

Data from an online survey on lentil consumption practices in France in 2022

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Abstract

Background

In a context of transition towards plant-based protein diet, a survey aiming to collect the lentil consumer practices in France in 2022 was performed. There were 607 responses to the survey, of which a large majority (556) were lentil consumers. Amongst those, 283 people indicated that they currently eat more lentils than 5 years ago.

New information

The questions were related to type of lentil meals, frequency of consumption, type of preparation, storage duration once cooked etc. (Table 1). There were also general questions on age, gender and region. The survey may be used to obtain information on what type of lentils is consumed (and how often) in France, how it is cooked and stored. This information may be then plugged into a food safety risk assessment to refine, for instance, a microbial exposure model.

In particular, of the 21 questions asked, four were about possible leftovers and their duration and two about cooling practices for hot meals. This information is crucial for lentils because consumer information about legumes, especially those prepared at home, is still scarce.

Keywords

consumption survey, consumer behaviour, diet preference, microbiological risk, food safety, lentils

Introduction

Modern agriculture contributes to global warming, particularly by releasing greenhouse gases into the atmosphere. Indeed, greenhouse gas emissions (GHGs) from the agricultural sector account for about 30% of global emissions, with a large portion coming from the livestock sector (Perignon et al. 2019).

Our current food system also has significant health impacts. For example, the increase in the risk of diseases (cardiovascular, obesity, type 2 diabetes) linked to a diet rich in animal protein has been often highlighted. Thus, many scientific experts, nutritionists, farmers and consumers are sounding the alarm: our agricultural and food system has reached a dead end. The stakes are high, adopting a dual transition: protein and agroecological (Uthayakumar and Loustau 2019).

In that context, legumes hold a prominent place. Pulses (chickpeas, lentils, beans) belong to the Fabaceae family and their seeds play an important role in the human diet. They are a very important source of vegetable proteins, polysaccharides (fibre, starch) and micronutrients (vitamins, trace minerals). In the next few years, lentil consumption will probably increase significantly due to a change in eating habits by consumers, who are increasingly turning to proteins of plant origin and also to organic food. According to Nielsen (2019), flexitarianism (lower consumption of animal proteins) is becoming the primary diet of the French population.

However, while facing this protein transition favouring a higher consumption of lentils, too little is still known on the potential public health risk associated with this food product. Due to this, it was considered as urgent to conduct a more in-depth analysis of types of consumption behaviour in order to assess, in a second phase, the health risks (microbiological and chemical) associated with these current and future consumption patterns.

General description

Purpose: In the context of transition towards plant-based protein diet, this survey aimed to collect the lentil consumer practices, in France, in 2022. A national survey in France was performed in 2014 (Dubuisson et al. 2019); however, to integrate the increasing demand for legumes, an additional survey was necessary. Interestingly, the survey revealed that amongst the 556 responders consuming lentils, 283 indicated that they currently eat more lentils than 5 years ago.

Additional information: The survey was created using Google Forms. It contained 21 questions (Table 1).

The survey was launched from 5 May 2022 to 8 June 2022. The link was sent to friends, colleagues from INRAE (Rennes, Nantes) and Oniris (Nantes), students from University of

Avignon, Saclay (AgroParisTech), Toulouse (Mirail, Toulouse School of Economics) and Angers (BTS Agronomie, production végétales).

A total of 607 responses was received. At this stage, no data analysis was performed, meaning that the dataset is raw.

The dataset includes the 607 responses provided to the survey (csv format). Besides the dataset, a document including the questions asked (pdf format) is provided.

The data underpinning the analysis reported in this paper are deposited at “data.gouv.fr” at <https://doi.org/10.57745/KMGODH>

Sampling methods

Sampling description: The survey was created on internet (Google Forms) and circulated to friends and colleagues, all around France. The answers were based on declarative information. As such, the sample is not representative of the general population. The responders came from 12 different regions in France, belong to a range age from 18 to 91 and were mainly females (442 females, 154 males, 11 unknown gender).

Google Forms guarantee that they operate under the same strict privacy and data protection commitments as other Google Cloud enterprise services. In more details, Forms are cloud-native, eliminating the need for local files and reducing the risk to personal devices. All files or created in Forms are encrypted in transit and at rest. The security, privacy and compliance settings of Google Forms are regularly audited independently.

Regarding more specifically the survey and the data collected, security measures were put in place to protect the data, including advanced malware protections. Participants' data have been fully anonymised.

Geographic coverage

Description: An online survey on lentil consumer practices was carried out in France in 2022. The region of survey responders is provided in the last column of the csv dataset.

Temporal coverage

Living time period: The survey was launched from 5th of May 2022 to 8th June 2022.

Usage licence

Usage licence: Creative Commons Public Domain Waiver (CC-Zero)

IP rights notes: The dataset obtained the following licence for use: <https://www.etalab.gouv.fr/licence-ouverte-open-licence>

Data resources

Data package title: Online survey lentil consumer practices 2022

Resource link: <https://doi.org/10.57745/KMGODH>

Number of data sets: 1

Data set name: Dataset_English_Final version_underscoreaulieuvirgule.tab

Character set: text/tab-separated-values

Download URL: <https://doi.org/10.57745/KMGODH/ROOPGS>

Data format: csv

Data format version: V1

Description: The dataset includes the 607 responses provided to the survey (csv format).

Column label	Column description
Do you eat lentils or meals based on lentils?	Yes/No
If yes, why?	Multiple choice
If no, why?	Multiple choice
In the last 5 years, your consumption of lentils has increased, remained the same or decreased?	Multiple choice
Which types of lentils do you buy?	Multiple choice
How often do you eat lentils (Raw lentils)?	Multiple choice
How often do you eat lentils (Canned lentils)?	Multiple choice
How often do you eat lentils (Frozen lentils)?	Multiple choice
How often do you eat lentils (Lentil salad)?	Multiple choice
If you consume raw lentils, what is the type of preparation?	Multiple choice
If hot meals, how do you cook them?	Multiple choice
If cold meals, how do you cook them?	Multiple choice
If you cook hot meals, what is the time of cooking?	free text
Which type of lentils do you buy?	Multiple choice

Do you eat the ready-to-eat meals (canned lentils) in several times?	Multiple choice
Do you eat the ready-to-eat meals (lentil salad) in several times?	Multiple choice
Do you eat the ready-to-eat meals (frozen lentils) in several times?	Multiple choice
Do you eat the home meals (hot meals) in several times?	Multiple choice
Do you eat the home meals (cold meals as lentil salad) in several times?	Multiple choice
If you eat a ready-to-eat meal (canned lentils) in several times, what is the storage duration?	Multiple choice
If you eat a ready-to-eat meal in several times (lentil salad), what is the storage duration?	Multiple choice
If you eat a ready-to-eat meal (frozen lentils) in several times, what is the storage duration?	Multiple choice
If you eat home meals (hot meals) in several times, what is the storage duration?	Multiple choice
If you eat home meals (cold meals as lentil salad) in several times, what is the storage duration?	Multiple choice
How do you cool down the cooked meals before putting them in the refrigerator?	Multiple choice
How long do you leave the cooked meals to cool down before putting them in the refrigerator?	Multiple choice
What is your diet?	Multiple choice
What is your gender?	Multiple choice
How old are you?	Free text
In which region do you live?	Multiple choice

Additional information

It is important to keep in mind that as most of responders were consumers of lentils (556/607), an over-estimate of the percentage of lentil consumer in France is expected. Consequently, the dataset could be used to obtain an estimate on type of lentil meals, type of preparation, storage duration once cooked etc., but not to estimate the overall French rate of lentil consumption.

Author contributions

Aïssétou Yabré: Conceptualisation, Methodology, Software, Writing- Original draft preparation

Jeanne-Marie Membré: Investigation, Writing- Reviewing and Editing, Funding.

References

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Table 1.

List of the 21 questions asked in the survey. The response options are provided in the 2nd document (pdf). The responses to the questions are given in the dataset (csv document).

Number	Question	Type of responses
1	Do you eat lentils or meals based on lentils?	Single choice
2	If yes, why?	Multiple choice
3	If not, why?	Multiple choice
4	In the last 5 years, your consumption of lentils has increased, remained the same or decreased?	Multiple choice
5	Which types of lentils do you buy?	Multiple choice
6	How often do you eat lentils?	Double array: Single choice per type of lentils
7	If you consume raw lentils, what is the type of preparation?	Multiple choice
8	If hot meals, how do you cook them?	Multiple choices
9	If cold meals, how do you cook them?	Multiple choices
10	If you cook hot meals, what is the time of cooking?	Free response
11	Which type of lentils do you buy?	Multiple choices
12	Do you eat the ready-to-eat meals (bought not cooked at home) in several smaller servings?	Double array: Single choice per type of lentil meals
13	Do you eat the home meals in several smaller servings?	Double array: Single choice per type of lentil meals
14	If you eat a ready-to-eat meal in several times, what is the storage duration?	Double array: Single choice per type of lentil meals
15	If you eat home meals in several times, what is the storage duration?	Double array: Single choice per type of lentil meals
16	How do you cool down the cooked meals before putting them in the refrigerator?	Single choice
17	How long do you leave the cooked meals to cool down before putting them in the refrigerator?	Single choice
18	What is your diet?	Single choice
19	What is your gender?	Single choice
20	How old are you?	Free response
21	In which region do you live?	Single choice