Nutritional Truths Handbook

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Special **THANKS** to the contributors!

We would like to convey our thanks to all associates involved

in creating this handbook.

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Introduction

Nutrition is complex and confusing!

We've got you covered.

Welcome to our ROYAL CANIN Nutritional Truth Handbook!

Choosing the right food can be an overwhelming decision. There are thousands of options, and many differing opinions on what makes a food “good”.

ROYAL CANIN offers individualized health nutrition worldwide that accurately respects the specificities of cats and dogs, because we fundamentally believe in the distinct nutritional needs of pets.

.

This handbook is intended to support our associates in their role as ambassadors of our brand, in our journey to “Feed Their Nature, Not Yours” through tailor-made individualization and prescription.

Feed Their Nature, Not Yours!

Our nutrition philosophy: knowledge & respect

Respect

We respect cats and dogs for the animals they truly are, which is why we always put the needs of cats and dogs first in order to improve their health and well-being. This is an ethical code that is embedded in our philosophy.

Knowledge

Our passion feeds our thirst for knowledge, which inspires our mission for precision, and enables us to deliver targeted nutritional solutions.

Cat and Dog First!
We commit ourselves to put the needs of cats and dogs at the centre of everything we do.

Navigating the complexity of pet nutrition.

This handbook includes key information to help navigate the world of pet nutrition.

Various feeding trends are being popularized, including natural, B.A.R.F. (“Bones And Raw Food”/”Biologically Appropriate Raw Food”), vegetarian or vegan, and negative advertising messages can be seen in markets around the globe. Misinformation and myths about the nutrition of pets is disseminated, creating a confusing landscape for pet owners looking for nutrition advice.

In the absence of strong positive messaging, many of our traditional partners and prescribers are experiencing “nutrition fatigue”; they are tired of communicating messages that do not resonate with pet owners.

This handbook will arm you with the tools needed for changing the conversation so can be proactive and effective!

Science speaks, when pets can‘t

After reading this chapter, you should feel comfortable explaining how Royal Canin approaches developing optimal nutrition for cats and dogs based on their nutritional needs.

Knowledge and Respect

Overview of the Section

Founded by a veterinarian in 1968, Royal Canin has always been an expert in animal health nutrition. We place cats and dogs at the heart of each step of the innovation process to develop the most adequate nutritional solutions.

Knowledge and respect

Animal wellbeing is more than a trendy tagline.

At Royal Canin helping pets live better, healthier, happier lives is why we get up in the morning.

At Royal Canin, we are passionate about animal health and well-being.

We are devoted to pets. They are at the center of everything we do.

We put our scientific knowledge at the service of the health and wellbeing of pets.

As scientists, we create and share knowledge. We base our work on the scientific observation of cats and dogs. We have been observing pets for 50 years and publish several scientific papers every year. We are passionate about observing pets and learning what makes them unique in their habits and needs.

Because we believe that pets make our lives better.

Knowledge and respect

Because we believe that pets make our lives better.

Royal Canin maintains respect for fundamental animal nature and distinct individualized nutritional needs.

We partner with pet experts - veterinarians, breeders and other professionals - to tailor precise nutritional formulations to the real needs of individual breeds, different life stages, different lifestyles and across a host of medical conditions.

Every pet is an individual. Which is why Royal Canin provides more than 200 different precisely formulated pet nutrition recipes for age, breed, size, life stage, lifestyle and health condition.

Sustainability – Royal Canin cares

Protecting the global environment

Sustainability is important not only to Royal Canin, but is also being carried out by the entire Mars group of companies to which Royal Canin belongs.

At Royal Canin, we know that to grow responsibly we have to expand our business without increasing our environmental footprint. In particular, our Sustainable in a Generation (SiG) initiative, launched in 2007, commits us to eliminating fossil fuel use and GHG emissions from our operations by 2040. We have similarly ambitious targets for waste and water usage.

As recognized by WWF, using byproducts is more sustainable than using human-grade ingredients, as we use 'animal parts that might otherwise be dumped in landfills, where they could emit tons of carbons dioxide and methane.

We are also committed to 100% sustainable sourcing of fish used in all our pet food products. By 2020, we commit to:

1. have all wild caught whole fish & fish fillet replaced by sustainable fish by-products and aquaculture
2. have 100% sustainable wild catch and sustainable aquaculture sources
3. use sustainable alternatives to marine fish ingredients

We believe that tackling climate change is vital to our planet, and that the security of the world's food supply depends on it. As a company within Mars, we have a responsibility to mitigate the impact of our business on climate change, and we are committed to pursuing science-based sustainability targets to make that happen.

Sustainability at Royal Canin – How?

We apply to a 3R policy:

Our sourcing of marine raw materials is a bright example:

1. **Reduce** absolute quantity as we do with fish meal, reduce the share of whole-body fish in our fish oil and turn it to by-products…),

2. **Reassure**: we certify our fish supply chain with third parties (we use IFFO RS to certify our fish oil and fish meal),

3. **Replace**: we want to progressively replace fish oil by an alternative from 2020, bearing in mind that we do not source fish oil in itself but EPA/DHA. Other marine-sourced ingredients are also in the scope (glucosamine – which we try to source from vegetable source at the moment, or green lip mussels for example).

The 3 R´s policy which does not only apply to sustainable fish sourcing can be completed by a 4th R:
We will seek to ensure that human rights are respected in our supply chains around the world.

Feed their Nature.

Pets are not people.

No matter how well we think we know them, or how much effort we put into caring for them, they can never really tell us what they need.

That's why, at Royal Canin, we've spent nearly 50 years observing pets, obsessing over them, collaborating with other pet experts – like veterinarians and breeders – to understand what makes them not just completely different from humans, but from each other.

There's only one thing that can fill the massive communication gap between pets and their owners:
science and constant long-term passionate observation.

FEED THEIR NATURE. NOT YOURS

Science Speaks When Pets Can't

Our Pet Obsession
PASSION

Passionately Scientific
INNOVATION

Different Breeds, Different Needs
INDIVIDUALIZATION

A Magnificent Standard
QUALITY

FEED THEIR NATURE. NOT YOURS

Our Pet Obsession
PASSION

To develop health nutrition, Royal Canin pursues knowledge of every individual cat's and dog's needs with passion and obsession. It means that research and design for a new diet is guided through science and observation, not through trends in human nutrition or preferences of the pet owner. Ingredients are selected according to their nutritional profile and the diet formulation is the result of a precise combination of nutrients that are vital to cat and dog health.

We are helping to improve the lives of cats and dogs through science, innovation and specialization. Our ultimate purpose is to make "A Better World for Pets"

FEED THEIR NATURE. NOT YOURS

Passionately Scientific
INNOVATION

To achieve our level of nutritional precision, Royal Canin partners with pet experts - vets, breeders and other professionals - to tailor precise nutritional formulations to the real needs of individual breeds, at different life-stages, in different life–styles and across a host of medical conditions, from the mildest to the most extreme.

With more published studies than all other manufacturers, Royal Canin and the Waltham Centre for Pet Nutrition continue to be responsible for significant advancement in the understanding of cat and dog nutrition.

Our scientific approach has led to us being the first company to develop nutrition adapted to specific health needs of cats and dogs of different age and size and to create breed-specific nutritional solutions.

FEED THEIR NATURE. NOT YOURS

Different Breeds,
Different Needs
INDIVIDUALIZATION

We know that Persian cats use the lower side of their tongue to pick up kibble, and Yorkshire Terriers have specific needs for their fussy eating habits.

So we make their food accordingly. Precisely. With the exact balance of nutrients that will help them grow into the best versions of themselves.

Oh, and we do this for over 300 breeds and needs as well.

We provide over 200 unique nutritional formulas for cats and dogs

FEED THEIR NATURE. NOT YOURS

A Magnificent Standard
QUALITY

The same quality control measures are performed at all Royal Canin plants throughout the world.

We make a point of selecting the best raw materials, suppliers and partners for our products and services & to be exemplary in our traceability from raw material sourcing, to manufacturing, distribution and to customers. All raw materials are inspected when they are arrive at a plant, and are analyzed & will only be used if they conform to specifications. In the unlikely event that standards are not met, the ingredients are not accepted. A sample of each raw material and finished product is kept in a sample library for at least 18 months. Each raw material & finished product has a specific lot number.

After reading this chapter, you should be comfortable making a nutritional recommendation by focusing on the 3 most important considerations when choosing a pet food: 1: is it safe? 2: Is it nutritious? 3: Is it right for this pet?

Making a Nutrition Recommendation

Understanding the Best Way to Choose the Right Food for a Pet

Some foods may be marketed based on their format (such as: list of ingredients, negative marketing messages, raw, dry vs canned) rather than the nutrition they provide. The most important considerations when choosing what to feed our pets are: “Is it safe?”, “Is it nutritious?” And “is it the right food for this pet?”

Three questions to ask in order to make the best nutritional choice

Is it Safe?

Safety is the number one priority for pet owners. The first question you should ask when considering a pet food should always be *is it safe?*

Factors that impact food safety:

- Manufacturing Site
- Raw Material Evaluation
- Supplier Validation and Audits
- Quality Control
- Finished product packaging and storage

Is it Nutritious?

Is the food complete and balanced? In other words, does it supply the essential nutrients required for survival?

Nutrients vs ingredients

- Individuals have requirements for nutrients, not for specific ingredients.

Dietary approach

- Regardless of the format food is provided in, the body uses nutrients

Is it Right for This Pet?

Does the food provide the nutrition that this pet requires? A nutritional assessment performed by the veterinary team will determine what the pet needs.

Be wary of where you get information on pet nutrition. What to look for from a resource providing nutrition advice:

- Pertinent credentials
- Access to resources
- Expertise in cat and dog health and nutrition
- Understanding of your individual pet

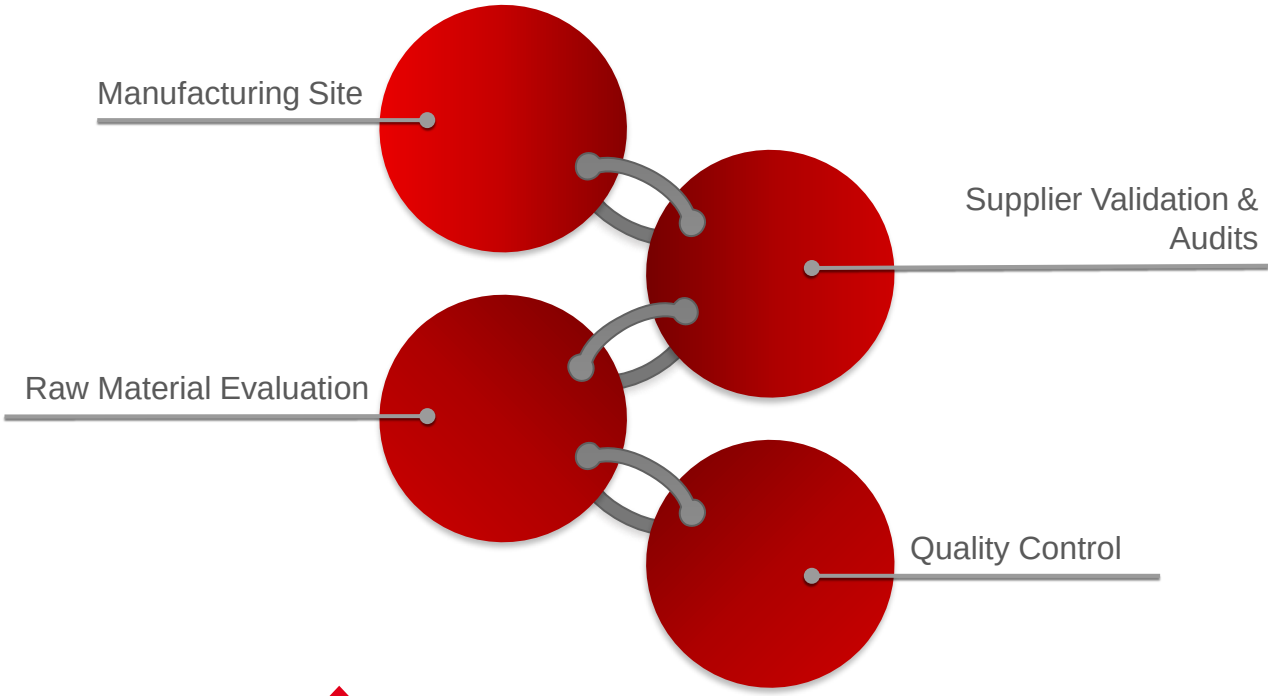
Is it safe?

The first question you should ask when considering a pet food should always be *is it safe?* It doesn't matter how nutritious or appealing a food is if the food is contaminated or unsafe.

Safety is the #1 priority for pet owners.

And the #1 priority for Royal Canin

Factors that Impact Food Quality and Safety



How Can You Find Out if a Pet Food is Safe?

The American Animal Hospital Association (2010) and the World Small Animal Veterinary Association (2011) published nutritional assessment guidelines for cats and dogs. In this document, specific questions were listed as suggestions to ask of pet food manufacturers. http://www.wsava.org/sites/default/files/Recommendations%20on%20Selecting%20Pet%20Foods.pdf

Example Questions to Ask a Pet Food Company

Do you have a Veterinary Nutritionist or some equivalent on staff in your company? Are they available for consultation or questions?

Who formulates your diets and what are their credentials?

Which of your diet(s) is AAFCO Feed Trial tested? Which of your diets meet AAFCO Nutritional requirements?

What Testing do you do beyond AAFCO trials? What kinds of research on your products has been conducted, and are the results published in peer reviewed journals?

What specific quality control measures do you use to assure the consistency and quality of your product line? What safety measures do you use?

Where are your diets produced and manufactured? Can this plant be visited?

Can you provide a complete product nutrient analysis of your bestselling canine and feline pet food?

Ask this list of questions of any pet food company you want to learn more about.

Baldwin K, Bartges J, Buffington T, et al. AAHA Nutritional Assesssment Guidelines for Dogs and Cats. J Am Anim Hosp Assoc. 2010; 46: 285-296. JSAP, July 2011;52(7):385-96

Royal Canin's Responses to the WSAVA Questions.

Do you have a veterinary nutritionist or someone equivalent on staff in your company? Who formulates your diets?

Royal Canin is a worldwide company providing nutritional formulas to cats and dogs in over 91 countries with state-of-the-art manufacturing facilities situated throughout the globe. Formulations are determined by a team of veterinary nutritionists, PhD nutritionists and Masters of nutrition primarily stationed at the Royal Canin Research Campus in Aimargues, France, but also in a number of other countries.

Using the knowledge gleaned from the Waltham Centre for Pet Nutrition, as well as the world wide body of research, the formulation team develops and validates new nutritional formulations at the Royal Canin Campus in Aimargues, France

Royal Canin's Responses to the WSAVA Questions.

Which of your diets are AAFCO Feed Trial tested? Which of your diets meet AAFCO Nutritional requirements?

There are over 100 dry and wet canine and over 90 dry and wet feline formulas. Most formulas have been validated according to AAFCO nutrient profiles and/or feeding trials though there are some special formulas with specific therapeutic formulations that preclude meeting the AAFCO nutrient profile. These formulas have all gone through alternate product testing, and many have been proven through clinical trials to be efficacious in managing the disease processes for which they were intended. All have been fed to either cats or dogs for long term trials, and the cats and dogs have thrived. Examples would be the Hepatic and Renal support formulas.

Royal Canin respects other nutritional standards globally. The nutritional requirements set by the National Research Council are utilized in addition to AAFCO and FEDIAF standards.

Royal Canin's Responses to the WSAVA Questions.

What testing do you do beyond AAFCO trials?

- ✓ Palatability trials
- ✓ Digestibility trials
- ✓ Blood parameters
- ✓ Relative Supersaturation trials
- ✓ Stool conformation
- ✓ Amino acid analysis
- ✓ Fatty acid analysis
- ✓ Toxicology studies and stability data
- ✓ Clinical trials for efficacy in conjunction with veterinarians and pet owners
- ✓ Peer reviewed research

Royal Canin's Responses to the WSAVA Questions.

What specific quality control measures do you use to assure the consistency and quality of your product line? What safety measures do you use?

Product quality begins with the audit of every single ingredient from each supplier. We source local ingredients whenever possible, however ingredient safety and quality is prioritized over geography in our ingredient selection. Each ingredient prior to entering the facility must be subjected to analysis conducted by trained technicians to confirm quality and safety. The centerpiece of the plant's laboratory in terms of product safety is the use of Near Infrared Spectroscopy (NIRS), an analytical test that compares the "fingerprint" of an ingredient to a database of standards (this database takes 3 years to establish). If the NIRS results for the incoming ingredient do not match the standard, then the ingredient is rejected prior to unloading.

The manufacturing facility is composed of 3 separate, but interconnected parts. Each part is color coordinated: red zone for pre-cooking, yellow for cooking and blue for cooked. The manufacturing facility is designed in a vertical arrangement which allows for an energy efficient flow, while the computerized formulation management system ensures that every formula is created precisely. In the first area of the facility (red zone), dry ingredients are received and stored. **All incoming ingredients are sampled and tagged to allow traceability - right to the source. To show further vigilance in this process, the ingredients in every bag of our formulas can be traced back to each stage of manufacturing, delivery and supplier.**

Over 500 salmonella tests are performed in our plant each week.

Ingredients are precisely weighed, ground and mixed to create a homogenous mixture. This mixture of ingredients is then delivered to the "kitchen" where heat and pressure will be supplied in the extruder to produce the kibble. A minimum temperature of 90°C is reached to ensure the control of bacteria, such as salmonella and listeria. In addition to this, **over 500 salmonella tests are performed in our plant each week, including tests on finished products, environmental swabs, and environmental residues.** This further monitors and protects against the most common cause of pet food recalls. Access to this area is strictly limited to skilled and authorized personnel only.

Positive pressure, just as in veterinary surgeries, reduces the possibility of bacterial contamination. Pneumatic pressure moves the kibble to the dryer, which, again, is arranged vertically for greater energy efficiency and more uniform drying. The kibble descends through 7 graduated zones until the correct moisture content is achieved.

The Royal Canin finished product is packaged in the 3rd area of the facility. Metal detectors are used during the process to provide a final safety check before the kibble is packaged. As the bags are filled, nitrogen is forced into the packaging to displace oxygen. Consequently, once the bag is sealed, there is minimal contact between the kibble and oxygen. This process ensures the food maintains a higher degree of freshness and palatability.

To enhance the level of biologic vigilance associates cannot move freely from one painted zone to the other.

Associates and tools working in the red zone cannot cross into the blue zone. The blue zone defines the area of the plant involved with finished product and packaging which has been sterilized by the extruder. Associates in the plant are required to wear special footwear, hair nets and clothing and require hand sanitization before entering the blue zone.

Associates in the plant are required to wear special footwear, hair nets and clothing and require hand sanitization before entering the blue zone.

Our safety measures however, do not end there. The Americas satellite laboratory situated in Guelph, Ontario, is a state of the art laboratory that conducts detailed analyses on all ingredients and finished product from plants in North and South America. This lab is integrated with labs in Asia and France, ensuring the quality and safety of all Royal Canin products worldwide. **The consequence of this remarkable technology from start to finish is that pet owners can be assured that Royal Canin products are free of any contamination and are 100% safe.**

From start to finish pet owners can be assured that Royal Canin products are free of any contamination and are 100% safe.

All internal laboratories have COFRAC ISO 17025 accreditation. This ensures the accuracy of our analysis methods and results. More than 500,000 analyses per year and more than 100 types of analyses are performed. Mars Quality Food Safety & ISO standards (9001/22000/14001) are applied in all sites and as part of the ISO 22000 standard, we apply a Hazard Analysis Critical Control Point (HACCP) based food safety management approach across the whole supply chain to the customer level. And in accordance with Good Manufacturing Practice Standard & General Principles of Food Hygiene all manufacturing sites conduct hygiene & pest control checks throughout the year.

Is it nutritious?

Cats and dogs require nutrients, not ingredients.

What is the healthiest nutrition for cats and dogs?

Feeding a complete and balanced formula indicates that an animal is receiving all essential nutrients. Complete and balanced nutrition can be achieved in a variety of ways for cats and dogs.

Meat can be an appropriate ingredient for cats and dogs when used correctly, however, there are often other ingredients that can be used as well. What matters is determining the optimal nutrition required to be healthy

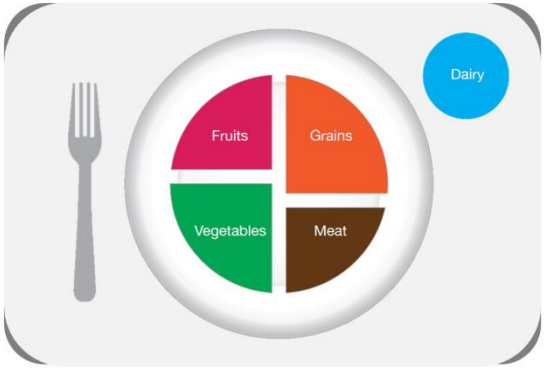
Nutrients must be delivered by digestible ingredients, that are broken down into nutrients such as amino acids and absorbed to serve various functions in the body. If digestible, it does not matter whether the raw material is of plant or animal origin.

How Can You Find Out if a Pet Food is Nutritious?

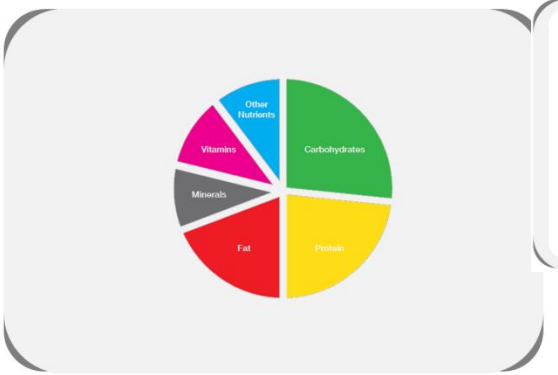
Complete and balanced nutrition can be achieved in a variety of ways.

Guidelines we follow to promote our own health

We ensure our food is balanced by combining foods from different food groups.



By doing this, we are providing our bodies with the essential nutrients we need to survive.



In fact, this balance can be achieved in a variety of ways. It's actually possible to create the same nutrient profile by combining very different ingredients. For example; chicken and mashed potatoes has a very similar nutrient profile to rice, beans and tofu, which has a very similar nutrient profile to a strawberry smoothie with 2% milk and protein powder. Three VERY different meals if you only consider the ingredients, but similar in nutrition.

How Can You Find Out if a Pet Food is Nutritious?

Nutritional adequacy can be determined by following the published nutrient parameters, or through specific feeding trials.

There are published guidelines on the nutrition requirements of cats and dogs.

Feeding a complete and balanced formula indicates that an animal is receiving all essential nutrients. This will usually be sufficient for survival, however a tailored nutrition solution which addresses the specific needs of the individual can enable an animal to thrive.

Complete and balanced nutrition can be achieved in a variety of ways for cats and dogs.

Homemade, raw, ingredient-first, and nutrient-first are different formats that nutrition can be provided.

Providing the essential nutrients for survival is a critical starting point, but incredible is in the details!

Read on to learn about some of the different formats of food available to feed cats and dogs.

Is Raw Food Safe?

Salmonella, *E. coli*, *Campylobacter*, *Listeria* and *Clostridium* are frequently isolated from both commercial and homemade raw diets.

The proposed benefits of raw feeding are unproven, while the many risks are well-documented.

Raw feeding is becoming popularized, however there are no proven health benefits and many risks associated with feeding cats and dogs raw food.

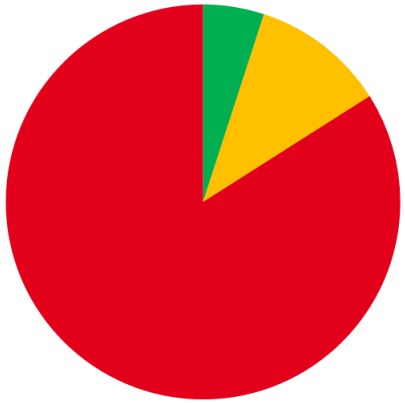
Various versions of raw feeding include; prey model raw (PMR), BARF, homemade, or commercial raw.

Safety should always be the first question when it comes to nutrition, because it doesn't matter how nutritious a product is if it is contaminated and will make you or your pets sick. In raw feeding, there is an increased risk of bacterial contamination. *Salmonella*, *E. coli*, *Campylobacter*, *Listeria* and *Clostridium* are frequently isolated from both commercial and homemade raw diets.

These are bacteria that can make pets sick, and can make people sick. While dry foods may also be affected by bacterial contamination, the frequency of this occurring in extruded dry food is much lower than in raw foods.

Freeman L, Chandler M, Hamper B, Weeth L. Current knowledge about the risks and benefits of raw meat-based diets for dogs and cats. J Am Vet Med Assoc 2013; 243(11): 1549-1558.

Is Raw Food Nutritious?



The proposed benefits of raw feeding are unproven, while the many risks are well-documented.

Raw feeding is becoming popularized, however there are no proven health benefits and many risks associated with feeding cats and dogs raw food.

In an evaluation of 200 home-prepared diets, only 5% were found to be complete and balanced, while 11% were deficient in one essential nutrient, and 84% were deficient in more than 1 essential nutrient. Nutritional deficiencies can have devastating consequences.

Stockman J, Fascetti AJ, Kass PH, et al. Evaluation of recipes of home-prepared maintenance diets for dogs. J Am Vet Med Assoc 2013;242:1500–1505.

Are ingredient-first diets nutritious?

Ingredient inclusions and exclusions give no indication of the quality of the nutrition provided.

Ingredient-based nutrition is an approach in which ingredients that are appealing to consumers are chosen and included in amounts that meet an animal's nutrient requirement for survival.

Ask the manufacturer to answer the WSAVA questions, to get an idea of the quality of the food.

Nutrient-first nutrition

Royal Canin uses a nutrient first approach to pet nutrition because this is the only way to tailor nutrition to the specific needs of individual cats and dogs.

This is the pet first approach to nutrition.

In a nutrient-first approach, the nutritional needs of an animal are evaluated, and an optimal nutritional profile is developed based on these nutritional requirements. From here, high quality, highly digestible ingredients are sourced which match the desired nutritional profile.

This is the only way to tailor nutrition to the specific needs of individual cats and dogs.

Nutrient-first nutrition: 4 goals

1. Body Development and Maintenance

Meet the nutrition requirements for healthy physical development and maintenance through precise levels of:

- amino acids
- minerals
- vitamins
- fatty acids

2. Energy Provision

Provide the energy the animal needs in the right amount and format through precise levels of:

- protein
- carbohydrates
- fat

3. Prevention

Help manage and prevent common concerns including the effects of aging, urinary issues, digestive problems, and skin conditions through precise levels of:

- antioxidants
- prebiotics
- fibre
- essential fatty acids

4. Special Care

Very specific nutrients can be limited or added in certain formulations in order to help cats and dogs affected by particular health issues.

At Royal Canin, each of our cat food formulas and dog food formulas are made up of over 50 nutrients that must be included in precise balance to supply the most effective nutrition for cats and dogs with different nutritional requirements. Because we know that only by feeding the best quality nutrition can we truly help pets stay as healthy and beautiful as possible.

Is it right for this pet?

Does the food provide the nutrition that this individual pet requires?

A food can be safe and nutritious but still not be the best choice for an animal.

The right food will provide a tailored nutrition solution which addresses the specific needs of the individual.

A nutritional assessment should be performed by a veterinarian before any nutritional recommendation is made.

A full nutritional assessment includes a complete diet history, full physical exam, and any necessary diagnostics .

Is it right for this pet?

Pet nutrition is complicated. Only accept advice on pet nutrition from knowledgeable, credible resources.

Pertinent credentials

- Education associated with animal health and nutrition
- DVM
- MSc/PhD in nutrition

Access to resources

- Company representatives, technical services, specialists, journals, veterinary conferences)

Knowledge about cats and dogs

- Breed predispositions
- Life stage requirements
- Disease management

Understanding of your individual pet

- Age
- Weight
- Household
- Medical history

What to look for in a resource providing nutrition advice

- ❑ Pertinent credentials
- ❑ Access to resources
- ❑ Expertise in cat and dog health and nutrition
- ❑ Understanding of your individual pet

After reading this chapter, you should understand the importance of managing conversations proactively instead of defensively, as well as the approach to making a nutritional assessment.

Changing the Conversation

Overview of the Section

How to move beyond "mythbusting".

Debunking myths is problematic. Unless great care is taken, any effort to debunk misinformation can **inadvertently reinforce** the very myths one seeks to correct.

The Debunking Handbook

Cook J, Lewandowsky, S. (2011), The Debunking Handbook. St. Lucia, Australia: University of Queensland. November 5. ISBN 978-0-646-56812-6. Available at: https://www.skepticalscience.com/docs/Debunking_Handbook.pdf [Accessed August, 2016].

Stop being defensive, be proactive and effective.

Many team members have reached the point of “nutrition fatigue” when it comes to addressing myths and misinformation.

Mythbusting is often an ineffective strategy to correct misinformation amongst pet owners and over time frustration and fatigue set in.

Mythbusting Doesn’t Work

In the past, the approach many of us have taken was to highlight the myth and then offer a plethora of scientific information to explain why that myth was incorrect. The impact of this is we’ve inadvertently strengthened the belief in the misinformation instead of shedding light on the truth.

What’s the solution?
Focus on nutritional truths and clear messaging!

Three major elements to avoid inadvertently reinforcing myths

Focus on Facts, Not Myths

Discuss nutritional truths instead of nutritional myths. Emphasize what is truthful and factual, not the misinformation.

In mythbusting, the myth is highlighted in big, bold letters, which means it is more likely to be remembered than the plethora of facts provided in smaller text beneath it.

Precede Myths with a Warning

If you must mention a myth it should be clearly preceded by a warning.

This warning needs to be obvious, so there is no confusion. Simply stating the word “myth” is not obvious enough to avoid confusion.

Provide an Easily Understood Alternate Explanation

Here the old saying, “keep it simple,” works wonders!

Complicated explanations are likely to create “information overload”. Instead, provide a simple, easy to understand message with one or two supporting facts to help the message stick.

Making a nutritional recommendation

Unfortunately, once misinformation is deep-seated in a pet owner's mind, it can be very difficult to change.

Even if we avoid inadvertently reinforcing these myths, we may not be able to completely abolish them.

So what can be done to ensure pets receive the best possible nutrition, while still meeting the personal views of the pet owner? We need to communicate!

The following pages outline the steps that should be taken in order to provide the right nutritional recommendation, along with the information the pet owner needs in order to accept and follow it.

Making a nutritional recommendation

Step 1. Diet History

Collect diet history information using different strategies.

- Verbal: Start by asking open-ended questions initially.
- Written: Have the owner complete a diet history form (examples available online at: www.wsava.org/nutrition-toolkit).

When booking appointments, tell the pet owner to bring all pet food and treat packages to the appointment to ensure you have an accurate diet history.

Alternatively, provide an email account where pet owners can email photos of all pet food and treats they are feeding.

Sometimes the diet history forms do not provide enough information. If this is the case, have the pet owner keep a diet log for an entire week if more information is needed (e.g. what foods were offered, amounts offered in grams, amounts consumed in grams, and any notes the pet owner feels are relevant).

Making a nutritional recommendation

Step 2. Nutritional Assessment

Perform a complete Nutritional Assessment using a predefined checklist.

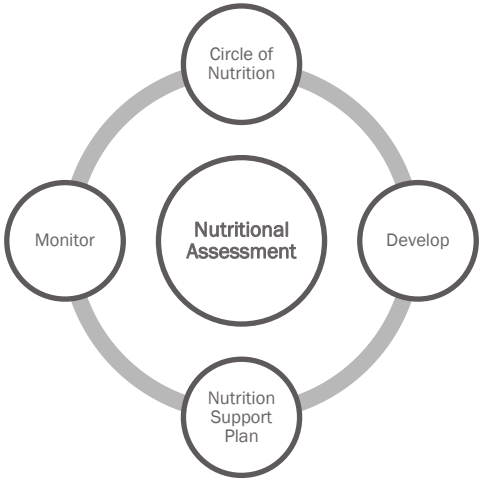
This checklist will quickly allow the veterinary team to work together on every patient's screening evaluation.

This checklist demonstrates to the pet owner everything the veterinary team does to evaluate their pet's diet.

This tool also provides an area for developing an individualized nutrition support plan for patients. The plan must include monitoring in order to be successful (e.g. recheck appointment in two weeks to reassess weight, BCS, and MCS).

If risk factors are identified during the screening evaluation, then an extended evaluation is required. The more risk factors identified during the screening evaluation, the more important an individualized nutrition support plan becomes for the patient.

An extended nutritional assessment is required for senior patients and patients with medical conditions to gather further information on the circle of nutrition: patient, diet, and feeding management and environment.



Global Nutrition Committee Toolkit, courtesy of the World Small Animal Veterinary Association.
www.wsava.org/nutrition-toolkit

Making a nutritional recommendation

Step 3. Don't assume, communicate!

Make sure you have all the information you need.

After going through the nutritional assessment, ask the pet owner to tell you about any concerns they have regarding their pet's nutrition. Open-ended questions are the best strategy for gathering information from the pet owner (e.g. Now that we have completed Maggie's nutritional assessment, what concerns do you have regarding Maggie's nutrition?).

Clarify the pet owner's concerns with reflective listening and further open-ended questions/statements (e.g. You mentioned that you do not want to feed by-products to Maggie. Please tell me a little more about your concerns with by-products. I want to be sure I understand your concerns.)

Making a nutritional recommendation

Step 4. Practice talking points – nutritional truths

Practice giving simplified messages during role play with colleagues to increase your level of comfort.

Compliment the pet owner

- e.g. I'm glad you are so focused on providing the best possible nutrition to Maggie.

Ensure your talking points address the pet owner's concerns and that the message is easy to understand

- e.g. By-products are nutritious. By-products provide many nutrients including protein, fat, vitamins, and minerals, which Maggie needs.

My Talking Points.

Write down some nutritional truths to practice.
Remember, keep it short and simple.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

The more often you practice delivering nutritional truths to pet owners, the more confident you will become.

Making a nutritional recommendation

Step 5. Follow up with resources

Provide the pet owner with more information (e.g. Would it be alright if I emailed you some good resources on by-products? Then we can make a follow up appointment if you have further questions about Maggie's nutrition.)

Examples of resources:

Global Nutrition Committee Toolkit provided courtesy of the World Small Animal Veterinary Association:
www.wsava.org/nutrition-toolkit

- Selecting the best food for your pet
- The savvy cat owner's guide to nutrition on the internet
- The savvy dog owner's guide to nutrition on the internet

Pet Nutrition Alliance website: http://petnutritionalliance.org/

After reading this chapter, you should feel comfortable handling common nutrition misconceptions by using positive nutrition messages which highlight nutritional benefits, instead of defending against myths and inaccuracies.

Nutritional Truths

overview of the section

Understanding some of the common misconceptions in pet nutrition.

Nutritional Truths

Pets require nutrients. There is no requirement for specific ingredients in an animal's diet.

In the pet nutrition industry, fear is often used as a marketing tactic.

This section will help to address some of the common misconceptions in pet nutrition.

Nutritional Truths

Topic	Nutritional Truth	What you may hear
Choosing the right food	The most important considerations when choosing what to feed our pets are: “Is it safe?”, “Is it nutritious?” And “is it the right food for this pet?”	Some foods may be marketed based on their format (eg: list of ingredients, negative marketing messages, raw, dry vs canned) rather than the nutrition they provide.
Ingredients • By-products • Grains • Wheat • Corn • Meat	Ingredients provide nutrients. Their nutrition depends on the nutrients they provide, their digestibility, and how they are processed, among other factors.	Some ingredients have been vilified, and some ingredients receive recognition beyond their nutritional value. Click the name of each ingredient to the left to learn how to handle misconceptions related to these ingredients.
Nutrients • Protein • Carbohydrates • Fat	These macronutrients are digested by cats and dogs and provide energy and (for protein) building blocks for body tissues. The body cannot differentiate where a nutrient originated. What matters is that the right nutrients are provided in the right amounts.	There is a misconception that the ingredient which provides a nutrient changes the quality of a nutrient.
Marketing Terms • Biologically appropriate • Holistic • Natural • Premium	It doesn’t matter if you label a dog or cat a carnivore or an omnivore, what matters is identifying and meeting their nutrient needs.	Some foods are marketed based on advertising terms. These give no indication of the quality or appropriateness of a diet for an individual. There is no requirement for different quality of ingredients or different processing and manufacturing standards in pet foods using advertising terms.

Nutritional Truths

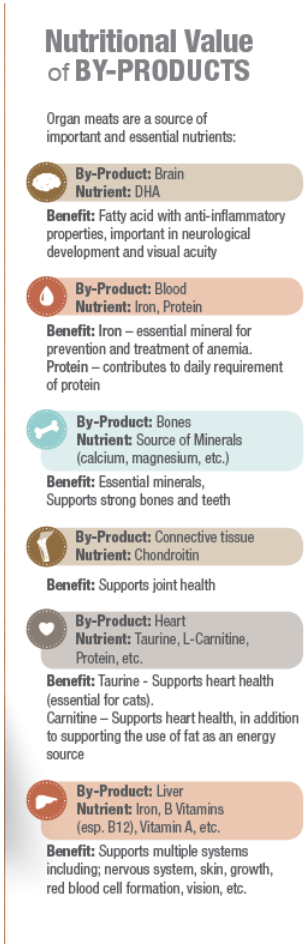
Understanding Ingredients

Ingredients provide nutrients. Their nutrition depends on the nutrients they provide, their digestibility, and how they are processed, among other factors.

Some ingredients have been vilified, and some ingredients receive recognition beyond their nutritional value. Read on to learn how to handle misconceptions related to commonly discussed ingredients.

Understanding By-Products

Many "by-products" are considered staples in the diet or even delicacies in other cultures.



What are By-Products?

By-products are defined by the Association of American Feed Control Officials as "secondary products produced in addition to the principal product."* By-products can be from animal or plant sources.

By-products from animal sources may include a combination of meat (or cuts or parts) including lungs, spleen, kidneys, brain, livers, blood, bone, necks, undeveloped eggs and intestines.

Chicken By-Product Meal is produced through a process of cooking, drying and separation of fats and proteins from animal carcasses. Chicken by-product meal is much more nutrient dense than the ingredient "chicken", which includes water.

By-products are an excellent source of protein, fat, minerals, and vitamins. These foods play many vital roles in a dog or cat's body by supplying essential amino acids used for building and renewing organs and muscles, supporting the immune system, and supplying energy. By-products from animals and grains used in reputable pet food products are derived from the very same sources as human foods and are safe and nutritious.

The decision to not use these in the human food cycle is based upon cultural, philosophical, appearance, or taste preferences. In other areas of the world by-products are eaten regularly as part of a healthy, nutritious diet.

* http://talkspetfood.aafco.org/byproducts

By-products are Nutritious!

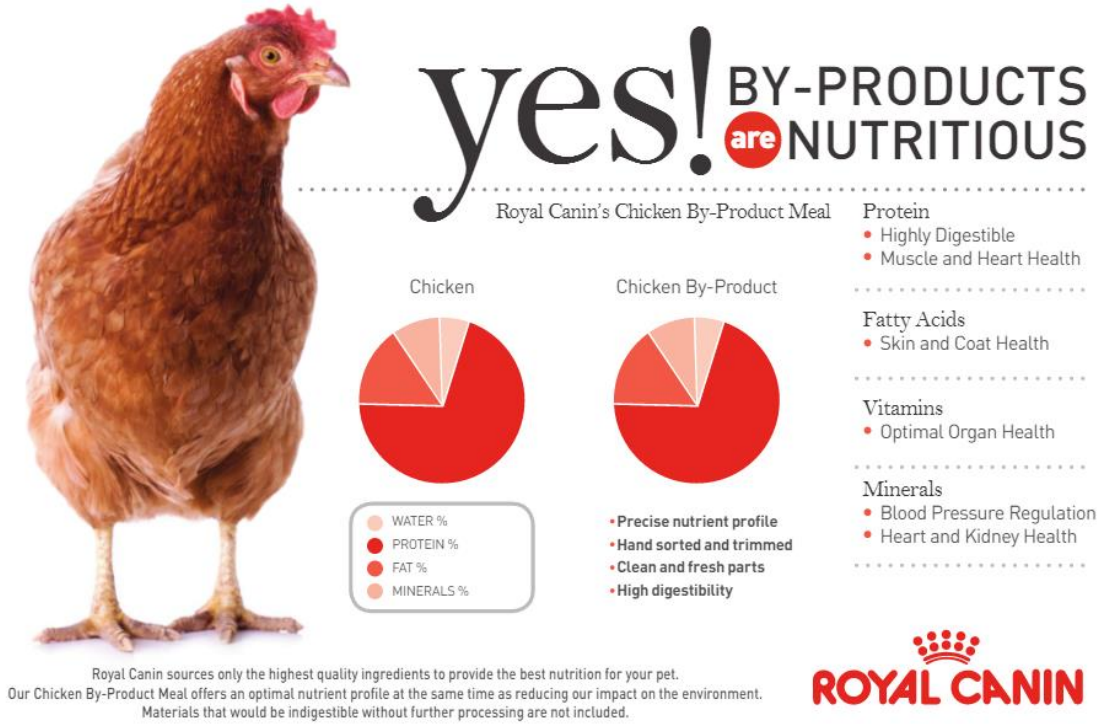
Royal Canin only accepts ingredients from validated suppliers who undergo regular audits.

We choose ingredients because they deliver high-quality nutrients that support our customized pet food formulas. Using chicken by-product meal instead of chicken meal for example will allow Royal Canin to maintain our highly customized nutrient standards while also achieving a more secure and sustainable supply.

- By-products are defined by AAFCO as secondary products produced in addition to the principle product. They can be from animal or plant sources.
  - Chicken by-product meal
  - Corn meal
  - Beet pulp
  - Chicken stock
  - Internal organs (liver, kidney)
  - Fish oil
  - Gelatin

By-products provide high quality protein and other nutrients that are not present in skeletal muscle. What's important is not what looks the best on the ingredient panel—but our ability to identify and deliver on the precise nutritional needs of cats and dogs.

This is an example of a positive messaging tool which can be used to highlight the nutritional benefits of an ingredient, instead of mythbusting or being defensive about using the ingredient.



*This data represents the nutritional composition of ingredients used by Royal Canin

By-products are nutritious!

Many negative advertising messages exist around by-products.

By-products **do not** include road-kill, euthanized cats and dogs, diseased and/or cancerous animal parts, or foreign materials. By-products provide high quality protein and other nutrients that are not present in skeletal muscle.

By-products are the parts of food-producing animals not generally consumed by North American consumers. The decision to not use these is based upon cultural, philosophical, appearance, or taste preferences. In other areas of the world by-products are eaten regularly as part of a healthy, nutritious diet.

Having the term by-product in the ingredient list does not specify anything about the pet food's overall level of quality

CONSIDER THIS...

The human population is **growing at an exponential rate.**

Human consumption of chicken alone has **DOUBLED** in the last **30 years** *(Statistics Canada 2011).*

The increased human demand worldwide has **DECREASED** the amount of chicken meat available for other uses *(Yegani 2008)*

How is production meeting this increased demand worldwide?

- Worldwide chicken meat and egg production have increased over the last 30 years *(Yegani 2008)*
- However, in Canada production has not grown in the last three years *(Statistics Canada 2012)*
- In the United States poultry production has experienced a decline *(USDA 2012)*
- The proposed decline in the United States production is expected to be a result of increased grain costs *(USDA 2012)*

Similar scenarios are a possibility for other countries in the future.

What happens to the **parts of the chicken** that **aren't eaten** by humans?

This "waste" includes many highly digestible tissues that provide sources of valuable nutrients. Instead we could be using these by-products to produce nutritious, complete formulas for our pets without creating increased pressure on poultry production. *(Agriculture and Agri-Food Canada, 2009)*

As an environmentally conscience company Royal Canin has conducted the necessary research and established sound scientific evidence to the merits of utilizing these by-products.

WHAT ABOUT ALTERNATIVE MEAT?

Increasing demand on these alternate sources will create similar pressures to those already being felt in the poultry industry.

In 2010, five populations of Atlantic **salmon** were declared **endangered**, one **threatened**, one **extinct**, and four others of special concern *(COSEWIC 2010)*

Is this really where we want to place more pressure when sources of rich nutrients are currently available that do not increase pressures?

Understanding Grains

Grain-free foods are being popularized, however avoiding this category of ingredients is unnecessary except in the case of diagnosed adverse food reactions, and may prevent an animal from getting certain nutrients like readily-available energy and essential fatty acids.

Grains are digestible and nutritious.

Grains are nutritious!

Royal Canin only accepts ingredients from validated suppliers who undergo regular audits.

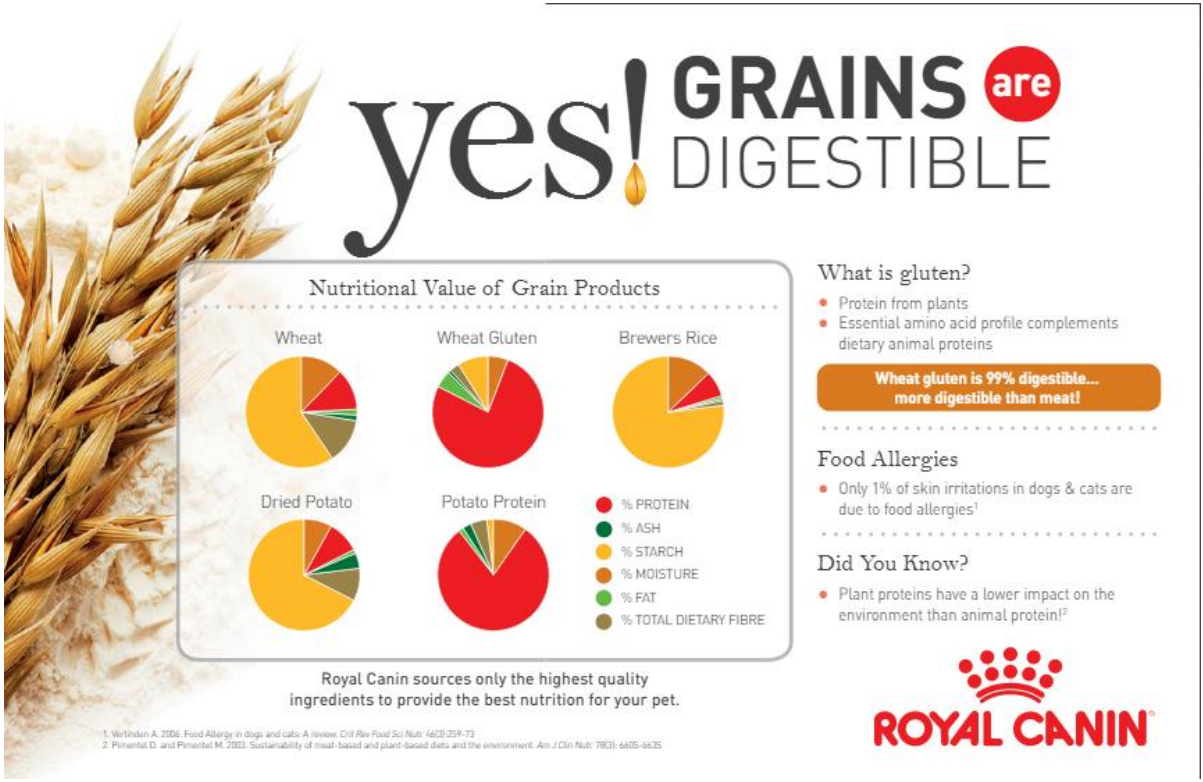
We choose ingredients because they deliver high-quality nutrients that support our customized pet food formulas. Grains supply many important nutrients including protein, carbohydrates, essential fatty acids, vitamins and minerals.

Grains are important sources of nutrients including amino acids, fatty acids, vitamins, minerals, and fiber.

- Pet foods may include one or more grains such as rice, wheat, corn, barley, and oats.

Grains are an important source of many essential nutrients.
The six essential nutrients are:
Fat
Protein
Carbohydrates
Vitamins
Minerals
Water

This is an example of a positive messaging tool which can be used to highlight the nutritional benefits of an ingredient, instead of mythbusting or being defensive about using the ingredient.



*this data represents the nutritional composition of ingredients used by Royal Canin.

Grains are nutritious

Many negative marketing messages exist around grains.

Many people misinterpret skin and coat issues with food allergies, and erroneously recommend grain-free diets for itchy pets.

In fact, food allergies are not as common as pet owners believe. It's more likely a reaction to something in the environment.

- Food allergies can be caused by any ingredient containing protein.
- Grains are no more allergenic than any other ingredient including fruit, vegetable, or animal protein. Less than 1% of dogs and cats are sensitive to grains.
- Grains provide nutrients which support a healthy skin and coat.

There is nothing inherently allergenic about grains.

Grains provide nutrients which support a healthy skin and coat.

Roudebush P, et al (2000). Adverse Reactions to Food. Small Animal Clinical Nutrition 4th ed. 431-463.

Grains are digestible

Many negative marketing messages exist around grains.

Many people mistakenly believe that cats and dogs are unable to digest grains.

Cooking and grinding make grains extremely digestible.

- Cats and dogs produce the enzymes required to digest grains.
  - Amylase digests starch and is produced in the pancreas of both cats and dogs
  - Proteases digest gluten (the protein found in grains) and is produced in the pancreas of both cats and dogs.

Plant proteins can be more digestible than animal proteins, when cooked and finely ground.

.

Roudebush P, et al (2000). Adverse Reactions to Food. Small Animal Clinical Nutrition 4th ed. 431-463.

Wheat is nutritious!

Royal Canin only accepts ingredients from validated suppliers who undergo regular audits.

We choose ingredients because they deliver high-quality nutrients that support our customized pet food formulas. Wheat supplies many important nutrients.

- Whole wheat grain contains starch (meal body of the grain), fiber (bran layer), protein (bran layer), & vitamins, essential fatty acids and antioxidants (germ)
- Wheat and wheat flour:
  - Excellent source of energy
  - Source of vitamins, antioxidants and essential fatty acids
- Wheat gluten (the protein portion of wheat with the starch removed)
  - Very highly digestible source of protein
  - Good source of essential amino acids and particularly a good source of glutamine, an amino acid, that supports gut health and the gastrointestinal mucosa´s barrier function.

Wheat provides not only energy, but a wide variety of beneficial nutrients.

Wheat is Nutritious!

	Wheat*	Wheat Gluten*	Wheat Flour**	Wheat Bran**
Protein %	12	80	14	16
Ash %	2	1	0.5	0.5
Starch %	59	9	71	21
Moisture %	12.5	6	12	12
Fat %	1.5	5.5	2	0.5
TDF %	13	2.5	0.5	50

The wheat gluten used by Royal Canin is 99% digestible.*

What is gluten?

- Protein from plants
- Essential amino acid profile complements dietary animal proteins

Wheat gluten is 99% digestible... more digestible than meat!

Food Allergies

- Only 1% of skin irritations in dogs & cats are due to food allergies[1]

Did You Know?

- Plant proteins have a lower impact on the environment than animal protein![2]

*This data represents the nutritional composition of ingredients used by Royal Canin.
**This data is pooled and includes data from additional sources.

Wheat is nutritious

Many negative marketing messages exist around wheat.

Wheat often gets a bad reputation for being used in pet foods as a “filler”. By definition, a filler is an ingredient with little to no nutritional value. However, wheat in fact contains many important nutrients including protein, carbohydrates, essential fatty acids, vitamins and antioxidants.

When thinking about the whole grain of a wheat, it’s understandable that some people think that wheat is not digestible for cats and dogs. The outer shell of the wheat kernel contains fibre that is not digested. Grinding wheat exposes the highly digestible centre of the wheat kernel so the body can benefit from the nutrients it contains. Even more precisely, the protein part of the wheat can be separated with a specific method. The fibre from the shell, on the other hand, helps to promote healthy digestion.

Having the term wheat in the ingredient list does not specify anything about the pet food’s nutritive value

Wheat is nutritious

Many negative marketing messages exist around wheat.

Wheat often gets a bad reputation for being used in pet foods because it is mistakenly blamed as a common cause of food allergies.

It has been reported that animal sources of protein such as beef, dairy, chicken, fish, lamb, and egg are the most common food allergens. Wheat is less often responsible for cases of diagnosed food allergy. In fact, food allergies are not as common as pet owners believe. It's more likely a reaction to something in the environment.

- Gluten sensitive Enteropathy is a rare condition of intolerance – not allergy –to wheat gluten in dogs. It was familiarly inherited in some Irish Setters in England, but has been extinct due to breeding hygiene measurement. It can turn up in single individuals (cats and dogs). Those animals have to avoid wheat in there diet to thrive.

There is nothing inherently allergenic about wheat.

Typically when a pet has a food allergy it will be to the main protein sources in the diet.

Understanding Corn

Corn is perhaps the most vilified ingredient in pet nutrition. However, corn is a golden nugget of nutrients that provides many benefits to the pet.

Corn is digestible and nutritious.

Corn is nutritious!

Royal Canin only accepts ingredients from validated suppliers who undergo regular audits.

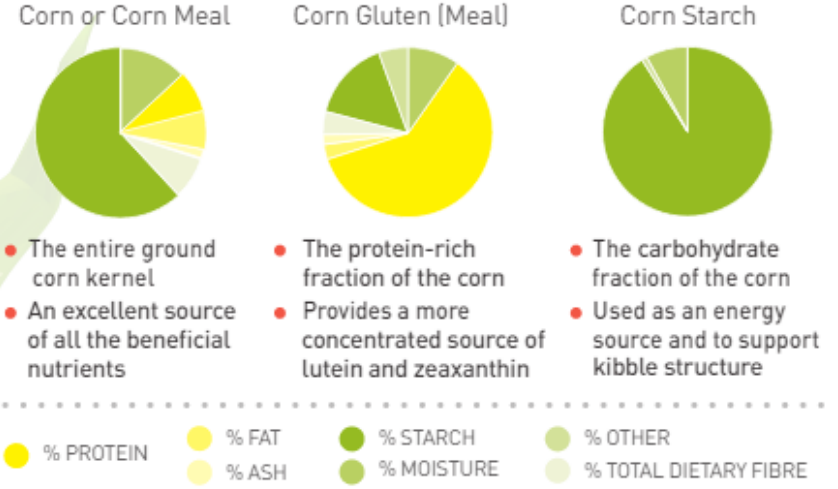
We choose ingredients because they deliver high-quality nutrients that support our customized pet food formulas. Corn supplies many important nutrients including protein, carbohydrates, essential fatty acids, vitamins and minerals.

- provides the essential fatty acid linoleic acid
  - important for healthy skin and haircoat
- Supplies vitamin A (beta carotene) and vitamin E
- Corn gluten (the protein portion of corn)
  - highly digestible when ground into a meal and cooked
  - a good source of amino acids such as methionine and cysteine
  - source of the antioxidants lutein and zeaxanthine

Corn provides such a wide variety of beneficial nutrients, we like to call it the "golden nugget" of nutrients!

yes! CORN IS A NUTRITIOUS NUGGET

Nutritional Value of Corn Products



Corn is a source of:

Lutein and Zeaxanthin
- Powerful antioxidants supporting eye health and protecting the cellular membrane from free radical attack

Protein
- Methionine and cysteine for skin and coat health

Fibre
- Soluble and insoluble fibres for gastrointestinal health and promote optimal stool quality

Vitamins & Minerals
- Excellent source of B complex vitamins, vitamin E, vitamin A, zinc and manganese

Fatty Acids
- For skin health and coat quality

The grinding of corn into a meal increases the digestibility from 79 to 94%.
Royal Canin sources only the highest quality ingredients to provide the best nutrition for your pet.

ROYAL CANIN

**This data represents the nutritional composition of ingredients used by Royal Canin.

Corn is nutritious

Many negative marketing messages exist around corn.

Corn often gets a bad reputation for being used in pet foods as a “filler”. By definition, a filler is an ingredient with little to no nutritional value. However, corn in fact contains many important nutrients including protein, carbohydrates, essential fatty acids, vitamins and minerals.

Corn supports

- Energy requirements through highly digestible carbohydrates, protein, and fat
- Glossy coat through omega-6 fatty acids
- Strong skin and hair through sulfur amino acids
- Healthy digestion through insoluble fibre
- Healthy vision through antioxidants including lutein, zeaxanthine, and B-carotene.

Having the term corn in the ingredient list does not specify anything about the pet food’s overall level of quality

Corn is nutritious

Many negative marketing messages exist around corn.

Corn often gets a bad reputation for being used in pet foods because it is mistakenly blamed as a common cause of food allergies.

It has been reported that animal sources of protein such as beef, dairy, chicken, fish, lamb, and egg are the most common food allergens. Corn is less often responsible for cases of diagnosed food allergy. In fact, food allergies are not as common as pet owners believe. It's more likely a reaction to something in the environment.

There is nothing inherently allergenic about corn.

Typically when a pet has a food allergy it will be to the animal protein sources in the diet.

Corn is safe

Many negative marketing messages exist around corn.

Corn often gets a bad reputation for being used in pet foods because of fear and misunderstanding surrounding GMOs.

GMO stands for Genetically Modified Organism. For GMO crops, one or more genes from one organism (such as a plant or microbe) are inserted into another plant to impart beneficial characteristics in the plant, such as drought tolerance or resistance to bacteria to which the plant is susceptible in the environment.

- The use of pesticides in a crop is not related to whether a food is GMO, conventional or organic. If you have concerns about pesticide residue, refer to the section “is it safe”.
- There was a methodologically and ethically flawed paper published which implied GMOs increase the risk of cancer. This paper was retracted from the original journal due to poor quality research and incorrect conclusions. The findings have never been replicated, and many studies have been performed which refute the claims of this one study.

Numerous studies performed both by companies and by independent scientists have demonstrated that GMO crops are safe and provide the same nutritional benefits as non-GMO crops.

Corn is digestible

Many negative marketing messages exist around corn.

Some people mistakenly believe corn is not digestible because they observe undigested corn kernels the day after eating corn on the cob.

The outer shell of a corn kernel is made of fibre, so it is not digested by dogs, cats or humans, but the inside of the corn kernel is highly digestible. Grinding corn exposes the digestible inside of the kernel so the body can benefit from the nutrition it offers.

- Royal Canin chooses high quality corn with a specific nutrient profile that provides important benefits to pets.

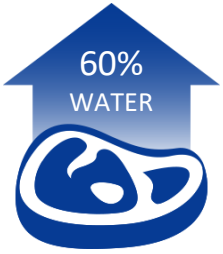
.

The grinding of corn increases the digestibility by as much as 15%

Roudebush P, et al (2000). Adverse Reactions to Food. Small Animal Clinical Nutrition 4th ed. 431-463.

Understanding Meat

Fresh meat and poultry contains over 60% water. That leaves less than 40% of the weight for protein and other nutrients!



Meat and Poultry in Pet Food?

Meat can be an appropriate ingredient when used correctly, however, there are often other ingredients that can be used as well. What matters is determining the optimal nutrition required to be healthy.

Sometimes, meat is mistakenly used as a synonym for protein, however, meat provides a variety of nutrients including protein, water, vitamins, and minerals. In addition, protein is supplied by several ingredient sources, including vegetables, meat, legumes, and grains.

Fresh Meat/Meat Meal

Meat meal is a concentrated source of protein. The term “meal” simply indicates that the meat is dried and the fat removed prior to inclusion in a pet food. This production method is beneficial for making dry cat or dog food. The term meal does not indicate anything about the quality of a pet food or the quality of the protein source.

Because fresh chicken contains so much water, 1 kg of chicken meal provides more nutrients than the same weight of fresh chicken.

1 kg fresh chicken provides:
250g nutrients + 750g of water

1 kg chicken meal provides:
940g nutrients + 60g water.

* http://talkspetfood.aafco.org/byproducts

Meat or poultry as the first ingredient gives no indication of the nutrition provided

Ingredients are listed in descending order of weight of raw materials. The ingredients are weighed prior to processing. Because meat is 70-80% water by weight, having meat as the first ingredient does not indicate that a significant portion of the protein in the pet food is coming from that meat.

Often, a pet food will have a skeletal muscle meat source as the first ingredient and a meat (or poultry) meal as the second ingredient. Because meat is 70-80% water and meat (or poultry) meal provides more concentrated (and lighter in weight) protein at 10% moisture, it is likely in those scenarios that more of the protein in the pet food is actually coming from the meat meal versus the meat itself.

The nutrition provided by the entire diet, not which ingredient is first on the ingredient list, is what impacts the animal's health.

When a pet food has meat as the first ingredient, it does not indicate anything about the diet's overall level of quality.

“All Meat” diets are dangerous and unbalanced

Some messaging you might come across erroneously states that the ancestors of cats and dogs ate all-meat diets, and inappropriately recommend this for our pets.

The ancestors of cats and dogs, including wolves, ate their entire prey. While this did include meat, it also included the internal organs and the stomach contents of their prey – which frequently included plant products.

- This provided the ancestors of the cat and dog with essential fatty acids, vitamins, and minerals.
- There is great potential for nutritional inadequacy such as nutritional excesses or deficiencies in cats and dogs consuming meat without additional foods and supplements.
- Pet food is designed to be complete and balanced, meaning it contains all of the essential nutrients for a cat or dog in the proper quantities. Plant products provide essential fatty acids, fiber, vitamins, and minerals – making them important when creating a complete and balanced diet for a cat or dog.

All-meat diets are not balanced for cats and dogs.

An all-meat diet is deficient in calcium and contains excess phosphorus, which can cause brittle bones and fractures.

Lenox et al (2015). Case Report: Metabolic bone disease and central retinal degeneration in a kitten due to nutritional inadequacy of an all-meat raw diet. Journal of Feline Medicine and Surgery Open Reports 1-5.

“Raw” diets are dangerous and unbalanced

Raw feeding is becoming popularized, however there are no proven health benefits and many risks associated with feeding cats and dogs raw food.

Nutritional inadequacy

- Many raw diets are unbalanced and may contain nutrient deficiencies or excesses. This applies to homemade raw diets and commercial raw diets that are labeled as “intended for intermittent or supplemental feeding only.”

Risk for obstruction of the intestinal tract and/or perforation from bones, which can be life-threatening.

Food safety risk

- There have been numerous studies looking at risk of bacterial or protozoal infection from raw foods which includes both homemade raw and commercial raw diets. Both types of raw diets are at risk for containing pathogenic organisms like Salmonella, E. coli, and Campylobacter. Cats and dogs can carry Salmonella without being sick, so owners may not know that their dog or cat has a significant infection with shedding (meaning bacteria is present in the animal’s feces). While the risk is highest for pregnant women, children, and immunocompromised individuals, there is a general public health risk for anyone in the household if a pet has Salmonella or other organisms from raw food.

The proposed benefits of raw feeding are unproven, while the many risks are well-documented.

Freeman LM et al (2013). Current knowledge about the risks and benefits of raw meat-based diets for dogs and cats. *J Am Vet Med Assoc*; 243: 1549-1558.

Nutritional Truths

Understanding Nutrients

Nutrients are the functional components of food. Nutrients are essential for cats and dogs and provide energy (protein, fat, carbohydrates), and building blocks for body tissues and/or metabolic processes (protein, fat, vitamins, minerals). The body cannot differentiate where a nutrient originated. What matters is that the right nutrients are provided in the right amounts.

Understanding Protein

Protein can be supplied using vegetables, legumes, grains, and meat and/or meals.

Protein

Protein is one of the three macronutrients required in an animal's diet. Protein can also be used as a source of energy.

Proteins are very large, complex molecules. They play critical roles in almost every aspect of the body; including the muscle mass, enzymes, the immune system, bones, blood, and within cells of the body.

Protein Quality

The amino acid profile and digestibility of the protein determine protein quality. Both animal proteins and plant proteins can be highly digestible (that is, easily broken down and utilized) and both contain amino acids that cats and dogs need.

Amino acids are the building blocks of protein. There are two types of amino acids, essential and non-essential. Essential amino acids cannot be manufactured in the body in sufficient quantities, if at all, therefore, they must come from the food. Non-essential amino acids are not any less important than essential amino acids; however, the body has the capacity to manufacture them in sufficient quantities. Dogs have a dietary requirement for 10 essential amino acids, while cats require 11.

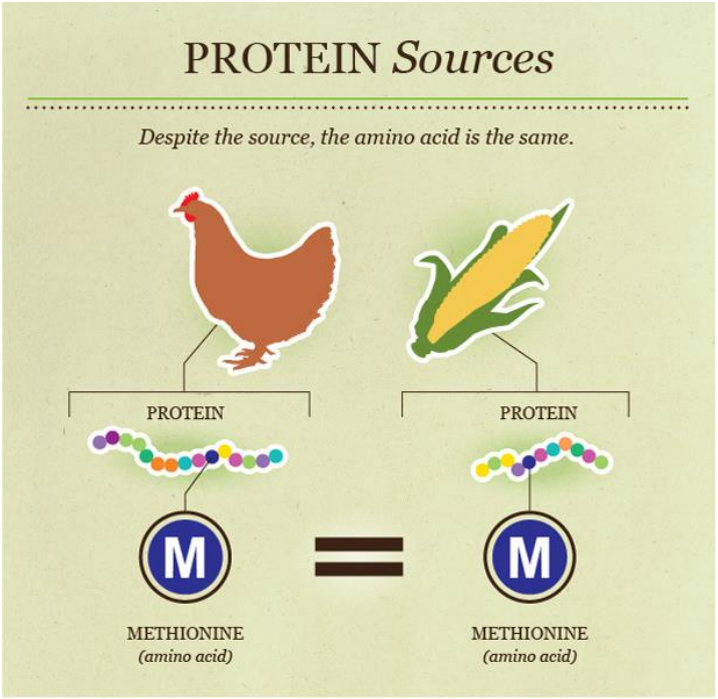
* http://talkspetfood.aafco.org/byproducts

Protein can come from many sources

Protein can come from many sources.

People commonly think of meat as the primary means of providing protein to the body. However, grains, seeds, legumes, and vegetables are also excellent sources of high quality protein.

The protein from one food source will differ from the protein in another food source by the length of the polypeptide chain, the individual amino acids that comprise the protein, and the structure of the folded protein. It should be noted that an individual amino acid from one source (eg. corn), for example methionine, will be the exact same as that amino acid from another source (eg. chicken). It is also possible to provide individual proteins or amino acids to a formula. This would be necessary when a more precise amount of a specific amino acid is needed to meet nutritional requirements, performance requirements or for disease treatment or prevention.



A lower biological value does not make a protein source inferior

Protein with a high biological value contains the essential amino acids in a proportion similar to that required by an animal.

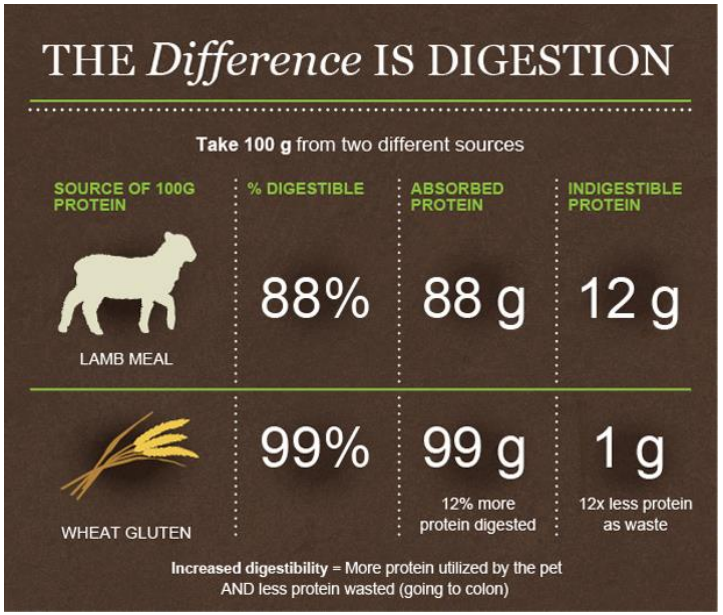
Biological value of the entire diet is important, because if there are essential amino acids missing the diet is not complete and balanced.

It doesn't matter if dietary protein comes from one source, or from multiple sources, as long as the total protein supplied in the diet provides all the necessary amino acids in the correct amounts.

- Consider going outdoors in cold weather. You can dress in pants and a top, or in coveralls. They both provide protection from the cold weather, just in different ways.
- The coveralls are like a high biological value protein, while the pants and top are like two complimentary lower biological value proteins, such as rice and beans.

The biological value of the entire diet, not individual ingredients, is what impacts the animal's health.

Protein digestion



Digestibility determines how much protein can be broken down in the gastrointestinal tract, absorbed into the blood stream, and utilized by the body.

Any protein not broken down in the digestive tract will be wasted in the stool. If protein is present in the colon as stool is being formed odoriferous flatulence and loose stool can occur.

Protein digestion begins in the stomach. Stomach acid uncoils the folded protein and specific enzymes break it down into smaller protein chains and individual amino acids. Digestion then continues in the small intestine where different enzymes from the pancrease continue to break down the protein. The individual amino acids get transported from the gastrointestinal tract into the blood to be used by the body to build its own proteins.

Understanding Carbohydrates

Both cats and dogs can utilize and benefit from carbohydrates in their diet.

Carbohydrates

Carbohydrates are a source of energy, which is essential to survival.

Using carbohydrates as an energy source is protein and fat sparing. It allows for fat and protein in the diet to be used for other functions.

Both cats and dogs produce amylase, the enzyme required to digest starch.

Recent research reveals that the early ancestors of modern dogs underwent genetic changes which allowed them to thrive on a higher starch diet.*

Why Feed Carbohydrates?

Consider building a campfire. You can burn kindling, or you can burn $100 bills. Both will effectively burn, but, the $100 bills could be used to buy things, so burning them is essentially wasting them.

Carbohydrates are like kindling; a great source of energy. Protein is like those $100 bills; you can burn them for energy, or use can use them to build tissues, create enzymes, and perform other functions.

Reducing the protein required is also important for sustainability; we have a finite amount of protein sources available to us and we are depleting them rapidly. It is not environmentally responsible to load up a diet with protein when there is no nutritional benefit to doing so.

*Axelsson et al.. The genomic signature of dog domestication reveals adaptation to a starch-rich diet. Nature. 2013;495(7441):360-4

Carbohydrates do not cause obesity, and do not cause diabetes

Obesity is caused by overfeeding. Obesity is a risk factor for diabetes mellitus.

Calories come from fat, protein, and carbohydrates. Too many calories, regardless of the source, can lead to excessive weight gain, which is a risk factor for diabetes.

Inactivity and obesity are risk factors for the development of diabetes mellitus in cats, not diet type.

Slingerland LI, et al. Indoor confinement and physical inactivity rather than the proportion of dry food are risk factors in the development of feline type 2 diabetes mellitus. Veterinary Journal, 179: 247-253, 2009.

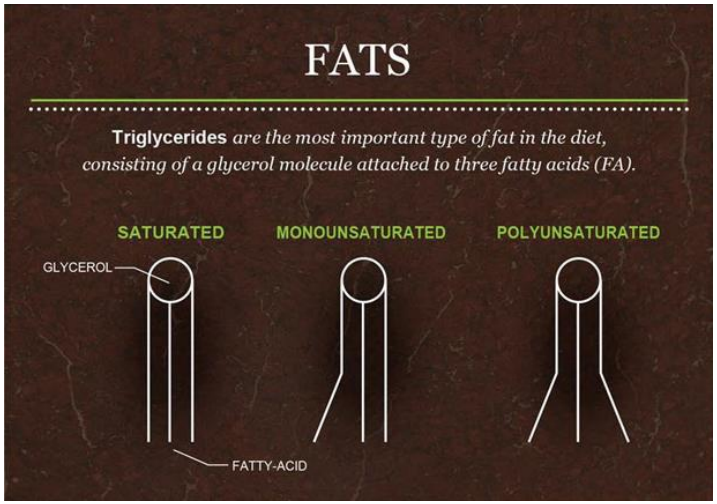
Understanding Fat

Fat

Fat, or lipids, are one of the three macronutrients of an animal's diet, providing an energy rich fuel source and supplying building blocks for the formation of tissues in the body.

Triglycerides are the most important type of fat in the diet, consisting of a glycerol molecule attached to three fatty acids (FA).

The digestion of fat is much more complex than digestion of carbohydrates and proteins.



Function of Lipids

Energy
Fat is a concentrated source of energy for cats and dogs, providing approximately 9 kcal/g.

Palatability
Fat contributes greatly to the palatability of a formula by influencing aroma, flavor, texture, and moisture level

Absorption of vitamins
Fat soluble vitamins (vitamin A, D, E, K) require fat to be present in order to be absorbed by the gut. Further, fat is often a source of these vitamins.

Cell structure
Unsaturated and polyunsaturated fatty acids are required to form phospholipids, which are the main building blocks for cell membranes

Signalling
Unsaturated and polyunsaturated fatty acids are required to produce eicosanoids, which are messengers involved in many metabolic pathways in the body

* http://talkspetfood.aafco.org/byproducts

Fat can come from many sources

FATTY ACID	MAIN SOURCE
Linoleic Acid *(LA, Omega 6)*	Soya Oil, corn oil
Gamma Linolenic Acid *(GLA Omega 6)*	Borage Oil, safflower oil
Arachidonic Acid *(AA, Omega 6)*	Animal Fats
Alpha Linolenic Acid *(ALA, Omega 3)*	Linseed Oil and Flaxseed Oil
Eicosapentaenoic Acid *(EPA, Omega 3)*	Fish Oil
Docosahexaenoic Acid *(DHA, Omega 3)*	Fish Oil

Essential Fatty Acids.

There are two specific types of polyunsaturated fatty acids (PUFAs) that are considered essential.

Omega-3 fatty acids and omega-6 fatty acids are named according to where the first carbon double bond is located within the carbon chain. These fatty acids have important roles in cell membrane structure, neurologic development, immune function, and managing inflammation.

Nutritional Truths

Understanding Advertising Terms

Advertising terms are used by some companies to differentiate their products and appeal to customers. Advertising terms give no indication of the quality or appropriateness of a diet for an individual. There is no requirement for different quality of ingredients or different processing and manufacturing standards in pet foods using advertising terms.

Recognizing Advertising Terms

Advertising Terms are used to appeal to pet owners

They give no indication of the quality or appropriateness of a diet for an individual.

Premium

There is no requirement for different quality of ingredients or different processing and manufacturing standards in pet foods labelled as premium.

Certain advertising terms may not be regulated.

Statement:	"Premium"	"Super premium"	"Ultra premium"	"Gourmet"	"Holistic"	"Organic"	"Natural"
Is a term approved by AAFCO	✗	✗	✗	✗	✗	✓	✓
Comment	• No requirement to contain different or higher quality ingredients or processing and manufacturing standards • No difference in nutritional standards						

Recognizing Advertising Terms

The term “organic” may falsely imply to a pet owner a problem with conventional ingredients.

Organic

The term “organic” refers to the methods used to grow crops and raise livestock. The USDA National Organic Program Standards lists several guidelines for organic products. For example, organic crops cannot be treated with synthetic fertilizers and certain pesticides. There are currently no organic pet food standards and no official oversight, therefore, pet food companies using “organic” to describe their products may or may not comply with the same standards used for human food.

Organic food does not necessarily contain more nutrients than conventional food. When evaluating organic pet foods, the package label should be carefully checked to see if all ingredients or only some are labeled “organic”. More importantly, the manufacturers should be contacted to ask if their ingredients and products are screened for chemicals of concern.

Recognizing Advertising Terms

The term "Natural" may falsely imply to a pet owner a problem with synthetic or artificial ingredients.

What is Natural?

Pet owners may not be certain what the term "natural" means even though it sounds as if it indicates a safe, healthy, nutritious product.

A recent survey showed that 68% of all dog food and 42% of all cat food sales involved products labeled as "natural."

Owners should keep in mind that "natural" does not mean safer, healthier, or more nutritious.

In addition to being safe, synthetic preservatives are often more effective than their natural counterparts.

The American Animal Feed Control Official (AAFCO) defines natural as: "a feed or feed ingredient derived solely from plant, animal, or mined sources.." with specific guidelines regarding processing.

Almost every natural product contains chemically synthesized vitamins and other nutrients.

All additives used in pet food, whether natural or synthesized, must be approved as safe.

Most scientists and veterinarians have no concerns about synthesized additives because none have been proven to cause harm.

Nutritional Truths

Understanding Ingredient-based Advertising Terms

Some ingredients have been vilified, and some ingredients receive recognition beyond their nutritional value. Ingredient–based advertising gives no indication of the quality or appropriateness of a diet for an individual.

Recognizing Advertising Terms

A pet food manufacturer should promote a formula based on the nutrition that is provided to the pet, not based on the ingredients it does or does not contain.

Ingredient Inclusions

These marketing terms advertise food based on trendy ingredients they contain, for example blueberries. This may sound appealing, but it gives no indication of the actual nutritional benefits to the pet. This is a form of advertising that may falsely imply to a pet owner a benefit of certain ingredients.

A pet food manufacturer should promote a formula based on the nutrition that is provided to the pet, not based on a couple of the ingredients it contains.

Ingredient Exclusions

These negative marketing terms advertise food based on ingredients they do not contain, for example grain-free. Ingredient exclusions may falsely imply to a pet owner a problem with certain ingredients. They are a form of advertising and don't highlight the benefits the formula does offer to a pet.

A pet food manufacturer should promote a formula based on the nutrition that is provided to the pet, not based on what it does not contain.

* http://talkspetfood.aafco.org/byproducts

Nutritional Truths

Understanding Biologically Appropriate

Biologically appropriate is an advertising term. It gives no indication of the quality or appropriateness of a diet for an individual.

Recognizing Advertising Terms

It doesn't matter if you label a dog or cat a carnivore or an omnivore, what matters is identifying and meeting their nutrient needs.

What is Biologically Appropriate?

Pet foods which claim to be biologically appropriate contain ingredients the animal would supposedly eat naturally in the wild.

Consider this:
Some foods, such as pineapples and avocados, can only be grown in tropical climates, so they are not a "natural" part of the diet of people living in colder climates. Does this mean they are unhealthy and should be avoided? Of course not! These foods are a source of beneficial nutrients including vitamins and minerals.

For many ingredients, the fact that they may not be consumed in the wild does not make them any less valuable as a source of nutrients.

Carnivores vs Omnivores

Carnivore and omnivore are terms used to help identify species, for example helping grade school children classify different categories of dinosaurs.

They are not meant to be used for formulating diets as they give no indication of an animal's nutritional needs.

There are specific nutrients an individual requires in specific amounts in order to live a long and healthy life, and those nutrients will not change whether they are labeled as a carnivore or labelled as an omnivore.

* http://talkspetfood.aafco.org/byproducts

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