

PET HEALTH & WHAT WE EAT AND FEED THEM

By Michael W. Fox BVetMed, PhD, DSc, MRCVS

[This paper examines the thesis that many of the serious, chronic, and costly health problems seen today in companion animals that mimic several medical conditions in the consumer populace are due primarily to a corn, soy and wheat based agri-industrial human food, livestock and pet food oligopoly.]

Until relatively recent times, the role of diet and nutrition in preventing a host of diseases has been more a common sense given than a subject of scientific study. More and more health problems in humans and animals alike are being dramatically reversed or prevented by dietary changes. Over the past decade there has been a surge of research into the health benefits of certain nutrients, probiotics, prebiotics, and herbal and nutraceutical supplements. The vital importance of maintaining a healthy intestinal flora has been underscored time and again. Ironically, many of the health problems that afflict people and their pets have a common root-connection with highly processed convenience foods and so called fast foods and junk foods.

Many people are surprised when their cats turn out to be allergic to fish, but this should be no surprise because house cats were a desert dwelling species originally, and fish was obviously never part of their natural diet. This is the first clue to the potential hazards of 'foreign' or novel proteins in biologically inappropriate foods. We might also speak of culturally and racially inappropriate foods in the same breath, allergies in Caucasians not adapted to the Mesoamerican foods like peanuts or groundnuts; and cats and dogs allergic to corn, another Mesoamerican crop now playing a central role in the Western diet.

It is ironic that Wheaten terriers are severely allergic to wheat, 'the staff of life,' but like other terriers from England, oats, rye, barley, groats, potatoes, offal and rats were their staple foods for generations. Wheat is a relatively recent inclusion into the Western European diet. Dogs from the Middle-east may be better adapted to wheat, chick peas, goat and lamb in their diets, just as those from the Orient are better adapted to rice and soy products in their diets, as well as some fish and poultry and pork offal. Cats and dogs may or may not be 'adapting' respectively to corn, soy, and other pet food ingredients. 'Natural selection' cannot operate to eliminate those animals who, because of their genotypes, develop overt health problems later in life when fed biologically inappropriate commercial diets, because the breeding stock are bred when young and before such maladies are likely to develop. So generation after generation of animals are going to suffer, while those dogs and cats with different genotypes fare much better.

These sweeping generalizations aside, the hazards of genetically inappropriate foods are now a major focus of pet food research and human medicine alike, but there will

be little progress so long as genetically engineered crop varieties proliferate, and the agricultural food commodity industry continues to fail to control another group of toxins in grains and corn from entering the food chain, namely those of various molds. Aflatoxin in pet foods, especially dry foods, may be a cause of 'sub-clinical' or pre-disease conditions especially of the liver at low levels, and at higher levels results in all too frequent recalls when cats and dogs sicken and die.

What crops are grown, and how, and what farmed animals, including farmed fish are fed, have a direct bearing on public health and the health of cats and dogs fed the byproducts of the Western diet. This will be examined more thoroughly below. But at this time of writing it is to be noted that the main-stream medical profession is beginning to acknowledge at last the enormous health costs and consequences, not only of essential mineral and vitamin deficient foods and hazardous supplements and additives like the neurotoxic Aspartame, and dog-killing artificial sweetener Xylitol, but of the Western diet itself. For instance, there is growing recognition of the essential fatty acid crisis, where our foods are too high in pro-inflammatory Omega 6 fatty acids, and deficient in Omega 3s.

Many informed nutritionists promote Omega 3s-rich organic butter, also high in conjugated linoleic acid and antioxidants, as is beef tallow/lard if from a grass-based rather than corn and soy based diet; also organic coconut oil (high in lauric acid) and other nut oils as healthier alternatives, including seed oils like grape and sesame in moderation because of lectin content. Organic butter and wild fish oils are best for cats, and for dogs and cats with kidney disease. Borage and Evening Primrose are also excellent sources of Omega 3 fatty acids. Spirulina is also an excellent nutraceutical, high in Omega 3 fatty acids and gamma-linoleic acid.

The recycling of much used multi-chain restaurant and food manufacturer cooking oil, high in Omega 6 essential fatty acids and deficient in Omega 3 essential fatty acids and linoleic acid -- especially soy, palm, cotton seed, peanut, sunflower, safflower corn and canola -- back into livestock feed and pet foods is a case in point. It has helped bring on this fatty acid crisis, as pets and people get fatter and sicker in many ways ! America's industrial agri-science response of creating genetically engineered pigs with a higher than normal content of desirable fatty acids for the human food chain, has been patented --- and is a patently absurd waste of public funds!

Most Common Health Problems

In the synopsis of the most common health problems reported by the pet health insurance company, Veterinary Pet Insurance (VPI), covering cat and dog treatment claims in 2007, ear infections in dogs and lower urinary tract diseases in cats topped the Big 10 list. The rest of the conditions requiring veterinary attention, with few if any exceptions, could have been prevented, and effectively treated, by diet alone, in my professional opinion, and in the opinion of holistic veterinarians* who practice integrative medicine.

For dogs, the top ten disorders, listed in descending order of frequency, were:

- 1. Ear infections**
- 2. Skin allergies**
- 3. Pyoderma (Hot spots)**
- 4. Stomach upsets**
- 5. Intestinal inflammation/diarrhea**
- 6. Bladder disease**
- 7. Eye infections**
- 8. Arthritis**
- 9. Hypothyroidism**
- 10. Sprains**

For cats, a preponderance of whom are fed only dry foods, in descending order of frequency, these conditions were:

- 1. Lower urinary tract infections**
- 2. Stomach upsets/gastritis**
- 3. Renal failure**
- 4. Intestinal inflammation/diarrhea**
- 5. Skin allergies**
- 6. Diabetes**
- 7. Colitis/constipation**
- 8. Ear infections**
- 9. Upper respiratory virus**
- 10. Hyperthyroidism**

Significantly, Dr. Cori Gross, a field veterinarian for VPI (cited on www.VPIpetinsurance.com), advocates feeding cats canned food to prevent lower urinary tract diseases. She expected to see arthritis, at # 8 for dogs, in the top 10 list for cats, since it is also common in cats. It is observed that owners are less likely to notice.

It may seem curious that obesity did not get onto the top 10 lists for dog and cat health problems, since this is an increasing concern for both species. The reason obesity is not included in the VPI list of illnesses is that they do not include it in the things they reimburse for. In addition, most veterinarians don't have an obesity program. VPI covers all the conditions that RESULT from obesity (diabetes, arthritis, etc.), but, like all the major human and pet insurance companies, does not cover preventive medicine (unless you want to call vaccination and flea prevention preventive care--and they are only included on their premium policies).

Dr. Gross is also quoted on the VPI website report as being surprised that there were not more dental claims for dogs. Dental problems, closely related to diet, are

very common in dogs and cats and are often left untreated for too long, causing much suffering and long crippling, even fatal illness.

In a subsequent phone conversation with Dr. Gross, she concurred with my observations, stating that “Many of these conditions could be prevented or minimized by a change in diet.” The early onset in life of these health problems in both the human and companion animal populations raises the possibility of epigenetic maternal nutrition-triggered influences during pregnancy.

The high incidence of urinary calculi in dogs and cats and in children as young as four or five, the Type 2 diabetes epidemic in children and pets, and the epidemic of overweight and obese pets and similar metabolic-obesity syndrome in people, all point to poor dietary factors, especially highly processed, prepared ‘convenience,’ and fast foods as the primary cause.

Behavioral Problems

Another possible diet-related health issue in children and companion animals entailing behavioral, affective, and cognitive impairment, often coupled with neuroendocrine disturbances and food allergies, has resulted in the use of more and more psychotropic drugs in pets and first graders. How else to deal with obsessively compulsive, aggressively impulsive, attention-impaired companion animals and school children, if no thought is given to what they are consuming, and may be consuming them? Excess quantities of Omega 6 fatty acids and Omega 3 fatty acids deficiency can play a major role in such afflictions. The high levels of glutamine, alanine, and taurine in the urine of aggressive dogs reported by veterinarian Dr. Karen Overall may be associated with high glutamate content in manufactured pet foods. (See below for further discussion).

Obesity and the Metabolic Syndrome

The main-stream pet food industry is as much to blame for this obesity epidemic as are those veterinarians who continue to see no connection between diet and the carnivore metabolic syndrome (CMS), as I prefer to call this condition. Highly processed cereal carbohydrates in the food cause an almost immediate ‘sugar rush’ every time the cat or dog eats. High fructose corn syrup is used as a flavoring in some dog and cat food, and along with other sugars, as a browning and caramelizing agent, and especially in semi-moist package foods and treats (still laced with propylene glycol and azo-dyes), as a preservative. This sugar reaction damages the liver and the pancreas, resulting in the conversion of sugar into body fat in many animals, with or without diabetes and fatty liver disease. The ‘sugar rush’ and insulin surge (until the pancreas becomes exhausted) make many cats and dogs constantly hungry, so they quickly become obese. Owners think their animal companions love the dry food because they always want to eat it.

CMS entails much more systemic damage than simply storing fat. Animals who become overweight or obese primarily as a result of the kinds of manufactured foods they are fed, rather than simply being over-fed and under-exercised, are likely to develop a host of health problems. These include diabetes, arthritis, skin disease, chronic inflammations and infections like cystitis, gingivitis, and otitis, heart and liver disease, hepatic lipidosis (also a recognized problem in obese children), lipomas and cancer. Poor nutrition can also lead to immune system impairment and increased susceptibility to infectious organisms and chemical allergens in the environment.

The Gluten Issue

Cereals contain natural opiates that could lead to addiction, but the high gluten content (with the exception of millet, buckwheat, brown rice and quinoa) can be problematic for both humans and their pets. Corn gluten meal is in most pet foods. It is the biggest source of gluten for dogs and cats.

Gluten is used as a cheap protein ingredient in pet foods, and is especially unsuitable for obligate carnivores like cats. Gluten-sensitivity is associated with a host of illnesses arising, in part from the ‘leaky gut’ syndrome and intestinal dysbiosis (bacterial imbalance). These illnesses include allergies, chronic skin and digestive problems, malabsorption and nutrient deficiencies, Addison’s disease, and epilepsy. Gluten-sensitive enteropathy is a recognized condition in some dog breeds such as Wheaten terriers and Irish setters.

High glutamate levels evident in many manufactured pet foods, along with monosodium glutamate that comes primarily from human food and beverage industry byproducts include soy protein, wheat gluten, whey protein, barley malt, natural beef flavoring, natural chicken flavoring, Carrageenan, calcium caseinate, gelatin, textured and hydrolyzed protein (usually soy), yeast extract, pectin, ‘seasonings’ and ‘natural’ flavors. The fermented offal called ‘meat digest’ that is sprayed on dry pet foods to enhance palatability/addiction is likely to contain high levels of glutamate. (Note: monosodium glutamate is the anionic form of glutamic acid. Glutamine differs from glutamate in that it is formed from glutamate and ammonia by the enzyme catalyst glutamine synthetase.)

High glutamate levels from the cheap proteins put into pet foods and human junk food may play a significant role in a host of common diseases such as taurine deficiency disease, which caused an epidemic of blindness, heart disease and brain damage in cats until partially rectified. More taurine is now put into manufactured pet foods because high glutamate levels block the uptake of the essential amino acid taurine. The spiking with taurine does nothing to stop the other harms of glutamate poisoning.

The ‘Chinese Restaurant’ syndrome is not just an acute MSG-induced headache, often with flushing, blood pressure elevation, sweating, tinnitus, and feeling full; there is also the after-shock of an increased, and unexpected hunger that comes on

soon after what was felt, initially, to be a long-satisfying meal. This reaction is often compounded by the high sugar and simple carbohydrate/starch content in Chinese entrées and in many snack and convenience foods that form the basis of the Western diet. The inclusion of sugars and starches in manufactured pet foods, like molasses, corn starch, and rice flour, needs to end.

Cats and dogs on many manufactured pet foods suffer the equivalent of the Chinese Restaurant syndrome day in and day-out. They are always hungry, demanding food, and soon become, like junk-food addicted people, obese, diabetic, and more prone to allergies, thyroid disease, depression, irritability/aggression, seizures, Alzheimer's disease, hypertension, and a host of other disorders of body and mind. Excess glutamate in manufactured foods is a serious problem for all. So a complete or partial raw food diet would be preferable for dogs, cats and their owners too!

Humans and Pets Harmed by Lectins

Allergenic and hypersensitive reactions to various pet food ingredients are triggered especially by cereal grain gluten (wheat, barley and rye), more specifically by carbohydrate binding proteins called lectins, of which gliadin in gluten is one. Malnutrition, and nutritional deficiency diseases like anemia and osteoporosis---that the cocktail of synthetic vitamins, minerals, etc. in manufactured pet foods does not prevent---result after the intestinal wall is damaged by these glue-like lectins. Cow milk casein (the bovine equivalent of gluten, also used to make glue), and soy and corn gluten can be problematic for some animals and people too.

Damage to the digestive tract can also lead to dysbiosis---the overgrowth of potentially harmful bacteria and yeasts---, and to the so called 'leaky gut' syndrome. This occurs when the damaged intestinal wall allows the body to absorb much larger protein molecules than normal. Some of these, like the lectins in grains and beans like soy, could cause cell damage and set of a cascade of health problems in various organ systems, or trigger allergic reactions to these foreign proteins that in turn could lead to neuroendocrine and autoimmune diseases. Lectins have been linked in humans to infantile diabetes (especially from dairy products); to celiac disease, rheumatoid arthritis, and diseases of the kidneys, pancreas, adrenals (e.g. adrenal insufficiency), thyroid, and heart, and also may play a role in cancer, possibly by activating dormant viruses in the DNA of cells.

Many so called 'idiopathic' diseases in humans and their pets, from epilepsy to psoriasis, and arthritis to gingivitis, have been cured simply by dietary changes and supplements. Those treated conventionally with no changes in diet bear the harmful consequences of widely prescribed drugs such as prednisone, the NSAIDs, antibiotics, costly immuno-enhancers and suppressors, even psychotropic drugs for neurological and behavioral/emotional problems such as depression, hyperactivity, and obsessive compulsive disorder.

Some breeds, races, and individuals are more susceptible than others to these nutrition- and diet-related health problems associated in particular with lectins, some of which can be neutralized by nutraceuticals such as glucosamine and aloe-

containing oligosaccharides. Many with genetically-based intolerance may develop degrees of tolerance, but we do not know how many dogs and cats, as well as their owners, slip under the radar, at least for a few years, before sub-clinical malaise becomes evident disease. Under holistic medical care, many afflicted people benefit from the so called 'Paleolithic diet' that excludes high-lectin containing foods. The evident trend of many small pet food manufacturers to market grain, corn and soy-free cat and dog foods is a logical step and may do much to help eliminate many so called 'iatrogenic', diseases and autoimmune and chronic degenerative diseases in companion animals that have a species- or breed-specific, genetically based intolerance.

There is also the factor of soy bean ingredients used as a cheap source of protein being rich in phytoestrogens. These could contribute to endocrine disruption and play a role in obesity. Soy may be one of several significant factors in the current epidemic of hypothyroidism in dogs fed conventional pet foods. Before the advent of such foods, this condition was uncommon in most breeds. Of course there are other factors to consider in the complex disease syndromes that we face today. These include a host of chemical contaminants especially in food, water and home environments, many of which are endocrine disruptors, and adverse reactions to vaccinations, over-use of same, along with 'preventive' drugs against fleas, ticks, heartworm and other parasites.

Allergies, Food Hypersensitivity, & Immune System

The dramatic increase in food-related allergic diseases and digestive problems in children and pets over the last decade may be linked to more and more foreign proteins, especially spliced-in lectins from other plants, in their diets that come from genetically engineered crops. Novel proteins in GM (genetically modified or engineered) crops and foods can act as allergens, notably the Bt-toxin in corn, and have been shown to have negative effects on every body organ and system in test animals.

The high incidence of skin and food allergies, and other suspected allergies associated with digestive disorders and inflammatory bowel disease in dogs and cats may well be caused or aggravated by novel proteins and other chemical contaminants, particularly herbicide residues, in GM ingredients in manufactured pet foods. Animal lab tests confirm this risk. I have seen a dramatic increase in these problems over the past decade in the thousands of letters I receive from cat and dog owners who read my syndicated column.

It is surely no coincidence that in Oct. 2008, the US Centers for Disease Control and Prevention reported an 18% increase in allergies in children under the age of 18 years, between 1997-2007. Some 3 million children now suffer from food or digestive allergies, their symptoms including vomiting, skin rashes, and breathing problems. They take longer to outgrow milk and egg allergies, and show a doubling of adverse reactions to peanuts.

Herbicides and Digestive System Bacterial Health

It is not widely understood that the digestive tract is not simply an organ system designed for the assimilation of food. It is our primary organ of defense against potentially harmful food and water-borne toxins, viruses, bacteria, and other potentially harmful organisms. Integral to this lymphatic-intestinal defense system is the population of intestinal ‘flora’---bacteria and other microorganisms -- that are symbiotic, having a symbiogenetic relationship with the cells of the gut that recognize them immunologically as eubiotic enteric residents (i.e. helpful resident organisms). This is an adaptive response because these enteric bacteria act as a defense against invasive organisms, and provide the cells with various nutrients essential to the health and functional integrity of the rest of the body, much as the mycorrhiza do around the roots of plants.

Agrichemicals, especially the herbicide residues in GM crops and their even more toxic breakdown products, when digested by humans and their pets, could cause a host of health problems if the normal gut flora is harmed. If this healthy, disease-preventing, nutrition-providing, and immune system-supporting population of symbiotic bacteria in the intestines is disrupted, nutritional deficiencies, overwhelming bacterial infection (Clostridia in dogs, for example), increased susceptibility to ‘allergies’, and other neuroendocrine and metabolic changes may ensue. These health problems have been linked in recent research to imbalances in the intestinal bacterial population where some species of bacteria come to dominate. This condition of dysbiosis is compounded by the over-prescribing by doctors of antibiotics and their wholesale use in livestock feed. What we have done to our digestive system bacterial flora and to that of our companion animals mirrors what we have done to the life of the soil.

The most widely used herbicides sprayed on GM (~~genetically modified or engineered~~) herbicide-resistant cotton, corn, soybean and canola, such as Monsanto’s Roundup (glyphosate) and Bayer’s Ignite (glufosinate), can also have toxic effects on the body. Glyphosate may be an endocrine disruptor, and in test animals has caused elevation of some liver enzymes and calcium oxalate crystals to form in the urine, along with inflammatory changes in the kidneys and lower urinary tract. Glufosinate can inhibit glutamine uptake. Deficiency of this amino acid is linked with bowel/digestive problems, impaired immune function, and possibly obesity due to increased appetite. It may be no coincidence that glutamine is widely prescribed for pets with ‘leaky gut’ syndrome and inflammatory bowel disease, and probiotics and prebiotics (like inulin and oligofructose) prescribed to help animals with allergies and other related health problems.

Dysfunctional Agriculture, Hazardous Foods

We should not be surprised that there are so many nutrition-related health problems when we look at the soil that is used to produce food commodities that are not organically certified. As one California farmer told me some thirty years ago,

‘Farmers today just use the soil to prop up their plants. Then they pour on the chemical fertilizers that they must, because they killed the soil with pesticides.’ Petrochemical-based agriculture has made our life-sustaining soil deficient in microorganisms that provide vital nutrients to the plants---and so our staple foods are also nutrient-deficient, especially in essential trace minerals and antioxidants like magnesium, zinc, and selenium.

Dead soil means no food without chemical fertilizers, herbicides, nematocides, fungicides, insecticides, agricultural biotechnology’s genetically engineered, cloned, and patented ‘improved’ varieties of crops and animals, with a frosting of USDA- & FDA-regulated food irradiation. While denying that Mad Cow Disease could be an endemic problem in US cattle, it is notable that the FDA prohibited the inclusion of brain and spinal chord in pet foods (the primary source of prions responsible for this neurological disease in cattle, pets and people), soon after the exposé of ‘downer cow’ cruelty at a California cattle handling and slaughter plant in early 2008.

Studies have shown that crops from organically certified producers, along with the meat and milk from farmed animals fed organic feed and allowed to graze on organically improved soils, contain far more essential nutrients than conventionally produced foods. And they suffer from far fewer viral and bacterial diseases which pose a serious public health concern today because of the intensive, concentrated animal production systems of the poultry, dairy and meat industry’s ‘factory farms.’**

The billions of pounds of offal that is recycled into pet food and farm animal feed is the bedrock of the main stream pet food industry. But it is a hazardous waste. Bacterial contamination, as with Salmonella, can be so difficult to control that Mars Petcare decided to permanently close one of its pet food manufacturing facilities in Everson, Pa in 2008 because the entire plant could not be effectively sanitized. There had been repeated recalls of contaminated dry dog and cat food, associated with nearly 80 reported cases of human illness.

Another form of offal is termed "by-products" which are presumed heavily contaminated with harmful bacteria, and is therefore subjected to high temperature and pressure sterilization and then slow cooking to evaporate off all moisture. The resultant solid is ground into a meal of essentially heat-denatured protein of little nutritive value. It loses more amino acids by evaporation, and others by cross-linkage into an indigestible product. Beef byproducts have less protein than chicken byproducts, and the actual digestible protein is significantly lower than the calculated ‘protein’ content of the manufactured foods.

Time for Change

There is already a rush-to-market special and expensive, prescribed diets to help obese pets lose weight, along with an approved prescription-only diet pill for obese

pets. Many veterinarians see this as a legitimate, profit-making business. There is a plethora of special prescription diets to help pets with a host of illnesses, such as allergies and digestive and urinary tract problems. But compared to simply transitioning cats and dogs onto a more biologically appropriate, whole-food diet with specific supplements and health restoring nutraceuticals as needed, these costly manufactured diets are of very limited value. Their scientific validity and medical efficacy are also questionable, especially the low-cal, high fiber weight loss formulations.

The veterinary profession is as yet behind, rather than leading, as it ought, the human medical profession, in addressing a host of health problems arising from manufactured pet foods, in part because of its ties to industry as an organized profession, colleges of which are richly endowed by the pet food industry: and in part because of indoctrination as students, that manufactured pet foods are scientifically formulated, animal tested, and provide complete and balanced nutrition for the health and maintenance of cats and dogs. There is much more to the basic ingredients and misleading terminology on the bag and can labels of these mainstream, main-street pet foods that the public trusts, no thanks to professional dog and cat performance events and other dog and cat shows, local, national, and international, that the pet food industry helps underwrite !

Commercial pet foods that people buy are a major factor in this obesity epidemic as well as a host of other health problems that are in part due to ignorance, overfeeding, and sheer convenience; and to the belief, shared, it would seem, by many veterinarians, that high cereal diets are not a significant contributing factor. Yet once informed, many pet owners will readily even cook home-prepared, wholesome, biologically appropriate meals for their animal companions, and attest to the almost immediate benefits observed in their animals' demeanor and vitality. Fortunately, new approaches and solutions are on the horizon. This necessitates an understanding of how nutrients act and interact at the molecular level. Accordingly, nutrition research has shifted from epidemiology and physiology to molecular biology and genetics. Diets for animals should be designed and tailored to the genetic profile of individuals in order to optimize physiological homeostasis, disease prevention and treatment, and promote desired athletic, obedience or reproductive performances.

For example, a series of specialized semi-moist canned pet food formulas containing all human grade and organic food ingredients is now in clinical trials in Italy. These diets act as cleansing foods for the bowel and specific organs (e.g. liver and kidney) of pets with sub-acute and chronic illnesses. The specific needs of these animals are determined by applying the principle of nutrigenomics, where optimal nutrition can be designed based on an individual's unique genetic makeup or genotype. The resulting food formula is termed the "molecular dietary signature", and is formulated to restore the animal to health.

The Codes of Practice for the Welfare of Cats and of Dogs established by the UK Government's DEFRA (Department of Environment, Food and Rural Affairs) opens up pet owners to prosecution under the Animal Welfare Act (potentially facing up to 12 months in jail and a fine of up to 20,000 pounds sterling) if they allow their animals to become overweight/obese.

This may help veterinarians and pets' care-givers to work together to solve the problem of feline and canine obesity---DEFRA's Cat document clearly states cats are carnivores. This should mean that cereal-based cat foods will soon be off the shelves. So I would heartily endorse similar animal welfare legislation in the US and other countries that indirectly induces the public to be more responsible and support better farming methods and more nutritious prepared and convenience foods for their pets and for themselves.

It is time for a revolution in agriculture and consumer choices and habits. According to Business Week (August, 2008), two thirds of adult Americans are either overweight or obese, along with 23 million children.

This food health crisis cannot be denied any longer by those who claim to regulate agriculture, the food and beverage industries, and allow the mass poisoning of people and their pets with erroneously considered safe and nutritious basic ingredients, like corn, wheat, soy, dairy products and by-products. In these basic food commodities are metabolism and endocrine-disrupting ingredients, like corn fructose syrup, wheat and soy gluten, and certain cow milk immune-system disrupting glycoproteins. The public heavily subsidizes this agribusiness food industry with billions of dollars in government subsidies and price supports, indirectly underwriting its own demise---and nemesis.

Conclusions

The above documented concerns about manufactured pet foods are not meant to imply that all manufacturers do not care enough about dogs and cats to really become part of the solution. By 'solution', I mean becoming a creative participant in the food and agriculture revolution like those 'green' pet food companies and other pet product manufacturers and suppliers profiled by the author. (Visit www.twobitdog.com or www.doctormwfox.org)

It is no coincidence that the Western diet, based on highly processed components of corn, soy, and cereal grains, and on the dairy, meat and poultry products from animals fed these food commodities, should result in several recently identified, endemic health problems that are mirrored by cats and dogs fed the byproducts of this diet. The pork, poultry, egg, dairy, and beef industries, along with the prepared foods, beverage, and candy industries, use companion animals as highly profitable waste-recyclers. The irony is inescapable, considering the fact that these sectors of agriculture receive the greatest government support in subsidies and incentives, all at taxpayers' expense since these are public funds. But they are not being spent on

the public good when we calculate the enormous health and environmental costs of the Western diet; and not to forget the horrendous existence of the animals down on the factory farm and feedlot.

Consumers and health-care providers alike are more widely realizing the connection between diet and the prevention and alleviation of a host of complex, so called degenerative, auto-immune, and idiopathic diseases that are in turn recognized as being brought on by other factors in addition to nutrition, or lack thereof. The so called pluri-causal, multifactor nature of such diseases makes it challenging to identify and control causal agents. But as evidence-based medicine affirms, often most effective treatment comes through attention to dietary factors.

With a burgeoning human population and growing social unrest with shortages of food, water, land and fuel, such a revolution---that includes the adoption of organic, low-input, sustainable farming methods and a reduction in meat production and consumption by many -- is as vital to global food security as it is to national security and progress in public health.

The more that pet food companies obtain food ingredients from organic and alternative, sustainable sources rather than from conventional ones that rely on pesticides, cruel livestock and poultry confinement systems, and 'cheaper' imported crop and food-products and supplements, the more 'green' they become. It is enlightened self-interest for pet owners to support this food and agriculture revolution in their market choices for their pets and for themselves.

POSTSCRIPT

Eat grain and suffer the consequences

link: <http://wideturn.com/Holdingdirectory/CarbEating/fatthincarbs.htm>

A few pages copied out of an 1891 encyclopedia (The National Cyclopedia in 3 Volumes: A Dictionary of Useful and Practical Information For The Farm, Home And School, by Hon. Jonathan Periam, Chicago, IL.,R.S.Peale Co) illustrates how animals fed carbohydrates develop entirely different fat patterns and weaker bones than animals fed a more natural diet. This research done by W.A. Henry, Director of the Experiment Station, Wisconsin University, showed that pigs fed a high carbohydrate diet (corn---high in starch and low in protein) had:

1. Extensive development of fat, not only below the skin, but among the muscles
2. The muscles failed to develop to their normal size
3. Abnormally small amount of hair and thin skin
4. Spleen, liver and kidneys are abnormally small

5. Amount of blood in the body is greatly reduced

6. Strength of bones reduced by up to one half!

(The above list reads like a description of many dogs and cats we see today with their obesity, weak muscle tone, ruptured ligaments, orthopedic problems, and skin, hair, liver and kidney deficiencies.)

The author writes " ... we may conclude that a system of feeding which robs the hog of half his blood and half the natural strength of his bones, and produces other violent changes, is a most unnatural one, and must, if persisted in, end in giving us a race of animals which will be unsatisfactory to all concerned. From the parents thus weakened, must come descendants that will fall easy victims to disease and disaster".

For more details on this modern food crisis and its adverse effects on companion animals, see Not Fit For A Dog: The Truth About Manufactured Dog And Cat Food by veterinarians Drs. M.W. Fox, E. Hodgkins, and M. E. Smart, published in 2008 by Quill Driver Books, Sanger, CA.

***For further assurance and information, contact a holistic veterinarian in your area. A searchable list can be found at <http://www.ahvma.org>
Veterinarians wishing to learn more are encouraged to become members of the American Holistic Veterinary Medical Association at <http://www.ahvma.org>.)**

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Michael W. Fox, BVetMed, PhD, DSC, MRCVS is a member of the British Veterinary Association and an Honor Roll Member of the American Veterinary Medical Association. He has doctoral degrees in ethology/animal behavior and medicine from the University of London, graduating from the Royal Veterinary College London in 1962. In 1961 he was awarded the gold medal and Fellowship of the Royal Veterinary College Medical Association for his report on the effects of poor nutrition on the health of working sheepdogs, (published in the J. Small Animal Pract., 5:183-192, 1964). Spending most of his professional life in the US as an advocate for animal health, welfare and rights under the flag of One Medicine, One Earth, he has published over 40 books and writes the syndicated newspaper column Animal Doctor. For more details, visit www.twobitdog.com and www.doctormwfox.org