservatives in foods to extend shelf life. Consumer demand for preservative-free foods has been growing, however, and there has been growing interest in packaging concepts that reduce or eliminate consumption of preservatives. The incorporation of antibacterial substances in the packaging material matrix which do not migrate into the contents has a clear potential in food packaging applications, but it is likely to be several years before the technology gains widespread acceptance.

•Intelligent packaging: Intelligent packaging assists and enables the real-time linking of merchandise, data and customers across the supply chain—providing visibility, traceability and accountability. It also reduces the risk of spoilage and waste, of tampering and diversion and of abuse through incorrect storage and use. Examples of intelligent or "smart" packaging technologies are radio frequency identification (RFID) including smart active labels (SALs), electronic article surveillance (EAS), electromagnetic identification (EMID) and printed polymer/laminar electronics. A second category of intelligent packaging includes methods aiming to protect products from tampering and counterfeiting. Examples are thermochromic and photochroming inks and pigments, holographic printing, etc.



A diagram of a container designed to hold a petfood snack, with different compartments—i.e., a dry petfood snack with a highly-palatable paste or sauce (patent MXPA04000848, Nestec SA, 2004).

•Digital printing for packaging: Digital printing enables the printing of packaging materials on demand and with a quick response time, personalizing and customizing images, as well as short-run, full-color process printing. The marketplace is increasingly demanding and expects these capabilities and



>>Figure 1. Respondents' views on major drivers to their packaging sector's growth in their respective national packaging industries over the next five years. Key:=averaged responses, 4=critical; 3=very important; 2=fairly important; 1=relevant, but not important; 0=not at all important. Source: Pira International Ltd survey of WPO member organizations (2005).

Beyond the box....

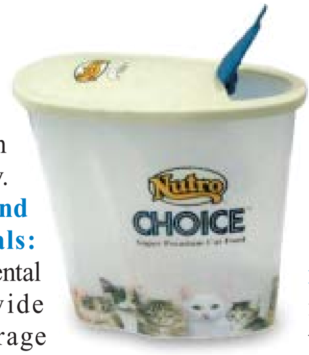
In summary, here are the major packaging trends affecting the future of the petfood industry:

- >High barrier materials;
- >Active packaging;
- >Antibacterial packaging;
- >Intelligent packaging;
- >Digital printing for packaging;
- >Down-gauging/lightweight materials; and
- >Improved convenience.

qualities that only digital printing can deliver cost effectively.

•Down-gauging and lightweight materials: One effect of environmental legislation worldwide has been to encourage the packaging industry to reduce the amount of packaging used by lightweighting of materials. This is being done across the board in metal, glass, plastic and paperboard packaging.

These capabilities have been made possible through the development of new technologies aimed at the strengthening of materials through new formulations and processes.



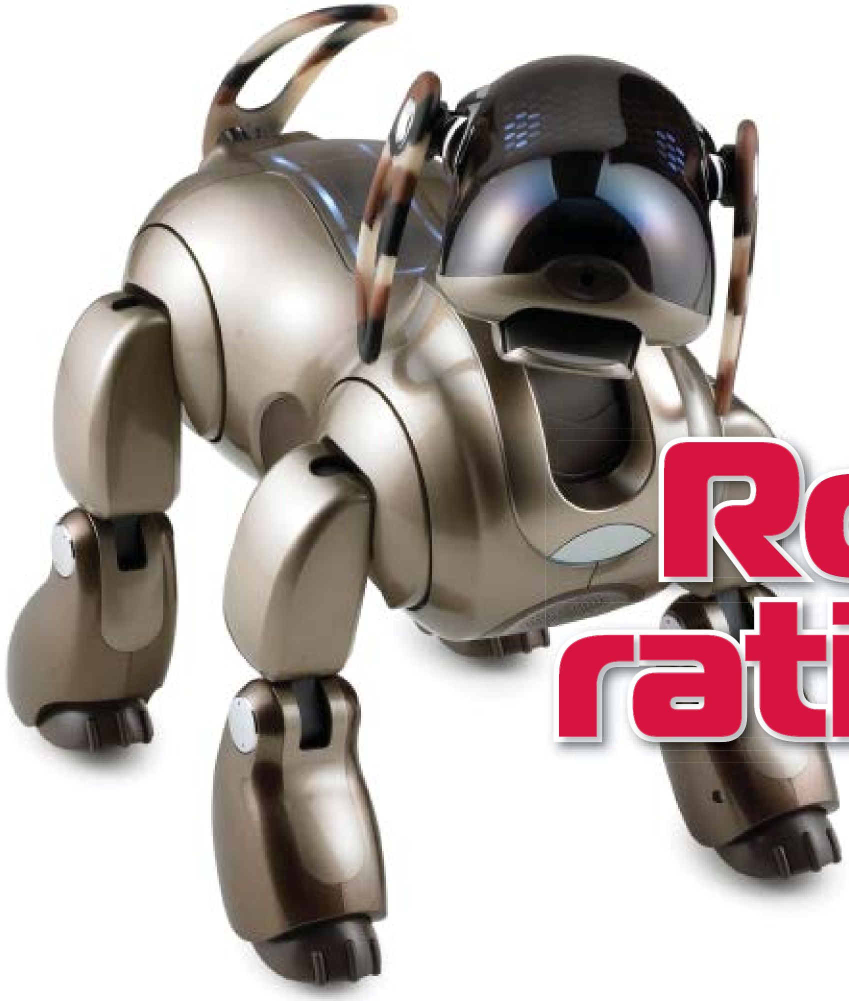
A canister recently used as a promotional item in Europe.

Chinese dog food product packaged in a stand-up pouch.

•Improving convenience in use: The packing industry is constantly creating materials to make products more user-friendly and convenient to use. Examples are food packages suitable for heating in both the microwave and conventional oven, as well as easy opening and closing packages aimed toward older people's convenience of use issues.

Look for articles on these packaging trends in future issues of *Petfood Industry* magazine.

Dr. Stassinopoulos is president of the World Packaging Organization (WPO). Contact: Box 5604, SE-114 86 Stockholm, Sweden, Tel: +46.8.676.70.78, Fax: +46.8.24.72.77, E-mail: stas@otenet.gr, Website: www.worldpackaging.org.



Robotic rationale

Palletizing systems offer speed, flexibility, safety and a good ROI

BY WILLIAM J. DONOHUE

Robotic palletizing systems have been coming on strong for several years in the petfood industry. Today they are used to palletize a wide range of products in many types of packaging. This includes bags, cases and rigid plastic containers. Often, these systems can handle multiple production lines running different packages simultaneously. Robotic palletizing systems offer numerous advantages over conventional palletizing equipment:

- Greater flexibility;
- Labor savings;
- Improved safety;
- Better productivity;
- Lower maintenance costs; and
- Significantly reduced changeover times.

Robot integrators fit robotic systems into production systems. They provide, and often manufacture, conveyors, robot infeed systems and control systems. Make sure you choose your integrator carefully.

Reliability

Robots are well proven in the most demanding applications. They were developed for the automotive industry where they had to provide unparalleled reliability, because downtime in the auto industry can be extremely expensive. Now, most reliable robot manufacturers provide equipment that lasts up to 25 years.

User-friendly software

User-friendly software is critically important for a company venturing into robotics for the first time. One needs to carefully evaluate the petfood plant's normal production staff and decide if the existing staff can be trained to run the system. Not all robots are alike, so it is best to choose a major robot manufacturer and integrator who can demonstrate the user friendliness of the system.

Reduced staffing

Robot systems are usually designed to run at floor level. Gone are the days of operators stuck all day on high-level platforms. The trained robot attendant can often perform numerous other functions in the line while keeping an eye on the robotic system. This can significantly reduce labor costs.

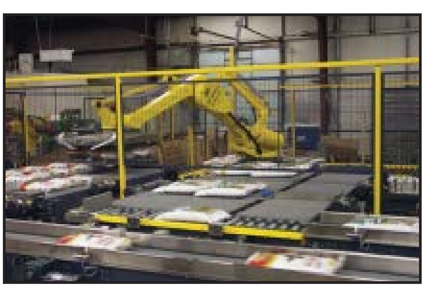
Bag production lines

Single package tooling: For bagged product production lines running up to 20 bags per minute, robotic systems typically use a clam shell style end-of-arm tool. This style tooling allows for fast robot moves. However, some users complain that the three second pick, place, return cycle is too fast and results in the need to drop or sometimes

Above, a robotic palletizer is handling two bag production lines and one bundle production line.

This system palletizes (or depalletizes) 100-lb. jumbo bags from two production lines simultaneously.

A robotic system simultaneously palletizes two bag production lines and one box production line.



A robotic palletizer uses high-speed, full-layer forming techniques to arrange 20-50-lb. bags into full-layer patterns. The infeeds automatically change over via a touch screen.

This system palletizes full layers of 50-lb. bags from two production lines, and bundles from a third line.

throw the bags in order to achieve the required production rate. This can lead to decreased pallet stack quality.

Multiple package tooling: Often robotic systems are designed to pick and place multiple packages each cycle. Some robotic system suppliers are using layer-forming techniques in order to be able to pick multiple bags at a time. This allows the robot to both move more slowly and increases the number of packages per minute palletized. Bags are placed gently, not dropped, resulting in more uniform pallet loads.

For example, a three-bag pick, place, return cycle can run with three times the cycle time of a single-bag-pick system. This is a 9-sec. cycle for 20 bags per minute or a 6-sec. cycle time for 30 bags per minute. The tooling is normally vacuum, but sometimes a clamp-style tool can be used.

Full-layer tooling: Full-layer robotic systems have the most gentle cycle and allow for the highest production rates. These systems offer speeds of 40-60 bags per minute (up to seven layers per minute on some products). Often standard layer-forming techniques are used. However, new, more efficient systems are being introduced to improve the standard methods. These are systems that offer two robots working simultaneously to palletize at high rates. They have a layer-forming robot working to make the layers and a full-layer palletizing robot to palletize the loads, apply top sheets and sometimes even pick and place the pallets. These systems often run 30-60 bags per minute and offer programmable (automatic) changeover from a touch screen.

Flexible and versatile

The flexibility and versatility of properly integrated robotic palletizing systems allow for simultaneous handling of multiple lines running different products. This dramatically reduces floor space requirements by replacing multiple high-level palletizing machines with one robotic system at floor level.

Some petfood manufacturers are supplying petfood in 1-5 gallon

A palletizing set-up uses patent-pending tooling to pick and place the heavy tubs— four at a time.

plastic tubs. For this packaging, robotic systems offer better flexibility, reduced floor space and lower maintenance costs vs. conventional equipment.

Buyer beware

Robot integrators vary over a wide range—from small to large and from inexperienced to world-class. It is usually best to choose an integrator whose main business is robotic palletizing. The companies that have gotten into robots as a sideline are not your best choice. Try to select an integrator who has been in the robotic palletizing business for 10 years or more.

The integrator should have dozens of systems in the field. Also, the integrator should be able to demonstrate his competency in tooling, programming and peripheral equipment.

Preferably the integrator should manufacture everything except the robot, including the conveyors, robot infeed systems and the control systems. In addition, make sure the integrator has the depth of resources to support your project now and in the future.

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Allow me to introduce you to my lab partner.


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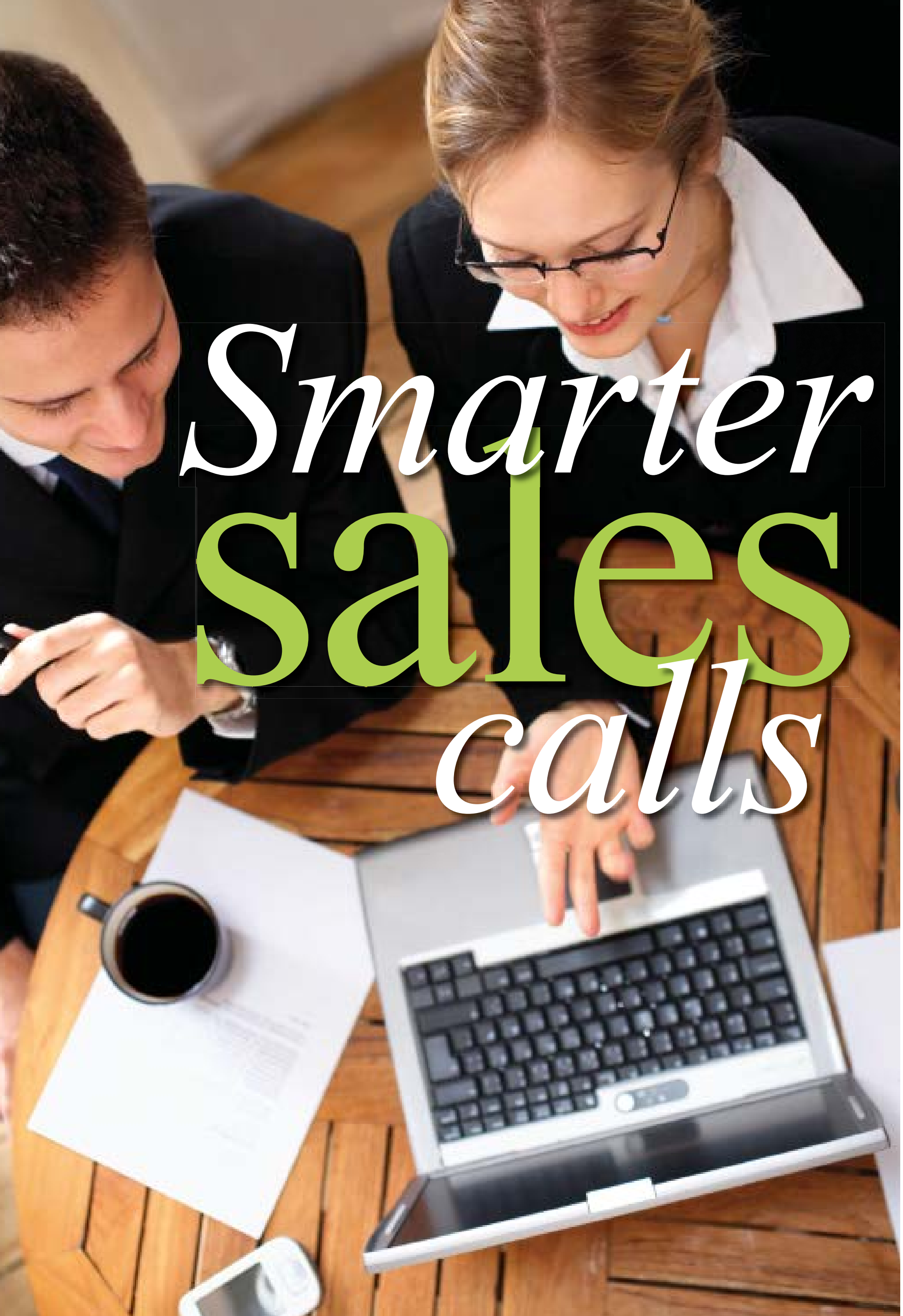

Smarter sales calls

The data-driven plan: A tale of two sales calls

BY MYLES BESKIND

The key to making more effective sales calls is in providing your customer with the information they need to make the best purchasing decisions. If a petfood manufacturer's sales representative can provide a store manager with data demonstrating strong sales of a particular product, they are more likely to get the shelf space for their product. In this article, we will examine how the right data can help a manufacturer get more of their product on the shelves and, ultimately, better sales figures.

What does it take?

Now, let's look at an example of two sales representatives on a call. Manufacturer A's salesman calls on You Pet Your Life, our fictional store. He walks the store, and is happy to see all his products neatly displayed on the last row of the petfood section. He makes small talk with the clerk, while the manager finishes a phone call. In his conversation with the manager, he asks how business has been, thanks her for being such a loyal customer and mentions the two new flavors of pet treats coming out.

Manufacturer B's salesperson calls on the same store the next day. The store manager is busy, but clears time on her schedule for a working session with the representative. Together, they review the results of last month's in-store demonstration and the increase in sales of the small bags of cat food which followed. The manager thanks the rep for recommending that she add those small bags in their previous meeting. They talk about the expanding line of treats, and the manager decides to make room for the new products by dropping the slow-selling treats from Manufacturer A.

What did the second salesperson do better? Obviously, the rep from Manufacturer B had done her homework. More precisely, she was armed with the store and SKU-level data and the analyses necessary to prove the value of her product line to You Pet Your Life. Of course, we all hope that our sales team is like that of Manufacturer B. Assuming we're not quite there just yet, let's examine the steps along the way to sales success.

What data do I need?

We all know that having a customer's buying history is a requirement in planning an effective sales call. We want as much detail as possible, going back as far as possible. But all that data can become overwhelming, so adjust your scope to what's manageable. SKU-level data are ideal, and typically two years of purchases summarized monthly are adequate.

The purchases history alone can't tell the story. What other events may have influenced the purchasing patterns? An often-overlooked element of the data is promotion history and results. Can we measure purchases during the period of a particular coupon or give-away campaign?

It's not only sales figures that are important. We also want to know what stores comprise the local competition for our customer, whether those stores are also our clients or not. Which of our SKUs do those stores carry, if any? On a regional or national basis, what percentage of the stores carry each SKU?

The distributor conundrum

If you sell through a distribution channel, how do you get the data you need? While some distributors will initially put up an argument like "that's my proprietary information," they will usually agree to share the data with you once you explain how you're going to use it to plan more effective sales calls. That's a classic win-win for the distributor.

In the petfood industry, the odds are they are already providing similar sales data to some of the petfood companies. There are also third parties who can act on your behalf in collecting the data. Sometimes this adds to a distributor's comfort level. When all else fails, a manufacturer can and should require detailed sales data on a monthly basis as part of their standard Distribution Agreements. There can be provisions to protect the distributor, such as an agreement not to share the data with any other distributor.

Making the investment

We all recognize that selling to our existing accounts is much easier than finding a new customer. So, if some additional effort would increase sales to the stores that already carry your merchandise, that's worth quite a lot, right? Can you afford not to make the effort?

Still, there are investments to be made here, and you might not be ready to take on all of the analysis for all your customers at once. Start simply, using a program like Excel and do the work "by hand" in spreadsheets for your top 10 accounts

Successful sales steps

Let's examine the steps along the way to sales success:

✔ **What data?**
SKU-level data are ideal—typically two years of purchases summarized monthly. An often overlooked element of the data is promotion history and results. We also want to know what stores comprise the local competition for our customer.

✔ **How do you get the data you need?**
Distributors will usually agree to share data with you once you explain how you're going to use it to plan more effective sales calls. There are also third parties who can act on your behalf in collecting the data.

✔ **Data analysis**
Start simply, using a program like Excel to create spreadsheets for your top 10 accounts, limiting history to the last few months. There are many services, including some firms that work exclusively in the petfood industry.

✔ **Effective sales**
Do your homework by gathering and analyzing the historical data, establish specific goals based on the data and present your well-supported recommendations to your customer.

(or the top 10 per salesperson or sales manager, etc.), limiting history to the last few months. As you see results and refine your processes, you should consider more automated solutions that may have high up-front costs, but are relatively inexpensive to maintain.

You could also consider outsourcing the analysis work. Many petfood manufacturers tell us their core competency is in the science and the nutritional formulation of their products, not in crunching numbers. There are many avenues for these services, including some firms that work exclusively in the petfood industry. You can find these organizations on the Internet. Try doing a Google search for "petfood sales data."

Analyzing the data

Armed with the proper data, the possibilities for how to analyze it are virtually limitless. Let's examine three types of analyses likely to have the greatest impact on the effectiveness of your next sales call:

✔**Gap analysis:** One of the most compelling analyses a manufacturer can perform is to determine which stores are carrying only a portion of a line. For example, if a particular store carries only large bags of a given brand of petfood, an opportunity exists to increase sales and margin by having the store add the smaller bags. A standard SKU list, combined with totals from purchases history data provide the basic elements needed during the sales call. Highlight a new category, package size or flavor, and discuss how these extensions of the brand can help the store increase sales and margins.

✔**Market penetration:** Your customer probably already knows they don't carry all of your line. But they have a limited amount of shelf space available. To get more of that real estate in the store, you could show your customer your market penetration nationally, regionally or in their local market. If 60% of the retailers in town carry both your bagged and canned food, that may help convince the customer who has only carried your cans to make room for your bags as well.

✔**Trend data:** If you have more than a handful of SKUs, it becomes difficult to spot trends in historical purchases data. Your analytical tools should do the work for you and identify SKUs, categories and brands that are slipping or soaring outside of a range you define as normal. Spend the time on the sales call asking about the factors that have contributed to those trends. Look at trends using monthly data for the prior rolling quarter and quarterly data for the prior rolling year.

Effective sales

The most effective sales call is the one in which the time is spent discussing the future, not explaining the past. Do your homework by gathering and analyzing the historical data, establish specific goals based on the data and present your well-supported recommendations to your customer.

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E-News

Podcasts: Is anyone listening?

In its new report, *Podcasting Hits the Charts*, Forrester Research states that only 1% of online households in North America regularly download and listen to podcasts. Forrester projects just 700,000 households in the US in 2006 will use podcasting, and that this will grow to 12.3 million households by 2010.

Although other sources have put the figure as high as 80 million by 2010, eMarketer, in its recently-released report, *Podcasting: Who's Tuning In?*, projected a very similar audience of 15 million by 2010. eMarketer says that while the future of original podcast programming may be in doubt, the ability to time-shift material from other channels—radio, news, webcasts—will create a growing, perhaps vast, audience.

Computer games pit pets vs. owners

If you've ever wanted to match wits with your pet hamster, *Mice Arena* could be the game for you. As reported by Wired.com, Computerized movements in *Mice Arena* are mapped to and from the real world, where your hamster chases "you" by pursuing a real piece of bait. Researchers at Emerging Art and Architecture Research Group (RASTER), and Singapore's Mixed Reality Lab have so far developed a game engine for *Mice Arena*. They are also in the process of building a remote-control bait mechanism for the hamsters to chase. They expect to demonstrate a fully-functional prototype by November.

"We want to enable pets to play games in a way very similar to the way human players play," said RASTER's Vladimir Todoroviæ, a collaborator working on the Metazoa Ludens project. "To play a computer game with your hamster would definitely make us think about where we have come with digital tradition now."

The goal of the game makers is ambitious: To merge human spaces with pet spaces through pervasive computing interfaces. By creating high-tech, pets-versus-owners computer games, researchers hope to gain new insights into animal behavior, and perhaps develop new technologies that could close the gap between the species.

In addition to *Mice Arena*, two other games in the Metazoa Ludens series have been proposed, including one involving chickens. All the games are being designed to remove the dominant "human edge" and allow both animals and people to have an equal chance of winning, while potentially opening up an entirely new dimension of enjoyable pet-human interaction.

"There is a history and tendency of playing games with animals but most games use very simple items that aren't as 'smart' as computers," said Todoroviæ. "For example, people use tree branches when playing with dogs. What we are exploring is a device that will enable clearer relations and maybe bring some completely unexpected results."

Ross launches comprehensive new website

Charles Ross & Son Company recently announced the launch of a new website covering the company's products and capabilities. The new website, www.mixers.com, includes background information on the company, its facilities and its extensive line of equipment. Included on the new site are:

•Product information on all mixers, blenders, dryers, dispersers, vessels and control systems;
•Multi-media product tour;
•Technical articles;
•Photographs of typical equipment;
•Literature;
•Links to technical publications; and
•Test and Development Center details.

BY DAVID A. DZANIS, DVM, PhD, DACVN

Organic regulations

Task Force makes recommendations for petfoods

The Organic Pet Food Task Force, convened under the auspices of the National Organic Standards Board, has released its recommendations for long-needed amendment of the United States Department of Agriculture (USDA) regulations pertaining to organic foods and feeds. A complete copy of its report may be found at http://www.ams.usda.gov/nosb/meetings/OrgPetFood.pdf. If the Task Force recommendations are accepted by the Board (and regulations based on such ultimately promulgated by USDA), it will go far in clarifying when and how "organic" claims for petfoods can be made.

Failure of the regulations to allow for reasonable use of synthetic nutrients must be rectified. — David Dzanis

Background

More than a decade after Congress passed the Organic Foods Production Act, USDA regulations for organic foods finally became effective in 2002. Regretfully from the petfood industry perspective, the regulations only applied to foods for human consumption and to livestock feeds. The rules for livestock feeds were very important to establish early in the process, since animals intended to be the sources of organic meat, milk and eggs for human consumption must be fed organic feed. Establishing rules for organic petfoods, however, was considered to be a less critical need at the time.

Unfortunately, the existing regulations for neither human foods nor livestock feeds were a good fit when it came to petfoods. The established human food categories [i.e., "100% organic," "organic" (95% organic ingredients) and "made with organic ____" (70% organic ingredients)] make sense when applied to petfoods. However, the human food regulations do not provide for many of the ingredients desirable, if not necessary, for inclusion in petfood products. On the other hand, livestock feed labels are not allowed to bear the third ("made with") organic claim. While that exclusion might make sense when dealing with food-producing animals, it would be unnecessarily restrictive when dealing with petfood products. Also, prohibition of use of mammalian and poultry slaughter by-products in organic livestock feeds could not reasonably be expected to apply to dog and cat foods for obvious reasons.

The lack of specific regulations has made the production of organic petfood confusing at best. At first, USDA told the industry and the Association of American Feed Control Officials (AAFCO) that the organic regulations would apply (http://www.aafco.org/organic_regs_pet_foods.pdf). A couple of years later, it issued a statement that products that were not subject to specifically-applicable USDA regulations (including petfoods) could not bear the USDA Organic Seal or otherwise imply compliance with the organic regulations. While that statement was subsequently rescinded (I can no longer even find evidence of its existence on the National Organic Program website), USDA still never has made it clear as to if and how organic petfoods could and should be labeled.

Task Force recommendations

The Task Force recommends amendment to the livestock feed regulations versus the human food regulations as the means to incorporate petfoods into the organic rules. This makes sense, since federal and state agencies generally regulate petfoods and livestock feeds together as an entity separate from human food regulation. To do that though, there must be additional changes to provide for exceptions from the livestock feed regulations in some matters.

For example, the amendments would provide for "made with organic ____" claims on petfood labels, even though such claims are not allowed on livestock feed labels. Petfoods would also be exempt from the restriction on use of slaughter by-products. At the same time, provisions to allow use of many of the synthetic nutrient ingredients necessary to help ensure nutritional adequacy of animal feeds, but not provided for in the human food regulations, are also incorporated in the proposed amendments. In fact, the Task Force has suggested that additional synthetic nutrients that have yet to appear on the "National List" of approved ingredients for livestock feeds be considered for inclusion in the List for use in petfoods.

To me, this last recommendation

helps solve what I think is the most critical hindrance for the production of organic petfood at this time. I know of several circumstances where third-party certifying bodies have failed to allow use of nutrients like taurine in cat food, despite the fact that it is nutritionally essential to that species. I don't blame the certifiers. They are just following the rules, and could face severe penalties (including loss of accreditation) if they are lax in their oversight. However, this failure of the regulations to allow for reasonable use of synthetic nutrients must be rectified if organic petfoods are to come under USDA regulation.

While I find most of the amendments to be well thought out and reasonable, my major adverse comment regarding the proposal is how it deals with foods for specialty pets (e.g., small mammals, birds, fish, reptiles). The Task Force opines that foods for these species should be included in the new petfood rules. The proposed amendments even define "pet," "specialty pet," "pet food" and "specialty pet food" similarly to AAFCO. However, unlike AAFCO, the regulations to which the definitions are pertinent only reference "pet food," and not "specialty pet food."

While there is an added caveat in the "pet food" definition to include "specialty pet food" when applied to the regulations, such wording is self-contradictory and clumsy at best. I recommend that unless there is to be a regulation that is intended to apply to foods for dogs and cats, but not those for specialty pets (I couldn't find one), it would appear much clearer for the purposes of these regulations to simply define "pet" and "pet food" more broadly as to incorporate specialty pets (e.g., "Pet: dog, cat, or any domesticated animal normally maintained in a cage or tank, such as, but not limited to…").

On the other side of things, the Task Force recommends that foods for horses, llamas, alpacas, rabbits and wild birds not be included in the new petfood rules. That's fine, saving that except for horses (which are already defined as "livestock"), the amendments would cause products for these species to fall into a regulatory limbo. Without some additional clarification, for example, rabbits may easily be presumed to be part of the specialty petfood category.

If the Task Force's intent is to be clear, I respectfully suggest "other ruminants" and "rabbits" be expressly included in the "livestock" definition. Wild birds clearly aren't "livestock," though, so perhaps foods for wild birds do not deserve to be part of the organic regulations at all. However, if that is the case, I further recommend that "wild birds" be expressly excluded from the "pet" definition for clarity's sake.

Dr. Dzanis is a writer and independent consultant for the petfood and animal feed industries on matters related to veterinary nutrition, labeling and regulation. He can be reached at Tel: +1.661.251.3543, Fax: +1.661.251.3203, E-mail: dzanis@aol.com.

BY GREG ALDRICH, PhD

Cellulose

Fiber to the max

Cellulose is the structural carbohydrate that provides strength and rigidity to trees, blades of grass, stalks of wheat, bolls of cotton and is one of the most abundant biological polymers in the world. It is where most of the carbon from the photosynthetic conversion of CO_2 to O_2 is deposited. Chemically, cellulose is comprised of a series of glucose units linked in the ß-configuration at sequential 1 and 4 positions. While at the elementary level it is very similar in structure to starch, the single change in the linkage from α to β alters its functional properties.

Unlike "cheap fillers," cellulose is not added to lower the cost.

— Greg Aldrich

Structurally, this is good for the production of building materials like lumber; but, nutritionally, it presents some challenges. This is because mammals have enzymes capable of degrading the α-1,4 glucose linkages of starch (e.g., amylase) but not the β-linkages of cellulose. Ruminant animals, like cattle and sheep, and insects, like the termite, have developed symbiotic relationships with fermentative bacteria and fungi that are capable of unlocking these strong hydrogen bonds and thereby extracting the energy stored within.

What does this have to do with pet diets? A great deal, as it turns out, because cellulose— primarily powdered cellulose—is used in large quantities.

The ups and downs of powdered cellulose

Petfoods containing high levels of cellulose are typically intended for weight management, diabetes and hairball control, to name a few. In weight control diets, the virtual indigestibility of cellulose translates into negligible food energy contribution. On a gross energy basis, cellulose is fairly similar to starch (about 4 kcal/g), but the metabolizable energy (ME; useful energy) is virtually zero. So, cellulose can be a very useful tool to help meet the low ME requirements necessary to call a petfood "light," "lite" or "low calorie" in accordance with the AAFCO (2006) guidelines. Without cellulose, this is very difficult to do with conventional ingredients.

The crude fiber content of commercially-available powdered cellulose is around 75% of the organic matter (Kienzle, *et al*., 2001a) and the total dietary fiber content is nearly 100%. It is mostly insoluble fiber, and fermentation *in vitro* and *in vivo* is negligible for both the cat and dog (Sunvold, *et al.*, 1995a, b). When added to the diet at high levels, this amount of fiber can negatively affect the digestibility of other nutrients like protein and minerals (Muir, *et al.*, 1996; Kienzle, *et al.*, 2001b). But, this can also be exploited in the case of diabetes where cellulose has been shown to aid in the management of glucose in the diabetic dog (Nelson, *et al.*, 1991) and cat (Nelson, *et al.*, 1998; 2000) when added to the diet in sufficient quantities.

However, high levels of cellulose may be detrimental to colonocyte morphology long term (Hallman, *et al.*, 1995) by robbing these cells of critical fuel, like butyrate, due to the reduced fermentation that other more fermentable fibers could provide. In addition, while the greater indigestible mass in the stomach can act to improve conveyance of the hair mass for hairball management in cats (Davenport, *et al.*, 2002), adding cellulose to the diet increases fecal volume (Silvio, *et al.*, 2000).

Commercial cellulose sources

There are various forms of powdered cellulose available from trees like pine and beech to bamboo and cotton. By and large, the cellulose used in petfood applications is derived from pine trees. The ingredient starts its journey in the pulping mills—the same mills used to produce paper. The pulp is made into long continuous sheets and rolled just like paper stock going to the local newspaper. However, cellulose intended for food and feed is ground through specially-designed hammer mills, then sized to certain particle lengths in giant "ball-mills."

From here it is packaged in bags and bulk sacks for distribution to the respective markets. The cost of powdered cellulose is based on the starting material and particle size. For petfood, the particle size may be from 50 to 500 micron; the smaller the particle size the higher the price. Unlike "cheap fillers" though, cellulose is not added to lower the cost. On the contrary, on a pound-for-pound basis, cellulose can be one of the more expensive ingredients in a formula. While powdered cellulose is the form most commonly used in petfood, there are other forms that one might encounter.

Microcrystalline cellulose is a purified, partially-depolymerized cellulose used primarily for the production of tablets and pills. Carboxymethylcellulose is derived from cellulose that has been reacted with akali and chloroacetic acid. It is used in the food industry as a thickener, emulsion stabilizer, suspending agent and an aid to retard staling. Ethyl cellulose is used as a polymer in coatings, binders and for controlled release of pharmaceuticals. For feed, it is only allowed as a binder or filler in dry vitamin preparations (AAFCO, 2006).

A delicate balance must be struck for proper application of cellulose.

The art of balance

Cellulose use in petfoods has found application in lowering calories, assisting glucose control in cases of diabetes and managing the transit time of gut contents. However, these benefits are offset by the reduction in overall digestibility, increased stool volume and diminished colonic fermentation. Thus, a delicate balance must be struck for proper application of cellulose by providing additional fortification of proteins and fats, minerals and complementary fermentable fibers.

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Research Notes

Effects of high-protein or high-carbohydrate diets on weight loss

The objective of this study was to compare the effect of two diets on weight loss in two groups of seven obese Beagle dogs, matched for age and gender. The first group received a high-protein (45%, 50%, 5% metabolizable energy (ME) from protein, fat and carbohydrate, respectively, 4484 kcal ME/kg dry matter DM) and the second group, a high-carbohydrate (36%, 19%, 46% ME from protein, fat and carbohydrate, respectively, 2871 kcal ME/kg DM) diet during an eight-week study.

Food amount was reassessed each week and adjusted, when necessary, to obtain a weekly weight loss rate of 1-2% starting body weight (sBW). BW was recorded weekly. Initial and final body condition scores (BCS) were evaluated on a 9-point scale and body composition was calculated using morphometric equation. Results are presented as mean ± SEM. Values are considered as significantly different for a p value <0.05. At the beginning of the study, no difference was observed between the two groups for BW (16.9 ± 0.7 kg), BCS (7 ± 0.3), % overweight (31 ± 5%) or body fat mass (30.9 ± 1.4% sBW).

The two diets resulted in a similar BW loss (2.18 ± 0.29% sBW/week, total BW loss 2.6 ± 0.2 kg). However, a greater loss of body fat mass was observed with the high-protein diet (-4.8 ± 1.9% versus =1.9 ± 0.9%). Moreover, mean energy intake to achieve the same BW loss was significantly higher with the high-protein diet (547 ± 6 kcal EM/day versus 495 ± 5 EM/day). In conclusion, weight loss with a high-protein, low-carbohydrate diet resulted in a greater loss of fat mass, allowing higher energy intake to induce the same BW loss rate.

Source: Jeusette, I, Compagnucci, M, Romano, V, Vilaseca, L, Crusafont, J, Sole, JM, Castell, E and Torre, C, 2005. Proceedings of the Nestlé Purina Nutrition Forum, St. Louis, Missouri, USA.

Key concepts

➤ Effects of high-protein or high-carbohydrate diets on weight loss

(Nestlé Purina Nutrition Forum): Weight loss with a high-protein, low-carbohydrate diet resulted in a greater loss of fat mass, allowing higher energy intake to induce the same body weight loss rate.

➤ Effects of diet on clinical signs of EPI in dogs

(*JAVMA* 228:225-229): Responses to three different special diets varied among individual affected dogs. Because responses to the feeding regimens were unpredictable, it is suggested that feeding regimens be individually formulated for dogs with exocrine pancreatic insufficiency (EPI).

➤ Risk factors of FLUTD in indoor-housed cats

(*JAVMA* 228(5):722-725): Lower urinary tract signs in indoor-housed cats may be more closely associated with cat-related factors than with demographic or environmental factors.

➤ *In vivo* digestibility of meal-based diets

(*Am J Vet Res* 67:88-94): The objective of this study was to determine an optimal window for determining peak flatulence and evaluate the effects of oligosaccharides and supplemental β-mannanase in soybean meal-based diets on nutrient availability and flatulence. Diets containing <22.4 g of stachyose/kg and <2 g of raffinose/kg did not alter digestibility or increase flatulence in dogs.

➤ A novel cognitive palatability assessment protocol

(*J Anim Sci* 82:2200-2206): This study was meant to determine whether a cognitive protocol could be used to determine food palatability in dogs. Study findings indicate the protocol established circumvents many of the limitations associated with other palatability assessment techniques.

Effects of diet on clinical signs of EPI in dogs

This study was carried out to assess the effects of dietary modification on clinical signs of exocrine pancreatic insufficiency (EPI) in dogs. In a blinded, randomized crossover study, twenty-one dogs with EPI were fed the diet they received at home for two weeks. Thereafter, they received three special diets (a high-fat diet, a high-fiber diet and a highly-digestible, low-residue diet) for three weeks each. Owners scored dogs daily for the last two weeks of each three-week period for severity of six clinical signs including appetite, defecation frequency, consistency of feces, borborygmus, flatulence and coprophagia. An EPI index was calculated for each dog by adding the daily scores for each clinical sign.

Significant differences in daily EPI indices among diets were observed in 20 dogs. The original diet appeared to be the most suitable in eight dogs, whereas the high-fat diet was most suitable in five dogs, the high-fiber diet was most suitable in four dogs and the low-residue diet was most suitable in two dogs. In one dog, the lowest EPI index score was the same during the original diet and the high-fat diet feeding periods. One dog did not complete the feeding period for the high-fiber diet. Differences in mean EPI indices among diets were not significant.

Results indicated that responses to different diets varied among individual dogs. Because responses to the feeding regimens were unpredictable, it is suggested that feeding regimens be individually formulated for dogs with EPI.

Source: Westermarck, E and Wiberg, ME, 2006. *JAVMA* 228:225-229.

Risk factors of FLUTD in indoor-housed cats

This study was conducted in order to determine associations between environmental and cat-related factors and lower urinary tract signs in indoor-housed domestic cats. In a case-control study, 238 healthy cats, 157 cats with clinical signs of lower urinary tract disease and 70 cats with other diseases were used. Data collected from owners of the cats were analyzed. Descriptive statistics, environmental variables and physical and

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Coating Excellence International, 975 Broadway, Wrightstown, WI 54180 behavioral signs were analyzed by use of ANOVA and logistic regression analysis to assess which factors were associated with clinical signs of lower urinary tract disease.

The only demographic or environmental factors associated with lower urinary tract signs were older age and months owned. In contrast, cats with clinical signs of lower urinary tract disease had significantly greater owner-observed gastrointestinal tract signs and scratching, fearful, nervous and aggressive behaviors. Lower urinary tract signs in indoor-housed cats may be more closely associated with cat-related factors than with demographic or environmental factors.

Source: Buffington, CAT, Westropp, JL, Chew, DJ and Bolus, RR, 2006. *JAVMA* 228(5):722-725.

In vivo digestibility of meal-based diets

The objective of this study was to determine an optimal window for determining peak flatulence and evaluate the effects of oligosaccharides and supplemental β-mannanase in soybean meal-based diets on nutrient availability and flatulence. Six dogs were used in a 2 X 3 factorial arrangement of treatments in a 6 X 6 Latin square experiment to evaluate the digestibility, flatulence and fecal odor metabolites of low-oligosaccharide low-phytate soybean meal (LLM), conventional soybean meal (SBM) and poultry by-product (PBP) meal diets with or without supplementals β-mannanase (5 g/kg).

Enzyme supplementation had no effect on total tract dry matter (DM), nitrogen digestibility or digestible energy; however, differences between protein sources did exist for total tract DM digestibility and digestible energy. The PBP meal had higher DM digestibility and digestible energy (mean, 0.914 and 4,255 cal/g), compared with soy-based diets (mean, 0.870 and 4,049 cal/g). No differences were detected for any treatment regardless of protein source or addition of supplemental enzyme for any flatulence components analyzed. No differences were detected for all fecal odor metabolites regardless of addition of supplemental enzyme; however, differences between protein sources were detected. The PBP meal had lower concentrations of carboxylic acids and esters and higher concentrations of heterocycles, phenols, thio and sulfides, ketones, alcohols and indoles than LLM and SBM.

Thus, diets containing <22.4 g of stachyose/kg and < 2 g of raffinose/kg did not alter digestibility or increase flatulence in dogs.

Source: Yamka, RM, *et al.*, 2006. *Am J Vet Res 67:88-94.*

A novel cognitive palatability assessment protocol

The purpose of this study was to determine whether a cognitive protocol could be used to determine food palatability in dogs. Five Beagle dogs were trained on a three-choice object-discrimination learning task. After establishing object preferences, the preferred object was associated with no reward; a second object was associated with the dog's normal laboratory diet (Purina Agribrands Canine Lab Chow No. 5006; Agribrands Purina Canada, Inc., Woodstock, ON, Canada); and the third object was associated with a commercial (Hill's P/D; Hill's Pet Nutrition Inc., Topeka, Kansas, USA) diet.

In the discrimination-training phase, dogs were trained until they learned to avoid the no-reward object. They were subsequently given an additional 20 test sessions, which were used to determine food preference. In the reversal phase, which involved reversal learning, the object-food associations were modified, such that the object that was previously associated with Hill's P/D diet and vice versa. Once the dogs learned to avoid the no-reward object, they were tested for an additional 20 sessions. All subjects learned to avoid the no-reward object during the initial learning, and the number of choices to the object associated with the Hill's P/D diet was greater than the number of choices to the objects associated with the dry laboratory diet ($P<0.05$) and no reward ($P<0.05$), indicating a strong preference for the Hill's P/D diet.

The object preferences were reversed in only three of five dogs when the food-choice associations were reversed, although the two phases did not differ significantly from one another. The protocol in the study provides a robust measure of food palatability and circumvents many of the limitations associated with other palatability assessment techniques. The present protocol should be useful as a replacement or adjunct to other tests of palatability, but requires further validation by comparing the assessment of more similar and novel foods directly with other palatability tests.

Source: Araujo, JA and Milgram, NW, 2004. A novel cognitive palatability assessment protocol for dogs. *J Anim Sci* 82:2200-2206.

Market place

The MARKET PLACE is a special advertising section which contains no editorial material. Format is similar to a classified section. Advertising is grouped. Seperation from competing advertising cannot be guaranteed. Advertising in the MARKET PLACE may not be combined with display advertising for frequency discounts. Maximum size in Market Place is 3 inches (75mm).

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Product News

Wide range of IML solutions

IPL Packaging now offers in-mold labeling IML for an array of containers ranging from 12-oz., up to four gallons. Offering the largest variety of IML solutions for injection-molded containers, IPL Packaging is the only North American company to offer this advanced process.

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IPL Packaging, E-mail: packaging@ipl-plastics.com, Website: www.ipl-packaging.com.

Liquid mixing machine

ARDE Barinco, Inc., manufacturer and distributor of high-capability mixing, grinding, dispersion, emulsification and size reduction equipment, announces a major redesign of its capable powders into liquid mixing machine—the ARDE Dispershear. The production Model D-6000 Dispershear has incorporated 10 changes that significantly improve the cleanability and, at the same time, reduce the long-term maintenance costs substantially.

The Dispershear is designed to meter a controlled feed of solid powders into a measured flow rate of liquid to produce a completely mixed dispersion with a residence time of 0.2 seconds. This complete dispersion is very effective on carbomers, natural gum thickeners, cellulosic thickeners and all powders that contribute significant viscosity in their dispersed form.

ARDE Barinco, Inc., Roy R. Scott, Sales Engr. Mgr., 500 Walnut Street, Norwood, NJ 07648 USA, Tel: +1.201.784.9880, Fax: +1.201.784.9710, +1.800.909.6070, Website: www.abmixer.com.

Omega-3 difference

Most marine oils in the market today are produced from fish or fish by-products that have been transported and stored for considerable time. Xalar Virgin Salmon Oil is uniquely fresh. The Marine Harvest Ingredients processing facility is located adjacent to the salmon harvesting station, which facilitates production within a few hours of harvest. Xalar Virgin Salmon Oil is produced with TVN value below 20 in the raw material, and no free radicals are present in the finished oil.

Tracking and tracing involves comprehensive, integrated records on all stages of food production (breeding, rearing, processing and distribution). Using this data warehouse, it is possible to identify accurately, within hours, the origins and destinations of all components in the food value chains. This traceability program is a great endorsement of how our presence throughout the production stages of the salmon value chain can bring real advantages for our suppliers, customers and consumers.

Xalar's parent company, Marine Harvest, is a world-leading fish farming company and leading producer and supplier of farmed salmon in the world.

Marine Harvest Ingredients, PO Box 48, Sjøhagen 3, N-4001 Stavanger, NORWAY, Tel: +47.51.88.56.31, Fax: +47.51.82.55.71, E-mail: Erik.Laerdal@marineharvest.com, Website: www.xalar.com.

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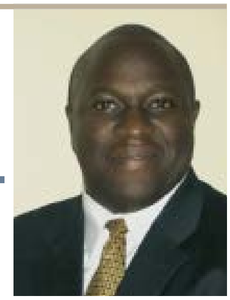
BY HUNTLEY MANHERTZ, PhD

Many mergers

Snacks are where it's at

Around 70% of the dog and cat food market is controlled by five major players: Nestlé Purina, P&G (Iams), Mars Inc. (Masterfoods), Colgate Palmolive (Hill's Pet Nutrition) and Del Monte Foods Co. The industry recently experienced shifts by major players in the petfood category. The most recent news comes from Mars Inc., when it acquired Doane Pet Care. Before that, we heard of Del Monte's purchase of Meow Mix and Kraft's Milk-Bone dog biscuit brand. These purchases reaffirm that the area of interest continues to be in the cookies and snacks subcategories and premium petfood products.

> **The premium petfood segment is now the focal point for growth.**
> — Huntley Manhertz, Jr.



Recent market shifts

Mars Inc., which holds a 25% share of the petfood market, targeted Doane Pet Care Co., which makes dry (more than 70% of sales) and semi-moist foods, soft treats and dog biscuits. According to Bob Gamgort, North American president for Mars Inc., "the addition of Doane's US operations will provide production capacity to accelerate our innovation pipeline and … grow our pet care business in North America."

Del Monte Foods Co., which holds a 3.2% share, invested US$705 million to acquire Meow Mix Holdings Inc., and US$580 million to include Kraft's Milk-Bone dog biscuit brand in its current arsenal of petfood offerings with stalwart brands such as Kibbles 'n Bits, Pounce, Meaty Bone and 9Lives.

The Meow Mix acquisition adds significant leverage to Del Monte's petfood business, which will not only make them a billion-dollar petfood business, but will enable them to compete with larger players in the space—players like Nestlé SA and Mars. Meow Mix has a 16% share in the US retail grocery market and had US$250 million in revenue last year. The quest to innovate, increase competitive advantage and fuel growth as a result of these slightly different strategic acquisitions raises the question as to how the market will react, or change, vis-à-vis the retail consumer.

Industry stats

Dog populations by country

USA	63.01
Brazil	31.40
China	26.15
Mexico	16.58
Japan	12.78
Russia	11.20
France	8.49

The seven countries with the largest dog populations in millions. From Euromonitor's Integrated Market Information System for petfood industry. For more information, go to www.petfoodindustry.com. Source: Euromonitor International, 2006.

Consumer demand: A push or pull dynamic

The premium petfood segment is now the focal point for growth. This migration to premium and superpremium foods is anchored on functional benefits and human-grade ingredients. Though not as significant a driver as the trend seen with Baby Boomers, there is another trend evolving which could become an important strategic positioning tool in the future. The fast-paced workforce, fueled by the Generation X and Echo Boomer generations, and the increase in urbanization worldwide, makes it more and more difficult to consider dogs as pets; and, as such, the new professionals are becoming more interested in feline companions as an alternative. It will be interesting to see how these demographic forces impact the composition and mix of the petfood marketplace.

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