Is that for me!?

Insights-Driven Product Development of Humanized Foods for Pets

Brittany White
Director, Product Development

American Food Innovate | March 29, 2022
Family Owned & Operated
“Building Relationships Through Food”

Poultry
Premium chicken for restaurants and retail around the world

Animal Nutrition
High quality, tailored nutrition for top brands in the pet food, livestock feed, and aquaculture industries

Pet Food
Wet pet food for the best brands in pet food
The History of Pet Food

Commercialized pet food has been evolving since the late 1800’s

1860
Spratt’s Dog Cakes

1900
Biscuits

1920s
Canned Food & Dog Meal

1950
Extruded Kibble

1970s
Super-Premium

2000
“Pet Parents”

Source | Pet Food Industry Article “History of Pet Food”
Global and U.S. Pet Care Market

Pet care spending is on the rise

$232 Billion Global Pet Care Market
$102.6 Billion Pet Food

$109.6 Billion US Pet Care Market
$44.1 Billion Pet Food

91 Million U.S. Households have a pet
Nearly half of US households include at least one dog

Source | https://www.gminsights.com/industry-analysis/pet-care-market
An increasing pet population has fueled the growth of the pet food industry.

**Annual total # of cats & dogs in the United States (in 000s)**

- **% of Households with Dogs in 2020**
  - 54%
  - Up from 37.8% in 2016

- **% of Households with Cats in 2020**
  - 35%
  - Up from 33% in 2016

**Source**
- Euromonitor Annual Passport data
"2022 Pet Food Trends"

Sustainability, transparency, and "health and wellness" are driving pet food growth and innovation.

- **Sustainability**: Beyond recycling, consumers expect brands to tell a full sustainability story.
- **Transparency**: Demand for insight into ingredient origin, safety, and nutrition.
- **Health & Wellness**: Promotion of a healthy lifestyle through healthy diet.
- **Alternative Ingredients**: Increased willingness to try new, alternative ingredients.
- **Functional Ingredients**: Demand for science-backed, food solutions for common pet ailments.

Source: PETFOOD Industry Magazine (January 2022)
“Is feeding kibble enough?”
Growth Rates by Segment

Refrigerated and frozen pet food have the strongest growth rates

Sales change L52 vs Year Ago

<table>
<thead>
<tr>
<th>Segment</th>
<th>Sales $</th>
<th>Year Ago Sales $</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refrigerated</td>
<td>$10.6B</td>
<td>$7.6B</td>
<td>38.8%</td>
</tr>
<tr>
<td>Frozen</td>
<td>$2.9B</td>
<td>$2.2B</td>
<td>31.8%</td>
</tr>
<tr>
<td>Treats</td>
<td>$5.1B</td>
<td>$3.8B</td>
<td>34.2%</td>
</tr>
<tr>
<td>Dry</td>
<td>$3.4B</td>
<td>$2.5B</td>
<td>36.0%</td>
</tr>
<tr>
<td>Wet</td>
<td>$1.0B</td>
<td>$0.7B</td>
<td>42.9%</td>
</tr>
</tbody>
</table>

Source: Nielsen 52 week ending 12/25/21

$ Sales & sales change by Sub Segment

* AOC + Total Pet Retail

** U.S. - AOC and Total Pet Retail
Top Brands of Refrigerated/Frozen Pet Food

Refrigerated and Frozen pet food is growing in all channels

Retail

DTC / Ecommerce

### Common Processing Methods

*Pet food processing is evolving to meet consumer demand*

<table>
<thead>
<tr>
<th>Process</th>
<th>Time / Temperature</th>
<th>Storage</th>
<th>Shelf-Life</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baking</strong></td>
<td>10-20 min 350 - 450°F</td>
<td>Room Temperature</td>
<td>12 – 18 months</td>
</tr>
<tr>
<td><strong>Extrusion</strong></td>
<td>10-15 min 160 – 225°F shear + pressure</td>
<td>Room Temperature</td>
<td>12 – 18 months</td>
</tr>
<tr>
<td><strong>Canning</strong></td>
<td>45 – 90 min 225 to 250°F pressure</td>
<td>Room Temperature</td>
<td>2 – 3 years</td>
</tr>
<tr>
<td><strong>Fresh-Cooking</strong></td>
<td>10 - 30 min 160 - 212°F</td>
<td>Refrigerated or Frozen</td>
<td>3 – 6 months</td>
</tr>
</tbody>
</table>
# Impact of Processing

*Heat processing results in reactions that can be desirable and undesirable for pet food*

## Advantages

<table>
<thead>
<tr>
<th>Advantage</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Shelf Life Extension</td>
<td>+</td>
</tr>
<tr>
<td>Improved Flavor &amp; Texture</td>
<td>+</td>
</tr>
<tr>
<td>Inactivation of Anti-Nutritional Factors</td>
<td>+</td>
</tr>
<tr>
<td>Improved Digestibility</td>
<td>+</td>
</tr>
</tbody>
</table>

## Disadvantages

<table>
<thead>
<tr>
<th>Disadvantage</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Destruction of Nutrients</td>
<td>×</td>
</tr>
<tr>
<td>Formation of Off-Flavors and Colors</td>
<td>×</td>
</tr>
<tr>
<td>Formation of Anti-Nutritional Factors</td>
<td>×</td>
</tr>
<tr>
<td>Reduced Digestibility</td>
<td>×</td>
</tr>
</tbody>
</table>
Fresh-Cooked Pet Food Delights both Pets and Pet Parents

Aroma
Appearance
Label Claims
Ingredients

Palatability
Digestibility
Nutrition
# Nutrient Retention

*Fresh-cooked pet food may retain more nutrients during processing*

<table>
<thead>
<tr>
<th>Vitamin</th>
<th>Extrusion</th>
<th>Retort</th>
<th>Fresh-Cooked</th>
</tr>
</thead>
<tbody>
<tr>
<td>B6</td>
<td>79%</td>
<td>85%</td>
<td>100%</td>
</tr>
<tr>
<td>Vitamin D</td>
<td>62%</td>
<td>87%</td>
<td>78%</td>
</tr>
<tr>
<td>Vitamin E</td>
<td>63%</td>
<td>85%</td>
<td>89%</td>
</tr>
</tbody>
</table>

Sources: Morin et al., 2021, internal unpublished data
Fresh-cooked pet food requires unique storage and shelf-life considerations

01 Loss of vitamins can occur if food is not properly stored

02 Must control lipid oxidation to avoid formation of off flavors

03 Storage conditions are important to control both spoilage and pathogenic bacteria
Preservation Strategies

There are many strategies to preserve and extend the shelf life of pet food.
Cost to Feed by Format

Feeding costs may hinder growth of premium pet food formats

Cost / Ounce
For leading, premium brands within each format

Premium Kibble
Premium Wet
Fresh-Cooked Retail
Fresh-Cooked DTC

Cost / Day
For a 20 lb. adult dog
“Human Grade”

Human Grade marketing adds complexity for pet parents and regulators
An opportunity exists for “fresh” cat food innovation.
Future pet food innovations must consider all aspects of sustainability

“A sustainable diet is one that considers both the environmental impact and the nutritional value of the diet”

Food and Agriculture Organization of the United Nations
Looking to the Future

Pet food is evolving to become more similar to human food, but opportunities exist for new innovation and responsible marketing and product development.
“Nourishing and delighting pets as the most trusted partner in our industry”

Thank you!

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