Nutrição completa com alimentos úmidos

Complete nutrition with wet foods

XVII CONGRESSO CBNA PET | 16 & 17 May 2018

Geoffroy Berthe

PRE-18-00066

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Agenda

- Pet food history
- Global pet food market & Focus on wet pet food market
- Different types of wet pet food and their process
- Packaging evolution in wet pet food
- Nutrition in wet pet food

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Pet food history

- Pet food was initiated in 1860's by James Pratt in UK
  - Biscuits for dogs made of wheat meals, vegetables, beetroot and beef blood





- Recipe was exported to USA in 1890's
  - Biscuits and dry kibbles based on nutritional knowledge of that period
  - Process used was coming from human's biscuits production

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Pet food history

- Wet dog pet food production started in USA in 1922 under the brand “Ken-L Ration” from the Chappel Brothers of Rockford.
  - Canned dog products mainly made of horsemeat, which was considered as an acceptable ingredient source at that time
  - Canned cat food was introduced in 1950’s



- First extrusion process appeared in 1950’s with Ralston Purina.
  - Studies conducted in 70’s have shown that between 1963 and 1975, dry Petfood production was multiplied by 5 in USA and that carnivores’ population was growing 10 times quicker than human’s population.

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Pet food history

Wet Petfood in 1980's





Wet Petfood in 2010's









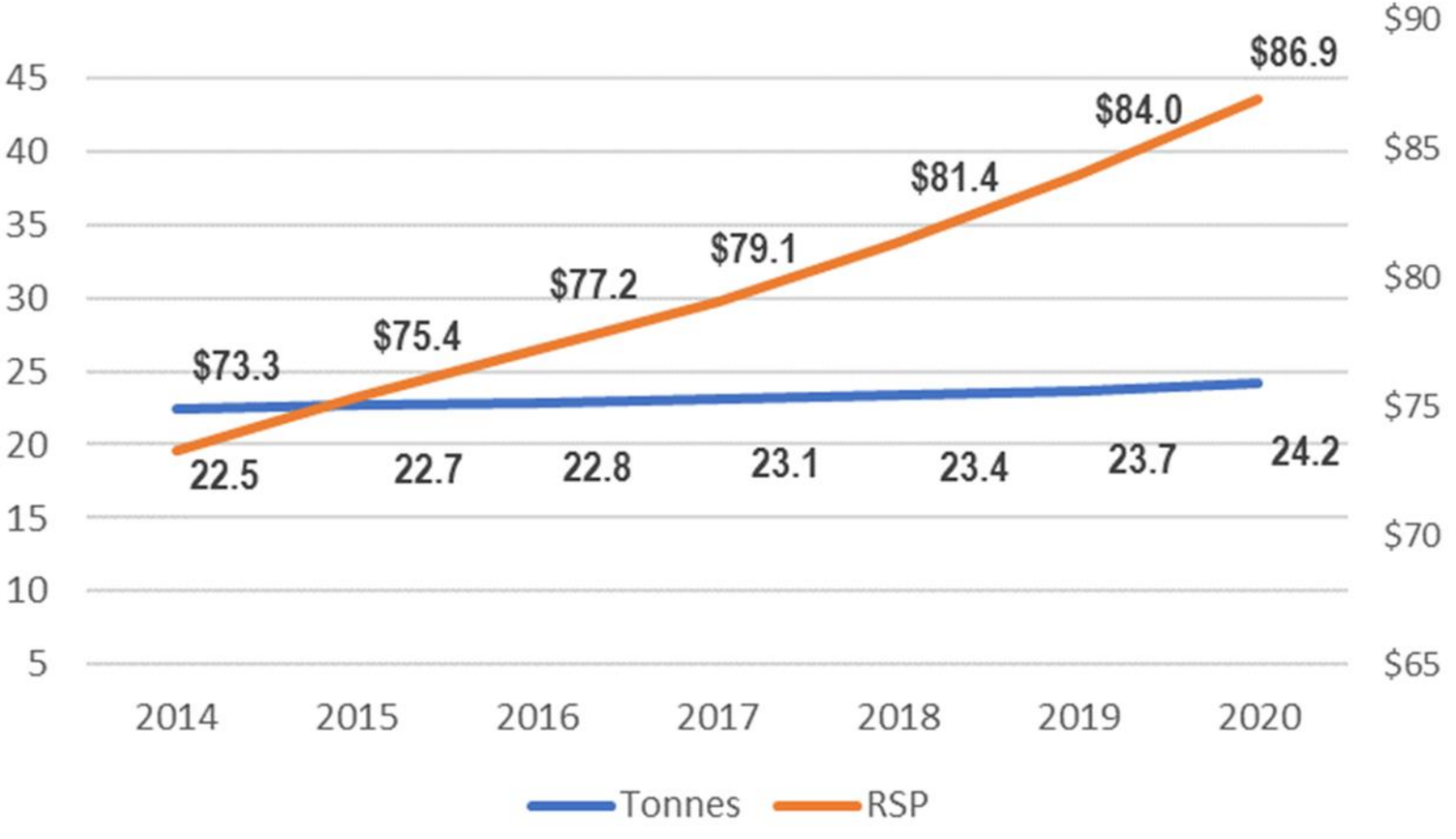
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Global Pet Food Market (000,000 $s & Tons)



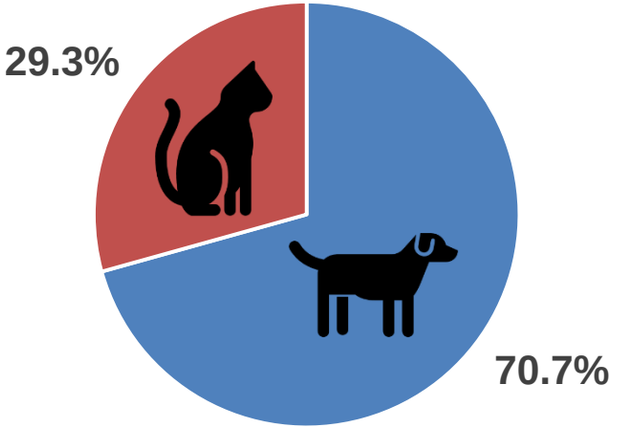
- Pet Food is a $79.1 B global category
- Premiumization drives dollar growth above volume
  - RSP CAGR 2013 – 2017 is 5.4%
  - Volume CAGR 2013 – 2017 is 2.9%

Research Sources:
Pet Care: Euromonitor from trade sources/national statistics

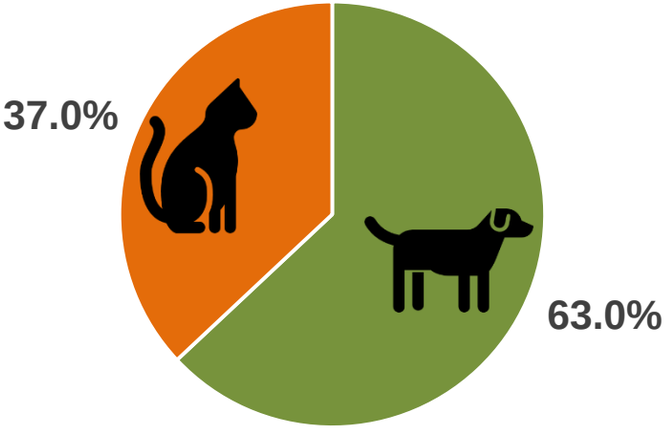
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Global Pet Food Market

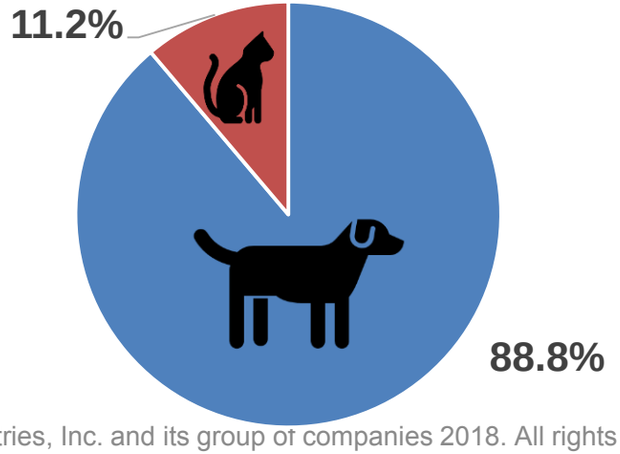
World Pet food Market in Volume



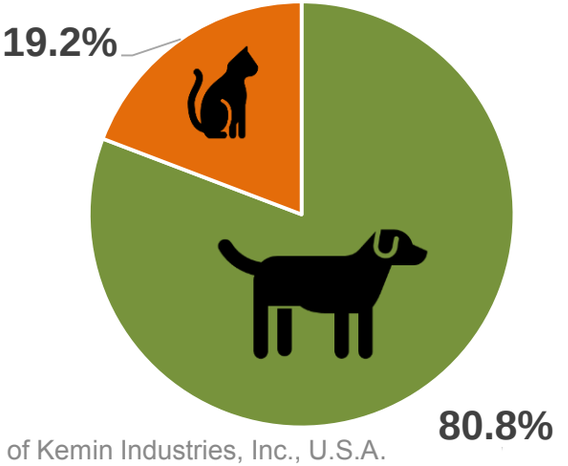
World Pet food Market in Value



LATAM Pet food Market in Volume



LATAM Pet food Market in Value



Research Sources:
Pet Care: Euromonitor from trade sources/national statistics

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Global Pet Food Market in Value

Geography		Species		Pet Food Form		
	Euromonitor	Dog	Cat	Dry	Wet	Treats
Global	NA	63%	37%	58%	29%	13%
NA	41%	70%	30%	59%	24%	17%
EU	34%	48%	52%	44%	42%	14%
LATAM	12%	81%	19%	90%	7%	3%
AP	13%	64%	36%	61%	27%	12%

Research Sources:
Pet Care: Euromonitor from trade sources/national statistics

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Focus on Wet Pet Food Market

Research Sources:
Pet Care: Euromonitor from trade sources/national statistics

		Volumes (in Tons)			% growth
		2015	2016	2017	15-17
Global		2,985,743	3,031,974	3,073,090	2.93
		2,436,187	2,462,071	2,482,233	1.89
NA		749,593	763,681	778,087	3.80
		903,894	915,376	927,692	2.63
EU		1,524,822	1,532,890	1,535,430	0.70
		934,056	930,086	920,529	-1.45
LATAM		37,338	40,771	44,455	19.06
		60,782	68,634	74,479	22.53
AP		124,995	133,501	143,340	14.68
		107,909	115,291	115,291	15.37

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Focus on Wet Pet Food Market

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Pet Care: Euromonitor from trade sources/national statistics

		Values (in Million US $)			% growth
		2015	2016	2017	15 - 17
Global		12,582	12,790	13,368	6.25
		7,799	7,917	8,209	5.26
NA		3,563	3,683	3,848	8.00
		3,325	3,474	3,639	9.45
EU		6,003	5,890	5,941	-1.02
		2,523	2,421	2,401	-4.84
LATAM		229	241	281	22.78
		313	325	370	17.97
AP		752	857	906	20.47
		528	589	644	21.78

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Different types of wet pet food & their process

Basically, there are 2 types of wet pet food for dogs and cats:

- Loaf or terrine / paté





- Chunks in gravy or jelly






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Different types of wet pet food & their process

Loaf / Paté

Raw Material Weighing

Grinding / Mincing

Dry ingredients

Gel dispersion

Mixing

Emulsifying

Can Filling

Can Seaming

Can Washing

Retorting

F0

Cooling

Labelling





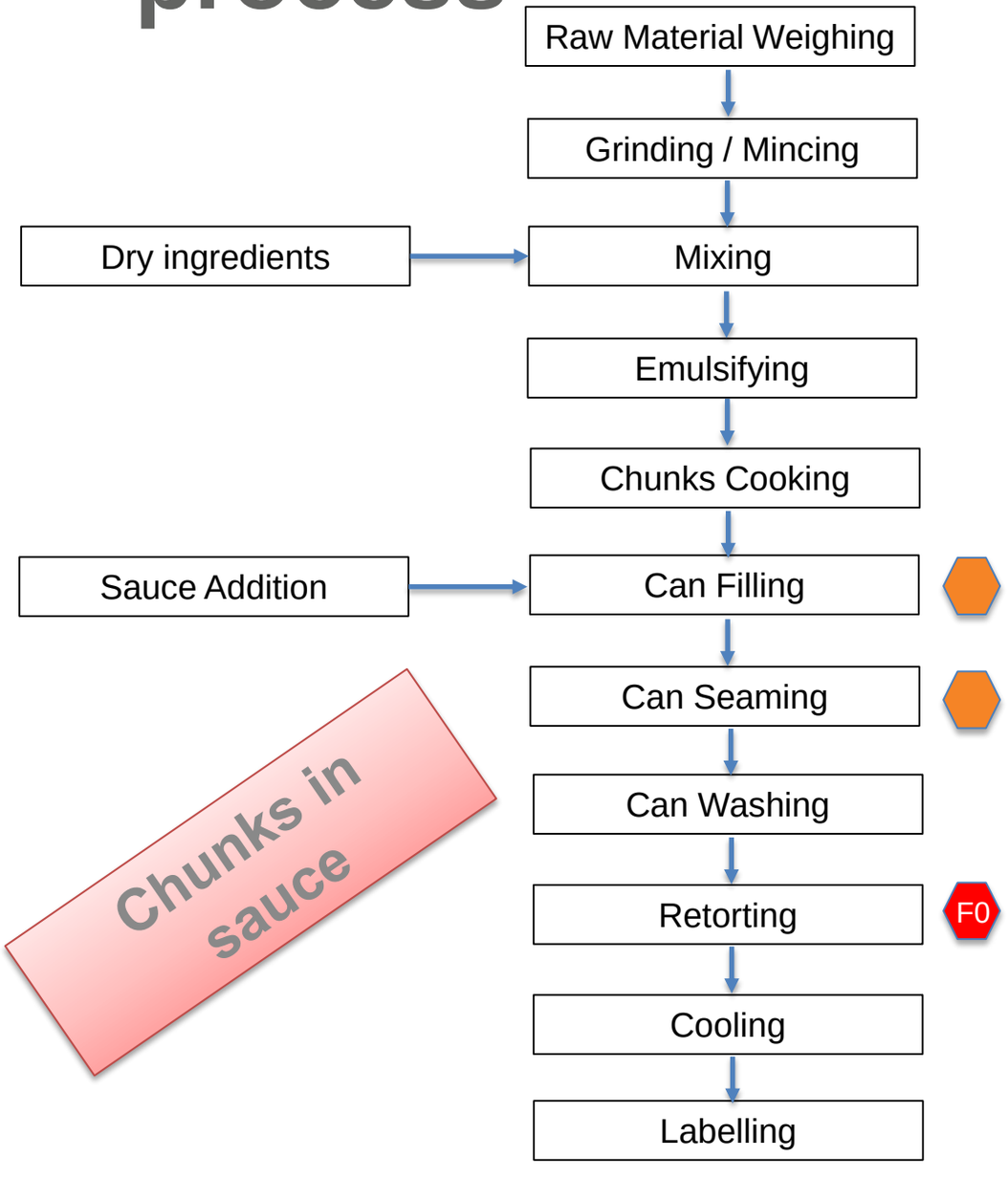






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Different types of wet pet food & their process





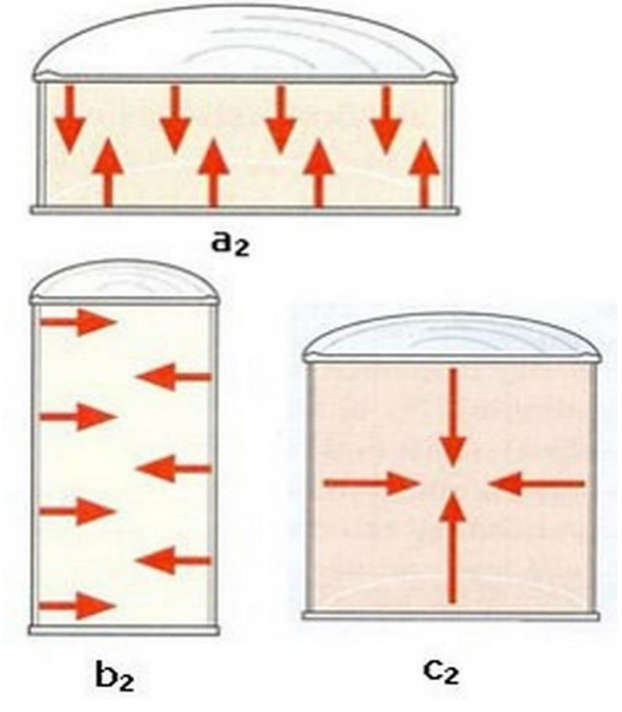




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Different types of wet pet food & their process

- Importance of F0 Value or Thermal Death Time



Ways of heat penetration into horizontal (a2) and vertical (b2) flat cans and square (c2) cans with solid (not liquid) content.

- The aim of sterilization of meat products is the destruction of all contaminating bacteria including their spores. Heat treatment of such products must be intensive enough to inactivate/kill the most heat resistant bacterial microorganisms, which are the spores of **Bacillus** and **Clostridium**

- The sterilization process in the canned product can be subdivided into three phases: heating phase, holding phase and cooling phase

Research Sources:
FAO website

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Different types of wet pet food & their process

- Importance of F0 Value

- Cold point: It is the point where the heat arrives last.

- When comparing cans with the same bottom area but different height, heat penetration to the cold point of the high can takes twice the time as needed for the lowest can.

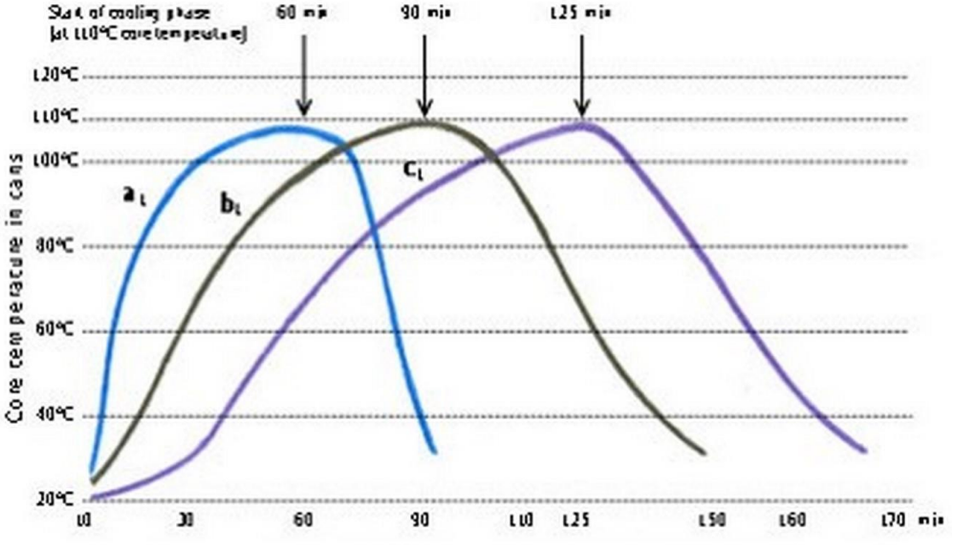




Fig. 360: Heat penetration into centre of cans (Cans filled with meat mix of Luncheon meat type) Temperature of autoclave water 118°C

Research Sources:
FAO website

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Packaging evolution in wet pet food

MULTI-SERVE

Cans

- 1200 g
- 800 g
- 400 g







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Packaging evolution in wet pet food

SINGLE-SERVE

Alutrays
- 300 g
- 100 g



Single Serve Cans
- 80 g



Pouches
- 100 g
- 85 g
- 50 g





Tubs
- 285 g



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Nutrition in wet pet food

- Difference between complete and complementary pet food
    - Complete pet food: Pet food which, by reason of its composition, is sufficient for a daily ration.
    - Complementary pet food: Pet food which has a high content of certain substances but which, reason of its composition, is sufficient for a daily ration only if used in combination with other pet foods.





Research Sources:
FEDIAF Nutritional Guidelines, July 2016
EU Regulation (EC) No 767/2009

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Nutrition in wet pet food

Wet pet food vs. Dry pet food

Advantages	Disadvantages
Water intake	Tartar Build-up
Soft Texture *	*Cost In Use* **
Variety	*Sustainability (?)*

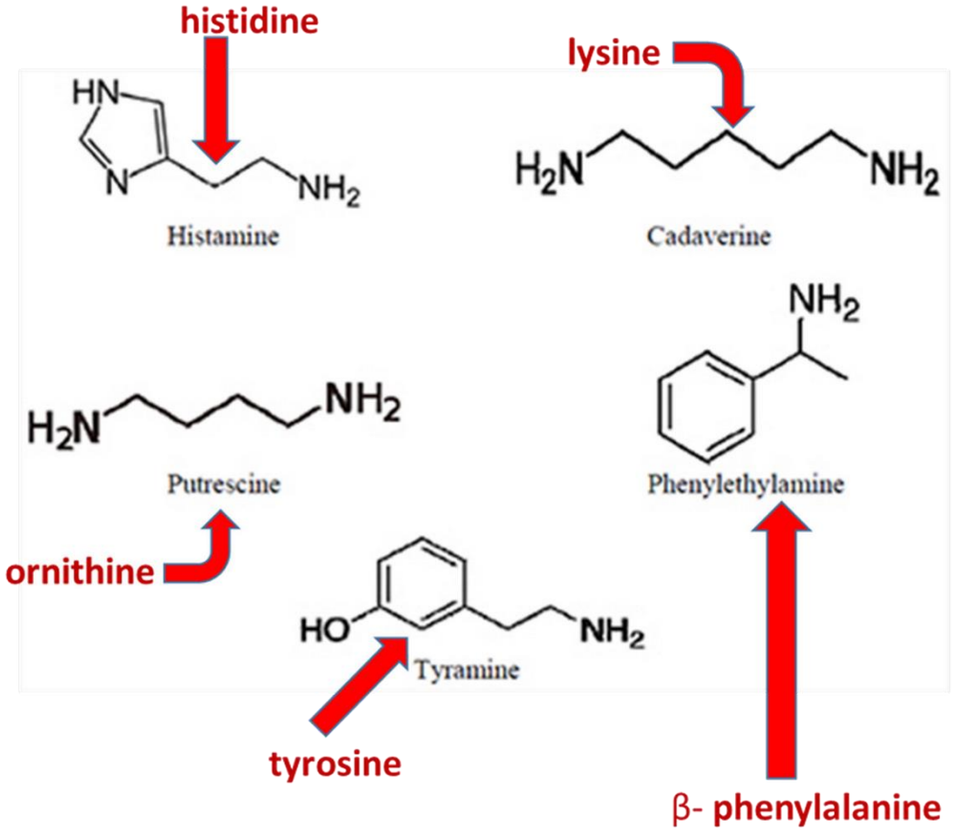
* Interest for senior pets or therapeutic diets

** Especially for large breed dogs

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Nutrition in wet pet food

- Main risks in wet pet food
  - Meat preservation (**before retorting treatment**) => Biogenic Amines



Biogenic amines (BA) are produced by decarboxylation of free amino acids (FAAs) mediated by amino acid decarboxylase enzymes .

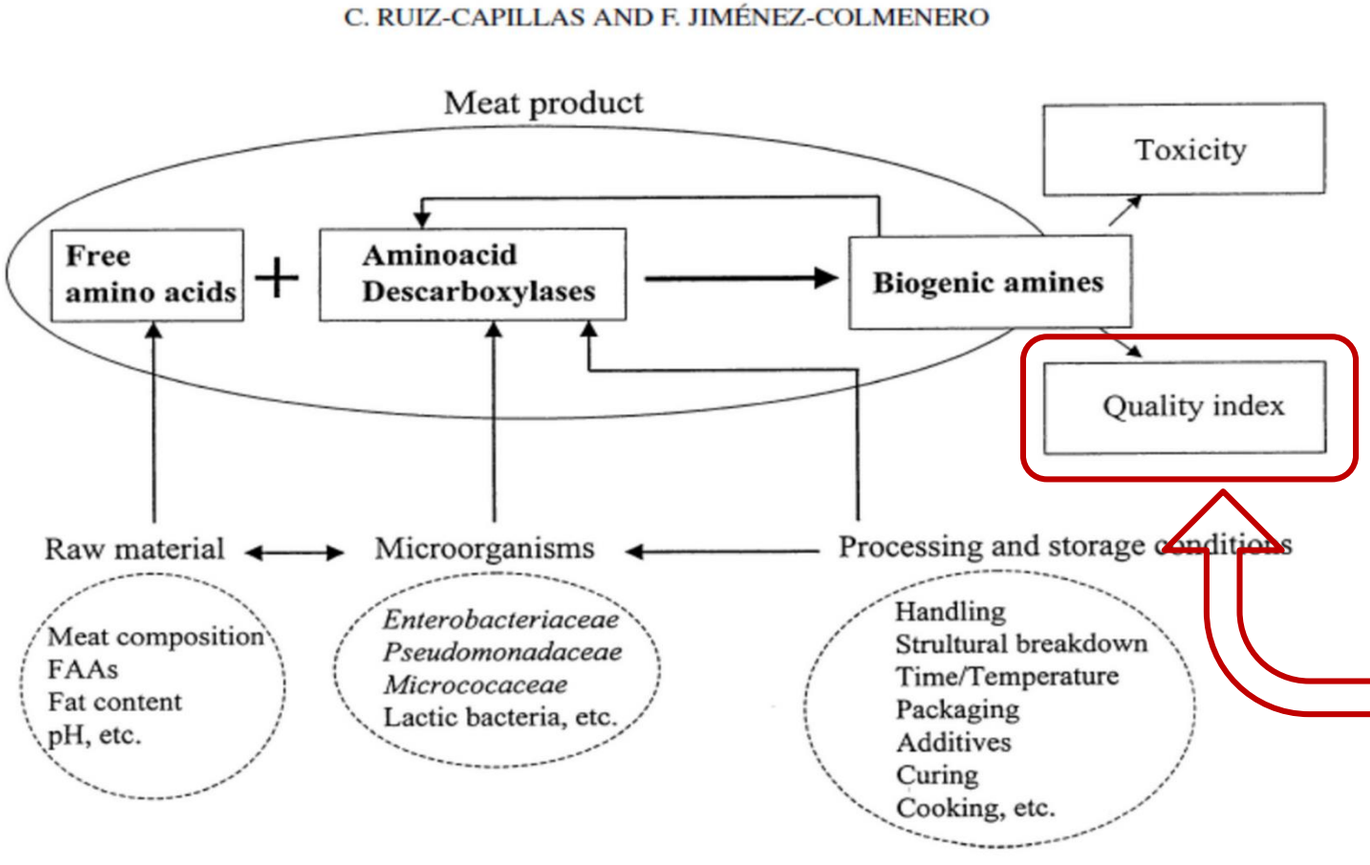
The most important BA — both qualitatively and quantitatively — in foods (fish and fish products, dairy products, meat and meat products, fermented vegetables) and beverages are **histamine, tyramine, putrescine, cadaverine and b-phenylethylamine**.

Pictures Sources:
H. Nishikawa, T. Tabata and S. Kitani, "Simple Detection Method of Biogenic Amines in Decomposed Fish by Intramolecular Excimer Fluorescence," Food and Nutrition Sciences, Vol. 3 No. 7, 2012, pp. 1020-1026

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Nutrition in wet pet food

- Main risks in wet pet food
  - Meat preservation (**before retorting treatment**) => Biogenic Amines



Factors influencing the formation of biogenic amines.

As the microbial spoilage of food may be accompanied by the increased production of decarboxylases, the **presence of biogenic amines might serve as a useful indicator of food spoilage** (Halász et al. 1994).

Research Sources:
Biogenic Amines in Meat and Meat Products, C.Ruiz-Capillas and F.Jimenez-Colmenero, Critical Reviews in Food Science and Nutrition, 2004

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Nutrition in wet pet food

- Main risks in wet pet food
  - Palatability issues

⇒ Directly linked to nutrition.

⇒ Animals need sufficient dietary intake to fulfil their daily requirements of nutrients, vitamins and minerals.

⇒ Just like babies, dogs and cats show how much they appreciate their food by eating it….. or not!

⇒ Pet owners want their animal to enjoy their meal.

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Nutrition in wet pet food

- Main risks in wet pet food
  - Palatability issues
    - ⇒ Could be caused by inadequate retorting process parameter (overcooked)
    - ⇒ Could also be caused by the way pets are fed, with a mix of wet and dry pet food (especially for cats).





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