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Oqali: a food observatory to support public policy on nutrition

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In this dossier

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A ajouter

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Improving the nutritional quality of processed products, a major issue between food and public health.

Oqali: a food observatory to support public policy on nutrition

Obesity, described as a nutritional pathology by the World Health Organisation, is a public health issue. Public policies have been addressing this issue through information and prevention strategies since the late 1990s. The need for knowledge and sharing tools has never been greater, and data on food and their transparency are a crucial issue. At the interface between science and public policy, INRAE and Anses have developed a food quality observatory: Oqali. A closer look at this tool for informing public policies on nutrition.

In 2017, one in five deaths worldwide was linked to a poor diet. The causes: too much salt, not enough whole grains, not enough fruit, too much sugar, too much fat[1]. The consequences: the development of chronic diseases such as obesity, type 2 diabetes and cardiovascular diseases, as well as certain cancers. Obesity affects 17% and overweight 49% of the French population. Recently, it has been possible to measure the devastating consequences of obesity on the severity of the symptoms of an infectious disease such as Covid-19. Faced with this rampant epidemic, the public authorities set up a veritable public policy on nutrition with the National Nutrition and Health Programme (PNNS) launched in 2001. Its objective: to improve the nutritional quality of food by simultaneously influencing the purchasing behaviour of consumers and improving the food supply by the agri-food industries. While it is established that a healthy diet is more favourable to health, enforcing these recommendations remains a major challenge. It is in this context that the Food Observatory (Oqali) was set up by INRAE and Anses (French Agency for Food, Environmental and Occupational Health & Safety). The observatory collects, processes and analyses data concerning the nutritional characteristics of processed products sold by large and medium-sized retailers: nutritional composition and labelling parameters. The purpose of such an observatory is to monitor the evolution of the food supply and to help orient public policy on nutrition.

1 Afshin, A. et al. (2019). Health effects of dietary risks in 195 countries, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. The Lancet, 393(10184), 1958-1972.

Upstream of Oqali: national plans to reduce salt, fat and sugar

Ghislaine Narayanane
Head of the Oqali project for INRAE

I am an agricultural engineer specialising in nutrition and have been in charge of steering the Oqali project at INRAE since 2017. It is a position that combines team management, scientific monitoring and strategic thinking. Oqali's objective is threefold: to study the evolution of the quality of the supply of processed products, to monitor the deployment of the Nutri-Score in metropolitan France, and to create a reliable database of labelled information. Ministries can use this work to meet their nutrition and health objectives. How is the nutritional quality of warm sauces evolving? Are consumer choices moving towards lower sugar levels in breakfast cereals? Is the use of additives in processed products decreasing? These data are also of interest to manufacturers to monitor developments in their sector. Collecting and analysing packaging is essential to Oqali's activities, but very time-consuming. They occupy 2/7 of the FTEs to the detriment of studies. The dematerialisation of this activity is therefore a central issue.

The National Nutrition and Health Programme (PNNS) aims to improve the state of health of the French by acting on one of its major determinants: nutrition. The word «nutrition» encompasses issues related to food: nutrients, food, physical activity, but also the social, cultural, economic, sensory and cognitive determinants of eating behaviour. Based on the opinions of scientific experts, the PNNS supports numerous communication and information actions to raise public awareness on the issue of nutrition and health. The aim: to change eating habits. To this end, it issues consumption guidelines such as the famous «eat 5 fruits and vegetables a day» of the PNNS1 (2001-2005).

The PNNS2 (2006-2010) has another key objective, that of improving the food supply. "Voluntary nutritional progress charters» with companies from the food industry have thus been developed. A less coercive public policy instrument than standards or taxes, such charters are based on voluntary action and validated by the public authorities after expert appraisal. They show the commitment of a private player to improve the nutritional quality of the products it markets. The priority of the charters is to encourage companies in the production, processing, distribution or catering sectors to reformulate their recipes by reducing the levels of sugar, fat and/or salt and to facilitate access to the foods recommended by the PNNS. Between 2008 and 2016, 38 voluntary nutritional progress charters were signed with companies such as Fleury Michon, Brossard, Marie and McCain.

As part of the development of PNNS 2 and in parallel with the introduction of the charters, exchanges between Serge Hercberg, a nutritionist doctor and epidemiologist (UMR EREN associating Inserm, INRAE, Cnam and the Paris University 13), then president of the PNNS, and research teams, including some from INRAE, gave rise to the idea of a tool for objectifying the nutritional quality of processed foods. The aim is to use rigorously collected and processed factual data measure the efforts made by manufacturers to improve their recipes. Displaying the nutritional quality of foods produced by entire sectors of the agri-food industry can thus encourage a virtuous process of progress to improve this quality. The ministries in charge of food, health and consumption showed interest in the idea of a food observatory capable of evaluating the effectiveness of public policy on nutrition. They therefore entrusted INRAE and Anses with the creation and management of such a tool: the Oqali.

Shared management and dual expertise to better understand the links between health and nutrition

The Food Quality Observatory (Oqali) was created in February 2008 to monitor the quality of the food supply of processed products on the French market. It is placed under the supervision of three ministries: food, health and consumption. It is jointly managed by INRAE and Anses with a team in each institution. The INRAE team works within the Social Sciences and Food (ALISS) research unit in Ivry-sur-Seine. It has two permanent staff members, Ghislaine Narayanane (research engineer) who leads the team and Odeline Molle (project engineer), as well as 5 persons on fixed-term contracts, three of them project managers who carry out the studies and two who collect and manage the data[2]. Louis-Georges Soler (Deputy Scientific Director Food) and Olivier Allais (head of the research unit ALISS) coordinate the scientific aspects.

The Anses Oqali team is integrated into the «Observatory of Food» unit of the Risk Assessment Department. This unit manages several databases: Contamin on contaminants, Ciqual on the average nutritional composition of food and the Oqali database. It is also responsible for the valorisation of these data by means of various studies. Even though the two teams work very closely together and on the same data, the Anses team focuses more on risks and ingredients (such as additives, allergens and fats) while the

2 The Oqali-INRAE is financed by the ministries in charge of health and food to the extent of 400 k€ per year: 175 k€ by the Directorate General for Health and 225 k€ from the Directorate General for Food. A budget intended to cover the remuneration of non-permanent staff and the acquisition of data.

INRAE team analyses more socio-economic data (like prices and market shares). The strategic orientations, the work programme and the publications of the observatory are validated by a steering committee composed of the three supervisory ministries, Anses and INRAE. A technical committee, made up of members of the steering committee, representatives of the agri-food and distribution sectors, and national consumer associations, is consulted for its opinion on these various points.
Now known as the Food Observatory, the Oqali's missions have been confirmed by the so-called «EGalim» law of 30 October 2018. It is set to become a central tool of food policy.

From data collection to change in composition

DATA COLLECTED AND MADE AVAILABLE TO SCIENTISTS

Oqali's primary mission is to centralise the nutritional data indicated on products: nutritional composition, nutrition label, any other labels, portion sizes, allergens, and other information provided on the packaging. Socio-economic parameters such as average prices, market shares, and brand types (national, store brand or hard discount) are also integrated. These data are transmitted by the players of the agri-food industry themselves or collected by Oqali through visits or purchases of products in shops. Collaboration with professionals from the various food industry sectors and their representatives is also essential to facilitate data collection, determine the classification of products by sector (food product nomenclature), and interpret the results obtained in the studies. To this end, an operational charter for partnerships concerning the data collected, their provision and their use has been established. The non-confidential data of Oqali are available to the public in an anonymised form on its website (https://www.oqali.fr/Donnees-publiques).

PERIODIC SECTORAL STUDIES TO MONITOR THE EVOLUTION OF THE QUALITY OF PROCESSED PRODUCTS

From the data collected, the experts at Oqali construct synthetic and aggregated indicators for each of the food and beverage sectors. These indicators make it possible to characterise and position marketed products within the sector concerned, both from the point of view of nutritional quality and certain socio-economic parameters. Their aim: to objectify and publicise the progress made by the agrifood industry. The thirty or so major categories of food products concerned are processed products sold by large and medium-sized retailers and specialist distributors in mainland France. This is the case, for example, with breakfast cereals, broths, soups and soups, industrial biscuits and cakes, crisps and cold cuts.
These studies monitor changes made to products, in other words their nutritional composition, formulation, labelling and portion sizes. They update data on new products or those withdrawn from the market. The sectoral studies also include purchase volumes, with data

The Odalim database

La base de données de l'Oqali est mise à disposition des chercheurs INRAE, de manière non anonymisée, sous réserve de la signature d'un engagement de confidentialité et d'une validation de la demande par le comité de pilotage de l'Oqali, avec d'autres bases sur la plateforme alimentation Odalim (Outils et données en alimentation). Cette plateforme compte actuellement 38 jeux de données de 14 domaines de l'alimentation : ingrédients, contaminants, santé, sensoriel, impacts environnementaux...
Voir le site Internet Odalim : https://odalim.inrae.fr/fr/.

Olivier Allais
Head of the ALISS research unit and scientific coordinator of Oqali for INRAE

As an economist and director of the unit that houses the Oqali at INRAE, I am both a user of the observatory's data and its scientific co-leader. I defend INRAE's scientific and strategic position before our partners and supervisory ministries. An important issue is lifting the anonymity of the composition data of processed products for the publicly available data provided by the system and in the Oqali studies. Opening up the data is key to encouraging the reformulation of recipes and pinpointing the efforts made by manufacturers in terms of food and health. This approach towards greater transparency is shared by manufacturers who are participating in the construction of a database of product characteristics. While this would allow Oqali to free up time for studies, it must be ensured that it enables Oqali to fully fulfil its missions, which is why we are actively monitoring its development.

Erwan de Gavelle
Chargé de mission food-health, Directorate General for Food

My thesis, conducted as part of a doctoral course in nutrition, made me aware of the need to bring science and public action closer together. I work in the office for food policy (BPAL), which relies heavily on Oqali's studies for its decisions in implementing the National Food Programme. These studies are invaluable in the context of the collective agreements that we negotiate with industrial partners to bring about a favourable change in the nutritional composition of processed foods. We back our exchanges and determine the objectives for reformulating recipes on the basis of the scientific data provided by Oqali. They are essential for creating a climate of transparency and trust with the sectors. Oqali is also in charge of the annual monitoring of these collective agreements, which will make it possible to evaluate the relevance of this system in conjunction with the other ministries concerned after three years.

Thanks to the Oqali data on the composition of processed products, the scientists of the TRANSFORM division are able to propose tools in order to support the reformulation of recipes.

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Isabelle de Guido-Vincent-Genod
Head of the Food and Nutrition Office

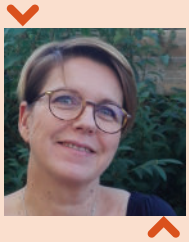
Manon Egnell
Chargée de missions PNNS
Directorate General of Health

Our office is leading the National Nutrition and Health Programme (PNNS), one of the objectives of which is to improve the food environment in order to facilitate access to a healthy diet. This is a public health issue and a major lever for reducing social inequalities in health. The global vision of the food supply provided by Oqali makes it an essential steering tool for improving the food supply and monitoring the effectiveness of public health policies. The studies that monitor the nutritional quality of food provide us with information on the evolution of sugar, salt and fat content and contribute to setting objectives for the reformulation of recipes for manufacturers. Monitoring the implementation of the Nutri-Score allows us to measure its deployment and its impact on the evolution of nutritional quality. Faced with the proliferation of databases, the observatory must engage with new players and commit to dematerialisation in order to maintain its strategic role at the national and European levels.

obtained from Kantar Worldpanel (data from households representative of the French population), which allows to identify changes in consumers' purchasing behaviour.
The results of these studies are first presented to the partners who participated in the collection of the data for the sector under study. These presentations give rise to numerous exchanges with the professionals on the nomenclature of the sectors or the market trends. These studies enable them to position themselves within their own sector.

SPECIFIC CROSS-SECTORAL STUDIES

Cross-sectoral studies are also carried out to analyse a specific theme in several food sectors in parallel. These studies analyse, for example, the use of additives or the reformulation of products. They thus make it possible to evaluate the actions proposed by the PNNS charters or the collective agreements of the National Food Programme (PNA). For example, a cross-sectional study conducted in 2019 was able to assess the relative contribution of changes in supply (changes in the nutritional quality of food) and demand (changes in consumption behaviour) to changes inthe average nutritional quality of food[3]. For this study, INRAE researchers developed a method to analyse the evolution of the average content of each nutrient of interest. Thus, the evolution of the average content of a nutrient, weighted by the market shares of the references concerned, is interpreted as being the result of three factors: the reformulation of products by manufacturers, the appearance or withdrawal of products on the market, and the substitutions made between products by consumers.
The method allows the quantification of these three factors and the analysis of their effects on the evolution of the average nutritional quality of the food consumed. The study thus showed that in the four sectors studied specifically - fresh pizzas, frozen pizzas, ready-to-eat canned meals and ready-to-eat-frozen meals manufacturers had generally



Isabelle Souchon
Research Director of Food Process Engineering and Physical Chemistry of Food, INRAE

The "Safety and Quality of Processed Fruit and Vegetables" (SQPOV) unit is interested in the impact of processing on food quality. For example, we are working on the characterisation of the food supply by developing tools for evaluating recipes and identifying reformulation levers to design healthier, more sustainable products that are appreciated by consumers. As part of the H2020 project " Stop ", which aims to combat child obesity, we proposed original approaches to reformulating cookie recipes, making it possible to identify by how much the recipe can be reduced in sugar or fat, while still appealing to children. To do this, we needed to know all the cookie recipes on the market. The Oqali data allowed us to know the diversity of the compositions and nutritional values of cookies, and to go beyond the "average cookie" recipe, which does not allow for a precise calculation.

3 « Contributions de l'offre et de la demande à l'évolution de la qualité nutritionnelle de l'alimentation » - étude actualisée - 2019: https://www.oqali.fr/Publications-Oqali/Etudes-transversales

improved the fat, salt and saturated fatty acid content of their products, but not the sugar content. New products introduced to the market did not necessarily contribute to the improvement of nutritional quality in the frozen pizza and ready-to-eat frozen meals sectors. As for changes in consumer purchases, they had little or no impact on the evolution of nutritional quality in these sectors. It is therefore the changes made by the industry to the food supply already on the market that have contributed to the improvement in nutritional quality in these sectors.

The Nutri-Score: an incentive nutrition label monitored by Oqali

Another mission entrusted to the Food Observatory, and by no means the least, is to monitor the deployment of the Nutri-Score. Within the framework of the EU Regulation 1169/2011 on the provision of food information to consumers, known as the INCO Regulation, the Ministry of Health opted in 2014 for the implementation of a simplified labelling system informing consumers in a clear, visible and easy way about the nutritional quality of food. The choice of the Nutri-Score logo is the result of comparative studies of four label systems, evaluated by an independent scientific committee set up by the Ministry.

Initially shunned with only 30 signatory companies at its launch in 2017, after 3 years more than 400 companies were involved in the Nutri-Score approach in France. An increase in voluntary commitments which suggests the effectiveness of the label's incentive aspect on manufacturers and which reflects consumers' expectations for simplified information.

The deployment evaluation of Nutri-Score produced by Oqali at the end of 2020 "Monitoring of Nutri-Score by Oqali - Three-year analysis" confirms this[6]. The market share of the brands involved in the Nutri-Score has increased since 2018, whether in terms of sales volumes, expenditure or purchasing actions. In 2020, it reaches 50% of sales volumes, all sectors combined. All categories of processed products monitored by Oqali include products bearing the logo. "Fresh delicatessen" products, "fresh dairy products and similar", and "ready-to-eat-fresh meals" are the three sectors with the most references bearing the Nutri-Score. Among the brands involved in the Nutri-Score, private labels have the highest market share. The results tend to show that participating national brands market products that are well classified (mainly class A and B).

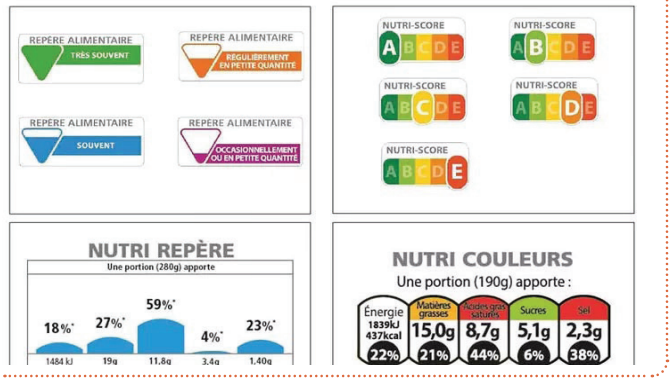
On the other hand, retailers (private labels, hard discounters and specialised retailers) apply the Nutri-Score to all the product categories they sell, so the different Nutri-Score classes are more evenly distributed. The analysis of the relative positioning in terms of nutritional quality of products

What is the Nutri-Score?

Based on the work of Serge Hercberg's team, the Nutri-Score takes into account the content per 100g of product of nutrients to be favoured (fibre, proteins, fruit, vegetables, legumes, nuts, rapeseed, walnut and olive oil) and those to be limited (energy, saturated fatty acids, sugars, salt). Each nutrient is associated with a number of points. The final score of the product is obtained by calculating the difference between the sum of the positive and negative points. This score is used to assign a letter and a colour to the product on a 5-level scale. The green colour with the A indicates products with the best nutritional quality, while the red colour with the letter E symbolises very poor quality. The Nutri-Score logo, positioned on the front of products, attracts the consumer's attention and makes it easier to compare the products available on supermarket shelves.

4 potential labels, only one selected

Four possible nutrition label systems were selected after consultation between the health authorities and representatives of manufacturers, distributors, consumers, patients and scientists: two synthetic (SENS and Nutri-Score) and two analytical (Nutri Couleurs and Nutri Repère). Several teams of INRAE researchers were selected by the Ministry of Solidarity and Health (Directorate General for Health) and the French Fund for Food and Health to carry out preliminary evaluations of the 4 possible labels. A "full-scale" experiment in 60 supermarkets[4] and a laboratory experiment allowing the observation of consumers in a controlled environment[5] were conducted. In both studies, the Nutri-Score was found to be the most effective label in guiding consumers' purchasing behaviour towards foods of higher nutritional quality. This was especially true for the most vulnerable populations.



Of the four proposed labels, the Nutri-Score is the most effective in guiding consumers towards foods of higher nutritional quality

4 Dubois,P., Albuquerque,P., Allais,O., Bonnet,C., et al. (2020). Effects of front-of-pack labels on the nutritional quality of supermarket food purchases: evidence from a large-scale randomized controlled trial. Journal of the Academy of Marketing Science. 1-20.

5 Crosetto,P., Lacroix,A., Muller,L., &Ruffieux,B.(2017). Modification des achats alimentaires en réponse à cinq logos nutritionnels. Cahiersde Nutrition et de Diététique, 52(3), 129-133.

6 https://www.oqali.fr/Publications-Oqali/Suivi-du-Nutri-Score

bearing the Nutri-Score compared to other products will be established over time in the sectoral studies carried out by the observatory. It will thus be possible to measure the effect of this simplified nutrition label on the offer of manufacturers and distributors and the purchasing behaviour of consumers, sector by sector. This will allow the evaluation of the effectiveness of the Nutri-Score as a nutrition policy instrument for public health. Several European countries (Belgium, Spain, Germany, the Netherlands, Switzerland, Luxembourg) have adopted the Nutri-Score. The Italian government has in turn developed the Nutrinform Battery, an analytical label that takes into account the daily nutritional intake. Italy claims it is a more effective label than the Nutri-Score. For the moment, these logos are optional and depend on the willingness of manufacturers. As part of the Farm to Fork strategy[7] the European Commission wants to define a harmonised mandatory nutrition label on the front of food packaging by the end of 2022. The war of the nutrition labels is on![8]

7 At the heart of the Green Deal, the Farm to Fork and biodiversity strategies promote a new and better balance between nature, food systems and biodiversity in order to protect the health and well-being of Europeans, while strengthening the EU's competitiveness and resilience.
8 See the call from European scientists for the implementation of the Nutri-Score https://nutriscore.blog/2021/03/16/call-from-european-scientists-to-implement-nutri-score-in-europe-a-simple-and-transparent-front-of-pack-food-label-with-rigorous-scientific-support-intended-to-guide-dietary-choices-and-thus-contrib/

Julie Gauvreau-Béziat
Head of the Food Observatory Unit, Anses

After joining Anses in 2009, I became head of the Oqali project in 2012, then of the Food Observatory Unit in 2020. This unit, which is part of the Risk Assessment Department, collects and manages data on the composition and contamination of foodstuffs. As part of Oqali's mission , we have, for example, studied the presence of additives in processed foods (such as breakfast cereals, dairy products and fresh desserts). This work can be used to estimate the population's exposure to these substances. Since 2015, we have also contributed to the dissemination of the Oqali model in Europe. The test carried out in two European countries showed that Oqali was an efficient and inexpensive tool to collect comparable information on the nutritional situation in and between countries. Anses will now train 20 countries in the Oqali methodology, which is considered a Gold Standard at European level. This new phase will make it possible to compare the nutritional composition of processed foods in Europe and encourage their reformulation.

Oqali: a consolidated and exported model

To date, Oqali has published 70 sectoral studies, 17 cross-sectional studies, 3 Nutri-Score follow-u p notes and 11 academic articles. This production should become even more extensive as the Observatory's missions expand, particularly in the context of programmes run by the Ministry of Solidarity and Health (PNNS4) and the Ministry of Agriculture and Food (PNA3)[9].

The authorities have noted the drying up of initiatives by agri-food industry players since 2015 in the context of voluntary commitment charters and the poor results of the agreements reached in terms of improving the nutritional quality of the supply. This is why they are proposing commitments, still voluntary but collective, to reformulate the food supply. The objectives will thus be set by sector, for example yoghurts, whereas they were previously set by manufacturer, for example Danone.

As part of an Anses referral, Oqali data are used to provide reformulation thresholds that can be achieved by the manufacturers of an entire sector, given the variability of the nutrient content of the products offered by it. For example, an agreement is about to be concluded on bread, which accounts for more than 25% of the daily salt intake of the French. Manufacturers and representatives of artisanal bakers have been brought together to set a target salt level in bread based on achievable thresholds. The observatory will also be called upon to produce an annual report gathering all external audits associated with these commitments. If their quantitative targets (reduction of salt, sugar or fat) are not met, the regulatory route will be considered. Oqali therefore intervenes both upstream and downstream of the implementation of public policy on nutrition: by identifying objectively achievable targets and by assessing the impact of commitments on the consumption of the French. A collective scientific expertise coordinated by the French National Research Institute for Sustainable Development (IRD) and research conducted within a project of the French National Research Agency (ANR), NuTWInd (Nutrition Transition in French West Indies: Interactions between food supply and dietary behaviours), in which INRAE was very involved, have allowed to enrich the knowledge on the nutritional qualities of foods in some sectors in the West Indies. As a result of this work, discussions are underway to evaluate the interest of systems similar to Oqali in the overseas departments. Another proof of the usefulness of this public policy tool: its European development. The Oqali model has been tested in Romania and Austria, on two product categories (breakfast cereals and soft drinks)[10]. These two pilot studies have shown that the observatory is an effective and inexpensive tool for assessing the food supply in a country, but also for collecting comparable data between countries. The deployment of the Oqali model with its rigorous methodology is encouraged at European level. The aim is to obtain comparisons of the nutritional qualities of products between Member States. On this basis, common objectives for food reformulation can be drawn up and monitored at European level ■

9 The French National Food and Nutrition Programme (PNAN) reflects the desire to better harmonize the PNA and the PNNS, setting targets for improving the food supply until 2023, via renewed collective agreements.
10 This work was carried out as part of the European Joint Action on Nutrition and Physical Activity (JANPA).

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