

Director's Digest



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Rendered Products and the Pet Food Industry

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Animals and animal by-products have enabled dogs and cats to associate with man symbiotically throughout history. For centuries man, dogs and cats have consumed similar diets of animals, animal products and plants. These food sources plus dog and cat dentition have helped earn the name "meat eaters" for these pets. Although the idea still prevails that dogs need meat and cats need fish, we have been meeting the nutritional requirements of both dogs and cats with purified diets based on a mixture of almost pure chemicals of vitamins, minerals, carbohydrates, fats and fatty acids and L-amino acids. Obviously, a diet primarily of animals and animal by-products or a purified diet meeting the nutritional needs of animals will not be purchased by pet owners; and the pet owner is still the decision maker. This owner control is the basis for the modern pet food industry since diets acceptable to pets are selected by the owners. A half century ago, nutritionists recognized that dogs offered vitamins, minerals, fats and proteins simultaneously in separate containers lacked the wisdom to select a well-balanced diet. Commercial pet food research conducted continuously by some companies for more than fifty years has resulted in diets that are nutritious and highly palatable to dogs and cats and anthropomorphically acceptable to the owner. The modern, informed pet owner is pleased to purchase an attractive, aromatically pleasant product contained in an ego-building sanitary package that can be stored alongside human foods in the kitchen pantry. The nutritional attitude of most pet owners has changed from demanding the "need of meat in the diet" of a generation ago to confident acceptance of modern,

Dog Food

1976

TONS

<u>Type</u>	<u>Tons</u>	<u>% Tons Supplied by</u>	<u>Moisture-free Nutrition Supplied by</u>	
			<u>Tons</u>	<u>%</u>
Dry	1,832,000	59.7	1,648,800	80.5
Canned	990,500	32.3	227,815	11.1
Semi-moist	245,000	8.0	171,500	8.4
	<u>3,067,500</u>	<u>100.0</u>	<u>2,048,115</u>	<u>100.0</u>

Cat Food

<u>Type</u>	<u>Tons</u>	<u>% Tons Supplied by</u>	<u>Moisture-free Nutrition Supplied by</u>	
			<u>Tons</u>	<u>%</u>
Dry	270,000	33.6	243,000	61.9
Canned	476,000	59.2	109,480	27.8
Semi-moist	57,500	7.2	40,250	10.3
	<u>803,500</u>	<u>100.0</u>	<u>392,730</u>	<u>100.0</u>

Products-in-pet foods

Dry pet foods are still the prime market capable of using dry products such as renderer's products while canned foods are the major uses of non-rendered materials. Semi-moist pet foods use both.

The almost 2.5 million tons of dry pet foods can use more than a million tons of high-quality animal by-products. As emphasized in previous years, if pet foods average 10 percent fat and 80 percent are from animal sources, this represents 200,000 tons needed from animal by-products, tallow and grease.

With dry dog and cat foods averaging 23 percent proteins, to supply half of this amount would require about 575,000 tons of 50% meat scrap or meat meal and bone meal for the dry pet foods alone.

Lard or grease contains approximately 18% linoleic acid. A formula level of 5% lard or grease should supply the 0.9% dietary linoleic acid needed in dry dog foods. The linoleic acid supplied by other ingredients represents an additional safety margin.

Modern dog foods use high quality fats stabilized with anti-oxidants which reduces the probability of pet foods becoming rancid. Pet foods require a long shelf life, since some dogs and cats may consume foods manufactured six months or a year previously. The development of rancidity also influences acceptability of the food by the pet.

Minerals

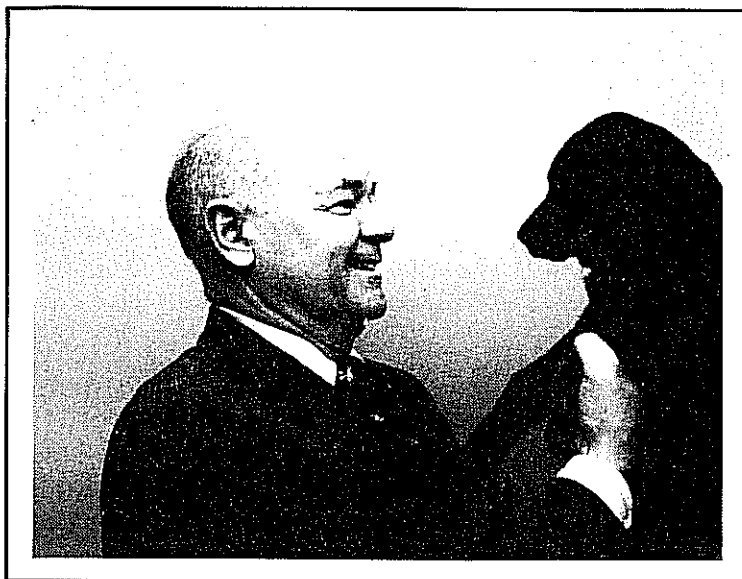
Ground bones including those in meat and bone meal may be consumed by dogs and cats in large amounts. The calcium, phosphorus and trace minerals found in bones are readily available to dogs and cats and provide most of the macro- and micro-mineral nutrients in ratios approximating those needed by pets. Meat and bone meal is an excellent source of these minerals and can supply all the calcium, phosphorus and most of the sodium chloride and trace minerals needed by pets.

Increasing the use of renderer's products

If the use of renderer's products in pet foods is to continue at present or increased levels, nutritional studies relating to the effect of processing, handling and maximum use of rendering by-products need to be pursued with vigor. Perhaps a survey of pet food manufacturers asking about ways to increase usage of renderer's products in pet foods would reveal helpful guidelines to follow in planned research.

A small telephone survey asking how renderer's products could be increased in pet foods brought up interesting topics including:

- A. Reduce the quantity of hair in by-products perhaps by screening technology or fine grinding to decrease visibility.
- B. Decrease quantity of added blood, if possible, to improve product acceptability to pets.
- C. Lower the calcium level wherever possible since calcium and total ash limits the quantity of meat and bone meal that can be used in pet foods.
- D. Increase quality assurance and decrease heat damage to proteins during processing.



Dr. Jim Corbin, contributor to this issue of the Director's Digest, is professor of Animal Science at the University of Illinois, in Champaign-Urbana. He was formerly Director of the Pet Care Center of Ralston-Purina Company. Dr. Corbin is also co-chairman of National Research Council's Subcommittee on Dog Nutrition and a co-author of "Nutrient Requirements of Dogs", the authoritative publication of the National Academy of Sciences.

When you enter his office pictures of dogs and a variety of framed postage stamps picturing dogs attest to his love for mans best friend. Jim also claims building furniture as one of his hobbies, and an affection for sailing. He calls a small farm near Urbana home.