Monitoring changes in processed foods by measuring nutritional quality evolution over time, at the branded product level

The Oqali project
The JANPA lessons

March 2018

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RÉPUBLIQUE FRANÇAISE

MINISTÈRE EN CHARGE
DE LA CONSOMMATION

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Oqali aims

- To **collect and analyze nutritional data on branded processed foodstuffs**, taking into account socio-economic parameters (types of brands, market shares and prices)

- To **follow nutritional and labelling changes in the food supply** (nutrient contents, ingredients, serving sizes, claims, …)

- To **publish periodic reports on labelling and food characteristics**

→ Decision tool for French authorities

Governance

To complete its mission, Oqali rely on

- **A steering commitee**
  - Members :
    - Representatives of 3 Ministries : Health, Agriculture and Consumption
    - Representatives of Anses
    - Representatives of INRA
  - Mission : approve the work program and Oqali deliverables (reports)
- **A larger committee**
  - Members :
    - Steering commitee members
    + Stakeholders representatives of manufacturers, retailers and consumers
  - Mission : express its views on the work programm and Oqali deliverables (reports)

Oqali parters

- The information about the products in the database is mainly provided by Oqali partners within sectoral working groups

- **Collaborations with manufacturers and retailers are essential**
  - To facilitate data collection at the branded products level
  - **To establish relevant food classifications**
  - To identify the main technological constraints for better interpreting the results

- These collaborations are governed by a unique Charter of partnerships, available on the Oqali website

Data collection at the branded products level

- **General information:** brand, names, commercial names
- **Nutrient contents**
- **Nutritional information:** nutrition facts panel, nutrition labelling schemes (e.g. the GDA or Traffic Light systems), nutrition and health claims, consumption advices, and serving sizes
- **Ingredient lists:** order and sometimes quantity
- **Other information:** organic or environmental label,…
- **Internal codification** : food sectors, food categories, types of brands, …

→ **Nutrition Data sources**

1. PDF of products packaging, send by manufacturers
2. Pictures of the products taken on the shelves by OQALI staff

→ **TNS/Kantar Worldpanel marketing panel:** price and market shares

Data collection

But also labels (organic, quality, environment,…)

+ Socio economic parameters

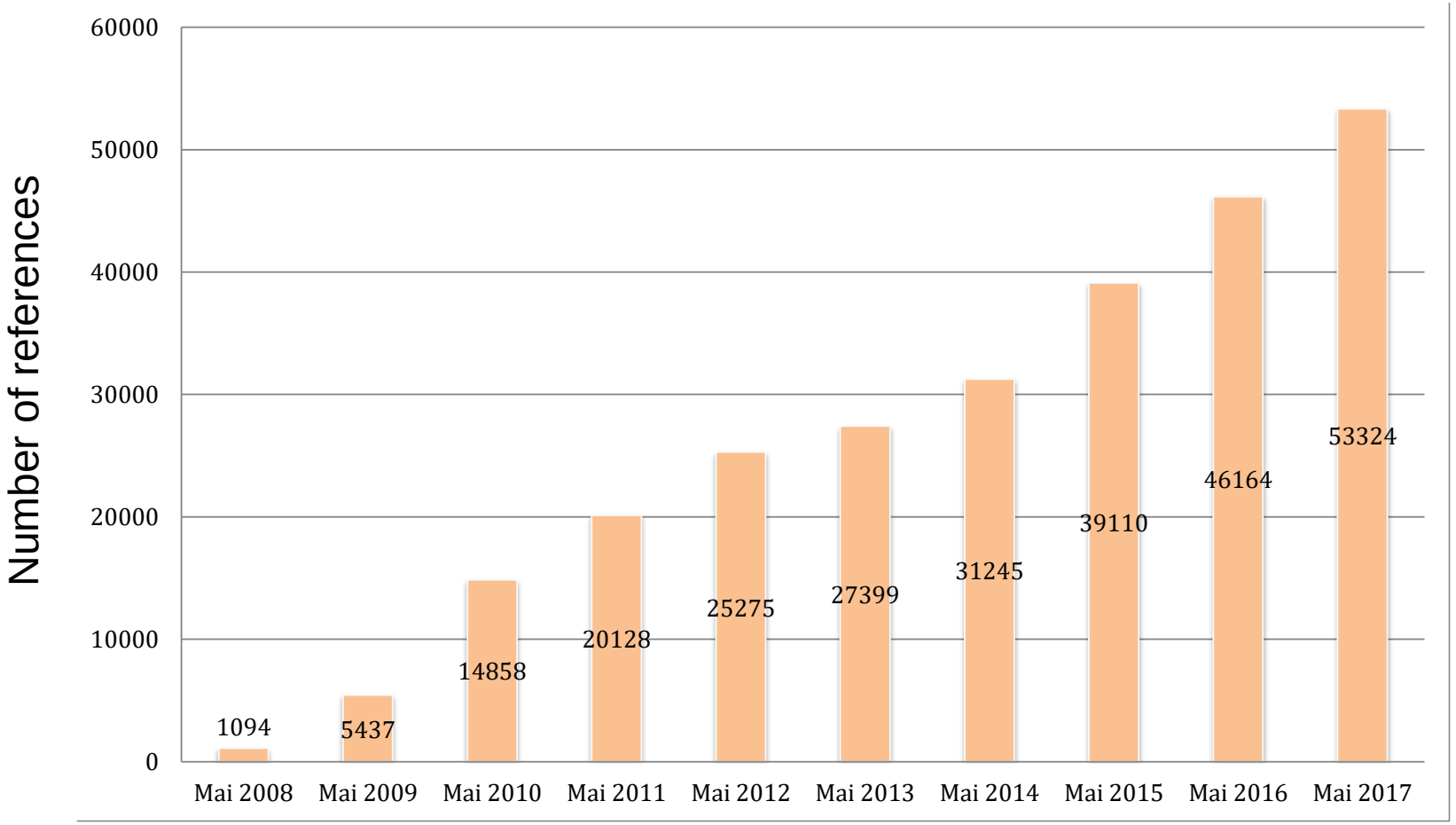
- **Mean price**
- **Market share**

Indicators weighted by references market share

Oqali database

Oqali database : more than 50 000 food items from 31 different food sectors

- **All manufactured food sectors covered**



Oqali studies

- **Food sector reports**
  - Monitoring of nutritional information provided on labels
  - Monitoring of nutrient contents
  - Assessment of the nutrient composition variability, integrating product market shares

- **Thematic studies**
  - Assessment of the potential cumulative impact of voluntary commitment charters on consumer nutrient intakes or volumes of sold nutrients
  - Ingredients study on all the food sectors (Allergens, additives, …)
  - Characterisation of reformulated products

➢ **https://www.oqali.fr/oqali_eng/**

Oqali food sector studies

- **31 food sectors**
- All processed foodstuffs
- More than **50 000 references**

FOOD SECTORS

- Baby food
- **Crackers**
- Cereal bars
- **Cakes and biscuits**
- **Soft drinks**
- Soups and broths
- **Breakfats cereals**
- **Delicatessen meat**
- **Chocolate products**
- **Fruit purees, compotes and desserts**
- **Jams**
- **Canned fruits**
- Cheese
- Ice creams and sorbets
- **Fruit juices and nectars**
- Infant milk
- Margarins
- **Bread products**
- Ready-to-eat canned meals
- Ready-to-eat fresh meals
- Ready-to-eat frozen meals
- **Dessert mixes**
- **Fresh dairy products and similar**
- Fresh delicatessen products
- Processed potato products
- Hot sauces
- Cold sauces
- Syrups
- Frozen snacking
- Frozen pastries and desserts

Coming
- Confectionery

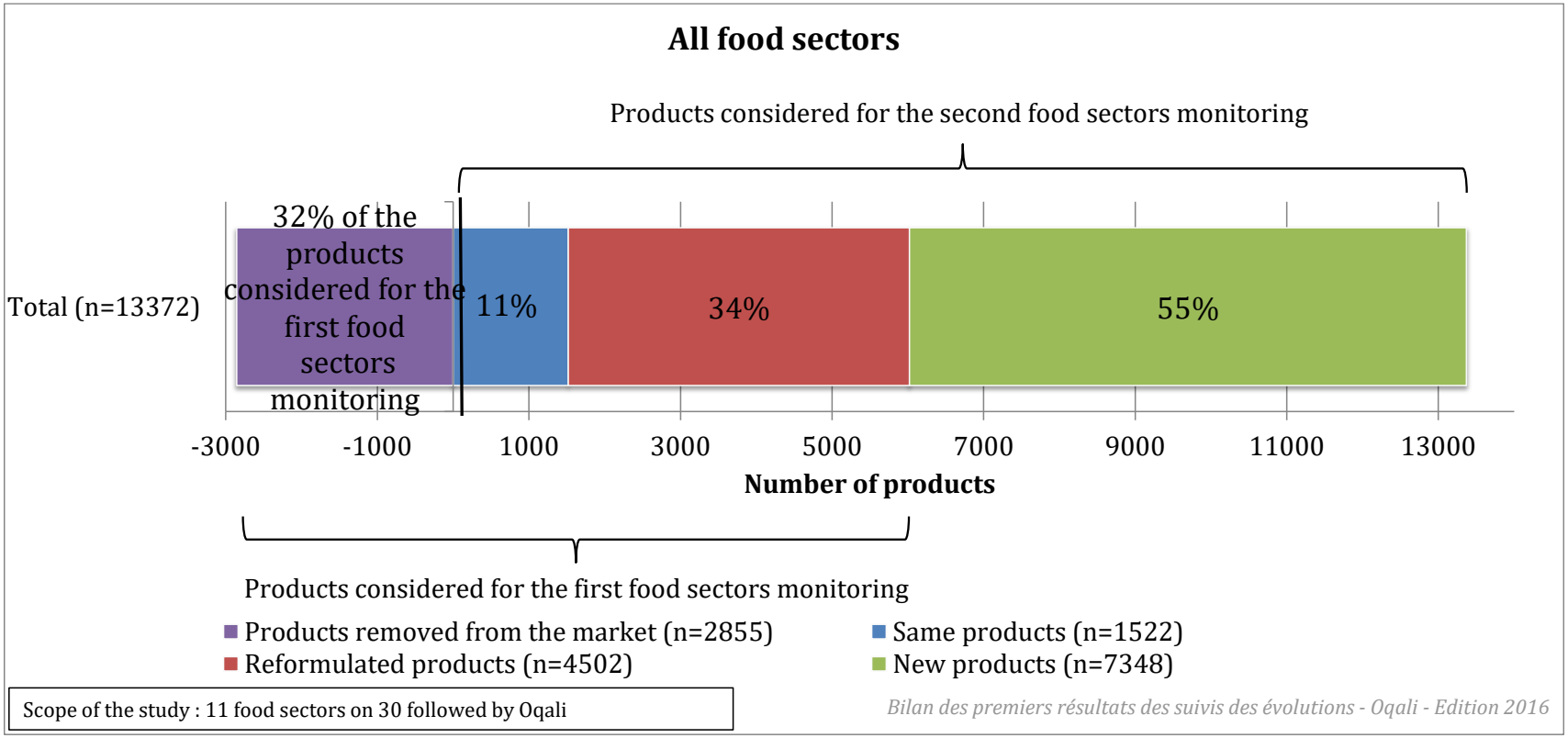
Public policy monitoring

- To **assess voluntary commitment charters** signed by food stakeholders (manufacturers or retailers) with the public authorities

- To monitor Nutriscore implementation

Food supply monitoring

Food supply turnover



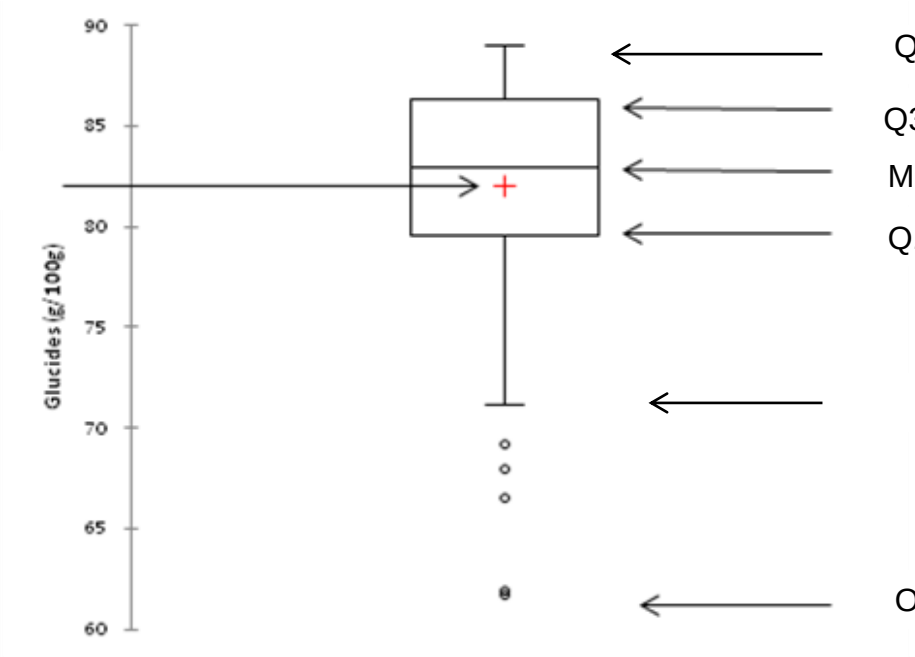
→ Significant renewal between first and second food sectors monitoring (11 food sectors out of 30 followed by Oqali)

Products removed from the market	Same products	Reformulated products	New products
32% of the products considered for the first food sectors monitoring	11% of the products considered for the second food sectors monitoring	34% of the products considered for the second food sectors monitoring	55% of the products considered for the second food sectors monitoring
9% of the first food sectors monitoring market share	8% of the second food sectors monitoring market share	45% of the second food sectors monitoring market share	26% of the second food sectors monitoring market share

Nutrient content variability

Nutritional content variability

Mean



Q3 + 1,5 (Q3-Q1)

Q3 Third quartile

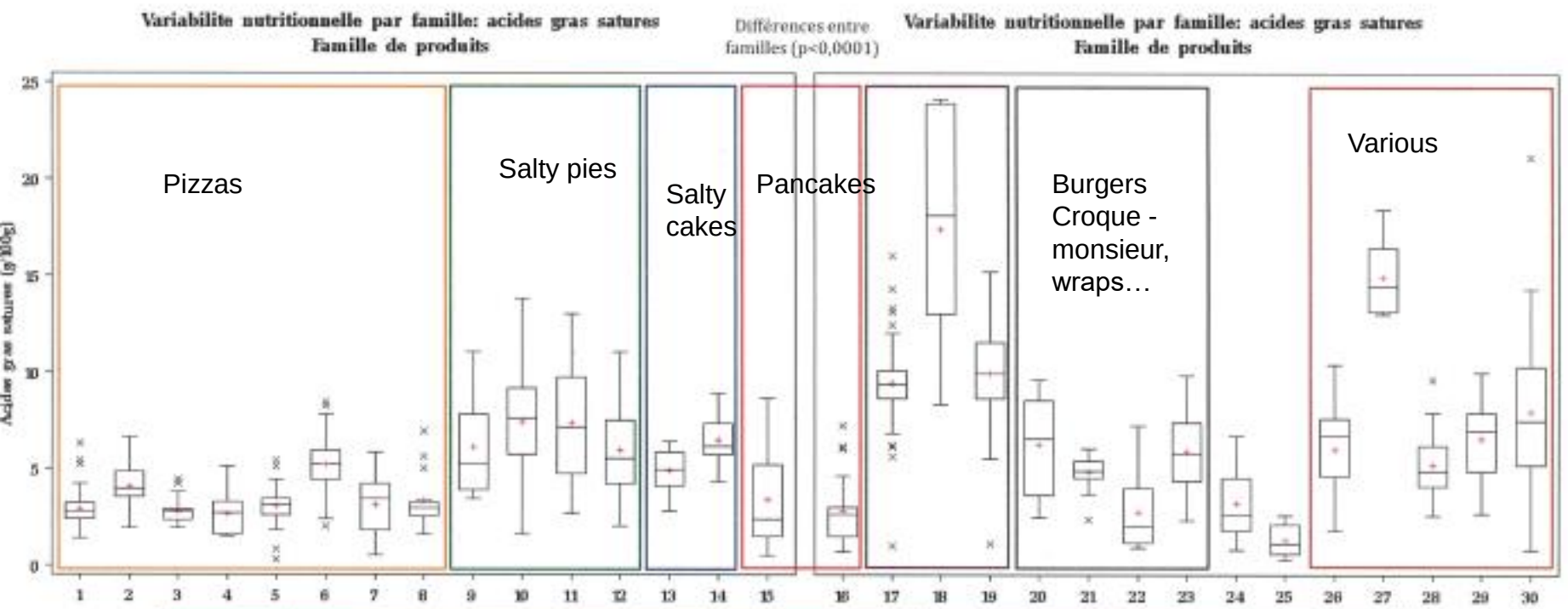
Median

Q1 First quartile

Q1 – 1,5 (Q3-Q1)

Outside values

Saturated fatty acids variability of frozen snacks

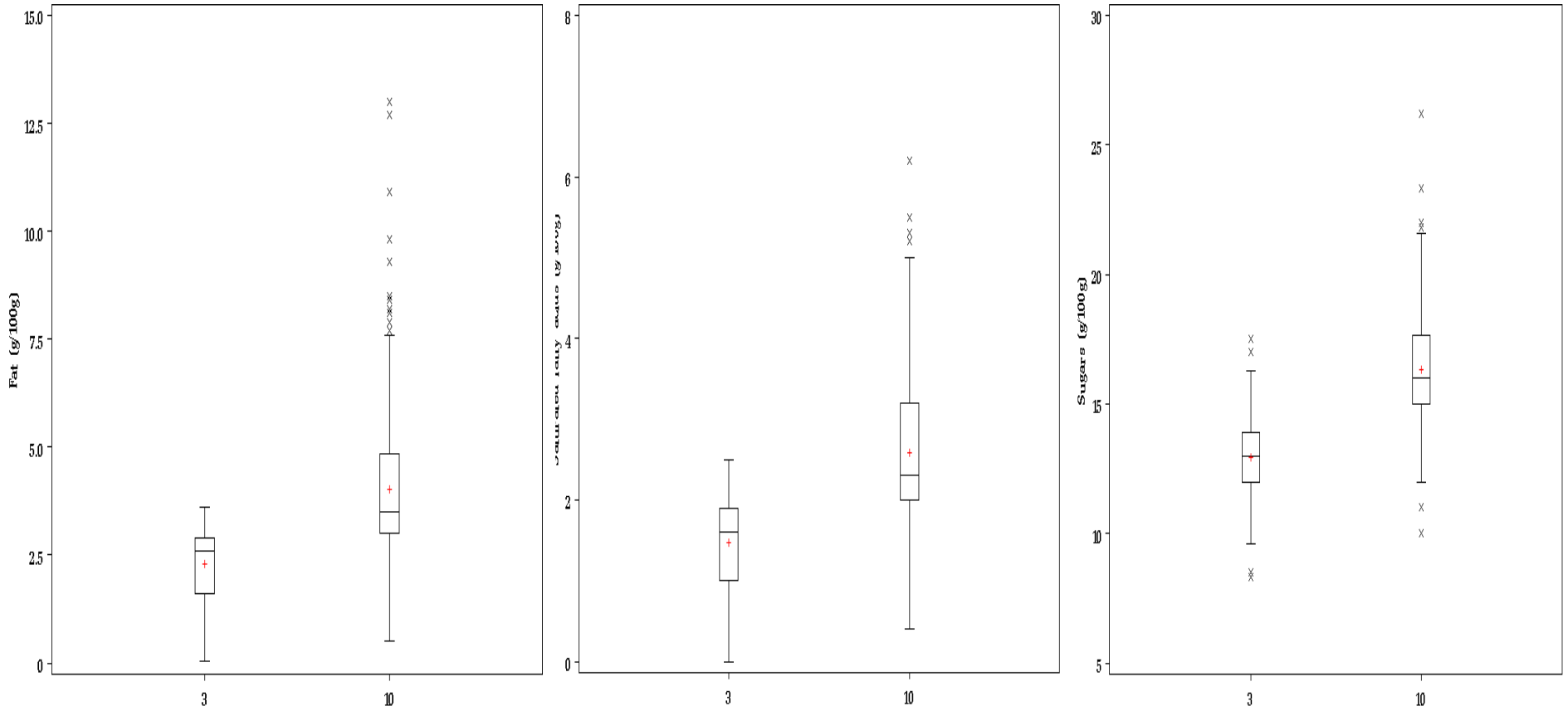


Numero famille	Nom famille	Numero famille	Nom famille
1	Pizzas jambon fromage (n=86)	16	Crepes et galettes vegetariennes (n=24)
2	Pizzas charcuterie (n=46)	17	Feuilletes avec viande ou poisson et viandes en croute (n=122)
3	Pizzas viandes type bolognaise (n=29)	18	Feuilletes avec escargot (n=10)
4	Pizzas viandes autres (n=20)	19	Feuilletes vegetariens (n=36)
5	Pizzas produits de la mer (n=38)	20	Croque monsieur (n=14)
6	Pizzas fromages (n=115)	21	Burgers (n=39)
7	Pizzas type margarita (n=33)	22	Wraps et kebabs (n=15)
8	Pizzas legumes (n=16)	23	Autres sandwiches (n=24)
9	Quiches lorraines (n=32)	24	Baguettes et tartines garnies (n=14)
10	Tartes avec viande ou poisson (n=88)	25	Salades (n=14)
11	Tartes aux fromages (n=20)	26	Aumonieres aperitives (n=13)
12	Tartes aux legumes (n=66)	27	Choux et gougeres (n=8)
13	Cakes sales avec viande ou poisson (n=10)	28	Pains surprises et canapes aperitifs (n=35)
14	Cakes sales vegetariens (n=9)	29	Verrines aperitives (n=8)
15	Crepes, galettes et pastillas avec viande ou poisson (n=66)	30	Assortiments et autres aperitifs (n=31)

Snacking surgelé-Oqali-Données 2015-Edition 2017

Figure 18 : Variabilité des teneurs en acides gras saturés (g/100g) au sein du snacking surgelé étudié.

Nutrient content variability for a product family : saturated fatty acids

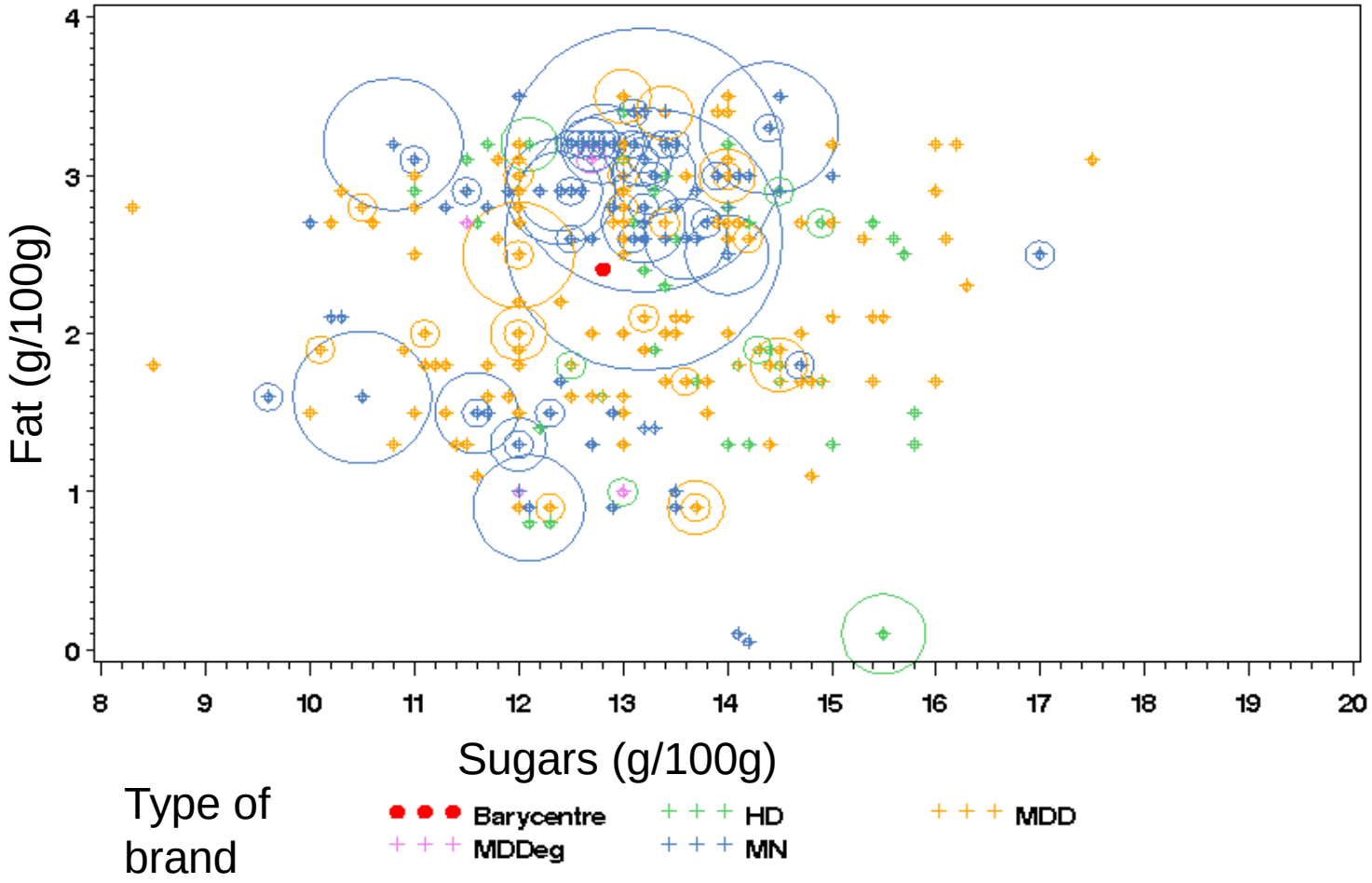


3 = Classic sweet yoghurts and fermented milks n=527)

10 = Custards, gelified milks, chocolate custards topped with whipped cream (n=300)

Nutrient content variability for a product family

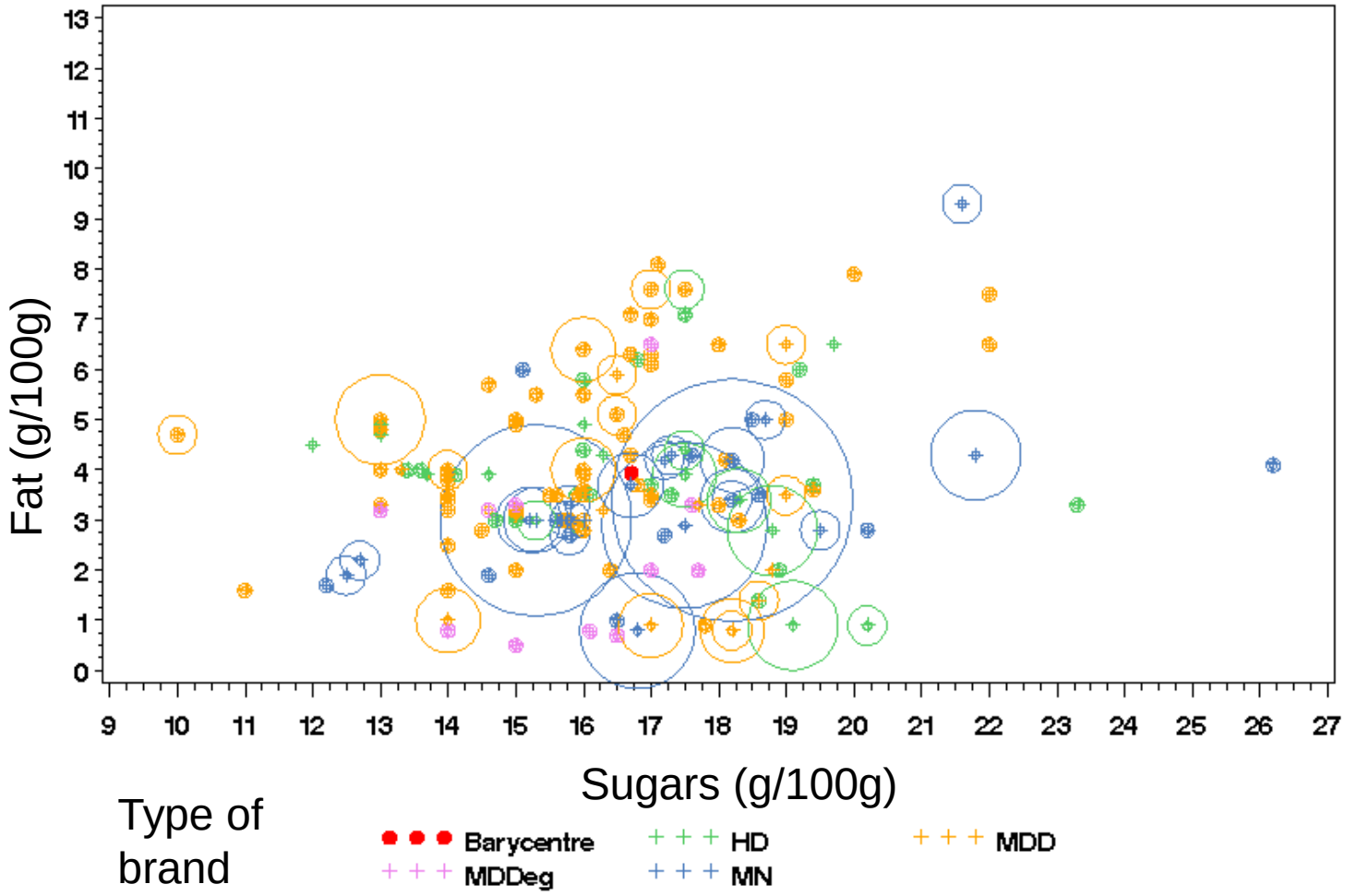
Classic sweet yoghurts and fermented milks
2011



One point : one reference
Circle size reflects the reference market share

Nutrient content variability for a product family

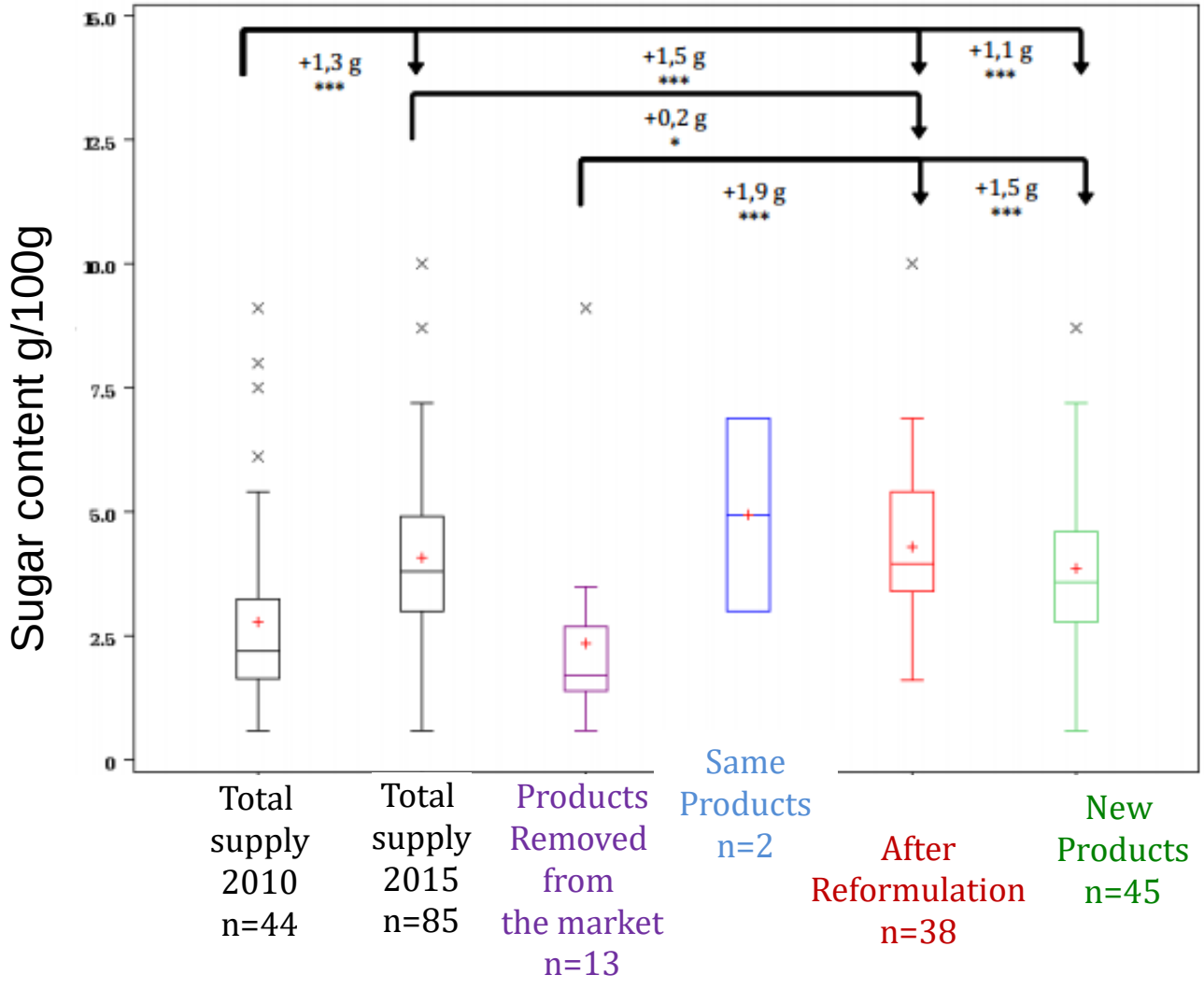
Custards, gelified milks, chocolate custards topped with whipped cream
2011



One point : one reference
Circle size reflects the reference market share

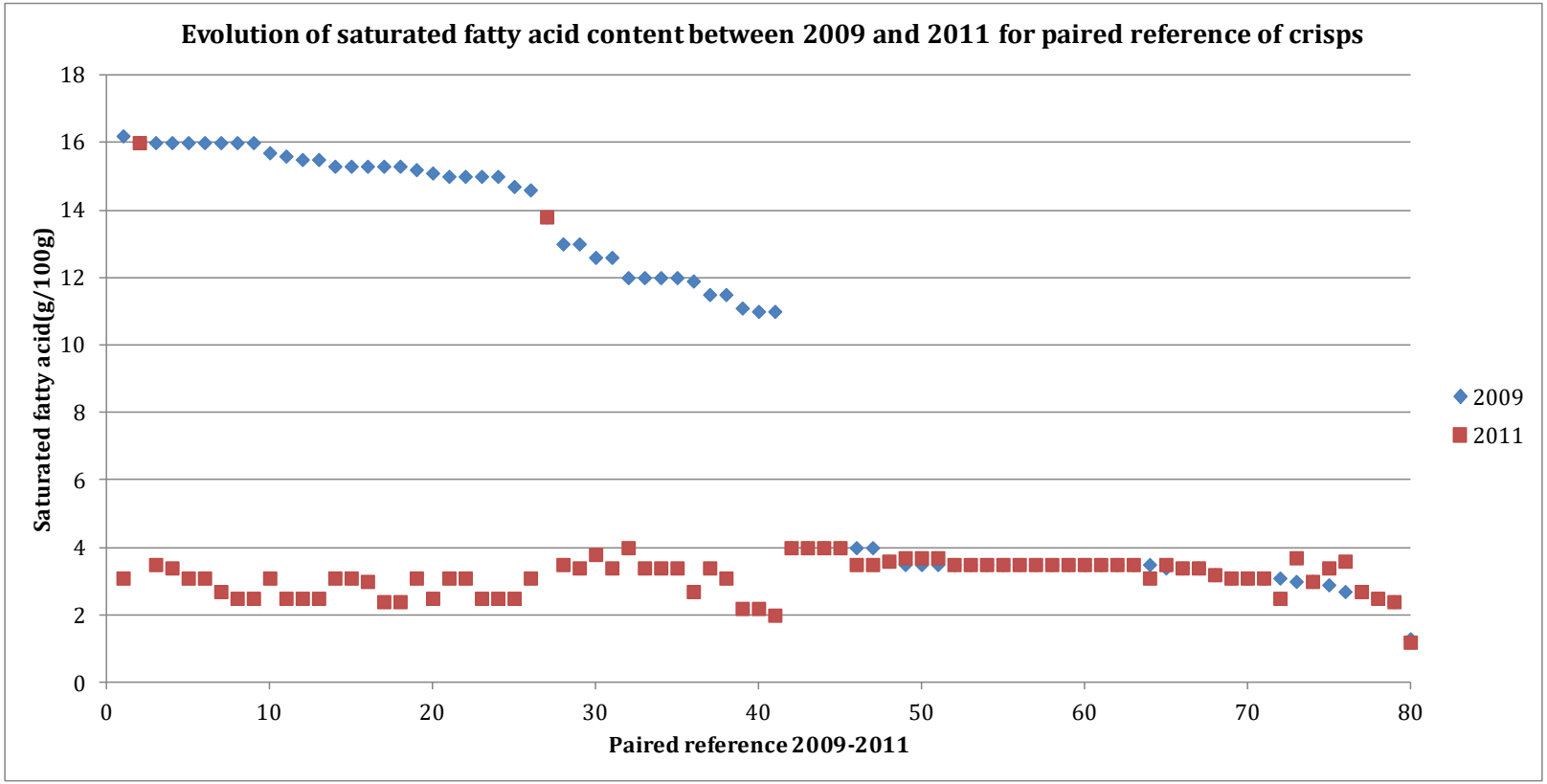
Nutrient content monitoring

Sugar content distribution for pizza containing ham and cheese



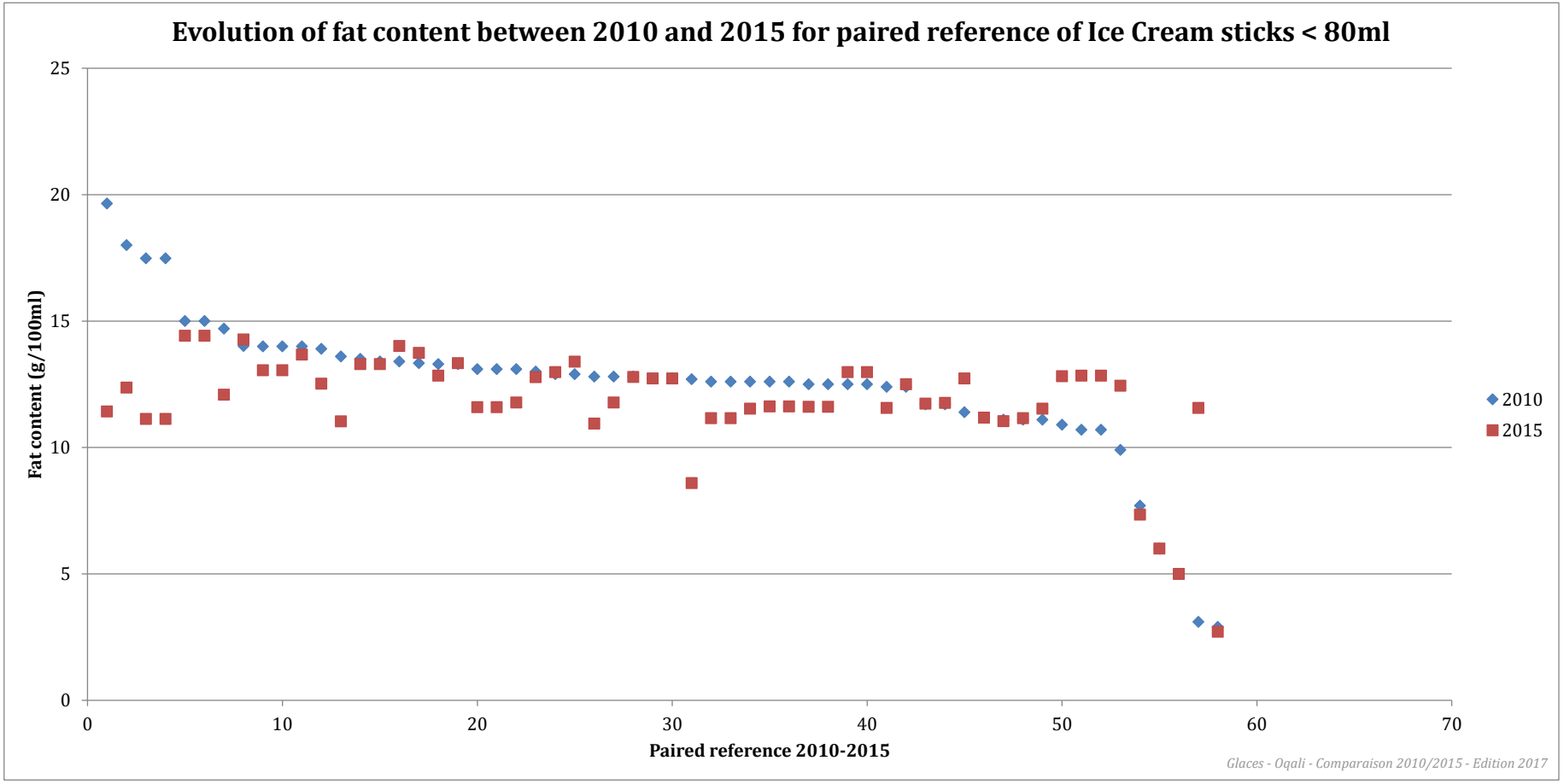
Monitoring food reformulation but also changes in food supply : with products removed from the market and new products

Product reformulation in crisps (paired samples in 2009 and 2011)



- Decrease of saturated fatty acid content for 55% of the paired references
  - Product reformulation
  - Palm oil has been replaced by sunflower oil for crisps frying
- Approach started by some food operators from 2009 : 36% of paired reference already have a 3g/100g content in 2009

Product reformulation in Ice cream sticks



Conclusions

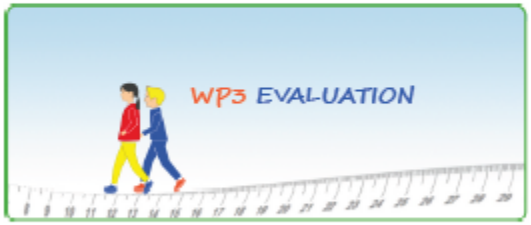
- An important turnover of manufactured products
- A capacity to discuss the extent of possible reformulation by product family
- Some evolutions of the nutritional composition, but in a limited number, downwards or upwards
- With a limited but significant impact on nutrients intakes
- **Necessity to monitor food reformulation and nutritional quality of food supply at the branded product level, by product family (disaggregated level)**
  - **Enable to make comparisons between countries**
- The Oqali project is expanding
  - Québec, JANPA

WORK PACKAGES

JANPA is organised in seven work packages.
Three of them are cross-cutting
while four are technical packages

Ensure the success of the joint action by efficient management and coordination of the different work packages

Promote the joint action and disseminate the results with the involvement of the relevant stakeholders



Carry out a systematic evaluation of the entire project, on three levels: performance and impact of JANPA, performance of the partners

Develop an evidence-based economic rationale for action on childhood obesity

Share the best practices on how the nutritional information on food and diet is gathered and used for nutritional policies

Provide guidance on policy options and national initiatives to create healthier environments in kindergartens and schools

Promote policies and interventions on healthy diets and physical activity for pregnant women and families with young children

Task 5.1 identification of available food information

- Aims: identify in the 9 participating countries
  - ✓ available studies about nutritional information on labels (+/- 200 sources)
  - ✓ monitoring tools

Country	Food composition database	Specificity / main use
France	Ciqual Oq...li	Generic level. Used to estimate the nutrient i...ke of the population (in combination with the consumption survey INCA) Branded leve...48000 references). Used ... the quality of the food supply and the evolution of food sect... time.
Austria	/	
Belgium	Nubel	...ences). ...(in combination with the
Bulgaria	/	
Lithuania	Food chemical database	
Norway	Nationa... ...table/database Tradesolution EPD	...es. ...est... ...and reta...
Romania	/	
Slovakia	Slovak Food Composition Data Bank	Generic leve... ...eferences).
Slovenia	Database of products	Generic level.

Need to develop monitoring tools to follow the nutritional composition of the food supply

Task 5.2 use by government

- Aims
  - ✓ Inventory and summarize nutrition policies and voluntary actions aimed at improving nutrient intakes

- Results: 3 main types of action (+/- 230 sources – 210 w sites)

  - Food formulation: c efficien prove the quality of the food of bene th n but impact limited (in of collective

  - Inform pean co ess regarding nutrition but r e ons lower socio-economic stat s and lo act o umers' be vior

  - Work on food environment (serving sizes, advertisements…): more direct impact, should be encouraged.

Need to combine several types of actions

Task 5.3 understanding by consumers

- Aims
  - ✓ Inventory the use and understanding of nutritional information provided on labels by families (according to their socio-economic status)

- Results (+/- 130 sources):
  - Nece[illegible] to simp[illegible] ho[illegible] f[illegible]beling: lot of informat[illegible]
  - Fron[illegible]ive /ordinal / supp[illegible]ide a family and b[illegible]f products
  - Efficiency: Efficien[illegible]ol to hel[illegible] the consumer in purchase situation, but limited [illegible]mpact on food basket (influence of price, habits, tastes…)

Necessity to combine with other types of actions

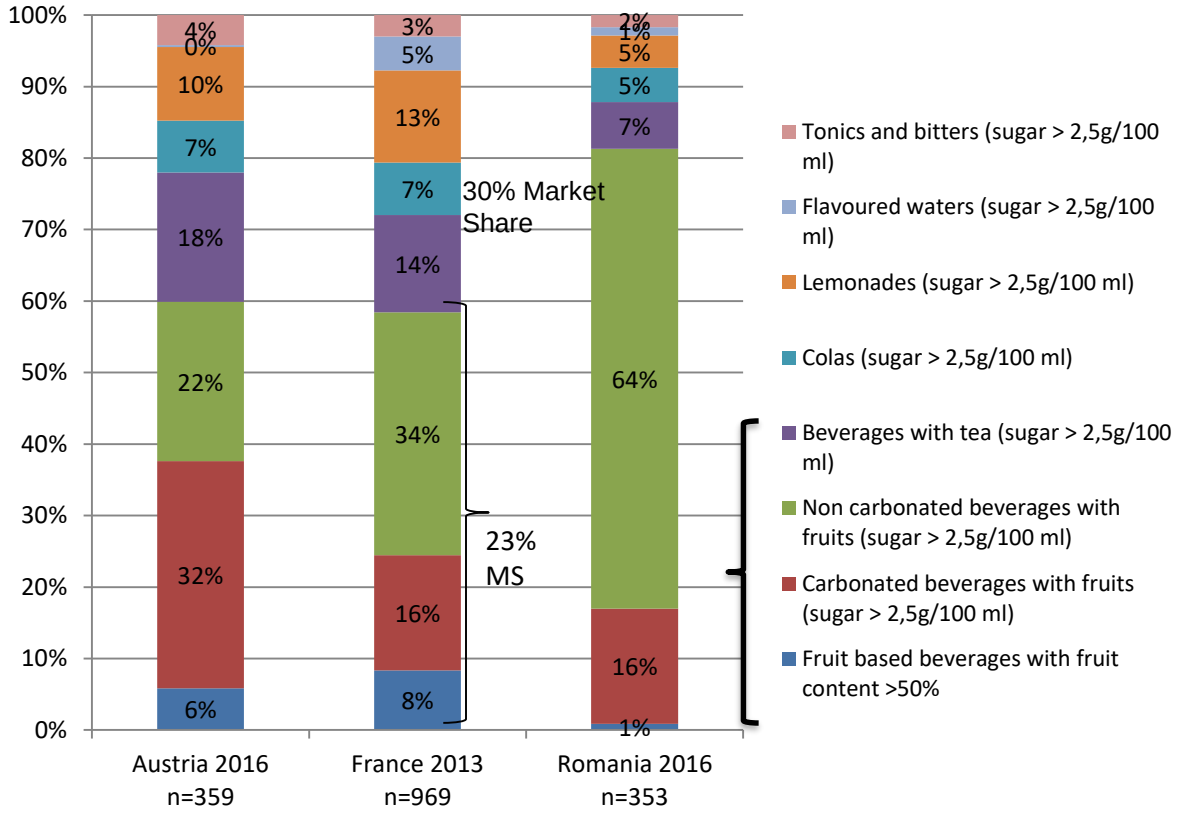
Task 5.4 Pilot studies

- Aims
  - ✓ Collect the nutritional information: harmonize the analysis and presentation of the data
  - ✓Present comparisons and identify best formulations
  - ✓Test the Oqali model from France

- Results:
  - Methodology easily transposable to other European countries
  - Data gathered for 520 breakfast cereals and 890 soft drinks (in only 2 months)
  - Data collected and treated following harmonized rules

Segmentation of the market by family of product* for regular soft drinks

Proportion of the different families of products for regular soft drinks (in number of references)



Different food offer in the 3 countries (in number of references)

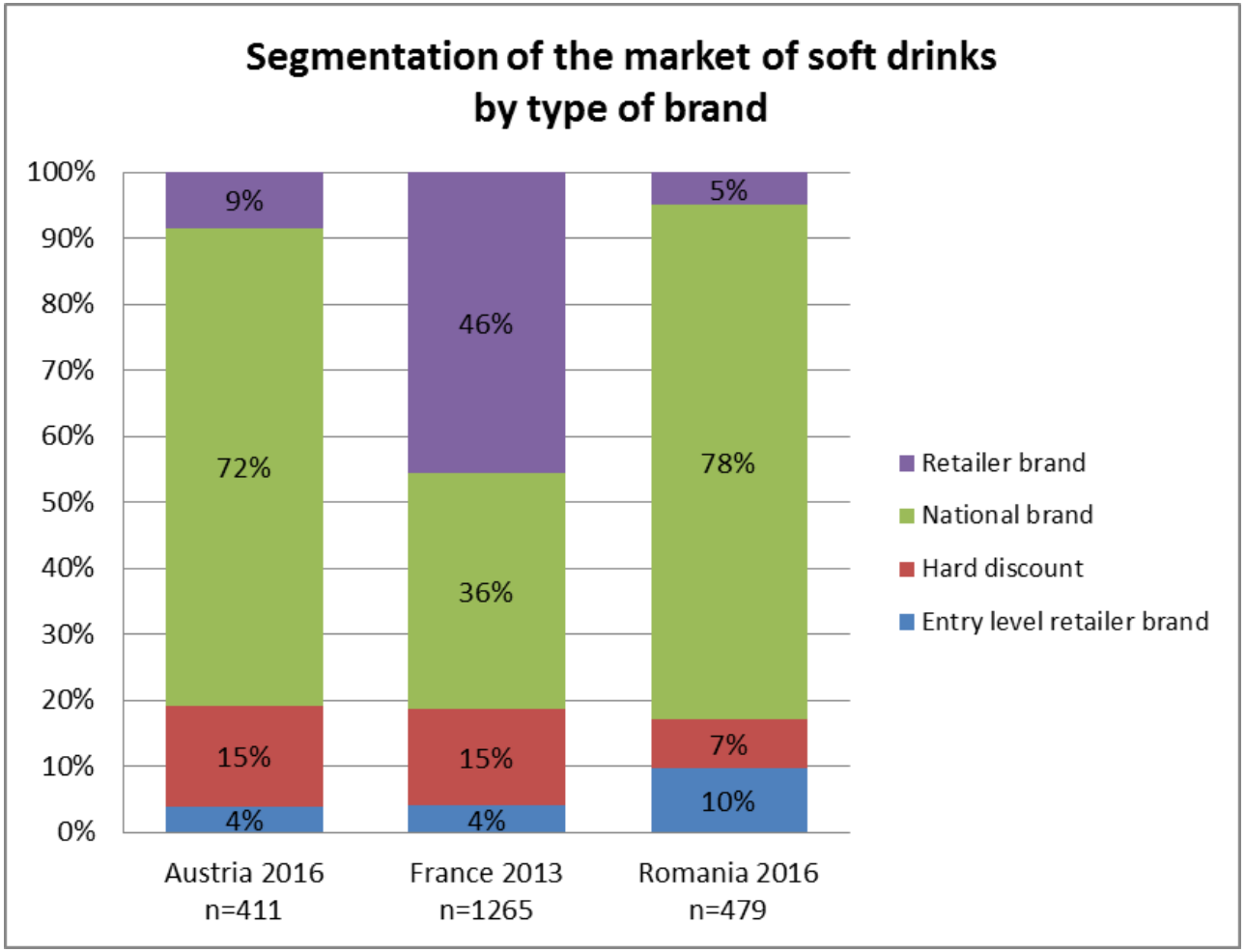
⇨ Prevalence of beverages with fruits in the 3 countries (60-80%)

⇨ Much more non carbonated beverages with fruits in Romania

⇨ Different definition of flavoured waters, lemonades

* Products with similar characteristics e.g. colas or beverages with tea among soft drinks

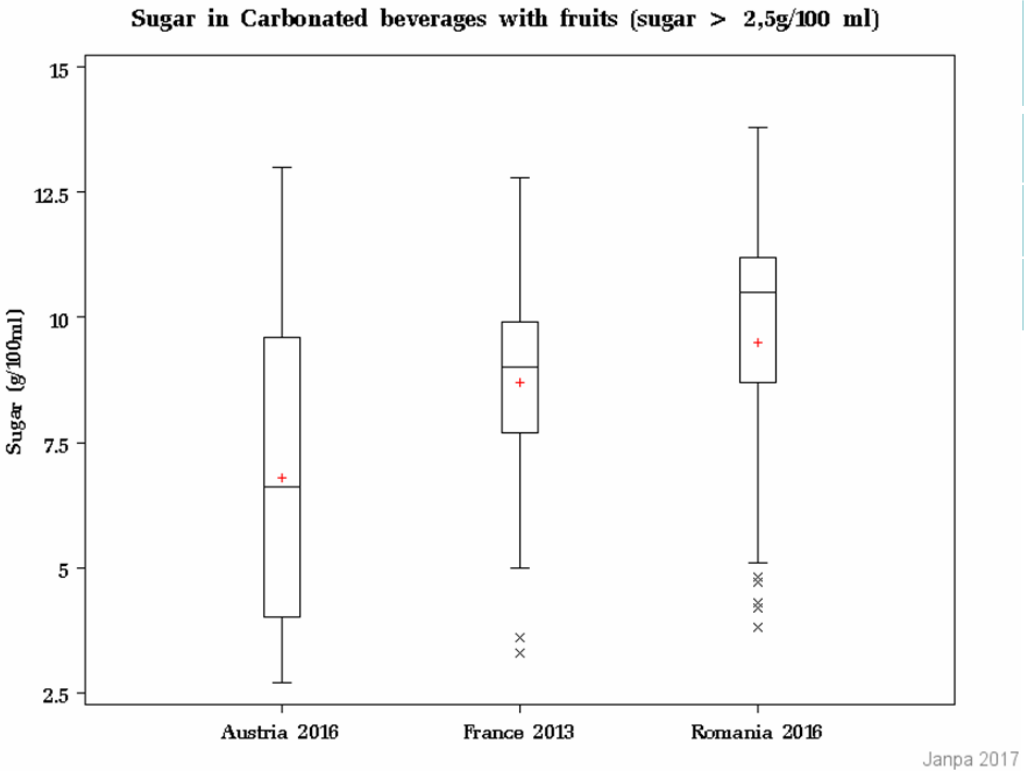
Segmentation of the market by type of brand for soft drinks



Different stucturation of the market in the 3 countries (in number of references)

Comparison of sugar content in soft drinks between countries

Example for carbonated beverages with fruits with sugar



Country	Number of products	Mean value	Standard deviation	Minimum value	Maximum value
Austria (2016)	114	6,8 [c]	2,8	2,7	13,0
France (2013)	150	8,7 [b]	1,7	3,3	12,8
Romania (2016)	57	9,5 [a]	2,6	3,8	13,8

⇨High variability

⇔ different offer (type of products / flavoured waters type products)

⇔Type and percentage of fruit

⇨ Reformulation possible

⇨Significant difference between the 3 countries but same variability of results

Comparison of sugar content in soft drinks between countries

	Sugar content (g/100ml)		Austria 2016		France 2013		Romania 2016	
	Family of product	p-value	Number of references	Mean value	Number of references	Mean value	Number of references	Mean value
Regular products	Fruit based beverages with fruit content >50%	1,4E-06	21	7,0[b]	76	10,4[a]	3	8,7
	Carbonated beverages with fruits (sugar > 2,5g/100 ml)	3,7E-12	114	6,8[b]	150	8,7	57	9,5[a]
	Non carbonated beverages with fruits (sugar > 2,5g/100 ml)	4,8E-07	78	9,5[a]	292	8,9[b]	227	9,7[a]
	Beverages with tea (sugar > 2,5g/100 ml)	0,67	63	6,2	117	6,1	23	6,4
	Colas (sugar > 2,5g/100 ml)	0,09	26	9,9	61	9,2	17	9,1
	Lemonades (sugar > 2,5g/100 ml)	4,0E-04	35	8,4[b]	95	8,2[b]	16	10,9[a]
	Flavoured waters (sugar > 2,5g/100 ml)	0,66	1	3,5	35	3,6	4	3,9
	Tonics and bitters (sugar > 2,5g/100 ml)	2E-06	15	10,4[a]	28	7,4[b]	6	9,8[a]
Low sugar products	Beverages with fruits (sugar ≤ 2,5g/100 ml)	0,05	17	0,8	73	0,8	45	1,2
	Beverages with tea (sugar ≤ 2,5g/100 ml)	5,4E-04	4	1,5[a]	25	0,2	10	0,04[b]
	Colas (sugar ≤ 2,5g/100 ml)	0,77	15	0,1	82	0,04	15	0,2
	Lemonades (sugar ≤ 2,5g/100 ml)	0,78	10	0,2	31	0,1	42	0,03
	Flavoured waters (sugar ≤ 2,5g/100 ml)	0,03	5	0,4	55,0	0,0	9,0	0,3
	Tonics and bitters (sugar ≤ 2,5g/100 ml)	0,56	0		3	0,1	5	0,01

[a] Highest sugar content (significant difference)

[b] Lowest sugar content (significant difference)

⇨ Significant difference for 6 families out of the 14 studied (5 out of the 8 families of regular products)

⇨ Important difference between families of soft drinks

Comparison of sugar content in soft drinks for common references

Family of product	Number of references			Number of common references	Number of common references with similar nutritional composition*	Percentage of common references with similar nutritional composition*
	Austria	France	Romania			
Fruit based beverages with fruit content >50%	21	76	3	0	0	-
Carbonated beverages with fruits (sugar > 2,5g/100 ml)	114	150	57	5	1	20%
Non carbonated beverages with fruits (sugar > 2,5g/100 ml)	78	292	227	15	14	93%
Beverages with tea (sugar > 2,5g/100 ml)	63	117	23	7	4	57%
Colas (sugar > 2,5g/100 ml)	26	61	17	3	2	67%
Lemonades (sugar > 2,5g/100 ml)	35	95	16	2	0	0%
Flavoured waters (sugar > 2,5g/100 ml)	1	35	4	0	0	-
Tonics and bitters (sugar > 2,5g/100 ml)	15	28	6	1	0	0%

* references showing exactly the same sugar content or a difference of sugar content lower than 0,1 g/100 ml

21 similar products out of 33 common references (total =2155)

⇨ Few common references

⇨ The same reference may have different formulations in different countries (adaptation to local taste / delay in implementation of reformulation / different owner of the brand etc.)

Conclusions for soft drinks

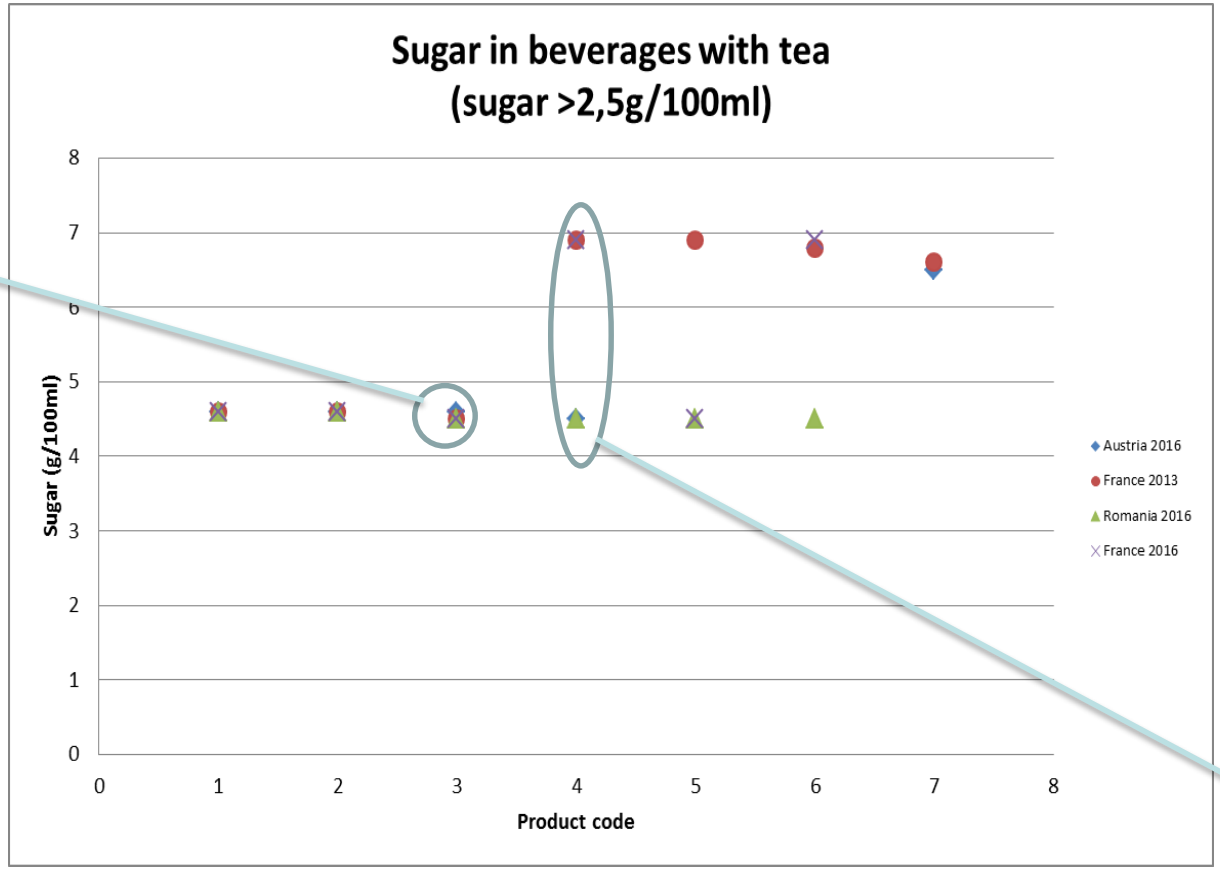
- Difference observed in the sugar c ent between the 3 countr for 6 families o of the 14 ed

- Differences du
  - ✓ Di (different segmenta).
  - ✓ Diff (lemonades, flavoured wat
  - ✓ Different characterist thin a ly of prod ts;
  - ✓ Different composition a same ref rence.

Food producers should be encouraged to reformulate their major references on the basis of the "best in class" products

Comparison of sugar content in soft drinks for common references

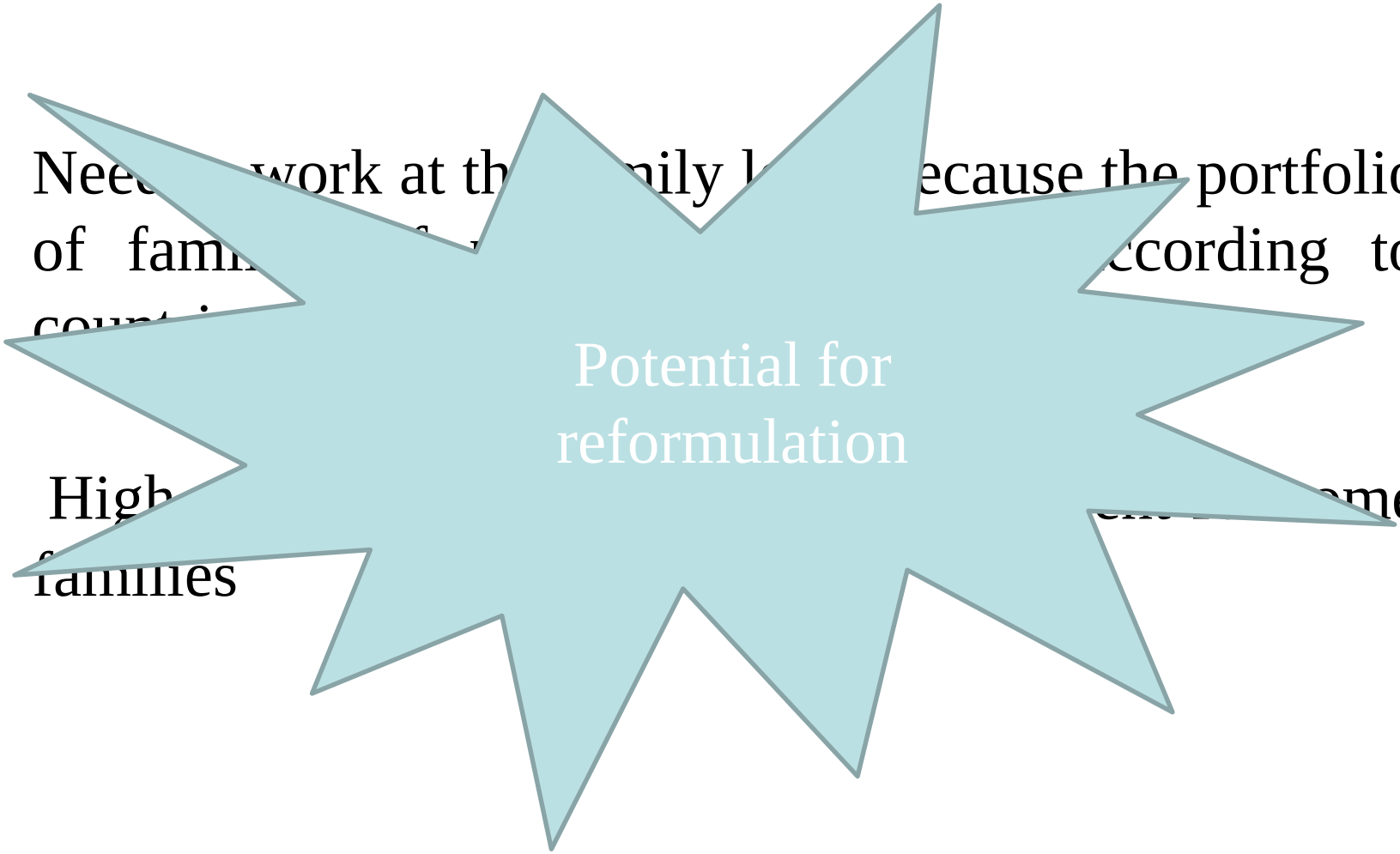
Same value for the 3 countries



Romania and Austria ≠France

Conclusions for soft drinks

- Nee work at th nily l ecause the portfolio of fami ccording to coun
- High me families



Conclusions for breakfast cereals

- Results for breakfast cereals are also available in the study (for sugar, fat, saturated fat, salt and fibres)

- Conclusions are the same for both sectors (breakfast cereals and soft drinks) for all nutrients

Resources

- Resources necessary for data collection and data treatment for both sectors (approximately 2 months for ecah country):

		Time needed in hours						
Country	Number of products collected	Preparation of collection and training of students	Data collection	Data entry	Quality check	Data analysis	Drafting of the reports	Total
Austria	708		17	80	34	45	129	305
Romania	702	70	50	126	20	70		336

- Number and qualification of persons:
  - Austria: 1 nutrition expert ,+ 1 senior expert
  - Romania: 1 PhD student, 3 third year BA students in food sciences, 1 first year BA student in public health and 1 MA student in psychology.

Conclusion of WP5

⇨ Monitoring tool managed by public authorities and fed by industry necessary :

- to qualify the nutritional quality of the food offer
- to follow up the impact of the nutrition policies deployed

⇨ Necessity to work at the brand and at the country level:

- the offer varies depending of the country,
- but also because the composition of the products can be different from one country to another.

⇨ Methodology used in Oqali adaptable to other European countries with minor modifications

http://www.janpa.eu/work/wp5.asp

Thank you for your attention!

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First price products : less nutritional quality ?

Caractérisation de l'offre alimentaire, par secteur et segment de marché-Oqali-Edition 2015

First food sectors monitoring overview

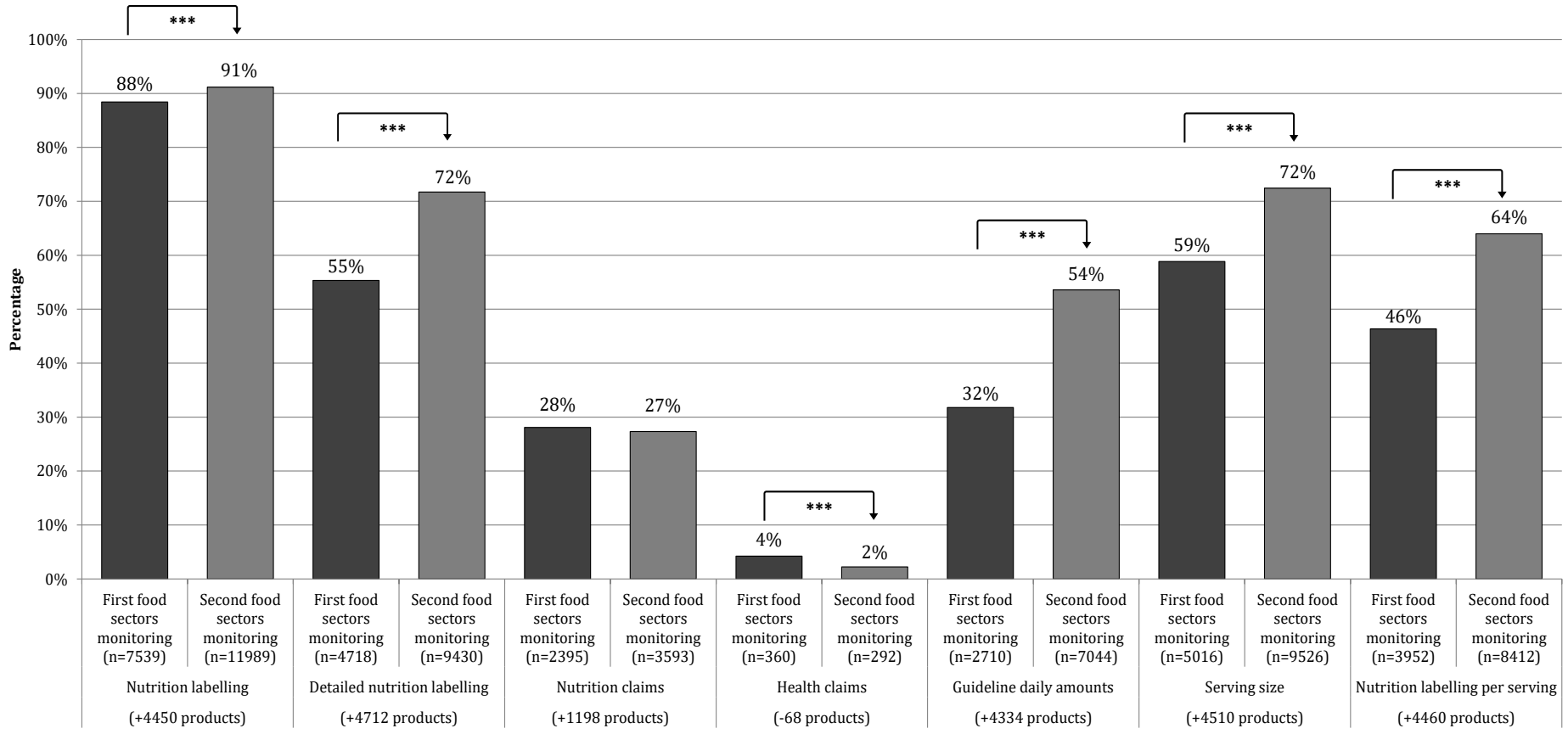
• Entry-level retailer brands : their product range is less diversified than that of the other types of brands (national, retailer, specialised retailer brand and hard discound brands)

- On the basis of the data collected for 16 081 products from 24 food sectors between 2008 and 2011, **the range of entry-level retailer brands was concentrated on the most basic and traditional recipes**
  - For instance among Fresh dairy products, there were 30% Fresh creams, liégeois and flavoured jellied milk , 24% Classic sweet yogurts, and 17% Classic plain fresh cheeses with no added sugar, but no Light and/or sweetened fresh dairy desserts

- **In terms of nutritional content**
  - only isolated and non-systematic differences in the nutrient contents between types of brands were underlined
  - no cross-sectional tendency was found among the 24 food sectors studied in this comparative study between types of brands

Labelling monitoring

Labelling monitoring by food sector



Year effect : *** p<0,001; ** p<0,01; * p<0,05

Scope of the study : 11 food sectors on 30 followed by Oqali
--> 8526 food products collected between 2008 and 2010 for the first food sector monotoring
and 13148 food products collected between 2010 and 2013 for the second food sector monotoring

Bilan des premiers résultats des suivis des évolutions - Oqali - Edition 2016

Improvement of nutritional labelling and information, excepting for claims

What impact on nutrients intakes?

Nutritional composition changes weighted by consumption

		Daily intakes variation when crossing consumption of the 254 INCA2 foodstuffs considered to labelled food composition of products taken into account for the first food sectors monitoring or labelled food composition of products taken into account for the second food sectors monitoring													
		Sugar		Fat		Saturated fatty acids		Sodium		Dietary fibres		Proteins		Calculated energy value (calculated from labeled nutrition values of carbohydrates, fat and proteins)	
Population	**Gender**	**g/day**	**%**	**g/day**	**%**	**g/day**	**%**	**g/day**	**%**	**g/day**	**%**	**g/day**	**%**	**kcal/day**	**%**
Adults	Male (n=774)	**-0,02**	-0,04%	**+0,3*****	+1,5%	**-0,2*****	-1,8%	**-0,004***	-0,6%	**+0,05****	+2,0%	**-0,1*****	-0,4%	**-0,3**	**-0,1%**
	Female (n=1142)	**+0,1**	+0,2%	**+0,3*****	+2,1%	**-0,1****	-1,2%	**-0,003****	-0,7%	**+0,05*****	+1,7%	**-0,003**	-0,03%	**+0,4**	**+0,1%**
Teenagers	Male (n=408)	**-0,3****	-0,4%	**+0,6*****	+2,7%	**-0,01**	-0,1%	**-0,01***	-0,9%	**+0,02**	+0,7%	**-0,05**	-0,3%	**+0,8**	**+0,1%**
	Female (n=465)	**-0,3*****	-0,6%	**+0,4*****	+2,3%	**-0,1**	-0,8%	**-0,003***	-0,6%	**-0,02**	-0,7%	**-0,1*****	-0,6%	**-0,5**	**-0,1%**
Children	Male (n=276)	**-0,4*****	-0,6%	**+0,6*****	+2,7%	**+0,1**	+0,5%	**-0,004***	-0,8%	**+0,1***	+1,7%	**-0,1*****	-0,9%	**-0,4**	**-0,1%**
	Female (n=294)	**-0,2****	-0,4%	**+0,4*****	+2,3%	**-0,1**	-0,9%	**-0,003**	-0,5%	**-0,05****	-1,6%	**-0,1*****	-0,7%	**-1,0**	**-0,2%**

Purple box : significant decrease between daily intakes calculated with composition data of first food sectors monitoring and second food sectors monitoring
Orange box : significant increase between daily intakes calculated with composition data of first food sectors monitoring and second food sectors monitoring
* p<0,05 ; ** p<0,01 ; *** p<0,001

- Differences are small but significant for some studied population

- Decrease for sugars, proteins, sodium and saturated fatty acides : less than 1%
- Increase for fats : between +1 and +3%

- Scope : 12 food sectors out of 30 followed by Oqali
- Observation time : between 1 and 4 years

Introduction

- **French Observatory of Food Quality (OQALI) has been set up in 2008** as part of the French Nutrition and Health Programme by the Ministries in charge of Agriculture, Health and Consumer Affairs

- **Implemented and managed by 2 teams**

  – The French Agency for Food, Environmental and Occupational Health & Safety (**Anses**)

  – The French National Institute for Agricultural Research (**INRA**)

Oqali team

- 2 project leader (1 for Anses and 1 for INRA)
- 7 project manager (to analyse data and realise reports)
- 4 dieticians (to collect and verify data, to monitor outsourced input and coding)

- Data input and coding is outsourced (since 2015)

- Functioning thanks to
  - An annual funding of Health and Agriculture ministries (750 000 €)
    - Financing 6 project manager and 4 dieteticians, outsourced data input and coding, socio economic parameters purchase (Kantar Worldpanel), database updating…
  - Internal resources of Anses and INRA

Feedback/perspectives

- After 10 years
  - Positive assessment of partners (stakeholders)
  - The Minitries support the Oqali project and stakeholders also find an interest in the project

- Challenges
  - Simplify data collection
  - Market shares cost at the branded product level is high
  - Try to answer the consumer need of transparency taking into consideration stakeholders concerns

Conclusions

- An important turnover of manufactured products
- An nutritional information more and more present
- Some evolutions of the nutritional composition, but in a limited number, downwards or upwards
- With a limited but significant impact on nutrients intakes

- **Necessity to monitor food reformulation and nutritional quality of food supply at the branded product level, by product family (disaggregated level)**
  - **Enable to make comparisons between countries**
- The Oqali project is expanding
  - Québec, JANPA

Presentation of Janpa

- WHAT IS JANPA?

Janpa = Joint action on nutrition and physical activity
Objective: to contribute to halting the rise of overweight and obesity in children and adolescents in EU Member states by 2020

- WHO IS INVOLVED?

26 countries (25 of the 28 European Member states + Norway)

- WHAT DO WE WANT TO ACHIEVE?

Through sharing, identification and selection of best practices within participating countries
→ estimate and forecast the economic costs of overweight and obesity
→improve the implementation of integrated interventions to promote healthy nutrition and physical activity for pregnant women and families with young children
→ contribute to healthier child care in family, kindergarten, pre-school and school environments
→ improve the way in which nutritional information about foods is collected and used by public health authorities, stakeholders and families.