AAFCO Feeding Trials: Realities

Joseph J. Wakshlag
DVM, PhD, DACVN, DACVSMR

Justin Shmalberg
DVM, DACVN, DACVSMR

Every bag or can of dog or cat food has a nutritional guarantee, which at a minimum provides piece of mind that the food has been formulated based on calculations done using the minima and maxima established by AAFCO, a non-regulatory group of state feed control officials and industry representatives. Companies may choose another route which is to design a diet which is believed to be complete and balanced, and then feed it to dogs for 6 months to fulfill an AAFCO feeding trial to obtain the nutritional guarantee by AAFCO. If successful in meeting the criteria, companies can state that feeding trial substantiate nutritional adequacy (as opposed to just formulating to be adequate). The greatest security that a food provides adequate nutrition for long-term feeding would be that a diet was both formulated to meet minima and maxima and then subsequently performed well in a feeding trial.

These are very reasonable expectations; however, approximately 80% of the pet food industry does not perform feeding trials with their foods. These companies employ the argument that formulation of the food alone should be sufficient security, as the AAFCO requirements are more than the minimum required by most dogs, and because many foods are designed with at least double the vitamin and mineral concentrations required by AAFCO. There have, however, been rare cases of foods containing nutrient excesses or deficiencies despite being formulated to meet current standards.

Feeding trials are not trials of foods under normal conditions, but rather are strictly controlled endeavors that may be expensive and difficult on pet dogs. A typical feeding trial will be designed to feed 10 dogs for a 6 month period of time. That said, 2 of the 10 dogs can drop out from the feeding trail with only 8 completing the trial. The standards for passing a feeding trial are 1) the dog or cat maintains body weight, 2) has normal stool, 3) blood counts remain normal, and 4) very basic markers of organ function remain normal. These guidelines are likely to detect major deficiencies that result in low blood proteins or perhaps toxicities leading to significant organ damage. It may be insufficient to detect inadequate mineral or vitamin intake because it can take longer than the study period to deplete reserves and/or to cause measurable changes. It is difficult to enroll pet dogs in these trials as guidelines require that dogs and cats eat only the food being tested, with *no* treats or other foods proving any calories or nutrients. This seems logical, but certainly does not reflect the reality that dogs and cats receive up to 20% of their calories as treats or imbalanced/incomplete foods

So what would an ideal feeding trial look like?
There is unlikely to be a perfect scenario. However, real life feeding trials would evaluate the sufficiency of the entire diet plan.

How many dogs and how long?
It is practical to enroll more dogs than you would like to finish the study as there are many medical reasons for a dog to drop from a protocol, but it would be ideal to use many different sizes of dogs. In an effort to enroll small, medium and large breeds, recruitment of 5-6 dogs from each group would help account for the differences in digestion and tolerances for different sized dogs. The length of time for the trial to ensure adequacy should be longer, closer to a year, to better evaluate the diet for any significant deficiencies or excesses.

Sole Nutrition?
The idea that sole nutrition comes from a pet food is quite impractical these days since there are many other sources of nutrition including treats, supplemental food, and supplements. In many cases the foods used as treats are not balanced or as nutrient dense as pet foods, therefore these treats and table foods actually dilute the nutrient concentration. In fact, if a food can cover the imbalances or deficiencies in these other foods it may in fact prove more versatile than those tested in the sole nutrition concept. It is reasonable for owners to be instructed not to give multivitamin products which could provide nutrients lacking in an incomplete pet food being tested.

Health parameters?
AAFCO only requires basic blood tests after the feeding trial, yet examination of values before and after the trial, and at multiple points, would be ideal in an effort to look at trends. Although blood testing performed in AAFCO feeding trials includes red blood cell and white blood cell parameters, a full screen of all white blood cells and cytological evaluation of morphology would be beneficial. The recommended blood chemistry screened in an AAFCO feeding trial include those related to kidney function and to electrolytes; however a more comprehensive examination of liver, muscle and triglycerides would provide additional information which could be affected by diet. Health parameters such as a fatty acid analysis or examination of inflammatory indices in the serum, such as c reactive protein or cytokine status, would provide a more detailed understanding of fatty acid metabolism and inflammation particularly when feeding diets designed for therapeutic purposes or for specific life stages

Feeding trials have value, but AAFCO feeding trials are not the most rigid or most complete test of a diet. Therefore, there is an opportunity to provide greater insight into the effects of a diet with real-world feeding trials. As a company with an ethos to push the limits and raise the standard, these are the ideas that are to be embraced for transparent nutrition.

VRS Real-life Feeding Trials

Inclusion:
Duration – 1 year
Gender – at least 33% of a gender
Age – 1-8 years
Less than 20% treats other foods
No vitamin or mineral or fatty acid supplements

Health parameters assessed before study
Physical Examination 0, 180, 360 days
Fecal score week 1, 4, 16, 52 weeks
Blood work – Day 0, 180, 360 – CBC, Chem, UA
Serum or RBC fatty acid status.
Serum inflammatory indices – c-reactive protein, IL-6 and TNF-alpha (cats – serum amyloid A and IL-6)
Serum Vitamin B12 and vitamin E status.