



JOURNÉE TECHNIQUE SUR LES RÉSIDUS ORGANIQUES
ET LA PRODUCTION D'INSECTES POUR L'ALIMENTATION
Marcy L'étoile 29/06/2017



Agenda :



I-Introduction

II- Pet food market

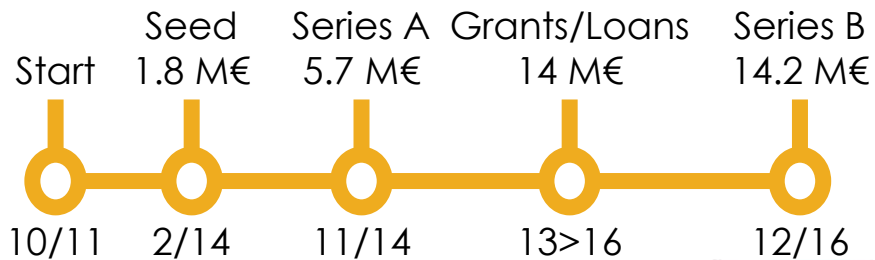
III-Process & Products

IV-Insects proteins and Pet food

Ynsect: a leader in the fast-emerging insect-based feed industry



50 People
10 Nationalities
Transversal Skills (Robotic-
Breeding-Nutrition-
Rendering...)



€MERTEC
DeMeter

NEW
PRO
TEIN



bpi**france**

future positive
capital
bpi**france**

quadla
SMART IDEAS

35 M€ raised in 3 years



**High level
Lobbying**
that opened EU
fish feed market



R&D partnerships

- > Ynsite = 1st Plant (Jura, France)
- > 2000 tons of mealworm/year



Pet food market



**Pet Food Global Market Leaders: 2008
(percent)**



* Including Affinity Petcare (Agrolimen SA), Uni-Charm, Total Alimentos SA and Nutriara Ltda.
Source: Packaged Facts

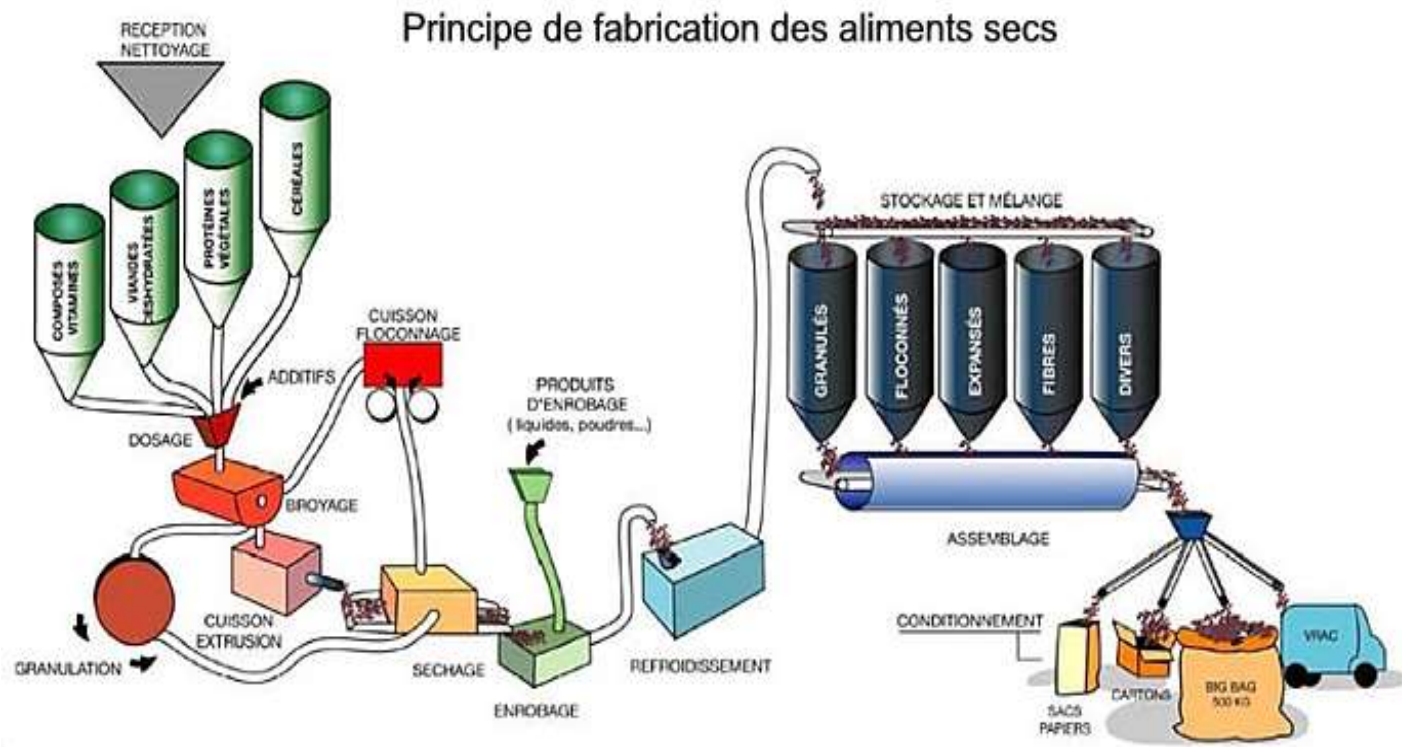
Global market size : 17 Mt/year

- EU (incl. RU) : 6 Mt
- USA +CAN : 6Mt
- SAM: 2Mt
- Other: 3Mt

Process



Dry pet food: Extruded product. Humidity < 10%. $A_w < 0,61$. Coated with fat and flavors.

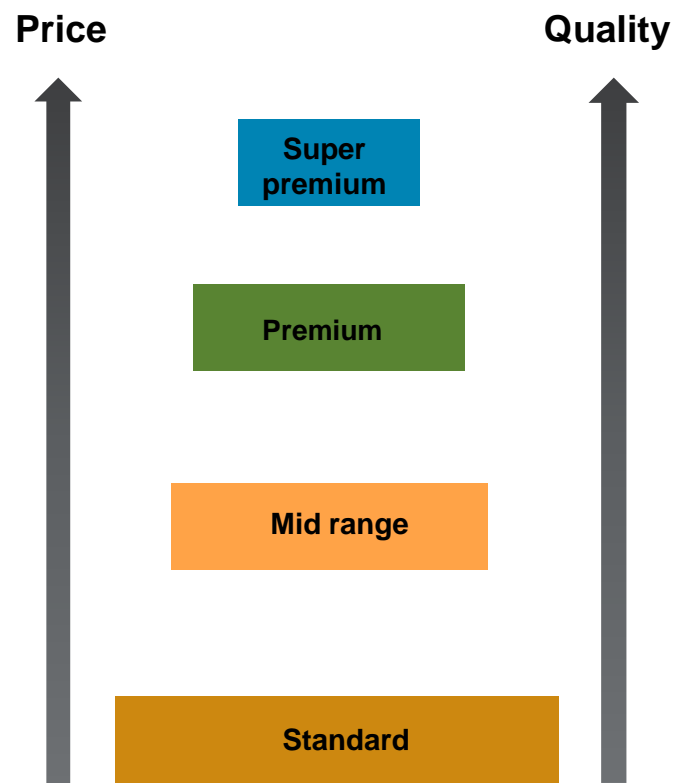


Products



Dry pet food highly segmented from Standard to Super premium for both Cat and dog use of animal protein and fat (Carnivorous).

- Animal protein meals
- Vegetable protein meals
- Fresh & frozen meats
- Fats and oils
- Palatants and aroma components
- Semi-final compounds
- Colorants
- Minerals, amino acids, vitamins, additives...

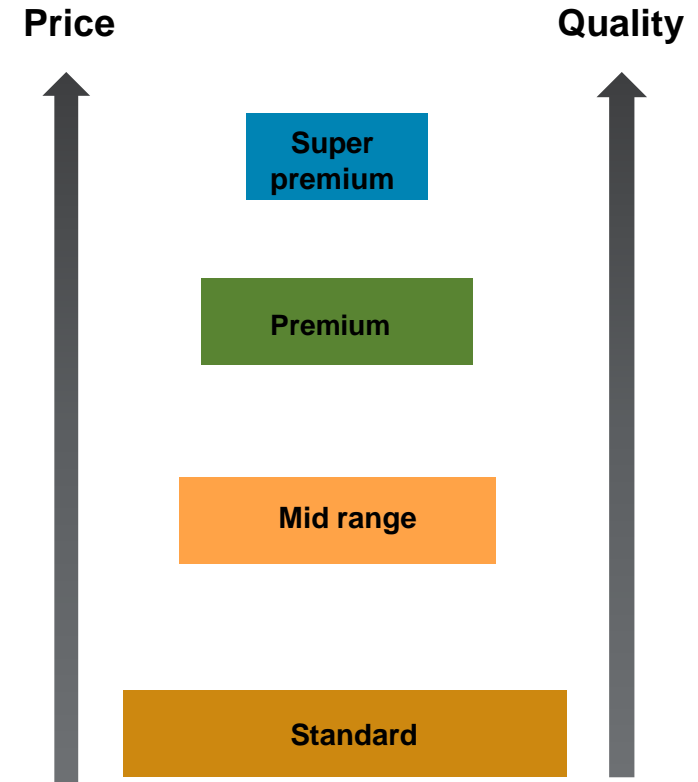


Recipes must fit with pets nutritional requirement!

Prerequisites for Raw material



- Flowability : the material must be fluid (air blow...)
- Colour : has to be stable (no colorant in premium...)
- Nutrition : has to be equilibrated and digestible
- Palatability : neutral (minimum...)
- In compliance with regulation



Recipes must fit with pets nutritional requirement!

Insect meal shows very high qualitative composition



Defatted mealworm meal (TMP™)

Composition	TMP
Protein	70 %
Lipid	12%
Ashes	3%
Water	4%

Amino acids	Unit	TMP
Arginine	%	3,67
Histidine	%	2,10
Isoleucine	%	3,18
Leucine	%	5,34
Lysine	%	3,84
Threonine	%	2,93
Tryptophan	%	0,84
Valine	%	4,45
Methionine	%	0,94
Cystine	%	0,63
Phenylalanine	%	2,49
Tyrosine	%	4,86
Taurine	%	0,42
Aspartic acid + Asparagine	%	5,61
Glutamic acid + Glutamine	%	7,80
Alanine	%	5,54
Glycine	%	3,75
Proline	%	4,38
Serine	%	3,30

No heavy metals/ low TVN

Pet food : Segmentation & trends



- Highly segmented market (breed/ senior...)
- Trends depend on area (not the same in USA than EU....)
- Humanization is a key factor
- Majors trends : Healthy food/ Single protein/ clean labels...



Pet food & Insects



- Pet food market is not seeking for protein!
- Insects proteins can enter in numerous ranges
- High demands from final consumers for sustainable food



Conclusions



20 years ago : No lamb and rice on the market





Thank you

