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## Data in Brief

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## Data Article

Q1 **Consumer perception data and scientific arguments about food packaging functionalities for fresh strawberries**

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## ABSTRACT

This data article contains data characterizing consumer perception and scientific arguments about food packaging functionalities for fresh strawberries. These data are associated with the article “Choice of environment-friendly food packagings through argumentation systems and preferences” (see Yun et al., 2018). These data are stored in a public repository structured by an ontology. These data could be retrieved through the @Web tool, user-friendly interface to capitalize and query data (Buche et al., 2013; Guillard et al., 2017). The @Web tool is accessible online at <http://pfl.grignon.inra.fr/atWeb/>.

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**Specifications table**

Subject area	Consumer perception
More specific subject area	Food packaging functionalities
Type of data	Table
How data was acquired	A survey upon a sample of 845 people, representative of the French population in terms of age and socio-professional categories. Arguments expressed by a food packaging scientific expert.
Data format	Raw and analyzed.
Experimental factors	Transformation of consumers' answers to poll into arguments is defined in the related research article
Experimental features	Transformation of consumers' answers to poll into arguments is based on a majority vote.
Data source location	University of Montpellier, FR-34060, France
Data accessibility	Data are accessible in a public repository
Related research article	Ranking semantics for the choice of environment-friendly food packagings (submitted to Environmental Informatics)

**Value of the data**

- A unique set of consumer perception data and scientific expert arguments indispensable in food engineering to design relevant food packaging for fresh foods.
- These data could be used to rank food packaging solutions according to consumer perception and expert knowledge.
- These data could serve as benchmark for other researchers coping with research on argumentation and multi-criteria decision support system.

**1. Data**

Consumer perception data are extracted from a survey upon a sample of 845 people representative of the French population in terms of age and socio-professional categories. Food packaging expert arguments have been registered during meetings of the INRA-CIRAD GloFood Pack4Fresh project. These data are stored in a data warehouse called @Web (<https://www6.inra.fr/cati-icat-atweb/>) in which the data management is guided by ontology (<http://pfl.grignon.inra.fr/atWeb/> and [2,3]).

Data type	Table DOI <sup>a</sup>	Amount of data
<b>Consumers' answers to poll</b>		
Consumers' answers to poll for Wood packaging	<a href="http://doi.org/10.15454/GNBUFH">http://doi.org/10.15454/GNBUFH</a>	72
Consumers' answers to poll for Plastic with plastic film	<a href="http://doi.org/10.15454/UBPOQG">http://doi.org/10.15454/UBPOQG</a>	90
Consumers' answers to poll for Plastic rigid lid	<a href="http://doi.org/10.15454/HKIQFJ">http://doi.org/10.15454/HKIQFJ</a>	72
Consumers' answers to poll for Plastic not closed	<a href="http://doi.org/10.15454/IHVM9P">http://doi.org/10.15454/IHVM9P</a>	72

109	<b>Arguments generated from con-</b>		
110	<b>sumers' answers</b>		
111	Wood packaging consumers' arguments	<a href="http://doi.org/10.15454/F4C810">http://doi.org/10.15454/F4C810</a>	9
112	Plastic with plastic film consumers' arguments	<a href="http://doi.org/10.15454/GMWB8Q">http://doi.org/10.15454/GMWB8Q</a>	11
113			
114	Plastic rigid lid consumers' arguments	<a href="http://doi.org/10.15454/DC9PYL">http://doi.org/10.15454/DC9PYL</a>	9
115	Plastic not closed consumers' arguments	<a href="http://doi.org/10.15454/NM3WET">http://doi.org/10.15454/NM3WET</a>	9
116			
117	<b>Food packaging expert arguments for all packaging solutions</b>	<a href="http://doi.org/10.15454/VDNRH6">http://doi.org/10.15454/VDNRH6</a>	9
118			
119			

<sup>a</sup> Access to data table is provided using the DOI metadata "Link to data".

## 2. Experimental design, materials, and methods

Consumers' answers to poll are extracted from a survey upon a sample of 845 people representative of the French population in terms of age and socio-professional categories.

Description of the sample

Total sample	Number	%
	845	100
Female	501	60,4
Male	344	39,6
20–34 years old	208	24,6
35–49 years old	230	27,2
50–64 years old	218	25,8
65 years old and +	189	22,4
High CSP	235	27,8
Low CSP	238	23,8
inactive	374	37,4

- High CSP: farmers, entrepreneurs, artisan, manager, retailer, businessmen, intellectual works
- Low CSP: employees, workers
- Inactive: unemployed, students, retired persons

A set of 12 questions corresponding to different criteria has been asked for each of the 4 packaging alternatives: Wood packaging, Plastic with plastic film, Plastic rigid lid, Plastic not closed. In the following, the example of question "Is Wood packaging harmful for strawberries?" involving the criterion "harmful" will be used to illustrate the transformation of consumers' answers to poll into arguments.

Accepted answers to questions are:

- Not agree at all
- Rather disagree
- Neither agree nor disagree
- Somewhat agree
- Totally agree
- Don't know

Transformation of consumers' answers to poll into arguments, defined in [1], is based on a majority vote. The answers are aggregated into 3 groups:

- “Not agree at all” and “Rather disagree” are sum up in No group.
- “Totally agree” and “Somewhat agree” are sum up in Yes group
- “Neither agree nor disagree” and “Don't know” are sum up in Neutral group

For each question, if cardinality of Neutral group is strictly superior to the sum of the cardinalities of Yes and No groups, then no argument can be generated,

Else if cardinality of No group is strictly inferior to cardinality of Yes group then argument “Wood packaging is harmful for strawberries” is generated,

Else then argument “Wood packaging is not harmful for strawberries” is generated.

Food packaging expert arguments have been expressed after reading the arguments generated from consumers' answers.

#### Q4 Acknowledgments

Part of the data presented here were acquired in the framework of the INRA-CIRAD GloFood Pack4Fresh project (2015 to 2018), funded by the Institut National de la Recherche Agronomique and CIRAD French National Research Agronomical Agencies.

#### Transparency document. Supporting information

Transparency data associated with this article can be found in the online version at <https://doi.org/10.1016/j.dib.2018.09.034>.

#### References

- [1] B. Yun, P. Bisquert, P. Buche, M. Croitoru, V. Guillard, R. Thomopoulos, Choice of environment-friendly food packagings through argumentation systems and preferences, *Ecol. Inform.* 48 (2018) 24–36. <https://doi.org/10.1016/j.ecoinf.2018.07.006>.
- [2] P. Buche, J. Dibia-Barthélemy, L. Ibanescu, L. Soler, Fuzzy web data tables integration guided by a termino-ontological resource, *IEEE TKDE* 25 (4) (2013) 805–819. <https://doi.org/10.1109/TKDE.2011.245>.
- [3] V. Guillard, O. Couvert, V. Stahl, P. Buche, A. Hanin, C. Denis, J. Dibia, S. Dervaux, C. Lorient, T. Vincelot, V. Huchet, B. Perret, D. Thuault, MAP-OPT: a software for supporting decision-making in the field of modified atmosphere packaging of fresh non respiring foods, *Packag. Res.* 2 (1) (2017) 28–47. <https://doi.org/10.1515/pacres-2017-0004>.