

# **CANNED PETFOOD PRODUCTS: A SUMMARY OF THE PROCESS AND FORMULATION/DEVELOPMENT CONSIDERATIONS**

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Canned petfood represents one of the oldest forms of commercially manufactured pet care products. While consumers have increasingly shifted their buying patterns to dry kibble products in recent years, canned petfood still offers the consumer and pet many positive attributes not found in dry products. In fact, many consumers combine the positive attributes of both dry and canned products by mix feeding on a regular basis. This has led to the growing popularity of the chunks in gravy canned product.

A basic cannery operation starts with a raw material processing area. The bulk of the materials are meats which arrive either in frozen or fresh state. They are ground to the appropriate particle size and blended together with the other raw materials to form a final mix. High speed fillers dispense the food into individual cans, a lid is applied to form an air tight container, and the cans are thermal processed. Thermal processing involves the combination of time, temperature, and steam pressure which is specific to the size and material of the can and the heat transfer properties of the formulation. Thermal processing is strictly controlled to ensure microbiological kill throughout the contents of the can, to maintain optimum palatability and acceptance, and to minimize nutritional degradation. Cans are then labeled and packaged. Canned products remain shelf stable under normal storage conditions for a considerable length of time without the use of preservatives.

Over the years, the type of materials used and the size and shape of containers have evolved to offer consumers greater selection and convenience. Cans are available in a number of different sizes to match the pet's feeding needs. Features such as “necked in” for can stackability and a pull tab EZO lid, to make can opening more convenient, are readily available in the marketplace. In addition to the steel can, aluminum single serve cans and plastic tubs/trays are available.

There are many positive attributes of canned products. Generally more palatable, canned products have a meatier, more succulent human like appearance when compared to the dry kibble format. They come in a variety of flavors and textures which are easier to chew. Some of the negative attributes include the handling of the cans and leftovers, the cost of canned product compared to dry , and the need to pay greater attention to the pet's oral hygiene.

The development of a petfood product involves the application of animal nutrition and science to design products which satisfy consumer needs and offers the pet a palatable, nutritious food. As well, formulations have become increasingly more specific with respect to addressing lifestage and lifestyle needs. The main ingredients in canned products are meat, meat by-products, other concentrated protein sources, and nutrient supplements. Typically, canned products are higher in moisture, lower in protein, and lower in energy content when compared to dry products. The actual values appear on every can as part of the guaranteed analysis. Nutrient supplementation ensures that the food is complete and balanced and compensates for losses due to processing.

The primary need of the pet is to have a food which satisfies a requirement for energy, but at the same time, provides complete and balanced nutrition. Understanding the energy requirements of the animal has been extensively researched. In particular, the dog has been especially challenging due to the immense diversity within the species. It is the responsibility of the petcare manufacturer to access both the energy density of the food and the energy requirements of the animal. As a result, the feeding guide on the label provide recommendations which are specific to dog breeds and makes allowances for the tremendous amount of individual variability.

While the total nutrient content of a given product can be determined through chemical analysis, the digestibility of the food is the true measure of the actual nutrient uptake in the gut of the animal. Understanding and applying the knowledge gained through digestibility trials helps the product developer to design foods which are highly digestible and meet the needs of both pet and owner in terms of nutrient availability, faeces quality, flatulence, and faecal volume. Faeces quality is an important consideration in determining the performance of a particular formulation. While the food is one of many factors which affect faeces quality, it is often implicated as the root cause. Pet owners often judge the performance of a particular food by the resultant stool quality and will alter their buying patterns accordingly.

Palatability of the food is another key factor in developing products. The pet must consume a sufficient quantity of product to ensure that an adequate supply of energy and nutrients are received. Canned products can offer a wide range of flavors/aroma and textures which is a clear advantage to other product formats. Canned offerings are more moist and meat like which is especially appealing for cats. Although the palatability of a food can be clinically measured by determining food intake levels and performing paired preference testing, in home testing has become increasingly important as a measurement tool in determining the feeding performance of a product. In home testing acknowledges that the perceived palatability of a food by the owner truly drives purchasing intent. Perceived palatability extends beyond the eating enjoyment of the pet and includes the behavior of the pet during the time needed for food preparation.

The emerging trend in canned petfood product development will be to produce designs which have a human appeal quality both in appearance and aroma. The leading edge of this trend is found in Japan where premium single serve can cat products are equal to or better than human food equivalents.