Appendix - Dog Food Samples Used in CVM Pentobarbital Surveys and Analytical Results

CVM conducted two surveys of dry dog food samples. In survey #1, samples were analyzed to determine if any pentobarbital was present. In survey #2, other samples were analyzed to measure how much pentobarbital might be present. The results are shown in two tables below.

THESE RESULTS NEED TO BE UNDERSTOOD WITHIN THE FOLLOWING CONTEXT:

Sampling was non-representative. Samples were purchased from retail outlets in the Laurel, MD, area. Only dry dog foods with certain animal-derived ingredients were sampled. This selection pattern meant that the samples were not representative of dog food nationwide or even locally. It also means that the data cannot be used to draw inferences about dog food being produced and sold in the U.S. today. The concentration of pentobarbital, if present in any U.S. pet food, may be different than the findings of these surveys. The results apply only to the specific lots analyzed.

Sampling focused on certain ingredients. The selection of products based on specific animal-derived ingredients would tend to increase the likelihood of finding pentobarbital given the assumption that pentobarbital in dog food comes from euthanized animals.

Ingredient sources vary geographically and temporally. Feed manufacturers have regional ingredient suppliers and manufacturing facilities. Samples available in a specific geographical region may not reflect the nation as a whole. Ingredient sources for pet foods vary based on such considerations as availability and cost.

The surveys represent a snapshot in time, and no conclusions about dog food in general can be made. For reasons described above, the survey information does not predict the likelihood of pentobarbital in a particular brand of dog food on the market today or in the future. Pet food formulations that had detectable pentobarbital levels when the samples were collected may be free of pentobarbital now. FDA has no way to know whether pet food brands that were not sampled had pentobarbital residues.

Differences between different lots of the same dog food are not surprising. In survey #1, two different lots for the same formulation were sampled in 37 cases, making up 74 samples. The different lots gave the same results in only 31 of 37 cases. One would not expect different lots to give the same outcome, because composition of the raw materials may vary, even if the formulations do not. In survey #2, only one lot of each formulation was analyzed.

The surveys are not comparable to each other. Comparisons between the two survey sets are not scientifically or statistically justifiable.

1. Survey #1 only detected the presence of pentobarbital, but did not indicate how much was present. Therefore, no quantitative comparison between the results of survey #1 and survey #2 is possible.

2. The surveys did not include the same brand names and formulations.

3. Survey #1 included more samples with rendered or hydrolyzed ingredients ranked higher on the ingredient statement. In survey #2, 25 of 60 samples (42%) contained rendered or hydrolyzed ingredients listed in the first, second, or third position in the ingredient statement, whereas in the survey #1 there were 56 such samples out of 87 (64%). Therefore, a direct comparison of the percent of confirmed samples in the two surveys would be misleading because the first sample set included 50% more feeds with rendered or hydrolyzed ingredients listed in the 1st, 2nd, or 3rd position on the ingredient list.

There appear to be associations between rendered or hydrolyzed ingredients and the presence of pentobarbital in dog food. The ingredients Meat and Bone Meal (MBM), Beef and Bone Meal (BBM), Animal Fat (AF), and Animal Digest (AD) are rendered or hydrolyzed from animal sources that could include euthanized animals.

1. Within the sample set for Survey #1, samples with certain ingredients near the 1st position in the ingredient list were more likely to be confirmed for presence of pentobarbital than samples with these
ingredients listed near the last position or not included at all. The association appeared to be strongest for AF (of all rendered ingredients tested) and was somewhat weaker for AD, MBM, or either MBM or BBM (no product contained both). Corn Gluten Meal did not show an association between position on the ingredient list and the confirmed presence of pentobarbital. Corn Gluten Meal was selected as a reference ingredient because it was not likely to contain rendered or hydrolyzed animal tissue, and the results were as expected. The position of BBM in the ingredient list showed somewhat of an association with a failure to confirm the presence of pentobarbital.

2. In survey #2 fewer total samples contained detectable pentobarbital, so examination of associations between pentobarbital and ingredients was more limited. For the 25 samples with either MBM, BBM, AF, (or beef tallow (BT) listed 1st, 2nd, or 3rd in the ingredient list, 15 (60%) were found to contain pentobarbital in concentrations greater than 1 part per billion (ppb.) For the other 35 samples with MBM, BBM, AF, (or BT), AD listed 4th-7th in the ingredient statement, pentobarbital was found in concentrations greater than 1 ppb in only 2 (6%) of the samples.

The tables that follow are sorted according to ingredient. Samples with rendered or hydrolyzed ingredients higher on the ingredient statement (column 1) appear nearer the top of the tables.

Dog Food Survey Results

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