Nothing but natural

Jeni Boniface of Aunt Jeni’s Home Made, p. 18

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On the cover: Jeni Boniface of Aunt Jeni’s Home Made with Rascal.
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Anyone trying to follow the trajectory of crop prices could suffer whiplash.

— Debbie Phillips-Donaldson

Anyone trying to follow the trajectory of crop prices could suffer whiplash. — Debbie Phillips-Donaldson

Delayed planting of corn in the US Midwest;
A drop of as much as 675 million bushels from 2008 in South American crops, according to a May 12 report from the US Department of Agriculture (USDA);
A decrease in wheat supplies, historically a competitor to corn; and
A sharp increase in ethanol demand due to US government mandates.

Wisner made a good case for rising corn prices—but don’t take that prediction to the bank (or your purchasing department) yet. USDA’s Acreage Report, released on June 30, stated: “Corn planted area for all purposes in 2009 is estimated at 87 million acres, up 1% from last year... This is the second largest planted acreage since 1946, behind 2007.” (See http://www.usda.gov/nass/PUBS/TODAYRPT/acrg0609.txt.) So much for a shortage in supply from US sources.

Speculators’ role

But Wisner also pointed to a return of commodity investment funds in futures, which many feed and grain experts blame as a key reason for price volatility. Such funds invested heavily in grains, leading to a run-up in grain prices, then a huge crash when the funds liquidated most of their positions as the recession spread.

The root cause, experts say, is lax regulation by the US Commodity Futures Trading Commission (CFTC). Joel Newman, president/CEO of the American Feed Industry Association, recently submitted comments to CFTC, saying index speculators “increased investments in 25 commodities from US$13 billion in 2003 to US$260 billion in 2008” and “stockpiled enough corn futures to fuel the entire US ethanol industry at full capacity for a year” (www.afia.org).

Perhaps all the criticism hit its mark: On July 7, the Wall Street Journal reported CFTC is considering setting position limits “in an effort to crack down on excessive speculation.”

No jumping the ride

Though the possible changes from CFTC would mainly affect energy trading, energy prices play a significant role in petfood. These changes aren’t inevitable, however. Plus, governments are notoriously slow, and their actions often have unintended effects. Couple that with continuing economic uncertainty, and we likely won’t be getting off the commodity price ride any time soon.

Phillips-Donaldson is editor-in-chief of Petfood Industry magazine. E-mail her at dphillips@wattnet.net.
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Industry News

Quick hits

- Nestlé Purina Petcare was licensed by the 100% Recycled Paperboard Alliance for using 100% recycled paperboard to package its petfood.
- Eurofins Scientific Inc. named Patricia Wester as director of food safety systems and Michelle Katrinak as head of audit services.
- JEFO Europe has entered the French petfood market as the distributor of PROFEED.

Petfood-Connection.com over 325 members and counting

The Internet is quickly becoming the most efficient and easy way to connect with people for business. Petfood Industry’s social networking site, www.petfood-connection.com, has more than 325 industry professionals as members, posting pictures, creating profiles, joining discussions, watching videos and more—the options are endless. Visit us at www.twitter.com/petfoodindustry and follow along as our editors tweet about the latest, up-to-the-minute news! Get online and get going!

Still time to submit abstracts for Petfood Forum Asia

Do you have important information to share on pet nutrition, petfood packaging, marketing or processing? Do you have speaking experience? There’s still time to submit an abstract to the call for papers for Petfood Forum Asia 2010, scheduled for March 3 in Bangkok, Thailand. The deadline for abstracts has been extended to September 15, 2009. Abstracts can be e-mailed to dphillips@wattnet.net. For more information, visit www.petfoodindustry.com/petfoodforumasia2010abstracts.aspx.

The organizing committee for Petfood Forum 2010, scheduled for April 12-14 near Chicago, Illinois, USA, is also accepting abstracts through September 15, 2009. For more information, check out www.petfoodindustry.com/petfoodforum2010abstracts.aspx.

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Correction: In “New weapons against contaminants” in the June issue, we mistakenly reported that Del Monte Foods uses the SpectrInline Processware technology developed by Ometric to monitor its petfood manufacturing line for bacteria and other contaminants. This is incorrect. The SpectrInline Processware technology primarily monitors moisture. It does not directly monitor bacteria or contaminants. Petfood Industry regrets the error.

Registration available for Virtual Petfood Forum

The all-new Virtual Petfood Forum: Target on Nutrition is a live educational event held entirely on the Internet on October 28. It features the industry’s leading experts presenting information on companion animal nutrition, then participating in live question-and-answer sessions with attendees.

Speakers and topics include:

➤ When more petfood doesn’t equal success—Sean Delaney, DVM, MS, DACVN, Natura Pet Products Inc.;
➤ The science behind grain-free and raw diets for cats—Brittany Vester Boler, PhD, University of Illinois;
➤ Exotic ingredients in petfoods—Greg Aldrich, PhD;
➤ Communicating with pet owners about petfoods and unconventional diets—Kathryn E. Michel, DVM, MS, DACVN, University of Pennsylvania School of Veterinary Medicine; and
➤ Dietary components in the treatment of canine osteoarthritis—Anton Beynen, PhD, head of R&D for Vobra Special Petfoods in the Netherlands.

Virtual Petfood Forum also allows you to interact live with your industry peers and with world-class solution providers and suppliers to the global petfood manufacturing industry. Registration is free; find out more and register at http://www.wattevents.com.

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INDUSTRY CALENDAR

A complete listing of 2009 events is available at www.PetfoodIndustry.com

September

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**16th Annual Practical Short Course on Aquaculture Feed Extrusion**, Nutrition and Feed Management, September 20-26, 2009, Texas A&M University, College Station, Texas, USA, mmriaz@tamu.edu, www.tamu.edu/extrusion.


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Establish your timeframe
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Poll: 50% of Americans treat pets like humans

A new Associated Press/www.petside.com poll recently released showed that about 50% of American pet owners consider their pets to be a family member. The survey revealed that 66% of single women said their pet is a full member of the family while 46% of married women shared the same viewpoint. In comparison, 52% of single men consider their pet a family member, compared to 43% of married men.

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Pedigree launches ‘Good Honest Food’ campaign

Pedigree announced the biggest brand re-launch in the product’s history. “Good Honest Food” is a new US$11.5 million marketing campaign aimed at promoting consumer trust in dog food and will focus on new recipes, improved appearance and improved nutritional content of Pedigree’s core range.

“Our customers are demanding to know more about the content of the petfood they buy,” said Wayne Tessier, convenience sales director at Mars Petcare, parent company of Pedigree. “It’s important to communicate the quality of our products and reassure pet owners that Pedigree is made up of exactly what their pet needs.”

“Good Honest Food” will work to dispel petfood myths and reassure dog owners that Pedigree contains only quality ingredients.

Evanger’s files resume petfood

Evanger’s Dog and Cat Food Co. filed a formal request with the US Food and Drug Administration (FDA) seeking a reinstatement order allowing it to resume interstate shipping of its canned petfood products, according to the company’s blog.

Earlier in June, FDA ordered the firm to halt interstate distribution of the products, saying it was not in
**Nestlé to invest in Thailand.** Nestlé has announced building a Purina feed mill in Thailand worth THB950 million (US$27.88 million), set to produce dry petfood for the local market and export to countries including South Korea, Taiwan and Hong Kong.

CEO Paul Bulcke confirmed the project during a recent visit to Thailand. The plant will be officially opened for production in 2010.

The news follows reports that petfood exports from Thailand show steady growth so far this year and are expected to expand at least 10% for the whole year despite global economic difficulties.

Data from the Commerce Ministry showed that exports in the first four months grew 14% to reach THB8.24 billion (US$241.3 million). Japan, USA, Italy, Cambodia and Malaysia are the respective top importers.

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**with FDA to shipments**

compliance with some food processing rules.

“Our company has been working closely with FDA and we have already addressed many of their questions,” says Joel Sher, vice president of Evanger’s. “No Evanger’s product has been recalled, nor is there any indication that Evanger’s products are unsafe or contaminated in any way.”

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New on the Shelves

Cocker Spaniel dog food
Royal Canin’s Medium Cocker Spaniel 25 dog food is formulated specifically for the breed and for dogs more than 12 months old and between 21 and 55 pounds. The food features L-carnitine for weight management. A complex of four vitamins and one amino acid promotes a healthy skin barrier for ears, according to the company. www.royalcanin.com

Holistic dog food
Holistic Select from Eagle Pack offers Small & Mini Breed Adult Formula for dogs less than 20 pounds, designed for differences in size at birth, dentition, energy consumption, growth rate and age at maturity. Ingredients include carrots, peas, apples, blueberries, cranberries and chicken meal. www.holisticsel ect.com

Dog chips
Carnello is offering Hundechips—supplemental dog chips made of pig intestines. The small, soft chips are designed to not splinter and are ideal for smaller dogs, according to the company. Biotin is included to promote a healthy, shiny coat. www.carnello.de/eng

Lamb meal dog food
Large Breed Lamb Meal & Rice dog food from NutriSource is designed for easy digestion, according to the company. The food includes New Zealand lamb meal as the primary source of protein and rice as the primary cereal carbohydrate. The product contains no corn, wheat or soy. www.nutrisourcedogfood.com
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NÜRNBERG / MESSE
Nothing but natural

Aunt Jeni’s Home Made promotes the health and longevity of pets with its natural and raw lines of products

BY JESSICA TAYLOR

“Several other companies started because a well-meaning owner had a sick pet, discovered the healing power of raw foods and then started making it at home for their friends,” says “Aunt” Jeni Boniface, explaining the beginnings of her own petfood company, Aunt Jeni’s Home Made, which recently celebrated its 10-year anniversary. “What makes us different is our educational background; I have degrees in animal science/nutrition, while most members of my staff have similar degrees and training.”

It’s not only the staff’s impressive academic backgrounds that set Aunt Jeni’s Home Made apart from other similar holistic and natural companies, but also the quality of its ingredients. “Our recipes are based on whole-food ingredients,” claims Boniface. “What I mean by that is we use absolutely nothing synthetic: no vitamin/mineral pre-mix powders, no preservatives or flavorings, etc. We approach the manufacture of petfood from the standpoint of

Business basics

Headquarters/Facilities: Temple Hills, Maryland, USA
Officers: Jeni Boniface, founder
Employees: 10+
Website(s): www.auntjenis.com
I could persuade someone to prepare were facing health issues. "Whenever work for pet owners whose dogs or cats manufactured by Purina Mills. the development of a special diet, later research with maned wolves resulted in in animal nutrition science, where her that, she received her master's degree not numbers, as she puts it. Soon after This event reminded Boniface that her one of her dogs fell seriously ill, neces- of Agriculture. Then the day came that in animal science (University of Mary- any questions customers may have about are able to formulate our own complete and balanced recipes as well as answer any questions customers may have about the recipes, ingredients or which is the best selection for their own pet."

Animal origins

After obtaining a bachelor’s degree in animal science (University of Mary- land, 1985), Boniface held a series of positions within the US Department of Agriculture. Then the day came that one of her dogs fell seriously ill, necessitating a visit to a teaching vet hospital. This event reminded Boniface that her true calling lay in working with animals, not numbers, as she puts it. Soon after that, she received her master’s degree in animal nutrition science, where her research with maned wolves resulted in the development of a special diet, later manufactured by Purina Mills.

Boniface then began doing consulting work for pet owners whose dogs or cats were facing health issues. “Whenever I could persuade someone to prepare their own homemade petfood, the pet would show remarkable improvement,” attests Boniface. “The challenge lay in convincing busy people to cook for their dogs. I soon realized there was a need for someone to do the work of preparing the food, and that started me on the road to manufacturing.” With her training in the academic/scientific community and her gravitation toward the world of holistic care, “Aunt” Jeni Boniface found herself in a position to combine the best of both worlds into something special and affordable.

The nutritional best interest of the pets we make it for, rather than from a marketing or business standpoint.” The company believes strongly that raw food is the best way to feed companion dogs, cats and ferrets. Boniface continues, “Because of our academic, scientific background, we are able to formulate our own complete and balanced recipes as well as answer any questions customers may have about the recipes, ingredients or which is the best selection for their own pet.”

Keys to growth

“I never forget that my name is quite literally on every container that leaves our building,” says Jeni Boniface, founder of Aunt Jeni’s Home Made, pictured with employees Joyce Berbig and Beth Thibodeau.

A raw deal: 3 challenges for raw and frozen petfood manufacturers

There are constant challenges in operating any business, some of which are universal across industry borders, but there are certainly some especially unique to manufacturing raw petfood. In starting her company, Jeni Boniface says her biggest challenge was figuring out what type of equipment was right for the job. “Our frozen food is not like any traditional petfood—there is no cooking, extruding or pelleting. We need to grind meat and bones, puree vegetables and fruits and pack special containers.”

The next biggest challenge, according to Boniface, has been and continues to be marketing a petfood that must be kept frozen at all times. Finding reliable, affordable transportation is an ongoing issue, and maintaining freezers is an extra expense that many stores were not willing to take on. “Luckily, that viewpoint is changing now, but we still have a long way to go before frozen raw foods become mainstream.”

The third challenge involves setting prices successfully. Making frozen petfood is definitely a labor of love, not a get-rich-quick scheme! “The premium ingredients we use carry a big price tag. Plus, by the time the product has gone through the layers of distribution, each with its own additional markup, the end user is paying a pretty penny for petfood,” says Boniface. “This may sound strange, but I really stress over raising our prices. Throughout all of last year when our costs on everything were skyrocketing, I refused to raise prices to our customers.”

Though Boniface admits she worried a lot, the company has only ever had one price increase per year. “It’s one less thing to worry about in an economy gone wild; at least the family pet can still eat well.”

Innovative ideas

“We continue to grow and expand, adding new products and finding new ways to manufacture them efficiently,” says Boniface. “Our treats division has experienced the most growth in the last couple of years, with the addition of a state-of-the-art custom-made dehydrator that has allowed us to dry a wide range of fruits and meats as healthy, low-fat snacks.” Aunt Jeni’s Home Made manufactures products for pets in three categories: Frozen items (complete and balanced diets, and Raw Meaty Bones); Treats; and Supplements.

Aunt Jeni’s has recently started to branch out into offering more Raw Meaty Bones from its current product line. “We currently have Ostrich Necks, Duck Necks/Feet, Chicken Necks/Feet and Rabbit Legs,” explains Boniface. “Last summer we introduced a new treat made from dehydrated alligator meat that’s been very popular so far.”

Different—and Aunt Jeni’s Home Made was born.

Supplements.

“Treats; and

August 2009 | Petfood Industry | 19
year the company will be adding some new frozen food recipes: ostrich and maybe bison or possibly duck.

“We like to offer products that are not readily available elsewhere,” continues Boniface. “We’re also phasing in new frozen food packaging, changing to something more green and eco-friendly.” Aunt Jeni’s already changed its packaging on Raw Meaty Bones to something more user friendly and less breakage-prone, according to the company. Home Made may also seek greater distribution as petfood distributors become more adept at distributing frozen foods.

A hands-on approach

Ownings and operating its own manufacturing facility right outside of Washington, DC, USA, Aunt Jeni’s Home Made does no co-packing or contracting of the production of its petfoods and treats. Its facilities are regularly inspected by the US Food and Drug Administration as well as the state’s agricultural department, says the company. “While this has always been a point of pride with us, it has become even more important in the wake of the petfood recalls of 2007,” explains Boniface. “We maintain complete control over each step in the production process. We have established one-on-one relationships with our vendors such that we know exactly where our ingredients originate, and we are able to inspect—and reject, if necessary—ingredients on arrival.”

Beth Thibodeau, a Home Made staff member, adds: “We research all our suppliers to determine the origin and growing conditions of our ingredients. We know our customers will demand straight answers to these questions, and we need to be equipped to provide those.”

Aunt Jeni’s likes to have complete control over all aspects of its products, from the selection of ingredients to the final product. There is less chance of alien ingredients or tampering when everything is done in-house, the company claims. “We even do our own microbial testing in-house; that way we have instant access to the information in the unlikely event we would ever need to destroy a batch, although that has never happened,” says Thibodeau.

And in the long run, it’s all about customer satisfaction and trust. “I never forget that my name is quite literally on every container that leaves our building,” says Boniface. “That’s a very strong motivation to accept no compromise on safety and quality.”
Will your business future wait until you have time?

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Petfood Industry Strategic Consultants (PISC) is a different kind of consulting service. There are no models in which to squeeze the clients’ problems; the client is the model to which we have to adapt. So you can expect robust plans and programs in the areas of general business, marketing & sales and manufacturing that are customized specifically to your business needs. And, with nearly 50 years of senior and top-management experience in the petfood industry, we are able to give clear, actionable recommendations that are candid, open and honest.

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- qualitative auditing of distribution activity (seen from the marketing perspective) and identification of opportunities
- petfood formulations
- regulatory counseling
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- assessment of structures/organizations and subsequent organizational design
- structured new product development
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According to the blogosphere and online pet community, making your dog or cat’s food at home with your own ingredients is the latest trend. But many animal nutritionists, veterinarians and petfood producers argue the average pet parent doesn’t know just what a pet needs in its bowl.

Middle ground
In a recent pet advice column by veterinarian Suzy Hochgesang, a pet owner asked whether she should feed her cats and dogs homemade petfood. Hochgesang was clear in her response, saying, “Most veterinary nutritionists agree that it is best to feed our pets a commercial food.” She listed lower costs, more convenience and a better nutritional balance as the top reasons to choose commercial petfood over homemade petfood. Hochgesang also recommended pet owners buy brands that are AAFCO approved.

A recent article from www.examiner.com (a website that often condemns commercial petfood) outlined several reasons why pets should not be fed food intended for humans. Among the reasons included:

➤ Petfood is specially formulated for pets, so human food may cause them to miss out on nutrition;
➤ Table scraps are additional empty calories, leading to pet obesity and other health problems; and
➤ Some foods that are consumable by humans are toxic to or not well tolerated by cats and dogs.

The best way to ensure animals get adequate nutrition is to find a quality petfood that pets enjoy and stay consistent.
Benefits for pets and people

As the status of pets continues to rise, many pet owners seem willing to put more time into preparing meals for their pets. Their motivations might include, according to Tim Phillips, DVM:
- Giving their pets more pleasure at mealtime;
- Using variety to prevent boredom;
- Adding variety in hopes of providing a more diverse and complete nutrient intake;
- Being convinced that properly formulated raw diets supply all the essential nutrients we know about and do not know about;
- Believing fresh is better;
- Strengthening the bond with their pet; and
- Enjoying the satisfaction of home preparation.

Mixers, dehydrated and fresh pet foods provide the opportunity for pet parents to prepare their pet’s food at home, but still buy the balanced ingredients and nutritionally approved recipes from the local petfood aisle.

Getting involved

Several companies are catering to pet owners who want to get more involved with feeding their pets:
- Nature’s Variety offers several products for implementing its Rotation Diet concept. Pet owners can feed various protein types (beef, chicken and salmon) and forms (raw, dry and wet);
- In May 2008, Vitakraft, the German feed and petfood company, introduced Mix It dog and cat foods throughout Europe. The idea was to provide variety without having to change the main food;
- Wild Kitty sells a Homemade Cat Food Kit. With the kit, cat owners can make raw or cooked cat food using

 Supplements and dehydrated petfood mixes are two of the most popular forms of high-involvement petfoods to hit the market recently.
boneless poultry;
- Sojourner Farms offers three natural pet food mixes. Pet owners add meat and water to one of the mixes for “fresh, homemade pet food in minutes,” the company says;
- Developed by a group of veterinary nutritionists, Balance IT is a web-based nutrition software by veterinarians along with a line of Balance IT supplements. It enables veterinarians to try new concepts in nutritional therapies with homemade pet food recipes;
- The Honest Kitchen is a family owned pet food company, based in San Diego, California, USA. It sells freeze-dried pet foods containing a combination of raw and cooked ingredients. Pet owners add water and their choice of vegetables, fruits and raw or cooked meats;
- Synergy Dehydrated Vegetable Mix from Canine Caviar contains no dyes, preservatives or chemicals, according to the company. The mix can be blended with frozen protein or canned foods. Ingredients include peas, carrots, pumpkin and red pepper;
- The Missing Link Wellness Blend from Designing Health contains nutrients and probiotics. The product can be added to the dog’s or cat’s food daily by simply sprinkling the powder over its regular diet.

We can expect to see more major marketers of traditional commercial diets adding high-involvement pet foods to their product lines.

Opportunity calling
What’s next? If the market continues to develop, which seems likely, we can expect to see more major marketers of traditional commercial diets adding high-involvement pet foods to their product lines.

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High involvement

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To peruse more mixers and other high-involvement pet foods, visit www.petfoodindustry.com/ListConsumerProducts.aspx.
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The petfood industry has often struggled with the US Food and Drug Administration’s (FDA) Center for Veterinary Medicine over the recognition and acceptance of ingredients. Each petfood company can likely recall an ingredient that has presented a challenge.

With FDA’s announcement of the “generally recognized as safe” (GRAS) notification procedure as an option for petfood ingredient recognition, some positive changes are coming for the industry.

Two mainstay methods

Traditionally, there have been two major processes for ingredient acceptance:

1. The food additive petition approval process through FDA; or
2. The feed ingredients definition process through the Association of American Feed Control Officials’ (AAFCO) Ingredient Definitions Committee (IDC).

The food additive petition process is slow, cumbersome and expensive for FDA recognition of a new ingredient. On the other hand, the AAFCO ingredient definition process can be a quicker process, but the required data are substantial and the process often still does not meet the timeline most companies are seeking.

In both these scenarios, it is FDA making the final decision on the safety of these ingredients, not the firm. This is the key difference between these two current ingredient recognition processes and the new GRAS procedure.

Safety sums it up

The main distinction between the food additive petition and
AAFCO processes can be best summed up by safety concerns and, thus, safety data. Typically, depending on the ingredient, FDA will determine which of these two processes should be utilized based on the potential safety concerns of a particular ingredient.

That is, an ingredient FDA deems as having significant safety concerns will typically be routed through the food additive petition process, while ingredients with fewer safety concerns may be directed down the IDC path (granted the intended use is not deemed a drug). While there are other distinctions, the criteria for safety play an important role in determining which way an ingredient might be recognized by the agency.

In the case of GRAS, the burden of determining safety is placed on the firm, based on general recognition. This task can be very difficult, particularly for a novel ingredient. It places a heavy burden on the notifying company to convince FDA an ingredient is a food generally recognized as safe for a specified intended use.

**Each petfood company can likely recall an ingredient that has presented a challenge.**

**Fundamental questions**

Before submitting a GRAS petition to the FDA, think through these fundamental questions:

- Is the compound a food?
- Is this ingredient/compound/nutrient something that is likely to be found in petfood or animal food?
- Does it nutritionally support a “normal physiological function in the body?”

For more information on what the FDA classifies and accepts as a food, see www.fda.gov/cvm.

**Key considerations**

While FDA’s plan for GRAS is a huge step forward for the industry in terms of accepting ingredients, there are some things you should think about before starting the GRAS process.

**First, general recognition is a requirement,** just as the GRAS name suggests. That means the information used to establish safety must be known by the public. Leaves found on a rare tree in the African rain forest and ground into a pulp to promote immune health are likely not a good candidate for GRAS.

Instead, you should think about the historical identification and use of an isolated nutrient or compound that is a component of your ingredient. It is safe to say FDA is likely to take a narrow view of “general recognition”; therefore, petfood companies must

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think creatively prior to submitting a GRAS notification.

Second, you must make an adequate case that the product is indeed a food (providing nutrition, taste or aroma). This is the single most common mistake made by firms when submitting a request to FDA for ingredient recognition. All too often, a company asks the agency to approve something that does not meet the criteria for a food.

Finally, you should understand intended use is a key component that FDA will use to determine the applicability of GRAS for an ingredient. Therefore, the intended use must be to provide taste, aroma or nutritive value (or any combination of these properties). If the intended use suggests something other than food (i.e., a drug), the agency will notify the firm the GRAS process is not applicable to drugs.

Ripe opportunities

There are some great opportunities for GRAS, if done appropriately. In most cases, your company should understand not just the GRAS process but also the processes for a food additive petition and AAFCO IDC. (For information, visit www.fda.gov/cvm.)

It is likely FDA will take a conservative approach for ingredients in which they issue a “no questions asked” letter. However, there are a number of ingredients that may benefit from this approach. Examples include:

- Normal constituents (nutrients) found in feed that, when isolated, are not recognized as an ingredient by FDA;
- Ingredients that have evolved as a result of technology and no longer meet an existing AAFCO definition;
- Ingredients with alternative intended uses.

While there are likely to be many potential ingredients that may benefit from GRAS, there are far more that probably will not be eligible for this process.

The GRAS notification procedure offers an entirely new option for ingredient acceptance. However, the burden is on the firm to illustrate safety, and gaining FDA acceptance is still a formidable task.

Jarrod Kersey is director, ingredients and state legislative affairs, for the American Feed Industry Association, www.afia.org.
Ensuring ingredient freshness

Safe, nutritious, tasty petfood requires careful handling and processing of raw meat ingredients

BY KOEN MEYENEN AND JENNIFER RADOSEVICH, PHD

Petfood and its ingredients—for example, meat and meat by-products—are subject to decay by several processes. The period before drastic changes occur can vary depending on the quality, processing and storage of raw ingredients.

The freshness of ingredients can also affect the palatability of the resulting product. Off flavors can result in food refusal, since animals rely on their sense of smell and taste to differentiate safe, nutritious foods from those that may contain toxic substances.

Microbial degradation’s role

One significant opportunity is ensuring high quality ingredients are used to produce palatants for dry kibble coating. For example, the freshness of poultry viscera is critical to the quality of products prepared from them. Minimizing the time between rendering and manufacturing of the palatant is crucial.

To demonstrate this, we evaluated the time between collection of fresh viscera and manufacture of a palatant. First, one portion of viscera was treated with a freshness agent with the other portion as control (Figure 1). Both portions were incubated at room temperature, and after 24 hours, the untreated material was divided into two. One portion was treated with the freshness agent; the other became the second control.

All the treatments were incubated for another 24 hours at room temperature. The initial total aerobic count of the untreated poultry viscera rose by two logs (Figure 2, p. 32). After 48 hours, no further increase in total count was observed, indicating quality of the material decreases quickly.

However, when a freshness agent was added before storage, development of total aerobes was delayed. After 48 hours, total aerobes in the treated sample had further increased to levels similar to that of untreated viscera stored for 48 hours. So, a freshness agent needs to be added as quickly as possible because adding it after 24 hours could not help.

Initial enterobacterial count of the untreated viscera increased after 24 hours of incubation at ambient temperature. No further increase was observed after 48 hours of storage, but when the
ground viscera were treated with the freshness agent, there was minimal change in enterobacterial counts, even after 48 hours.

**Freshness and palatability**

The effects of time and preservation of viscera before flavor production were also tested in palatability trials. Viscera were divided into six portions (Figure 3). Five were left untreated; the remaining portion was treated with a freshness agent. All samples were stored at ambient temperature for 24 hours.

Then the treated sample and one untreated sample were used to make Flavors H and C, respectively. Another sample was treated with a freshness agent to evaluate its ability to rescue the stored raw material. This treated sample was divided into two portions: One was used to make Flavor D, while the other was stored for another 24 hours. At the 48-hour mark, the remaining samples were used to make Flavors E, F, and J.

Palatability of the resulting flavors was assessed using a standard two-pan test with 20 dogs over two consecutive days. First choice and relative consumption were recorded (Figure 4).

The palatability of flavors prepared from viscera treated immediately after collection of the raw material and stored for up to 48 hours was found to be significantly better.
than that of digest prepared from untreated viscera stored for the same amount of time. Again, adding the freshness agent needs to happen as quickly as possible, because treatment of viscera stored for 24 hours at room temperature could not rescue quality or palatability.

**QA is essential**

These results demonstrate the importance of utilizing the freshest raw materials available and processing and handling measures such as reducing the collection and transit time before raw material chilling. While sound quality assurance practices are essential, freshness agents may also be considered.

Koen Meynen is a research scientist and Jennifer Radosevich, PhD, is director of R&D and regulatory affairs for Kemin Nutrisurance, www.kemin.com.

### Table 4. Results of palatability experiment

This table shows the palatability of flavors produced from poultry viscera stored for 24 and 48 hours, with and without treatment using a freshness agent.

<table>
<thead>
<tr>
<th>Digest comparison</th>
<th>Relative consumption</th>
<th>First choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-D</td>
<td>42%</td>
<td>ns 26</td>
</tr>
<tr>
<td>E-F</td>
<td>48%</td>
<td>ns 22</td>
</tr>
<tr>
<td>C-H</td>
<td>40%</td>
<td>* 23</td>
</tr>
<tr>
<td>E-J</td>
<td>38%</td>
<td>** 21</td>
</tr>
</tbody>
</table>

*Significant (p<0.05), **Highly significant (p<0.01)
Many in the petfood industry are aware of the National Animal Supplement Council (NASC) from its participation at the Association of American Feed Control Officials (AAFCO) meetings over the past number of years. However, some readers may not be wholly familiar with the organization’s goals and strategies as they pertain to pet products.

In May, I accepted a gracious invitation to attend NASC’s annual meeting in San Diego, California, USA, where I was impressed with its efforts in addressing some serious regulatory hurdles.

**Regulatory background**

NASC was formed in 2002 in response to discussions within AAFCO regarding enforcement actions against products containing, for lack of a better term, unapproved ingredients. Under the US Federal Food, Drug and Cosmetic Act (FFDCA) and equivalent state laws, ingredients used in animal feeds (including supplements) must be:

- Generally recognized as safe (GRAS—see p. 28);
- Approved food additives; or
- Otherwise sanctioned for their intended purposes (e.g., via the AAFCO feed ingredient definition process).

The Dietary Supplement Health and Education Act (DSHEA) opened the door for use of previously unacceptable food ingredients in dietary supplements for human consumption. The US Food and Drug Administration (FDA) subsequently gave notice that DSHEA did not apply to animal products and, hence, they remained subject to the aforementioned ingredient provisions in FFDCA. Because of these differences in applicability of the law, an ingredient that may be perfectly acceptable for use in human dietary supplements could render similar products intended for use in animals as adulterated and subject to enforcement action.

Since its inception, the goal of NASC has been to provide a means by which animal products containing ingredients not meeting FFDCA ingredient provisions could adequately satisfy regulatory concerns and remain on the market. To help achieve this goal, it has limited its efforts to dosage form products—pills, liquids, powders, etc.—intended for animals that are not in the human food chain. Various approaches have been attempted over the years, but the current strategy primarily relies on regulatory enforcement discretion.

**NASC in brief**

Some members of NASC manufacture conventional nutritional supplements, such as those containing AAFCO-recognized vitamins, minerals or fatty acids. NASC advises its members that these products must meet all provisions of FDA and AAFCO as required for foods.

For other products, such as those containing herbs and botanicals, antioxidants and other substances that do not have a recognized role in traditional nutrition, the guidance is quite different. Briefly, they are to be labeled similar to drugs, not foods. As such, they are no longer supplements, and their labeling cannot connote nutritive value or other food properties. There is no guaranteed analysis on the label but rather a declaration of quantitative content of active ingredients.

Claims may extend beyond those historically acceptable for a food item but remain in the realm of effect on structure/function rather than disease treatment or prevention (i.e., similar to that allowed on human dietary supplement labels under DSHEA). Depending on the ingredients, certain cautionary label statements may be required.

Beyond labeling, NASC has established other procedures that members must follow to help address regulatory concerns, including an adverse event reporting system.

**Formidable task**

NASC is attempting a formidable task in defining a category of pet products that does not fit neatly into the current regulatory rubric. Under FFDCA, FDA can only view products of this ilk as either foods or drugs. DSHEA considers human dietary supplement health and education act.
supplements as a subcategory of foods but with special provisions in the law not afforded foods in conventional form.

In this case, though, what NASC describes as dosage form animal health products are more amenable to regulation as drugs under current law. While I doubt any NASC member prefers this categorization, it appears to be the only currently viable option for most manufacturers of these types of products.

While these products are not formally approved as drugs as stipulated in FFDCA, regulators appear willing to exercise enforcement discretion in that regard. NASC’s annual meeting was attended by representatives from both FDA and state feed control official offices, who in my estimation appear to be at least tacitly in support of current NASC efforts. As drugs, though, these products would fall out of the purview of AAFCO and states that do not enforce animal remedy laws and regulations.

Causes for concern

One concern relayed to me was that while products in dosage form can comply with NASC guidance, the majority of petfoods cannot. This could create an unequal enforcement situation, wherein the same ingredient would be acceptable in the former but not the latter. On the other hand, DSHEA causes the exact same discrepancy in regulation of human foods vs. supplements.

Another concern of the petfood industry is that once established as drugs, it is unlikely many of the ingredients now used in both types of products will ever be considered as acceptable food ingredients again. However, NASC represents the dosage form manufacturers, not the petfood industry at large, so these matters are not within its duty to address.

Personally, my biggest concern is from a scientific, not regulatory, perspective, in that this approach is based on the presumption rather than demonstrative proof of safety prior to marketing. In my opinion, DSHEA is similarly deficient in this regard.

I understand and appreciate the sizable burden of a premarket approval process on manufacturers. However, notwithstanding NASC’s advisory risk assessment of potential ingredients, adequate safety data on many ingredients are largely lacking, and reliance on an adverse event reporting system as a primary means of detecting problems is simply too late. Admittedly, though, the predictions of dire safety consequences from passage of DSHEA 15 years ago arguably have not been realized.

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Phosphorus is an absolutely critical dietary element. Metabolically, it is involved in the structural composition of bone, is a vital part of genetic messaging in phosphodiester linkages of DNA and RNA nucleotides, is involved with transportation of energy through high-energy phosphate bonds (ATP), plays a role in systemic acid-base balance and is involved in fat and protein utilization via phospholipids and phosphoproteins.

Nutritionally available phosphorus (P) is higher in animal/avian/marine-derived protein and mineral sources and lower in vegetative sources due to the presence of phytate (an organic compound that tenaciously binds phosphorus). Further, an imbalance resulting from elevated levels of calcium (Ca) in the diet can antagonize phosphorus availability.

So, for proper dietary phosphorus nutrition, it is important to get the amount in the diet and the ratio to calcium just right. Unfortunately, the base ingredients of most pet diets often fail to meet all the nutritional requirements, necessitating supplementation with concentrated mineral sources.

These supplemental sources are commonly derived from refined minerals. The challenge is that most pet owners do not recognize these ingredients, and many petfood companies are less than positive about their origin or utility. Maybe shining a bit of light on the topic will benefit both parties.

Wide range of sources

The more popular sources of phosphorus for dog and cat diets are dicalcium phosphate (commonly called Dical and sold at 18.5% P and 22% Ca) and monosodium phosphate (MSP, 21.8% P and 32.3% Na). Periodically, other sources are used for special nutritional applications:

- Tricalcium phosphate (TCP, 18.5% P and 39.9% Ca, more commonly used as a calcium source in canned foods);
- Monocalcium phosphate (commonly called Monocal, 21% P and 16% Ca, more commonly used as a leavening agent); and
- Ammonium phosphate (20% P and 0.5% Ca, found more in urinary pH control diets and for research).

The dietary phosphorus source selected depends on cost, amount of supplemental phosphorus needed in the diet, potential interactions with other elements in the formula and biological availability.

First: phosphoric acid

The two principal dietary phosphorus sources, Dical and MSP, are derived from a similar starting point. Each comes from phosphoric acid refined from mined phosphate rock (the so-called apatite group). The more commercially viable mines pull from ancient oceanic deposits (phosphorite) rich in calcium phosphate.

The mined rock phosphate is refined to remove unwanted impurities and concentrate and standardize the phosphorus content by a process of acidulation known as wet type (using hydrochloric acid, sulfuric acid or nitric acid) or through a high-temperature electric furnace (dry type process). Most phosphoric acid for petfood is derived from the wet type process.

The majority of the resulting phosphoric acid is used in the soft drink industry, fertilizer production or other industrial applications.

Two phosphate types

In the US, Dical and Monocal are commonly sold in granular form. These products are a hybrid mixture of dicalcium and monocalcium phosphate in the ratio of 1.2:1 to 1.8:1, formed during dry bed reactions on recycled phosphate materials.

In Europe and Asia, the principal phosphorus products are precipitated salts formed as a result of the reaction between dilute phosphoric acid and a base. The result is a fine crystalline powder of a single composition phosphate.

The granular form is more stable and...
feed-mill-friendly due to its comparable particle size and flow characteristic relative to other ingredients in a compound feed. The precipitated forms are slightly higher in mineral concentration (in the anhydrous or monohydrate forms) and have a finer texture.

Like the precipitated calcium phosphates, MSP is usually produced by crystallization, then granulated in a rotary drum. The MSP and disodium phosphates produced by this technique are slightly hygroscopic and somewhat challenging to handle but work well when the goal is to bring phosphorus into the diet without added calcium.

**Animal considerations**

No research could be found in which popular dietary phosphorus sources were evaluated for relative bioavailability in dogs or cats. Disodium phosphate and mono-basic ammonium phosphate were used in some early dog and cat research, but the more common sources lack rigorous evaluation (NRC, 2006).

That’s not to say the products are suspect, given the more than ample research with surrogates such as swine, poultry and rodents. The net result from these species is substantial, consistent and leads us to conclude Dical, Monocal and MSP are nearly 100% biologically available sources of phosphorus (Soares, 1995). No reports of adverse reactions, flavor or palatability issues or other concerns have appeared.

While the principal phosphorus sources used in dog and cat diets go through a rigorous process, the starting materials are of natural origin. The production steps are elementary thermal and acid-base processes that are compliant with the US National Organic Program standards. These products have been shown to be safe and effective for bridging the gap in base dietary ingredients for dog and cat foods.

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Dr. Greg Aldrich is president of Pet Food & Ingredient Technology Inc., which facilitates innovations in foods and ingredients for companion animals.
Can lab methods predict digestibility?

The aim of this study was to check the accuracy of laboratory methods to predict the apparent protein digestibility (CPd, %) and digestible protein content (DP, g/kg dry matter) of dog foods, avoiding the use of experimental animals in digestion trials.

Twenty-eight commercial dry extruded dog foods were tested by three different methodologies: an adaptation of the in vitro incubation method described by Hervera et al. (JAPAN 2007, 91:205) for estimation of digestible energy of commercial dog foods; a modification of the pH drop methodology proposed by Hsu et al. (J Food Sci 1977, 42:1269) for protein evaluation of human foods; and near infra red spectroscopy (NIRS) technology.

All the methods revealed very good, similar accuracy in the prediction of DP content, although the in vitro method showed the highest accuracy approach of in vivo crude protein apparent digestibility.


Key Concepts

Can lab methods predict digestibility?


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Product News

Polyethylene terephthalate line
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Vector offers its 80 high-abuse plastic shrink bags for bone-in case ready meat products. The bags are available in clear plastic and colors such as red, white, metallic blue, silver and smoked. They are designed for low leak rates, longer shelf life and resistance to sharp, abrasive surfaces, according to the company.

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