

**NAUKA DLA  
SPOŁECZEŃSTWA**

# Public Perception of Healthy Food in The Light of Interdisciplinary Scientific Certainty

Survey report

Białystok 2023

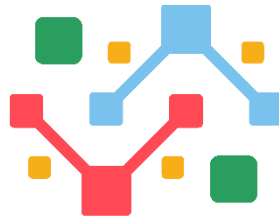


*Spółeczna percepcja zdrowej żywności w świetle interdyscyplinarnej pewności naukowej*

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# ***Public Perception of Healthy Food in The Light of Interdisciplinary Scientific Certainty***

***Survey report***



**NAUKA DLA  
SPOŁECZEŃSTWA**

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**BIAŁYSTOK 2023**

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## **Abstract**

In recent years, an alarming trend in the rising incidence of non-communicable diseases has led to increased interest in the issue of so-called "healthy food". Despite the enormity of food regulation, the concept of "healthy food" is not framed in any legal framework, and the public's understanding of it is uneven. So what is "healthy food" according to the public? This report contains the results of a survey aimed at answering this question. The survey consisted of two parts - on the one hand, a representative sample of 1,041 people was surveyed, and on the other hand, 100 food entrepreneurs were surveyed. The obtained results of the survey provide the research team with a starting point for further interdisciplinary research (legal sciences, chemical sciences, medical sciences) in the "healthy food" problem area.

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## I. Introduction

Food is an indispensable element of human life and a key condition for its existence. Until recently, it might have seemed that the only human problem related to food is the insufficient supply of safe food – understood as food free of any harmful factors, microorganisms and toxic chemicals, or containing these ingredients in tolerable amounts for the human body. However, as a result of the evolution from traditional agriculture to much more effective modern agriculture, especially in highly developed countries, the supply of food that meets these criteria has significantly increased. The method of production, the structure of agriculture and a number of other factors affecting what is finally on the consumer's plate have undergone far-reaching changes.

As indicated by the WHO, the gradual control of the majority of dangerous infectious diseases that have plagued humanity since the dawn of history, as well as the complete elimination of some of them, allowed in the second half of the 20th century to draw attention to the prevalence and etiology of non-communicable diseases, which are closely related, among others, to the consumed food. The initial enthusiasm associated with the possibility of mass production of highly processed food gradually waned along with scientific reports on the health effects of its consumption. As a result of the growing awareness of consumers in this area, their purchasing decisions have changed. Currently, consumers are looking for food that will not only be safe in the narrow sense indicated earlier, but will also enable them to stay healthy in the long term. The market abhors a vacuum, so the increased demand met with the reaction of food producers who are trying to meet new consumer requirements - the need for "healthy food". Despite the enormity of food regulations, the concept of "healthy food" is not included in any legal framework, and its understanding by the society is not uniform. So what is "healthy food" according to society, and what does science say about it?

The changes outlined above in the so-called in the food environment are the object of long-term interest of scientists in the research team. The scientific cooperation established in this area has confirmed the scientists that research on food consumed by society has much



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greater scientific utility and the potential to influence reality when undertaken interdisciplinary. From this collaboration was born the project „Public Perception of Healthy Food in The Light of Interdisciplinary Scientific Certainty”, which will explore public perception and awareness of:

- what kind of food is perceived by society as "healthy food" or health-promoting food?
- is the above consistent with scientific knowledge in the field of healthy eating?
- how do legal regulations affect the perception of certain categories of food as healthy?
- do the legal requirements for specific food products (e.g. for obtaining bio/eco certificates) justify social expectations regarding their nutritional/health properties?

Issues related to so-called "healthy food" are increasingly being raised in international organizations, including the European Union. The EU's "Farm to Table" strategy calls for ensuring healthy and affordable food for future generations. At the United Nations level, on the other hand, Sustainable Development Goal 3.4 calls for a reduction in non-communicable diseases linked to suboptimal nutrition. According to the project's authors, the planned study can contribute to improving so-called "healthy food" initiatives, since a noticeable gap in the design of such activities is the lack of verification of what so-called "healthy food" means to society and what pro-healthy food actually is.

It should be noted that the intention of the researchers from Białystok is that the conducted research should take into account the Białystok regional context. Of course, the results of the project (due to the use of adequate methodology) will be relevant on a national and even European scale, but the specificity of the Podlaskie Voivodeship allows us to expect that the planned project in this region may have an enhanced promotional/disseminating effect. In science, it is noted that the food economy is an important factor in the development of the Podlaskie Voivodeship and its potential may become a stimulator of further growth and development of the region<sup>1</sup>. In addition, according to expert research commissioned by the

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<sup>1</sup> See R. Przygodzka, Gospodarka żywnościowa jako czynnik rozwoju regionu na przykładzie województwa podlaskiego, Roczniki Naukowe Stowarzyszenia Ekonomistów Rolnictwa i Agrobiznesu, 2014, t. XV, z. 6.



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European Commission, Podlaskie has the potential to create an ecosystem of technological innovations called the Agricultural Valley 4.0. The high interest in agri-food topics allows forecasting a relatively high interest in the project, which increases the chances of a significant impact of the planned project on cooperation with the socio-economic sphere.

The research team consists of employees and PhD students of the University of Białystok, the Medical University of Białystok and the Institute of Plant Protection - National Research Institute.

1. **Prof. dr hab. Maciej Perkowski** – project manager, research and teaching employee, head of the Department of Public International and European Law, Faculty of Law, University of Białystok, President of the Management Board of the Law and Partnership Foundation.
2. **Prof. dr hab. Bożena Łozowicka** – researcher at the Institute of Plant Protection - National Research Institute, head of the Field Experimental Station in Białystok.
3. **Prof. dr hab. n. med. Barbara Mroczko** – head of the Department of Diagnostics of Neurodegenerative Diseases and the Department of Biochemical Diagnostics of the Medical University of Białystok.
4. **Dr hab. Katarzyna Socha** – head of the Bromatology Department of the Medical University of Białystok. Vice-Dean for Development of the Faculty of Pharmacy with the Department of Laboratory Medicine of the Medical University of Białystok.
5. **Dr hab. Piotr Kaczyński**, prof. IOR-PIB – researcher at the Institute of Plant Protection - National Research Institute, head of the Food and Feed Safety Research Laboratory in Białystok (at the TSD IOR-PIB).
6. **Dr hab. n. med. Karolina Orywał** – scientific and didactic assistant professor at the Department of Biochemical Diagnostics of the Medical University of Białystok.
7. **Dr Maciej Oksztulski** – researcher at the Department of Public International Law and the European Faculty of Law at the University of Białystok, data analyst at Europe Direct Podlaskie run by the Law and Partnership Foundation.
8. **Dr Jolanta Soroczyńska** – senior scientific and technical specialist at the Bromatology Department of the Medical University of Białystok.
9. **Mgr Jakub Ali Farhan** – third-year doctoral student at the Doctoral School of Social Sciences of the University of Białystok, associate of the Law and Partnership Foundation.



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10. **Mgr Wojciech Zoń** – research and didactic employee of the Department of International Public Law and European Law at the Faculty of Law of the University of Białystok, head of the office of the Law and Partnership Foundation.
11. **Mgr Piotr Iwaniuk** – assistant at the Institute of Plant Protection - National Research Institute (Field Experimental Station in Białystok).
12. **Jan Mroczko** – student of medicine at the Medical University of Białystok.

This report is the result of the implementation of the project (not yet completed on the date of publication) „Public Perception of Healthy Food in The Light of Interdisciplinary Scientific Certainty”. The project is funded by the state budget under the program of the Ministry of Education and Science called „Nauka dla Społeczeństwa”[„Science for Society”], project number Nds/551580/2022/2022. The duration of the project is two years, starting from October 2022. The research part of the project consists of three parts - sociological, legal and medical-chemical. This report presents abbreviated results of the first research part (sociological) in terms of the results of the survey, which is to be a starting point for further interdisciplinary research, the purpose of which is to determine the social perception of:

- categories of food products considered healthy;
- foods considered healthy due to their nutrients;
- food considered healthy due to applicable regulations in the field of food law;
- food considered healthy due to specific information provided to the consumer (quality marks, certificates, claims, etc.);
- food considered healthy due to the reputation associated with a given company or country of origin;
- differences in the perception of food considered healthy and standard food.





## II. Survey methodology

The Pollster Research Institute, a research enterprise specializing in research using new technologies (hereinafter the "Institute") , is responsible for the implementation of the survey<sup>2</sup>. This entity was selected because it had the most favorable offer, evaluated according to the ratio of price to quality and scope of services provided, out of eight entities providing similar services to which requests for proposals were sent. The Institute was responsible not only for obtaining the results of the surveys, but also provided expert services in terms of methodological correctness and optimization of the questionnaires provided by the researchers.

Society is not a monolith. It consists of different groups of society. In the case of commodities such as food, which are traded with consumers, we can distinguish two key groups of actors whose views need to be studied, namely consumers themselves and professional actors in the food industry (producers, processors, restaurateurs or retailers, among others). Therefore, the survey conducted was composed of two parts. First, the opinion of the general public was surveyed (using the CAWI method), and then the opinion of food entrepreneurs only (using the CATI method). Separating them from the general public and examining their opinions was indispensable for the realization of the main objective of the implemented project, which is to establish cooperation between entities from the field of science (Law and Partnership Foundation operating at the Faculty of Law of the University of Białystok and partners - employees of the Medical University of Białystok and the Institute of Plant Protection - State Research Institute) and entities from the socio-economic sphere, i.e. mainly entrepreneurs operating in the food sector and organizations dealing with consumer issues. The results of the survey were returned to the research team by the Institute in the form of a database in .xls format. This report contains the results of the survey, which have been converted into a clear form of tables and charts.

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<sup>2</sup> Website of the Institute – <https://pollster.pl>.



a. About the CAWI survey

The survey of the general public was carried out using the CAWI (Computer-Assisted Web Interview) method of collecting information by asking the respondent to fill out a survey electronically, on the ReaktorOpinii.pl research panel created by the Institute. Respondents were people over the age of 18, and responses were collected from January 26-31, 2023. The survey sample, which includes 1,041 people, is representative of the population of adult Poles by age, gender, size of place of residence and education.

In order to improve the quality of the responses received, the process of registering respondents with the survey panel follows a two-step process. In the first step, the respondent provides his or her basic demographic data, then is required to fill out a comprehensive "initial" survey, in which he or she provides additional demographic data and confirms the information previously collected from him or her. In each project, respondents are asked questions about demographic variables, which are then randomly compared with the variables provided in the initial survey. If there are inaccuracies, the respondent is sent a message asking him or her to clarify the situation. The final verification of the correctness of the demographic data is at the time of payment for participation in the research: then each respondent is obliged to provide his/her exact personal data linked to the bank account we use. We use double questions on the same issues, e.g.: year of birth and age range. Data that may change (e.g., education, place of residence and the like) are regularly updated.

The questionnaire was developed by the entire research team involved in the project, and then consulted with experts from the Institute. It consisted of 10 metric questions and 4 thematic sections:

- I. general information about food,
- II. use of healthy food categories,
- III. general opinions about food,
- IV. knowledge about food.



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In Section I, all respondents were asked 4 multiple-answer questions and 1 Likert scale response question (a cafeteria of five statements) on general information about healthy food. In Section Two on the use of healthy food, respondents were asked 3 closed-ended questions, 2 Likert scale response questions and 4 open-ended questions. Due to the number of questions and the time required to complete the questionnaire, the questions of Sections III and IV were divided into Module A and Module B. Respondents were divided into two representative samples and assigned to one of the two modules. It should be noted that the assignment to the modules was not random, and the assignment was based on the socio-demographic characteristics of the respondents to ensure the representativeness of the results from both modules. In terms of Module A, Section III consisted of 4 Likert scale response questions and 1 closed-ended question, and Section IV consisted of 8 multiple response questions and 2 closed-ended questions. In terms of Module B, on the other hand, Section III consisted of 4 Likert scale response questions and 1 open-ended question, and Section IV consisted of 1 closed-ended question, 1 Likert scale response question and 7 multiple response questions.

b. About the CATI survey

The survey of food entrepreneurs was conducted using the CATI (Computer-assisted telephone interviewing) method, which involves conducting a telephone interview with respondents in which the interviewer reads out the questions and notes the answers obtained, using a computer script. The respondents were entrepreneurs from a database of companies purchased by the Institute whose activities are related to food service, food production or food processing. The business profile was determined on the basis of Polish Classification of Activities (PKD) codes. The survey was implemented from January 30 to February 7, 2023 from 11:00 a.m. to 9:00 p.m. Before 11:00 a.m., only pre-arranged calls were made. The questionnaire consisted of 4 metric questions and a main questionnaire, which included: 9 closed questions, 9 open-ended questions and 3 multiple-answer questions.



### III. Survey of the general public

#### a. Demographics

The survey included 501 men and 540 women. The age breakdown of respondents is as follows - 18-25 years old – 112 people; 26-35 years old – 180 people; 36-45 years old – 212 people; 46-55 years old – 175 people; 56-65 years old – 164 people, and over 66 years old had 198 respondents. There were 436 people living in rural areas, 136 people from cities with up to 20,000 residents, 107 people from cities with 20,001 to 50,000 residents, 69 people from cities with 50,001 to 100,000 residents, 166 people from cities with 100,001 to 500,000 residents, and 127 people from cities with more than 500,000 residents. There were 74 people with primary education, 295 people with vocational education, 387 people with secondary education, and 285 people with higher education. From the northern region (Pomeranian, Kuyavian-Pomeranian, Warmian-Masurian) came 144 people, from the southwestern region (Lower Silesian, Opole) came 94 people, from the central region (Mazovian, Lodz) came 223 people, 186 people came from the northwestern region (West Pomeranian, Lubusz, Greater Poland), 189 people came from the eastern region (Lublin, Świętokrzyskie, Podkarpackie, Podlaskie), and 205 people came from the southern region (Silesian, Lesser Poland). Most of the respondents were married or married – 529 people; a partner or partner had 169 people; 190 people declared themselves as single or single; widows or widowers were 65 people, and divorced or separated were 74 people. To the question "how many people live together with you in your household who live on a joint income?" 115 people said one person; 319 people said two; 250 people said three; 207 people said four; 86 people said five; 35 people said six; 15 people said seven; and 11 people said eight or more.

With 32 respondents, there were children up to 12 months old in whose upbringing the respondents were involved. For children aged 1 to 3 years, the number of respondents was 87, 3-7 years there were 121 respondents, 7-12 years there were 125 respondents, 12-18 years there were 165 respondents, and over 18 years there were 208 respondents. 511 respondents had no children living with them. Among the respondents, there were 84



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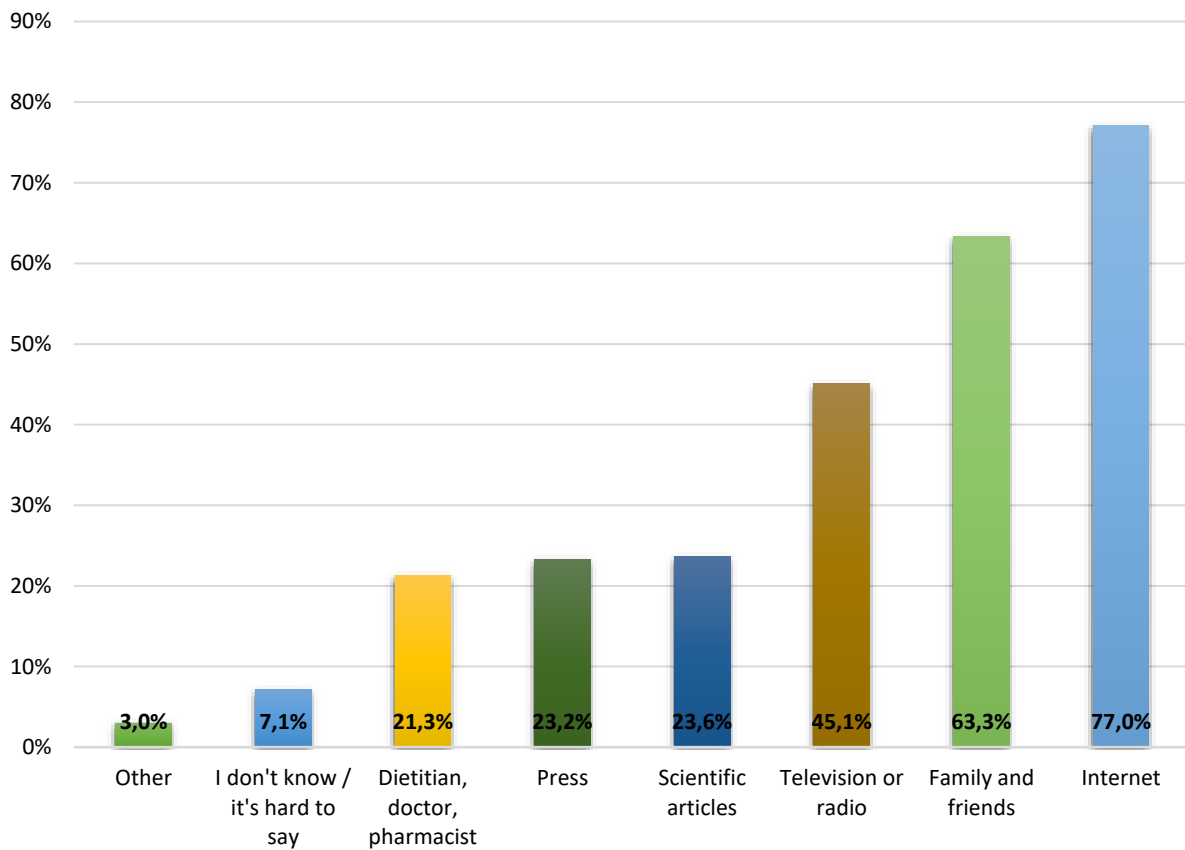
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unemployed; 46 either students or pupils; 31 entrepreneurs; 20 people on parental or maternity leave; 47 not working for other reasons; 429 employees or those working under a civil contract; 282 pensioners; 60 casual workers and 23 people studying or studying and working at the same time. Of those in business or employment, 36 were in public administration; 9 were in the energy industry; 23 were in finance, insurance or financial intermediation; 54 were in construction; 4 were in entertainment, recreation or sports activities; 43 were in education; 74 were in retail or wholesale trade; 24 were in hospitality, 6 persons were engaged in vehicle repair, 9 persons were engaged in security, 26 persons were engaged in health care and social assistance, 26 persons were engaged in food production, 65 persons were engaged in industry, 5 persons were engaged in advertising, television or media, 22 persons were engaged in telecommunications or information technology, 48 persons were engaged in transportation, warehousing or logistics, and 87 persons worked or were engaged in other industries. The total monthly net incomes of all members who share a household with the respondents were between 2001-3000 for 122 people; 3001-4000 for 123 people, 4001-5000 for 133 people; 5001-6000 for 134 people; 6001-9000 for 182 people; 9001-12000 for 91 people; 12001-15000 for 29 people, above 15000 for 11 people, and 160 people did not know the answer to this question or refused to answer.



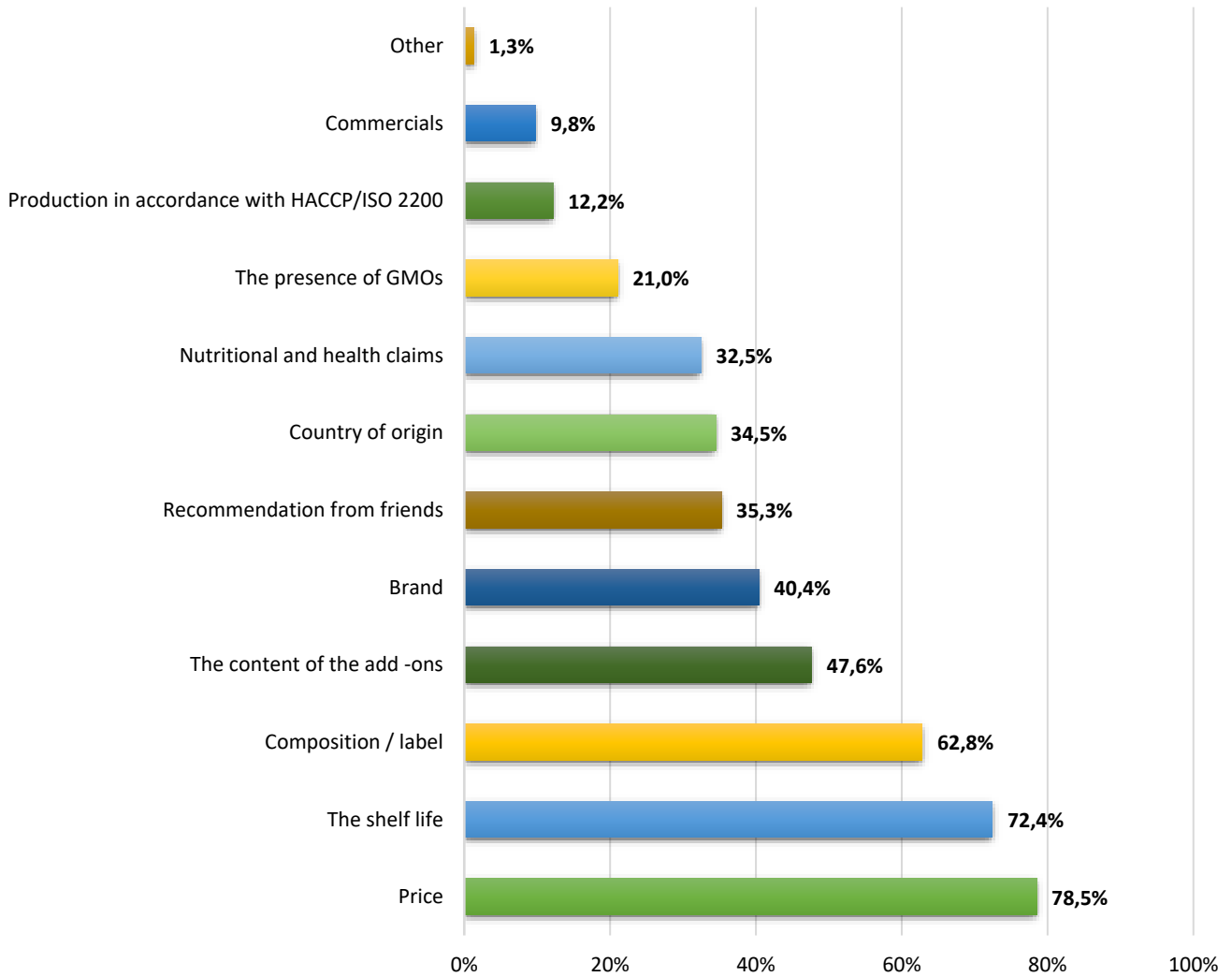
b. Survey results

What are the main sources of your knowledge about food products?



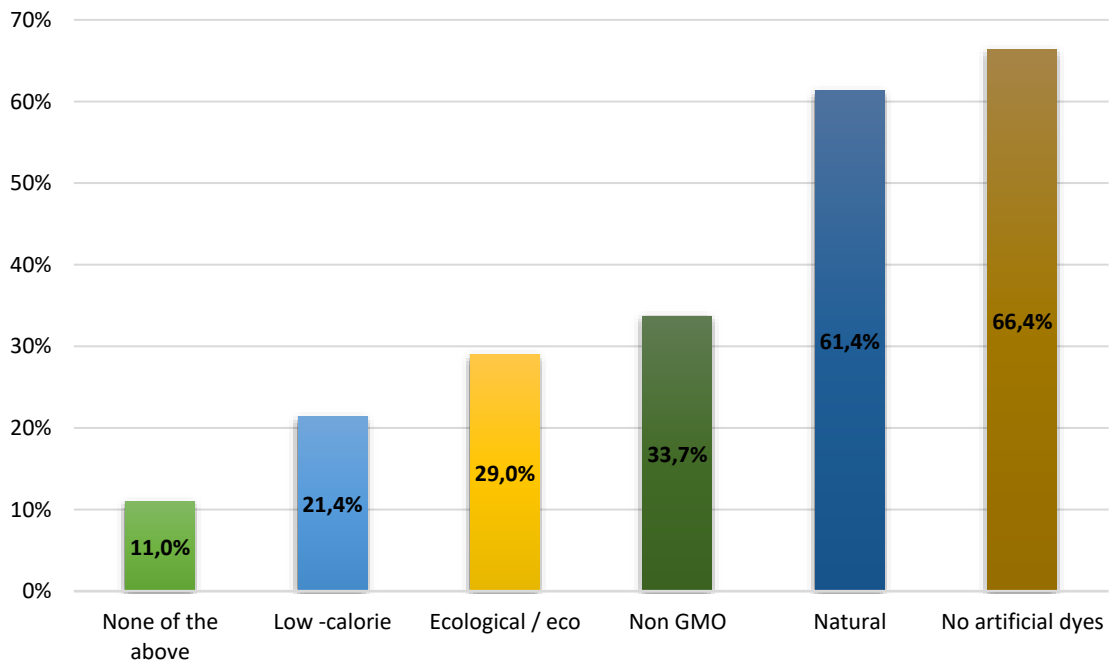


## What are you guided by when choosing food?





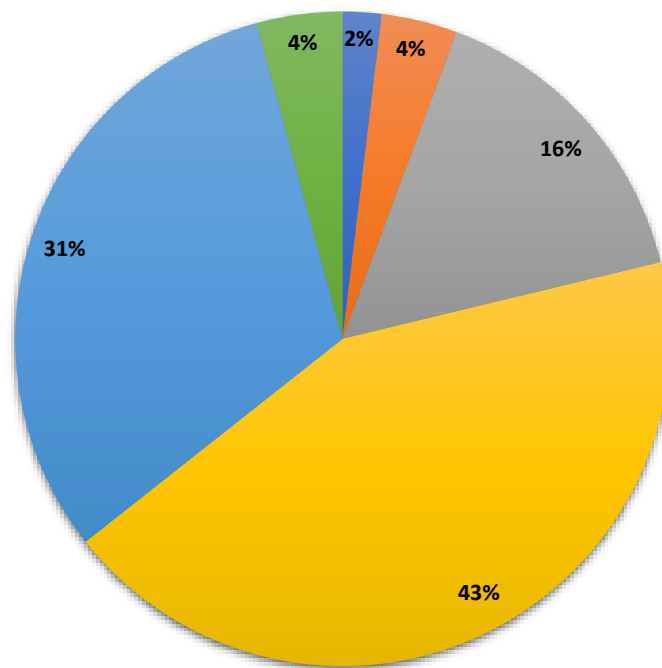
### Which food labels are particularly motivating for you to choose a given product?







Which of the following food ingredients do you consider particularly important in a healthy diet? – micro and macro elements



■ Definitely irrelevant

■ Rather irrelevant

■ Neither relevant nor insignificant

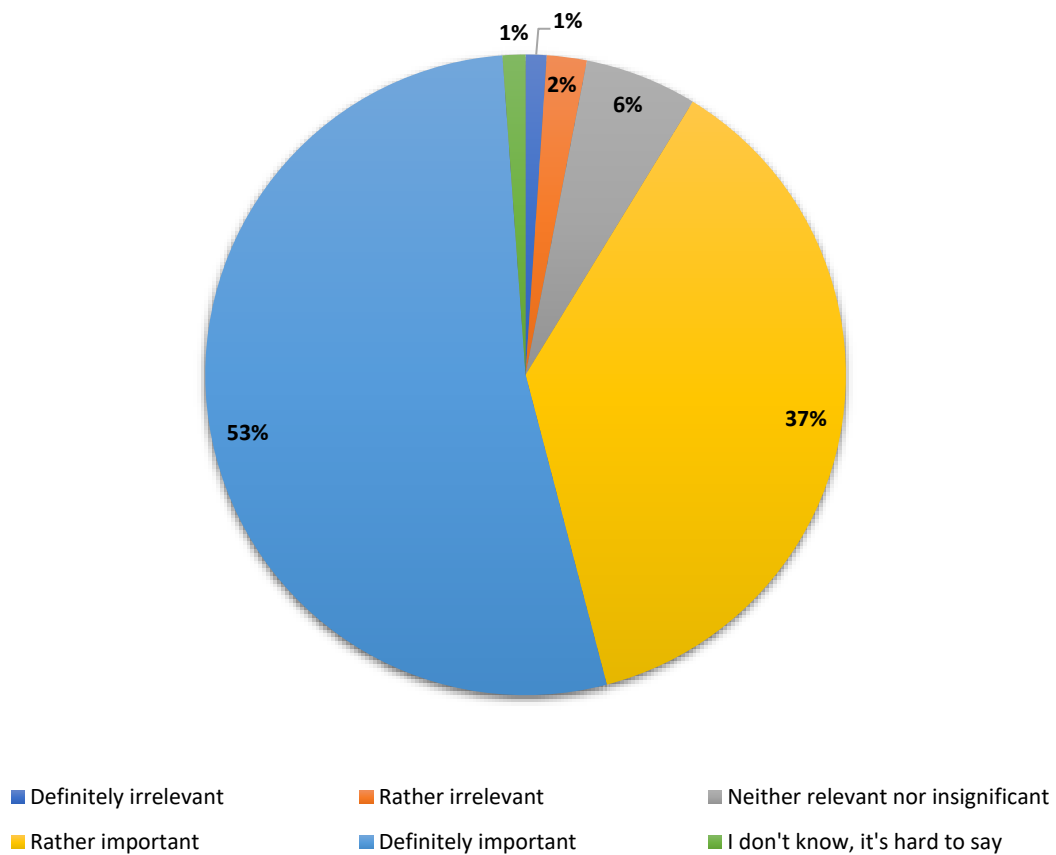
■ Rather important

■ Definitely important

■ I don't know, it's hard to say

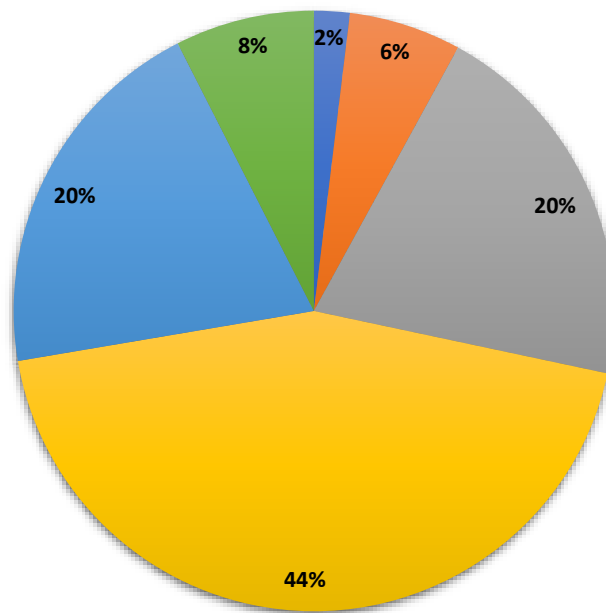


Which of the following food ingredients do you consider particularly important in a healthy diet? – vitamins and minerals





Which of the following food ingredients do you consider particularly important in a healthy diet? –  
unsaturated fatty acids



■ Definitely irrelevant

■ Rather irrelevant

■ Neither relevant nor insignificant

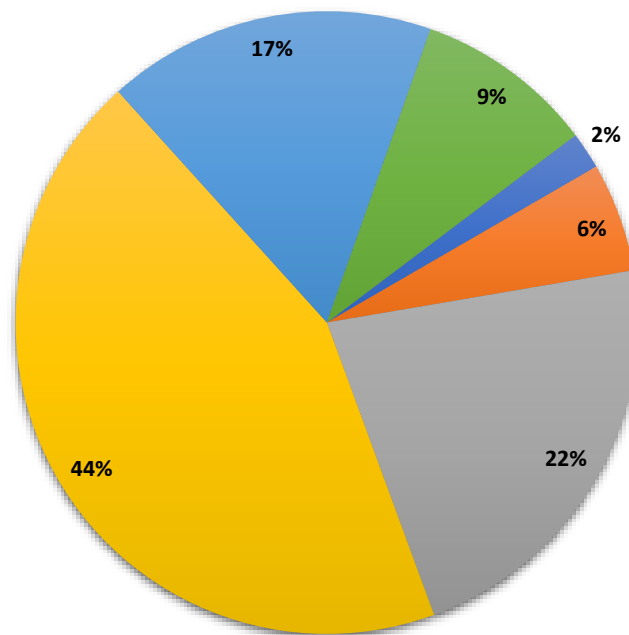
■ Rather important

■ Definitely important

■ I don't know, it's hard to say



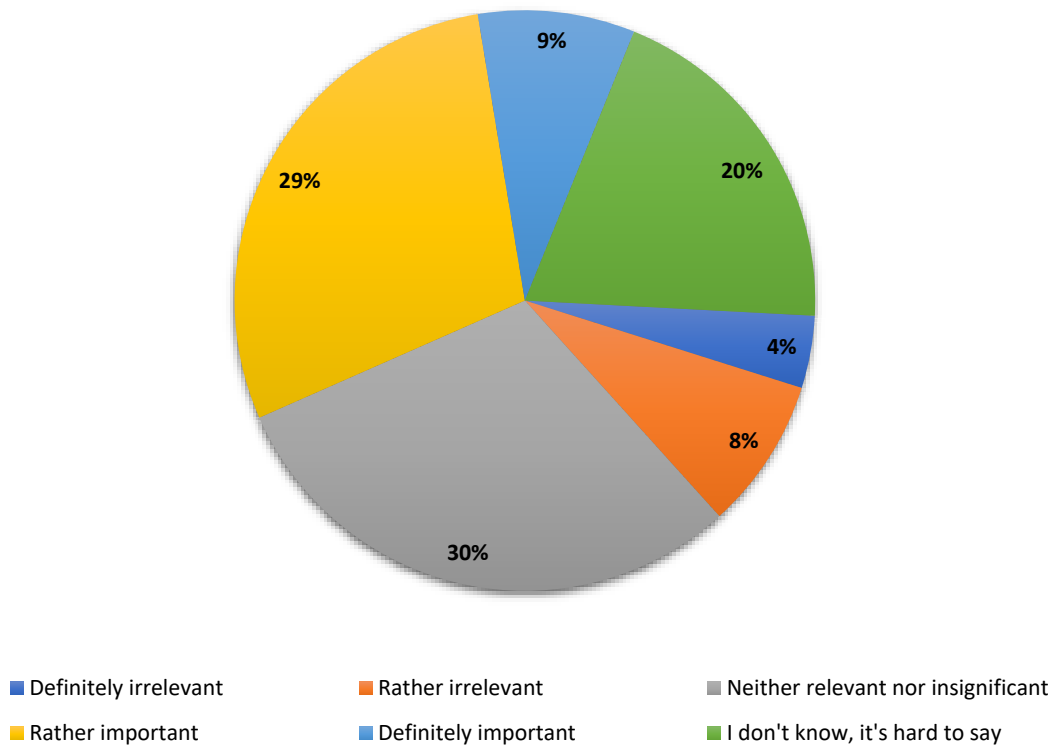
Which of the following food ingredients do you consider particularly important in a healthy diet? – aminoacids



- Definitely irrelevant
- Rather irrelevant
- Neither relevant nor insignificant
- Rather important
- Definitely important
- I don't know, it's hard to say

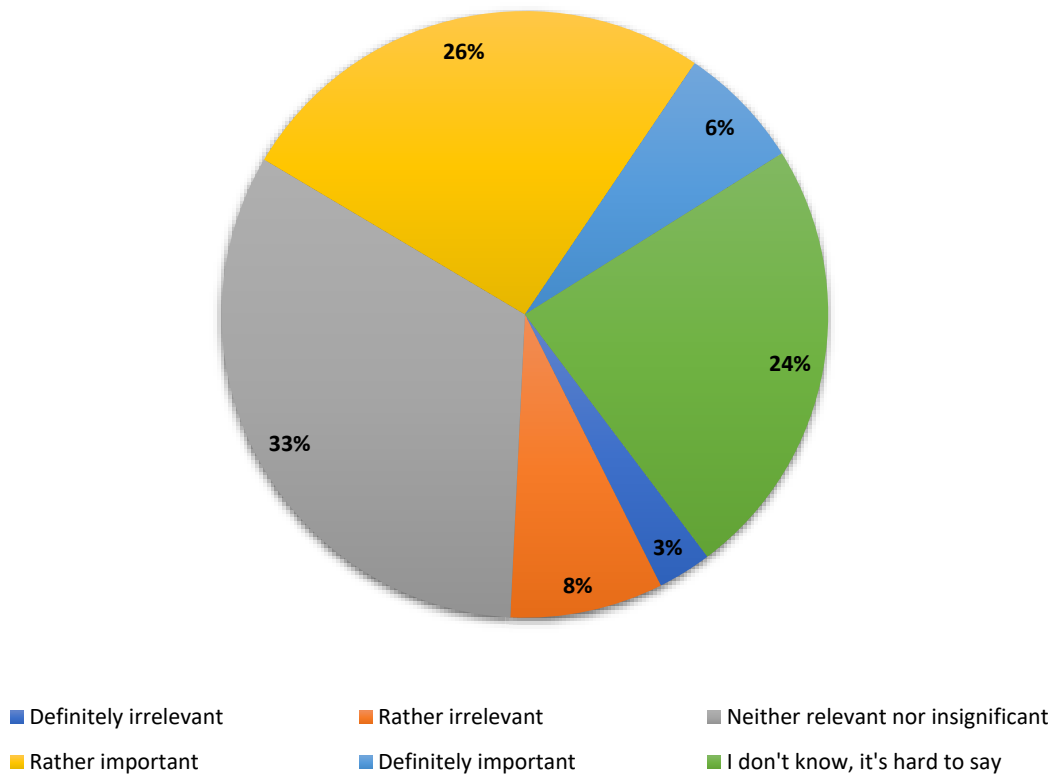


Which of the following food ingredients do you consider particularly important in a healthy diet? – polyphenolic compounds and phenolic acids



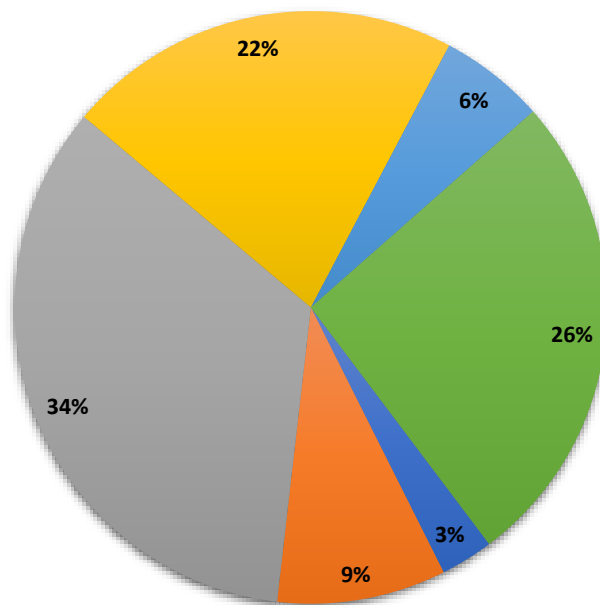


Which of the following food ingredients do you consider particularly important in a healthy diet? –  
phytosterols





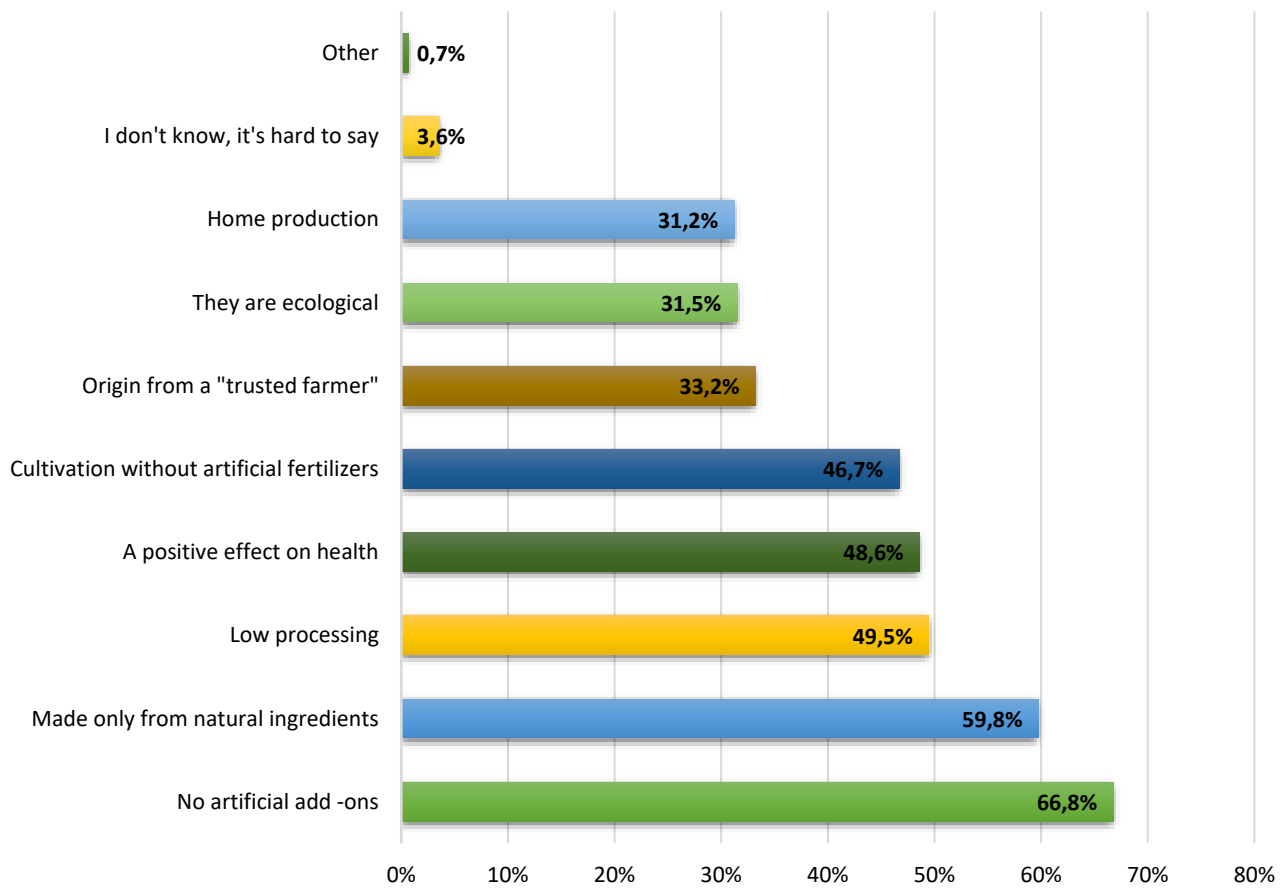
Which of the following food ingredients do you consider particularly important in a healthy diet? – glucosinolates



- Definitely irrelevant
- Rather irrelevant
- Neither relevant nor insignificant
- Rather important
- Definitely important
- I don't know, it's hard to say



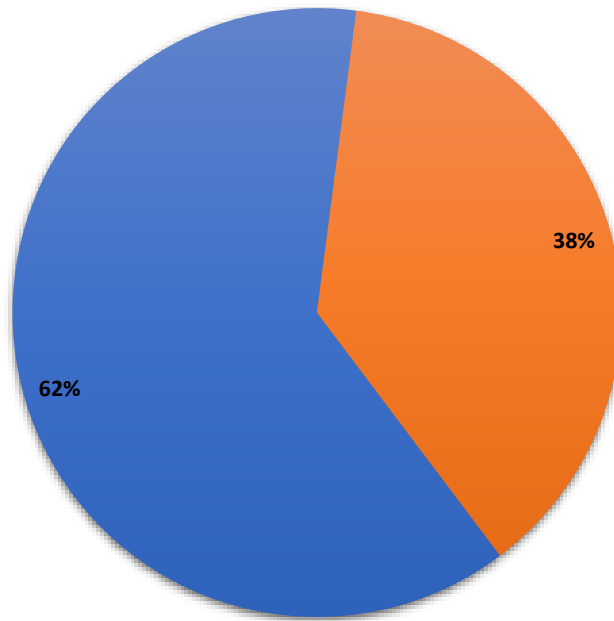
### In your opinion, what indicates high quality food products?







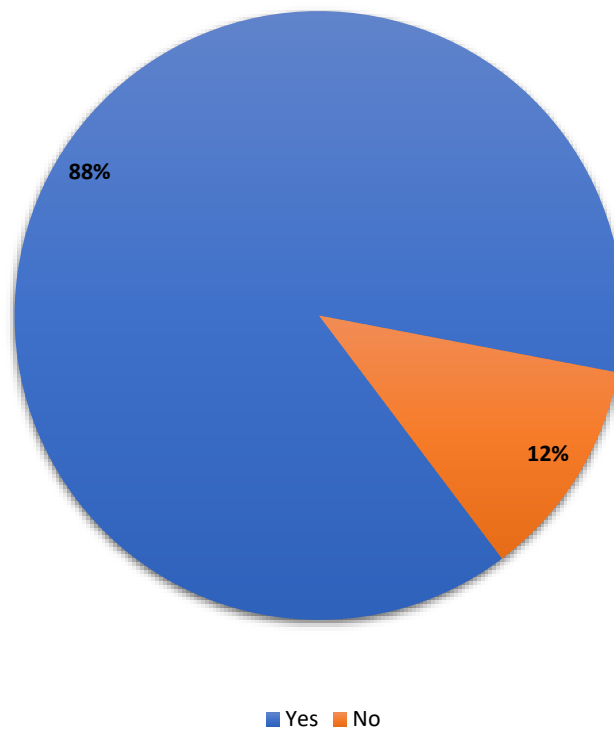
Are you interested in the subject of healthy food?



■ Yes ■ No

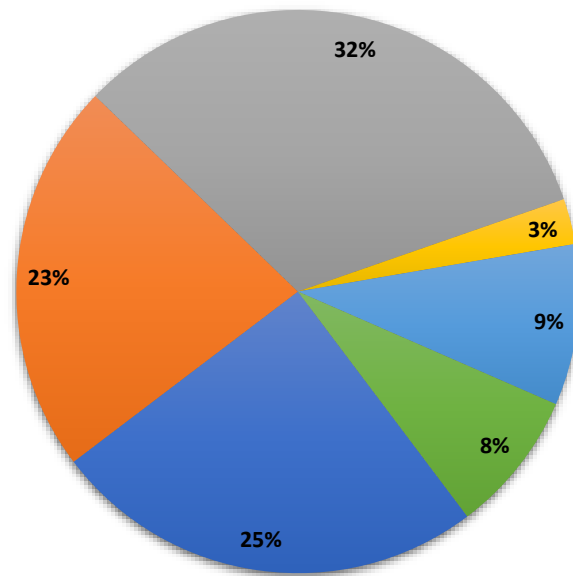


Do you ever buy healthy food?





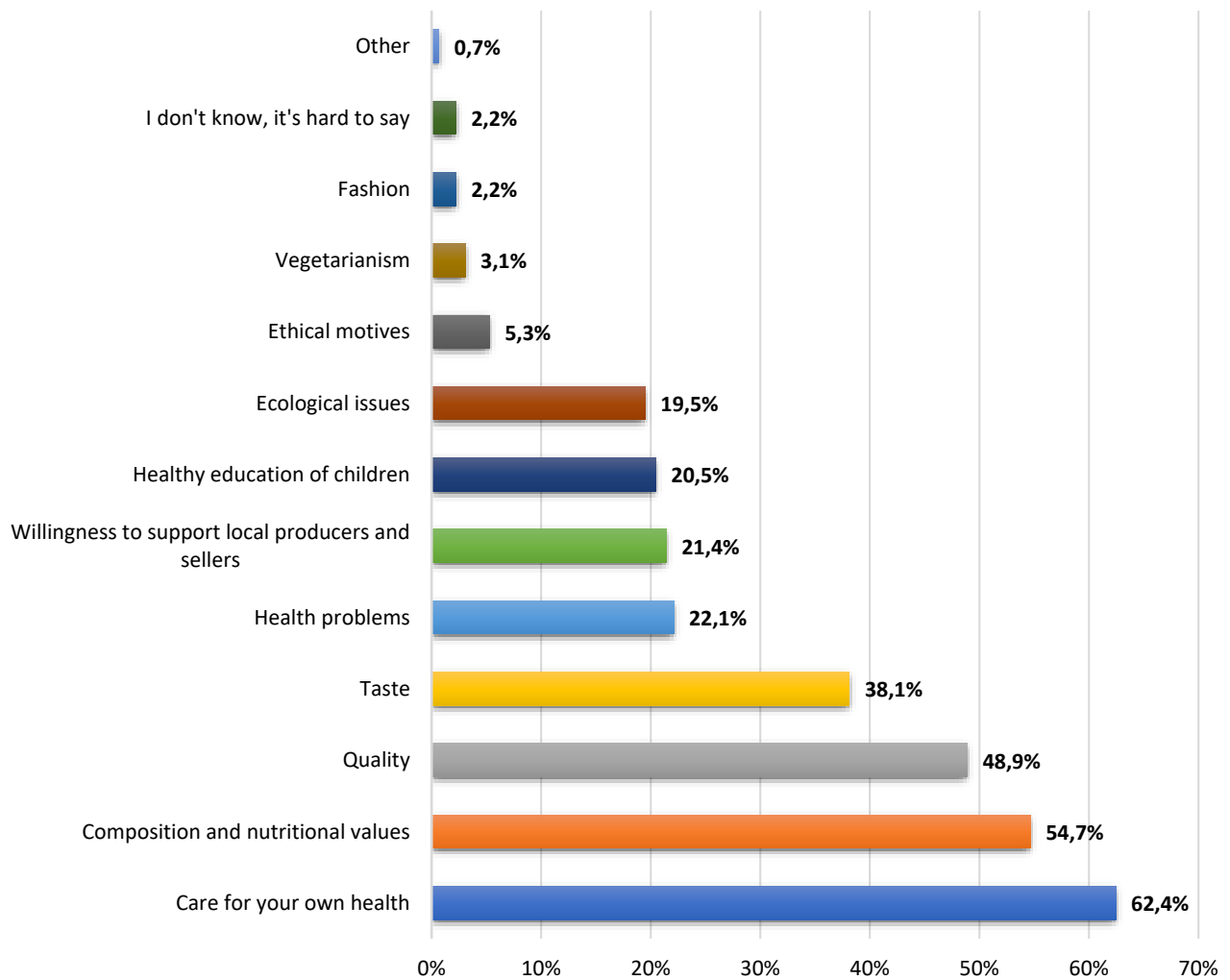
### How often do you buy so-called healthy food products?



■ A few times a week ■ Once a week ■ Several times a month ■ Every day ■ Once a month ■ Less frequently

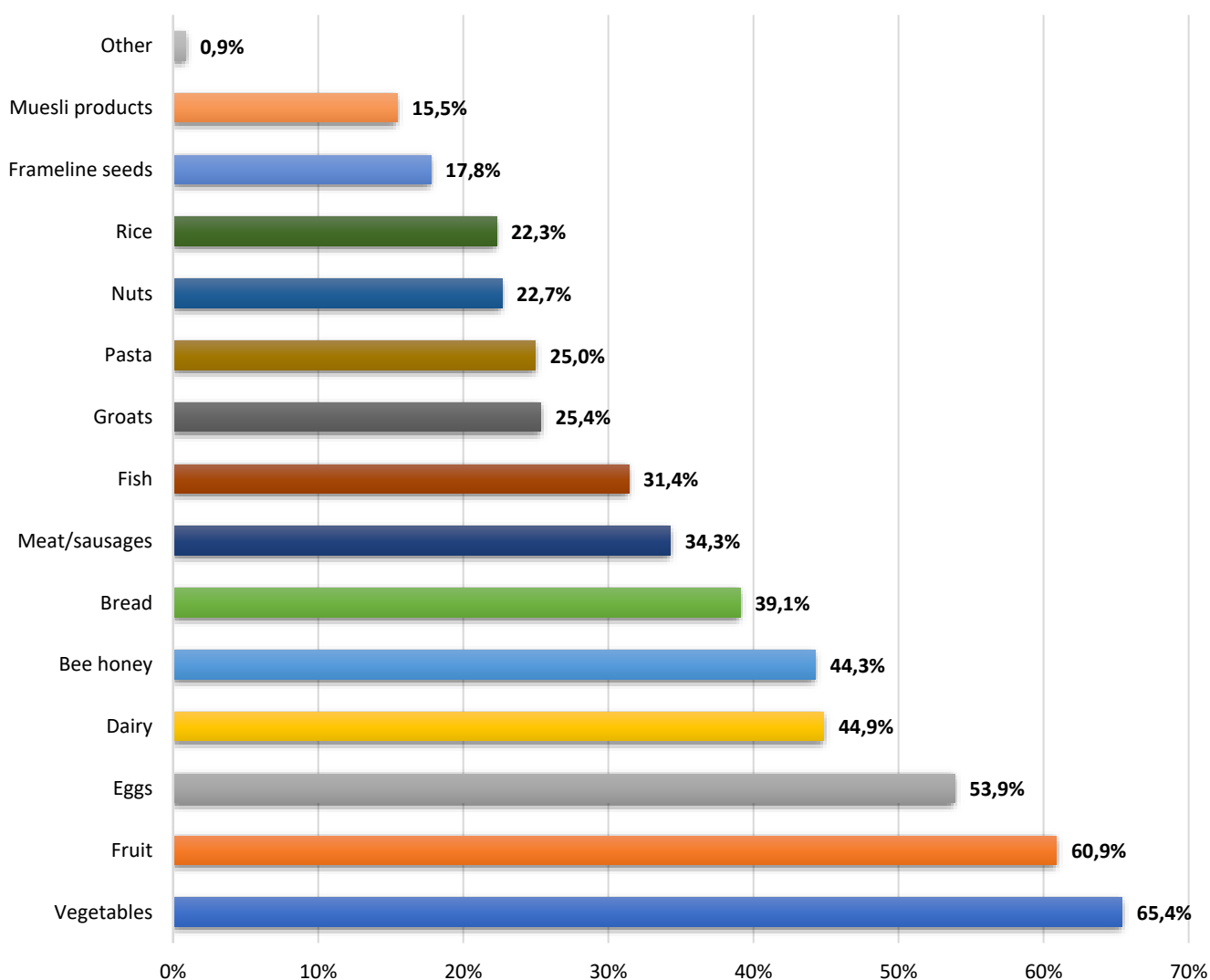


## What are the main factors motivating you to choose healthy foods?



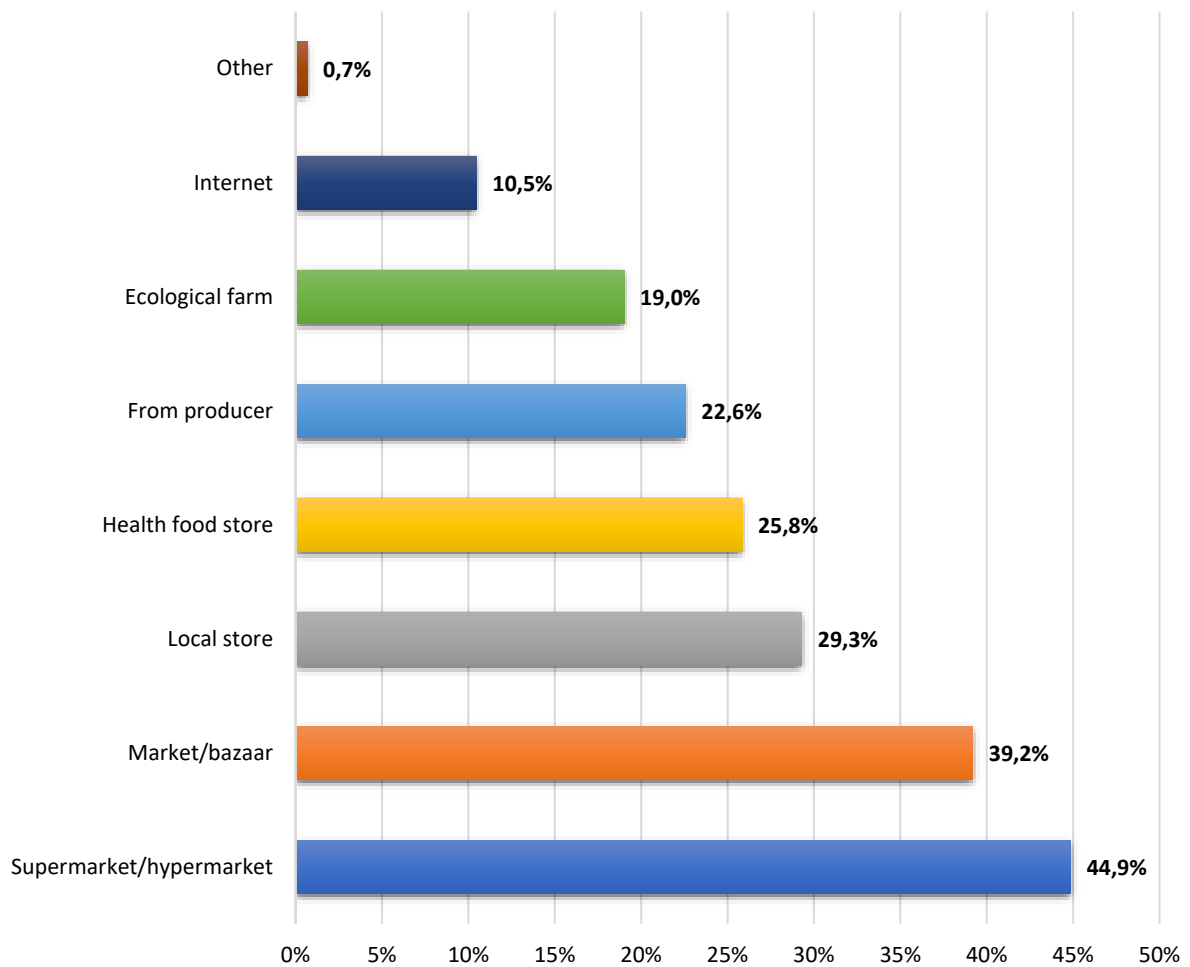


### What so-called healthy food products do you buy most often?



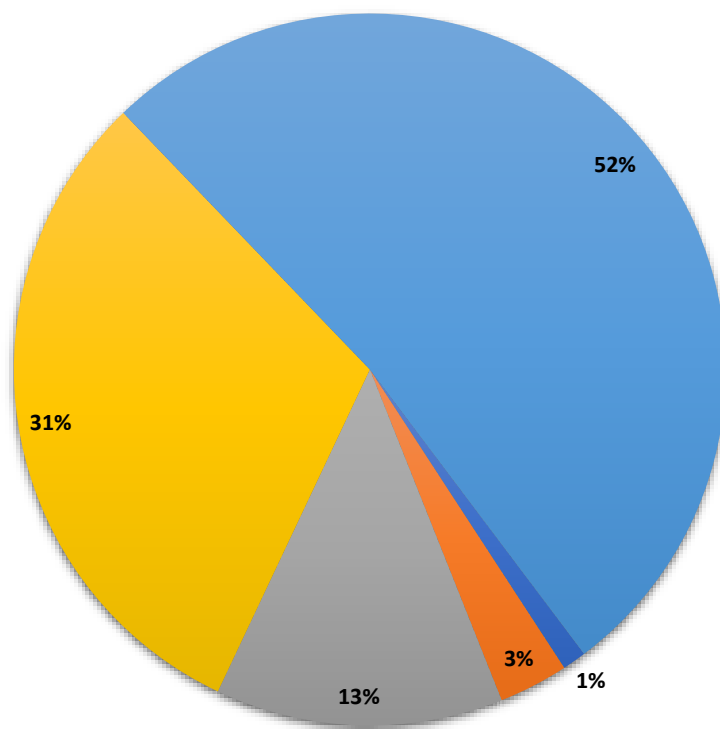


## Where do you most often buy so-called healthy food products?





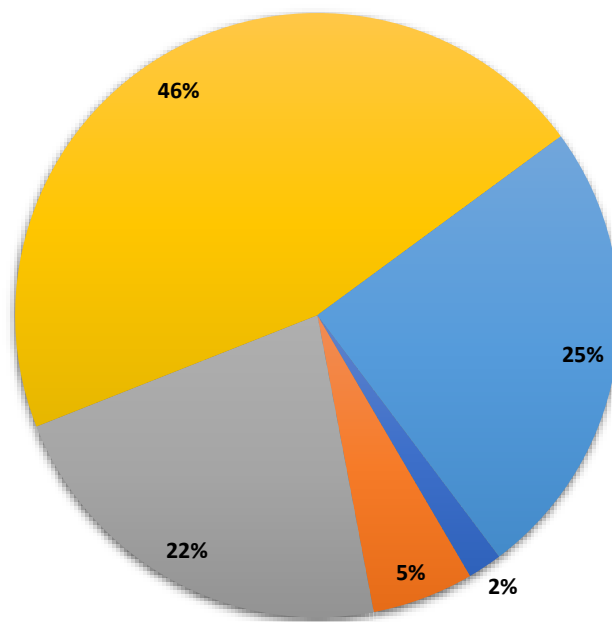
I am interested in the effects of healthy foods on improving vital functions.



■ I definitely disagree ■ I rather disagree ■ I neither agree or disagree ■ I definitely agree ■ I rather agree



When consuming healthy food, I achieve greater mental comfort knowing that I care about the environment and I am responsible.

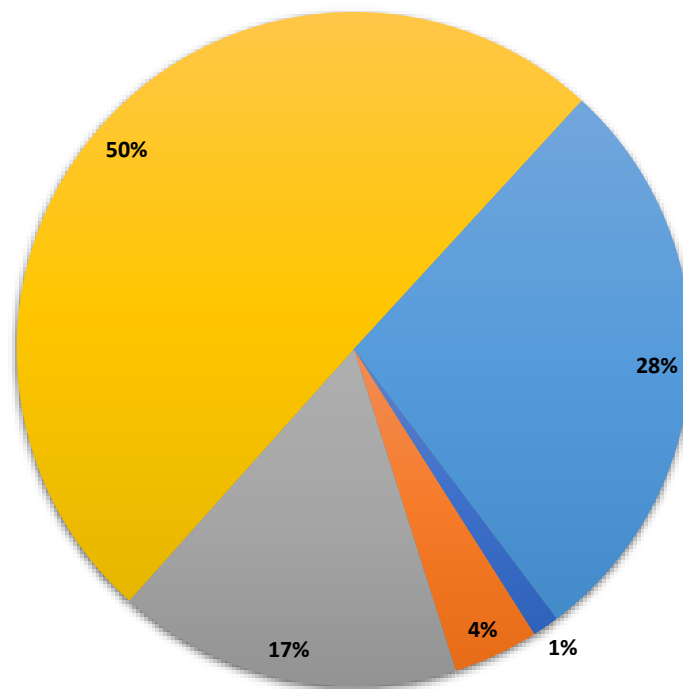


■ I definitely disagree      ■ I rather disagree      ■ I neither agree or disagree  
■ I rather agree      ■ I definitely agree





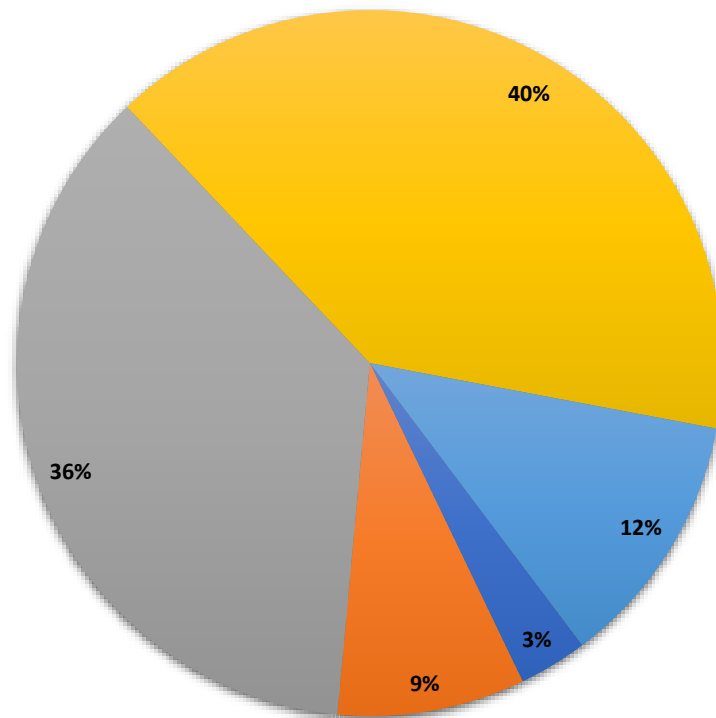
What type of packaging would make you buy healthy food? – packaging on which it has been explained what the individual ingredients have on our health



■ Definitely not   ■ I don't think so   ■ Neither yes nor no   ■ Rather yes   ■ Definitely yes



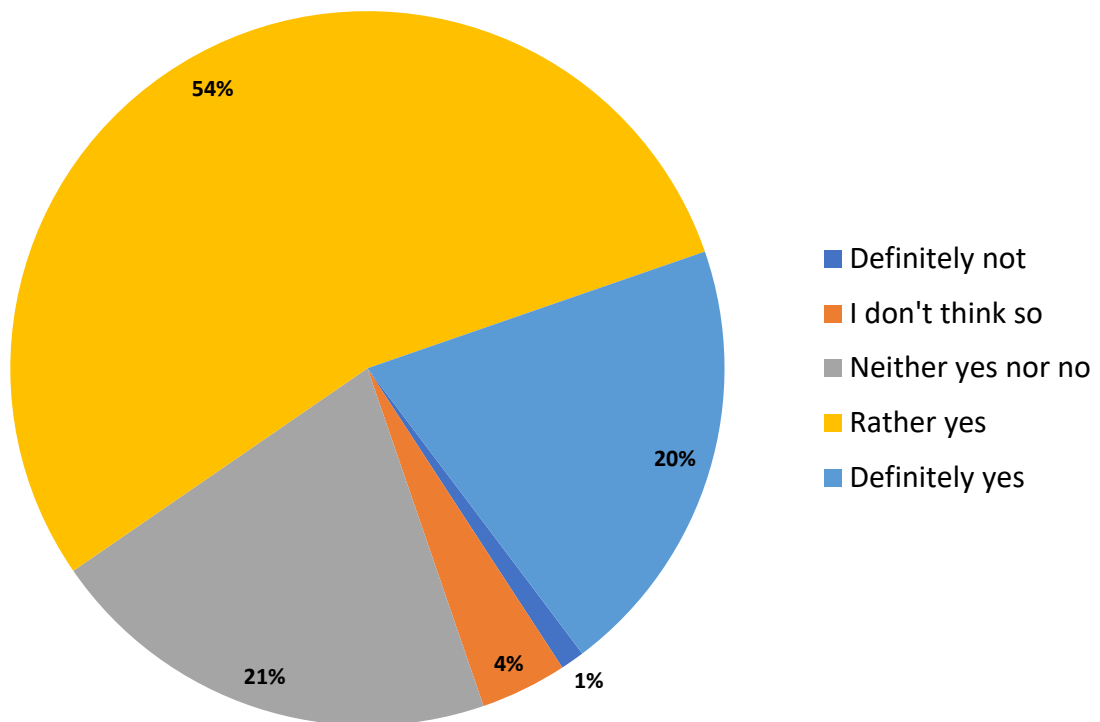
What type of packaging would make you buy healthy food? – attractive, aesthetic packaging



■ Definitely not   ■ I don't think so   ■ Neither yes nor no   ■ Rather yes   ■ Definitely yes

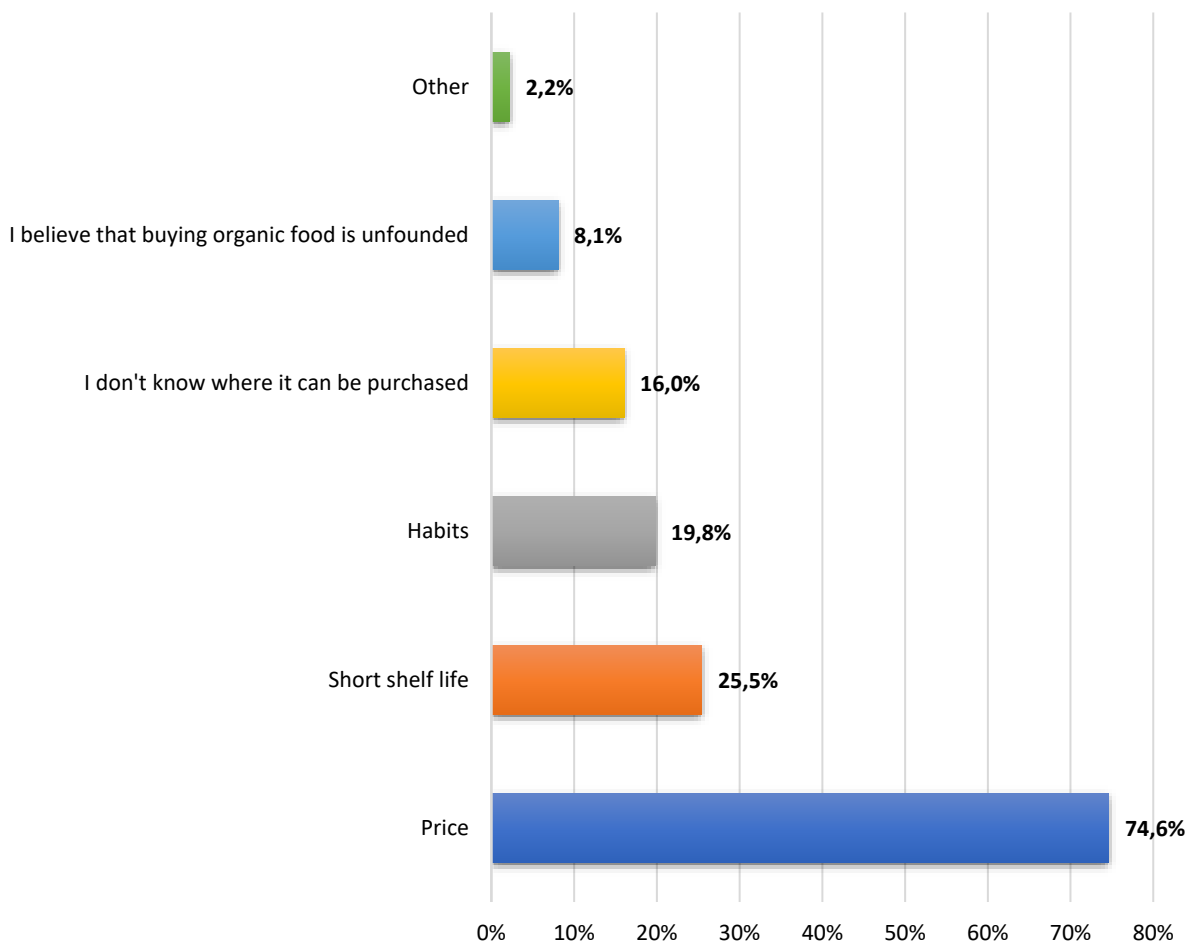


What type of packaging would make you buy healthy food? – packaging with a general indication that the product contains healthy ingredients



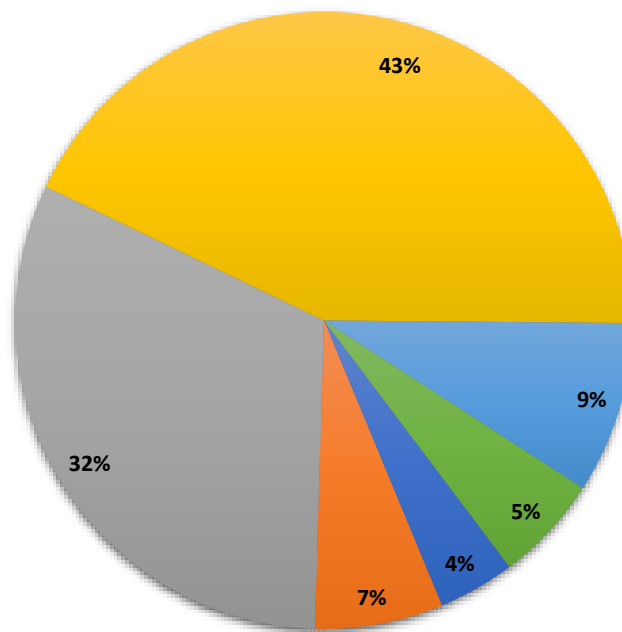


## What is the main barrier for you in purchasing ecological food?





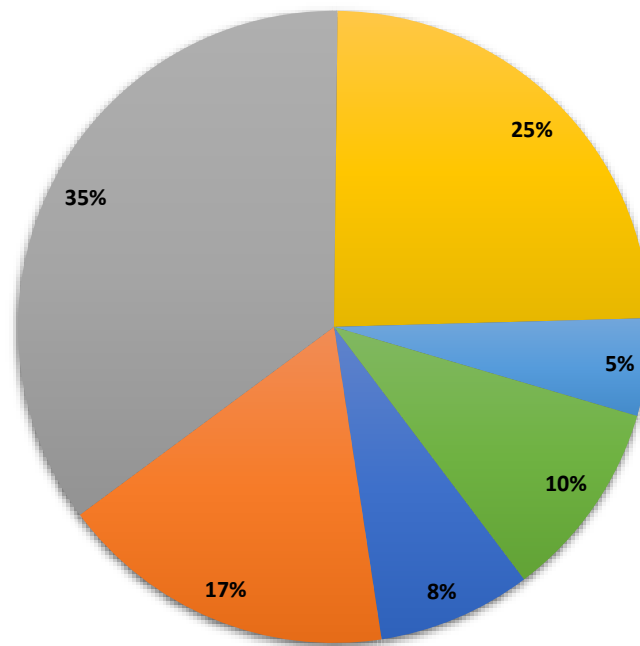
Product labelling with a sign such as "Ecological Production", "Try Fine Food", "Polish Product", "Quality Tradition", "Quality Assurance for Food Products" is a guarantee of its quality and safety.



- I definitely disagree
- I rather disagree
- I neither agree or disagree
- I rather agree
- I definitely agree
- I don't know / hard to say



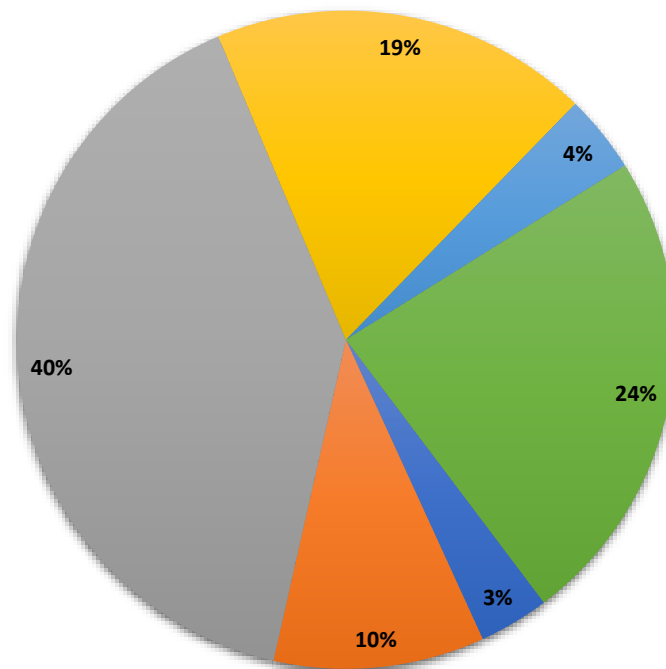
When choosing food products, I use food labelling systems such as GDA or Nutri\_score.



- I definitely disagree
- I rather disagree
- I neither agree or disagree
- I rather agree
- I definitely agree
- I don't know / hard to say



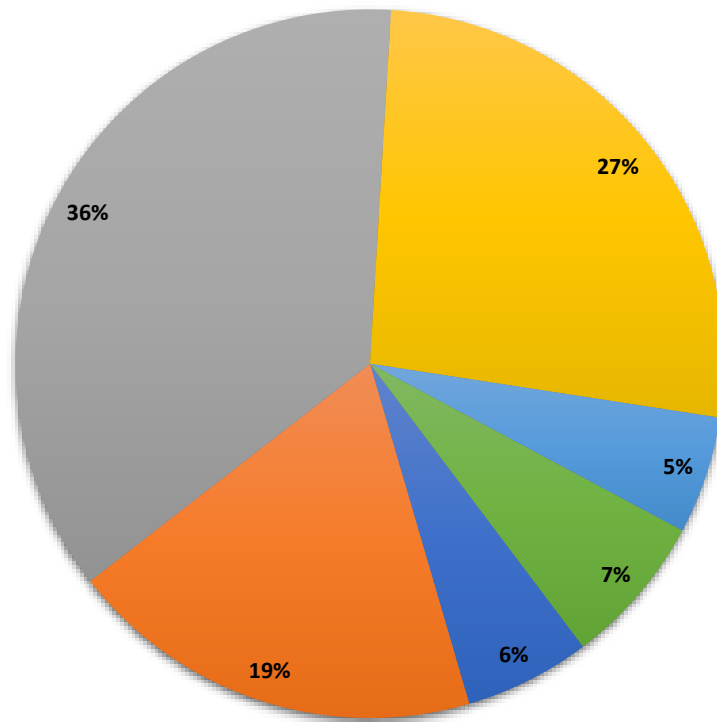
Food labelled with "Fairtrade" certificate is healthier than food without such a label.



- I definitely disagree
- I rather disagree
- I neither agree or disagree
- I rather agree
- I definitely agree
- I don't know / hard to say



Products registered as "Protected Designation of Origin" (e.g. Koryciński cheese, oscypek cheese, Grójeckie apples) are healthier than standard food.

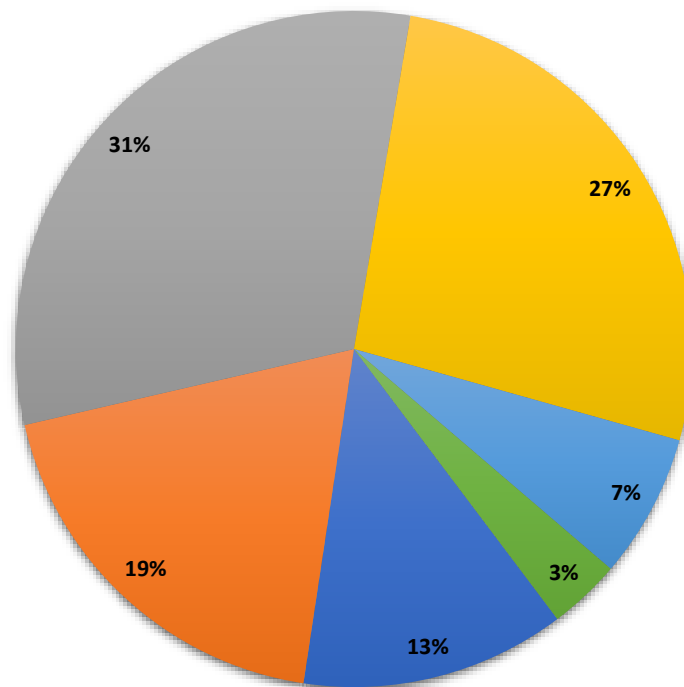


- I definitely disagree
- I rather disagree
- I neither agree or disagree
- I rather agree
- I definitely agree
- I don't know / hard to say



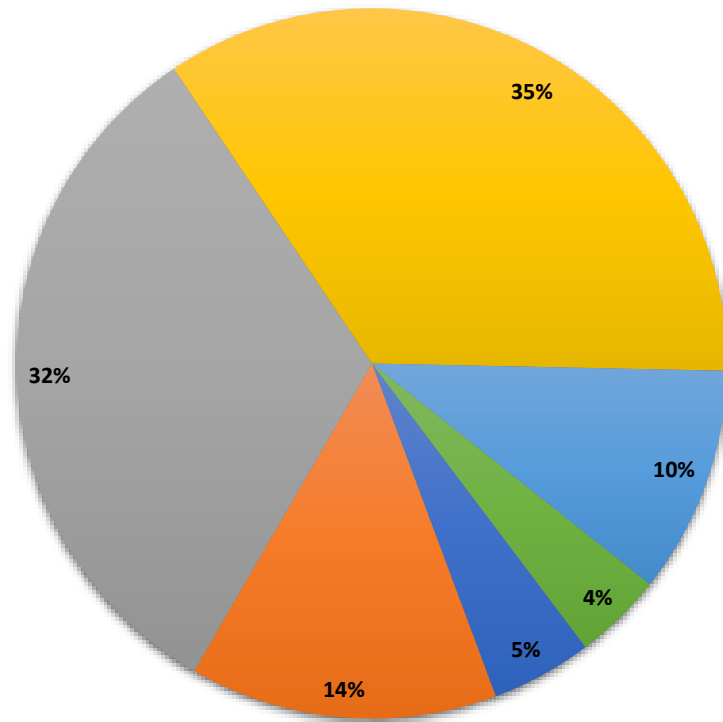


Among products belonging to the same category,  
more expensive products are better.



- I definitely disagree
- I rather disagree
- I neither agree or disagree
- I rather agree
- I definitely agree
- I don't know / hard to say

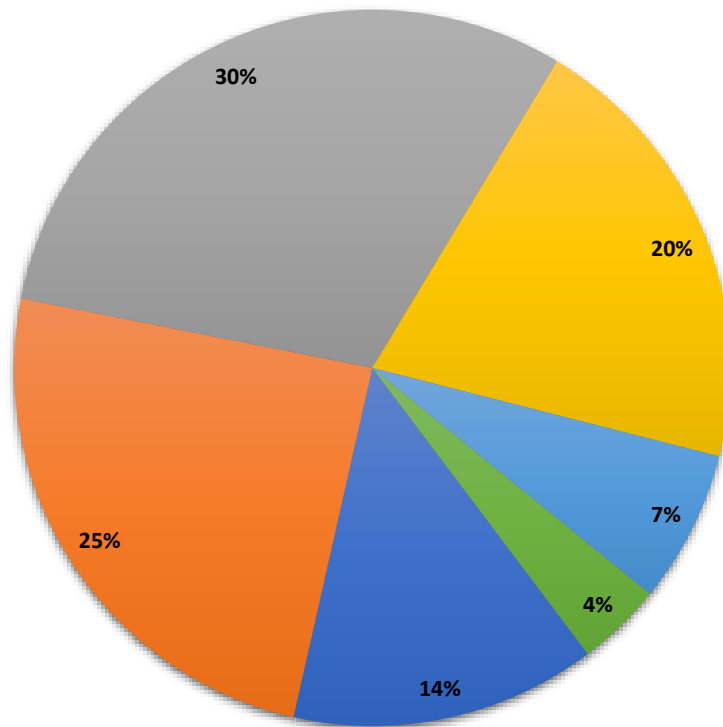
If ecological products were easily accessible, despite the higher price, I would choose them.



■ I definitely disagree      ■ I rather disagree      ■ I neither agree or disagree  
■ I rather agree      ■ I definitely agree      ■ I don't know / hard to say



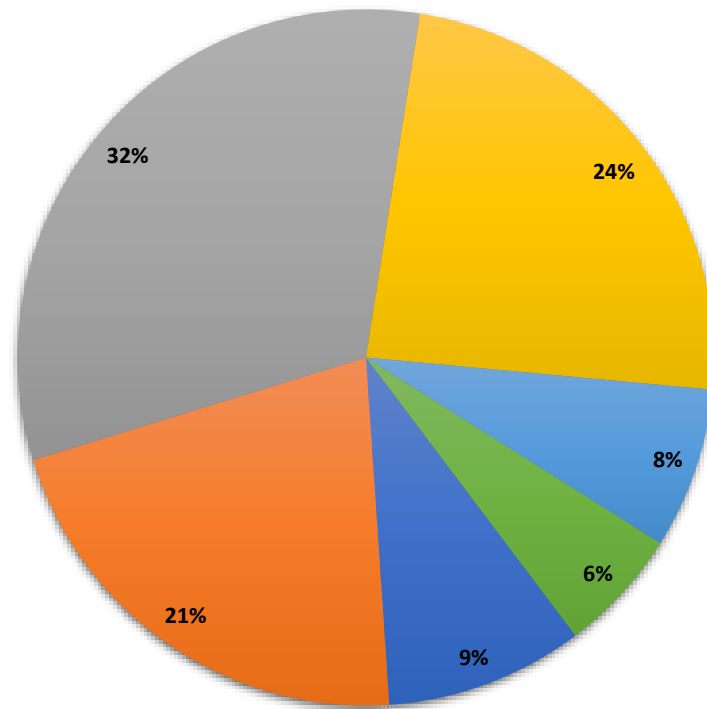
Even if the health food store is not near my place of residence, I will go there for everyday shopping.



- I definitely disagree
- I rather disagree
- I neither agree or disagree
- I rather agree
- I definitely agree
- I don't know / hard to say



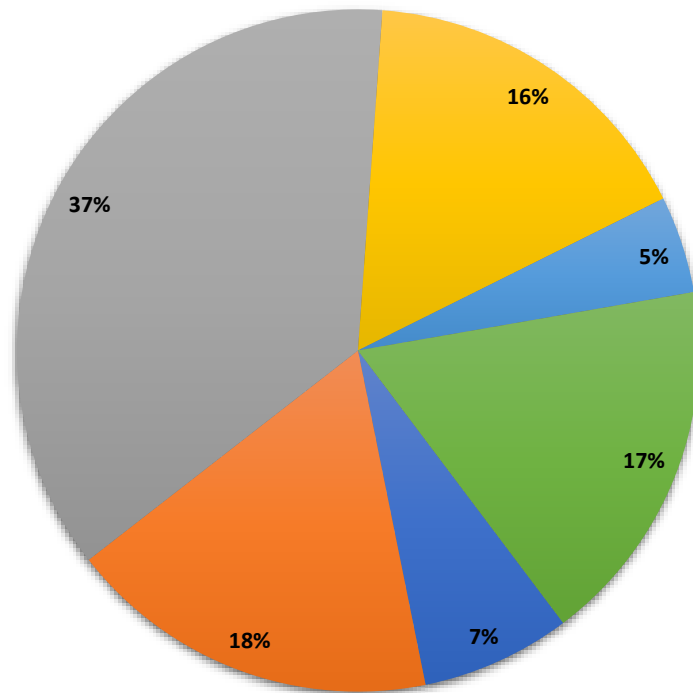
Vegetarian products are healthier than animal products and have a comparable nutritional value.



- I definitely disagree
- I rather disagree
- I neither agree or disagree
- I rather agree
- I definitely agree
- I don't know / hard to say



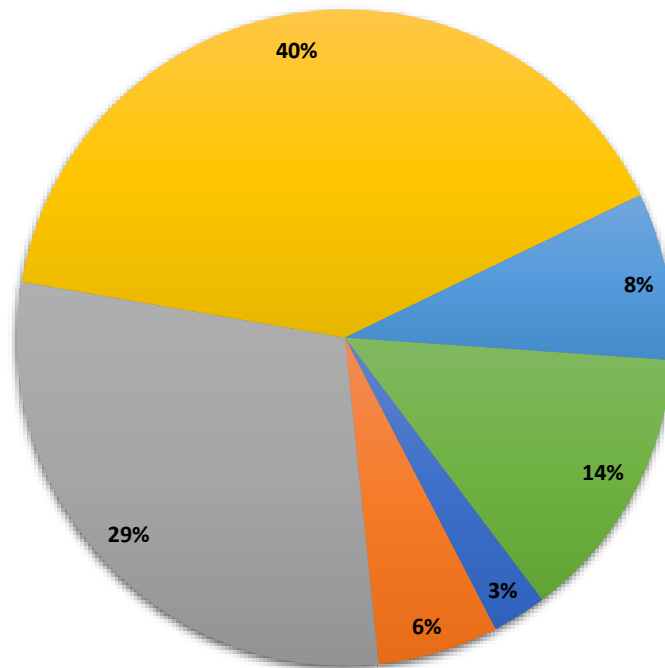
Food labelled as "superfood" has special health-promoting properties.



■ I definitely disagree    ■ I rather disagree    ■ I neither agree or disagree  
■ I rather agree    ■ I definitely agree    ■ I don't know / hard to say



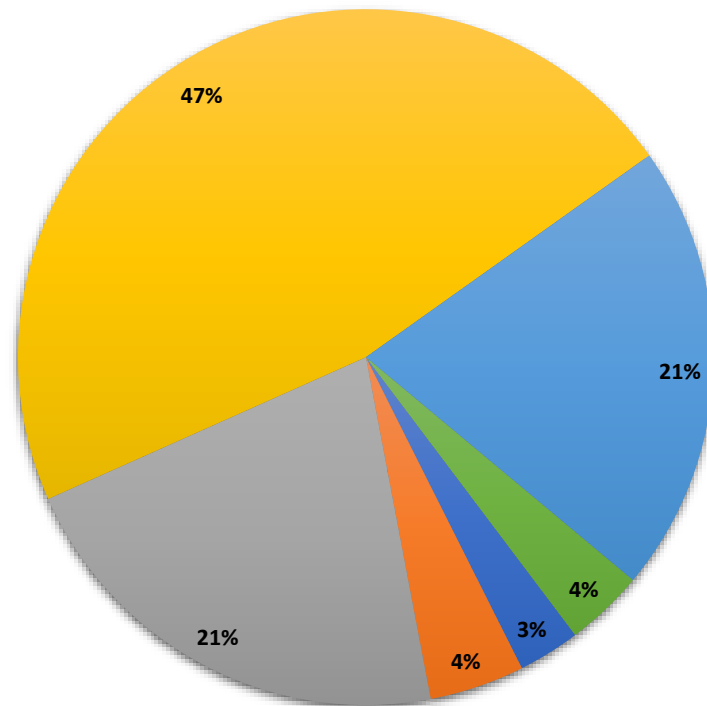
The quality system implemented in the processing company (e.g. HACCP) ensures food safety.



- I definitely disagree
- I rather disagree
- I neither agree or disagree
- I rather agree
- I definitely agree
- I don't know / hard to say

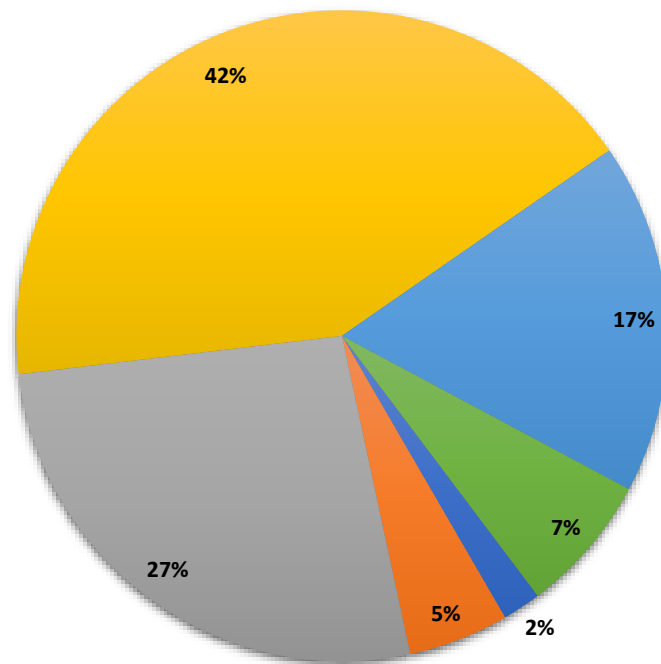


Locally produced food is healthier than mass food.



- I definitely disagree
- I rather disagree
- I neither agree or disagree
- I rather agree
- I definetly agree
- I don't know / hard to say

Food processing affects the content of pro -health and anti -synovial ingredients – i.e. those that partly or completely limit the use of nutritional value of products by the human body.

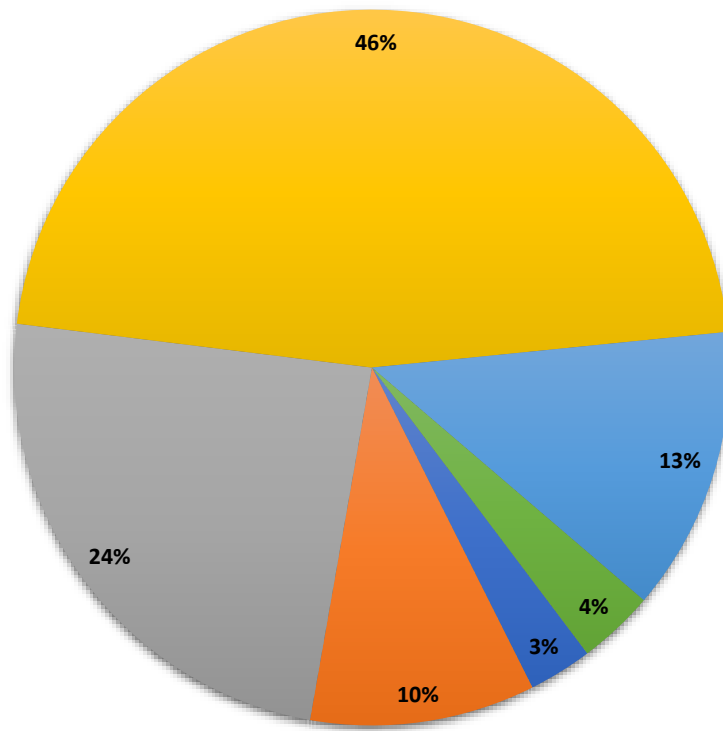


■ I definitely disagree      ■ I rather disagree      ■ I neither agree or disagree  
■ I rather agree      ■ I definetly agree      ■ I don't know / hard to say





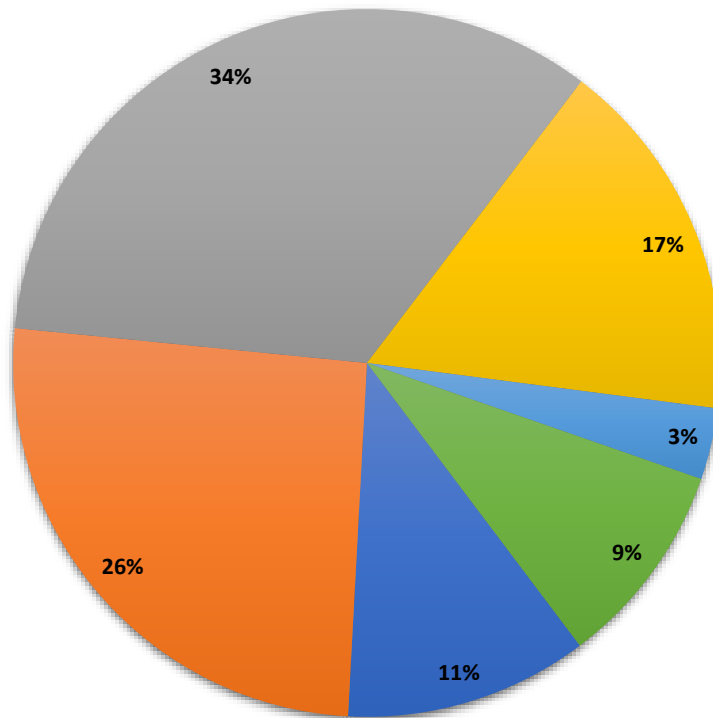
Low-fat food is healthier than standard food.



- I definitely disagree
- I rather disagree
- I neither agree or disagree
- I rather agree
- I definetly agree
- I don't know / hard to say



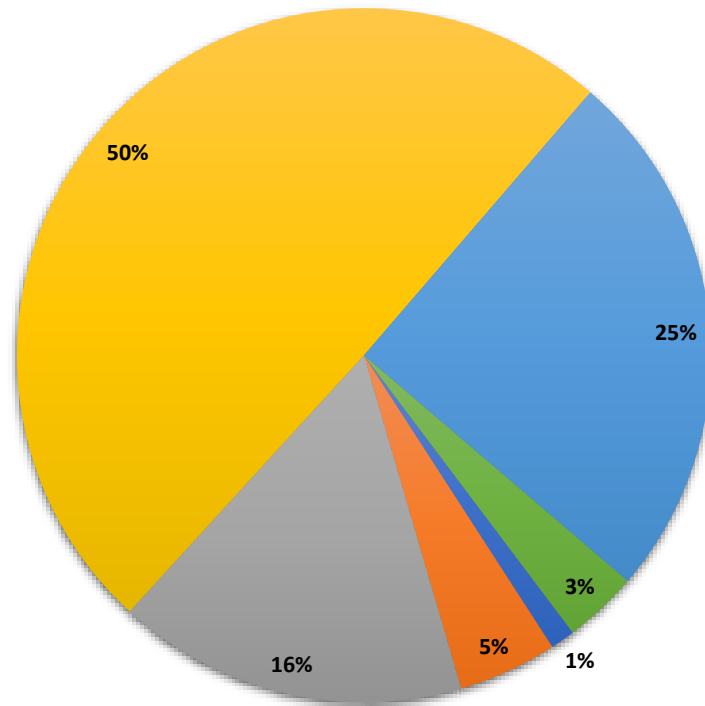
Low-protein food is healthier than standard food.



- I definitely disagree
- I rather disagree
- I neither agree or disagree
- I rather agree
- I definitely agree
- I don't know / hard to say



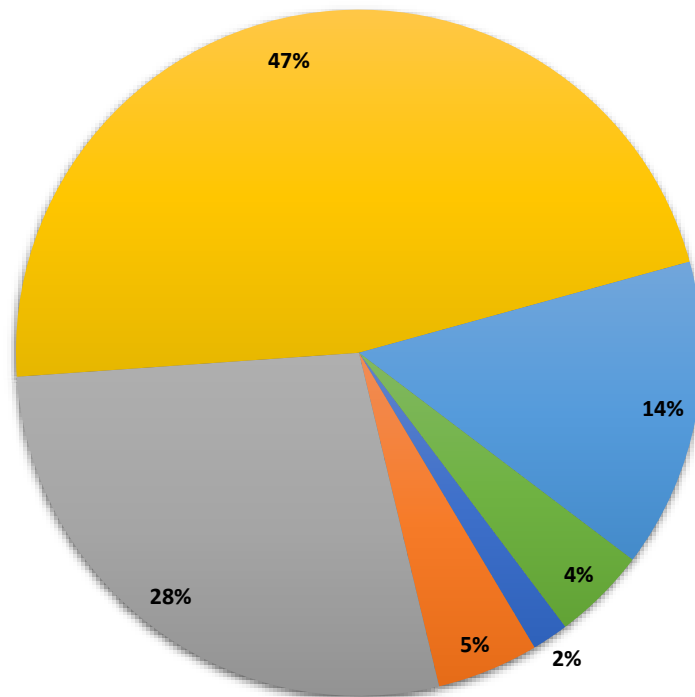
Food with low sugar content is healthier than standard food.



- I definitely disagree
- I rather disagree
- I neither agree or disagree
- I rather agree
- I definitely agree
- I don't know / hard to say

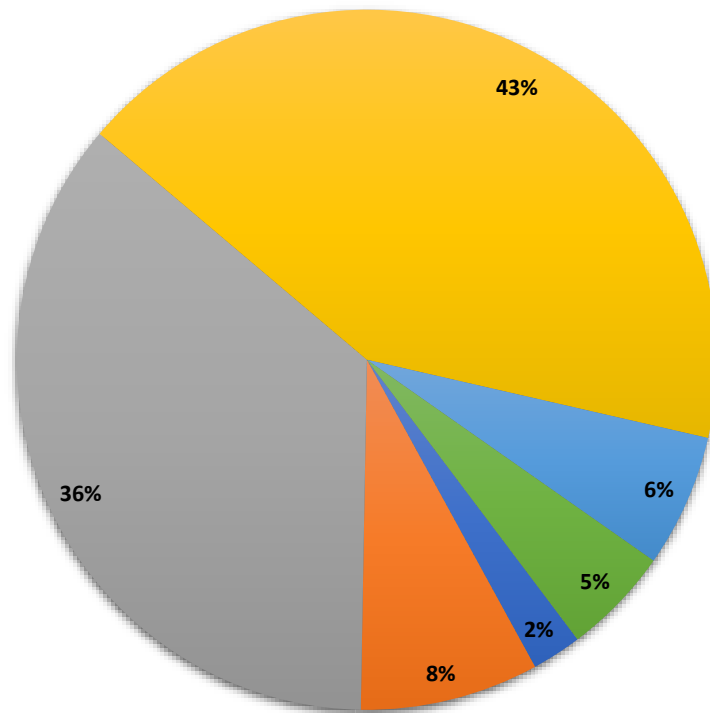


### Food with high dietary fiber is healthier than standard food.



- I definitely disagree
- I rather disagree
- I neither agree or disagree
- I rather agree
- I definetly agree
- I don't know / hard to say

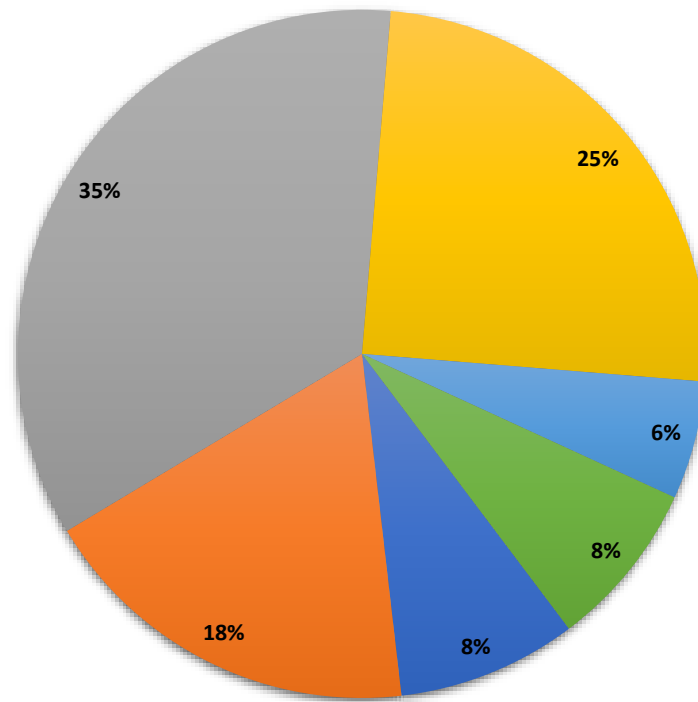
Food labelled as a source of a specific ingredient (e.g. vitamins, minerals) is healthier than standard food.



■ I definitely disagree      ■ I rather disagree      ■ I neither agree or disagree  
■ I rather agree      ■ I definitely agree      ■ I don't know / hard to say

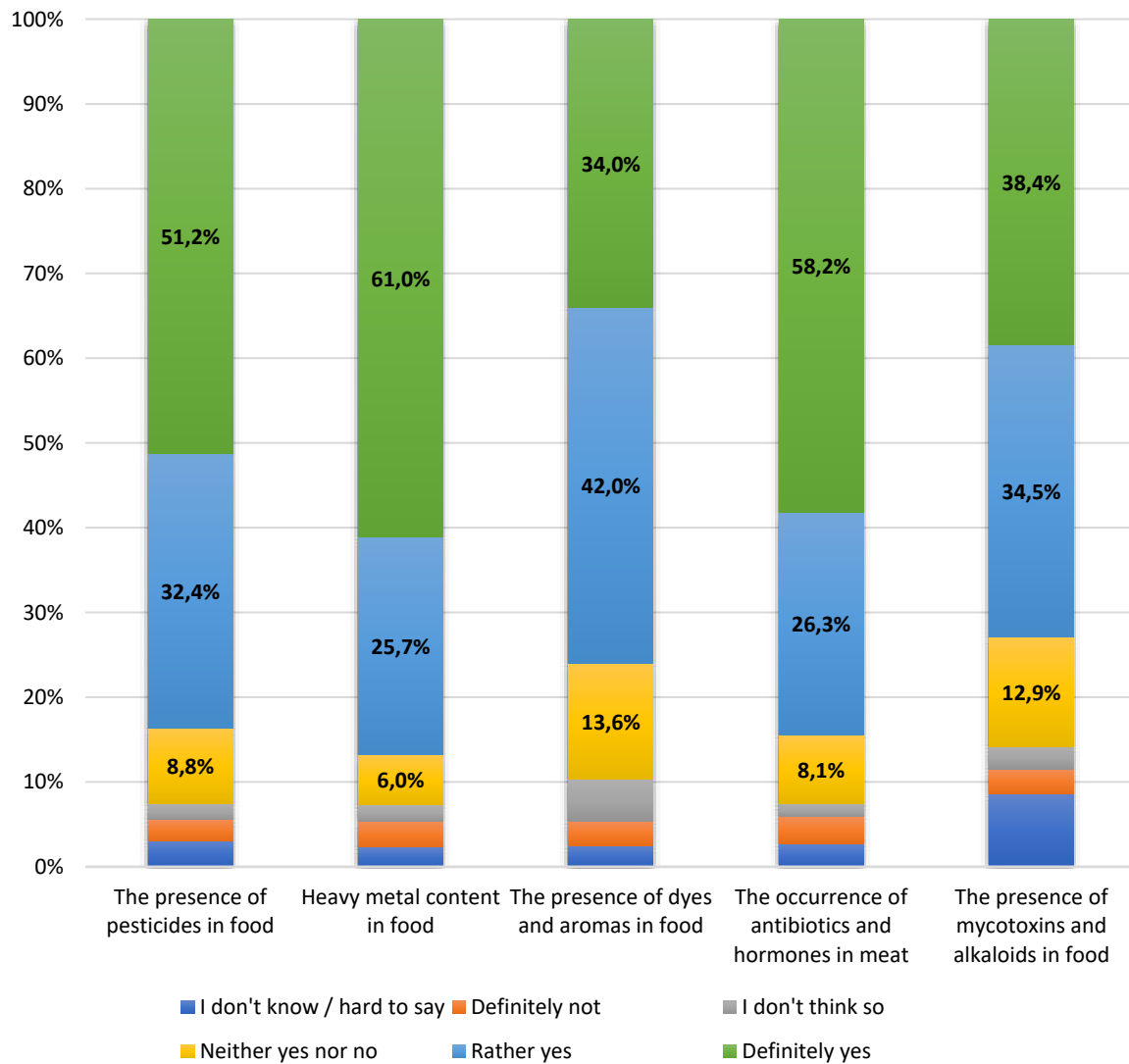


Food labelled as "gluten-free" is healthier than standard food.



■ I definitely disagree      ■ I rather disagree      ■ I neither agree or disagree  
■ I rather agree      ■ I definitely agree      ■ I don't know / hard to say

### To what extent each of the following issues raises your anxiety.

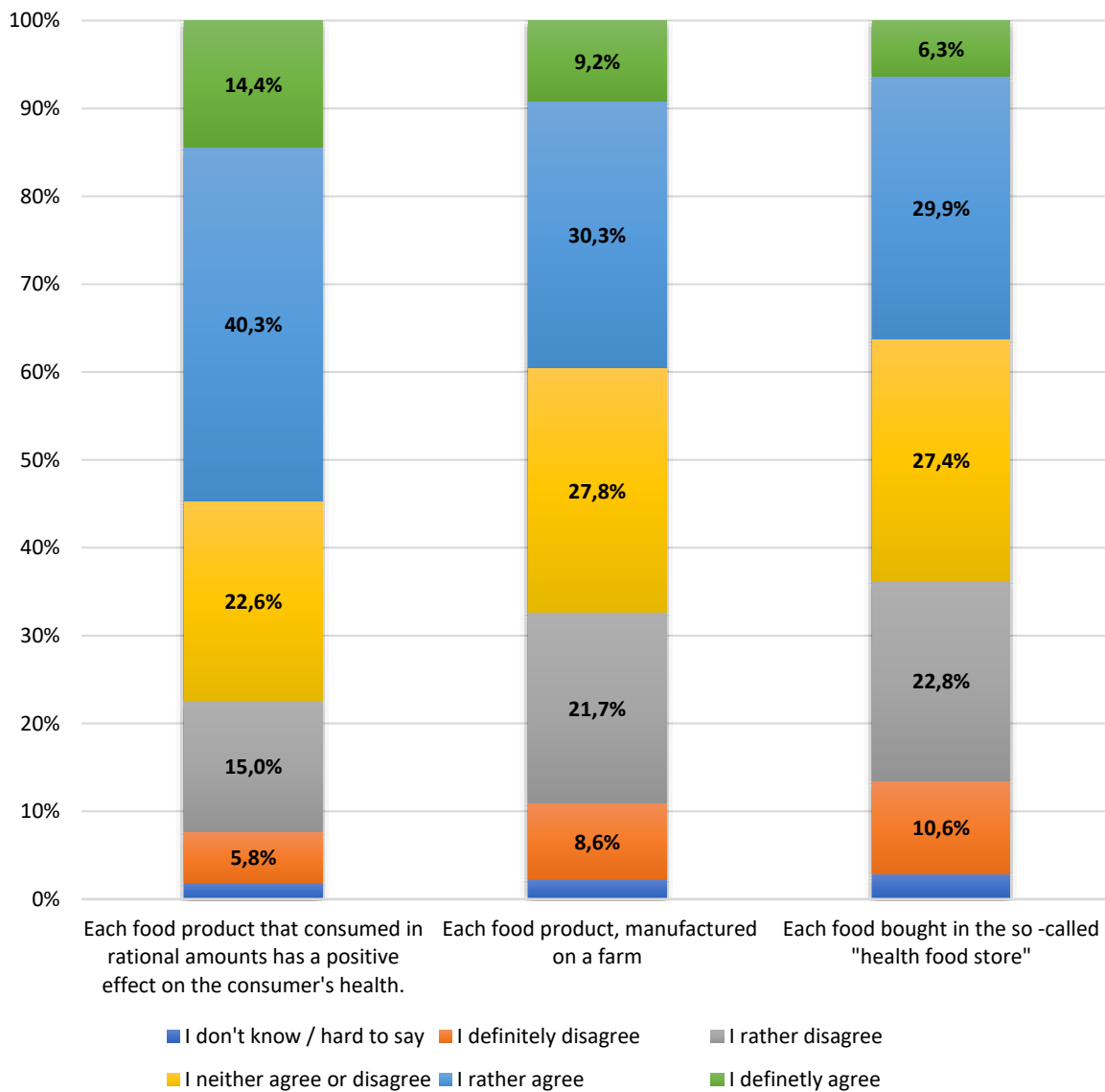




Spółeczna percepcja zdrowej żywności w świetle interdyscyplinarnej pewności naukowej

OBJ

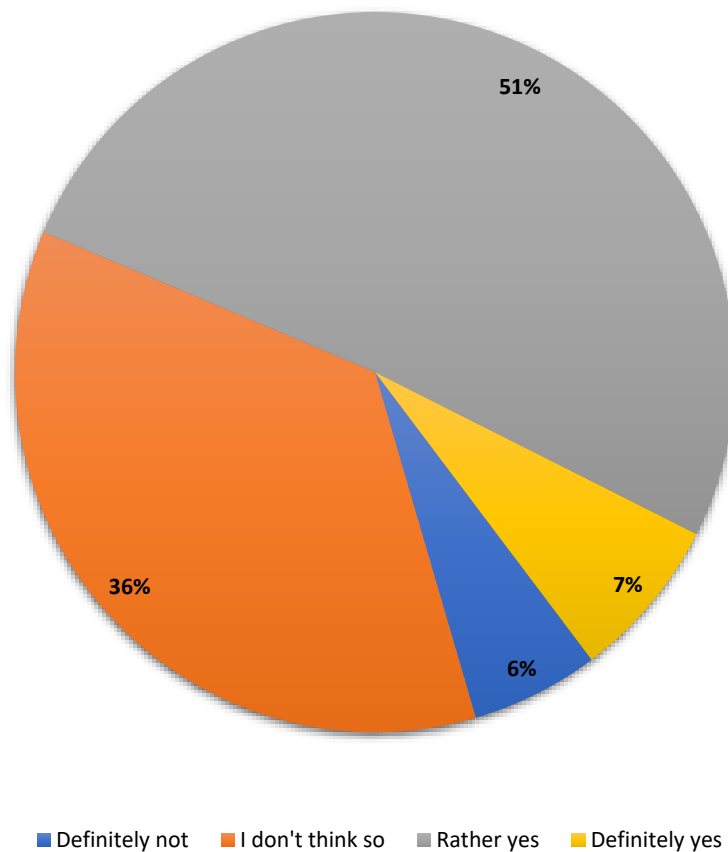
Healthy food is:





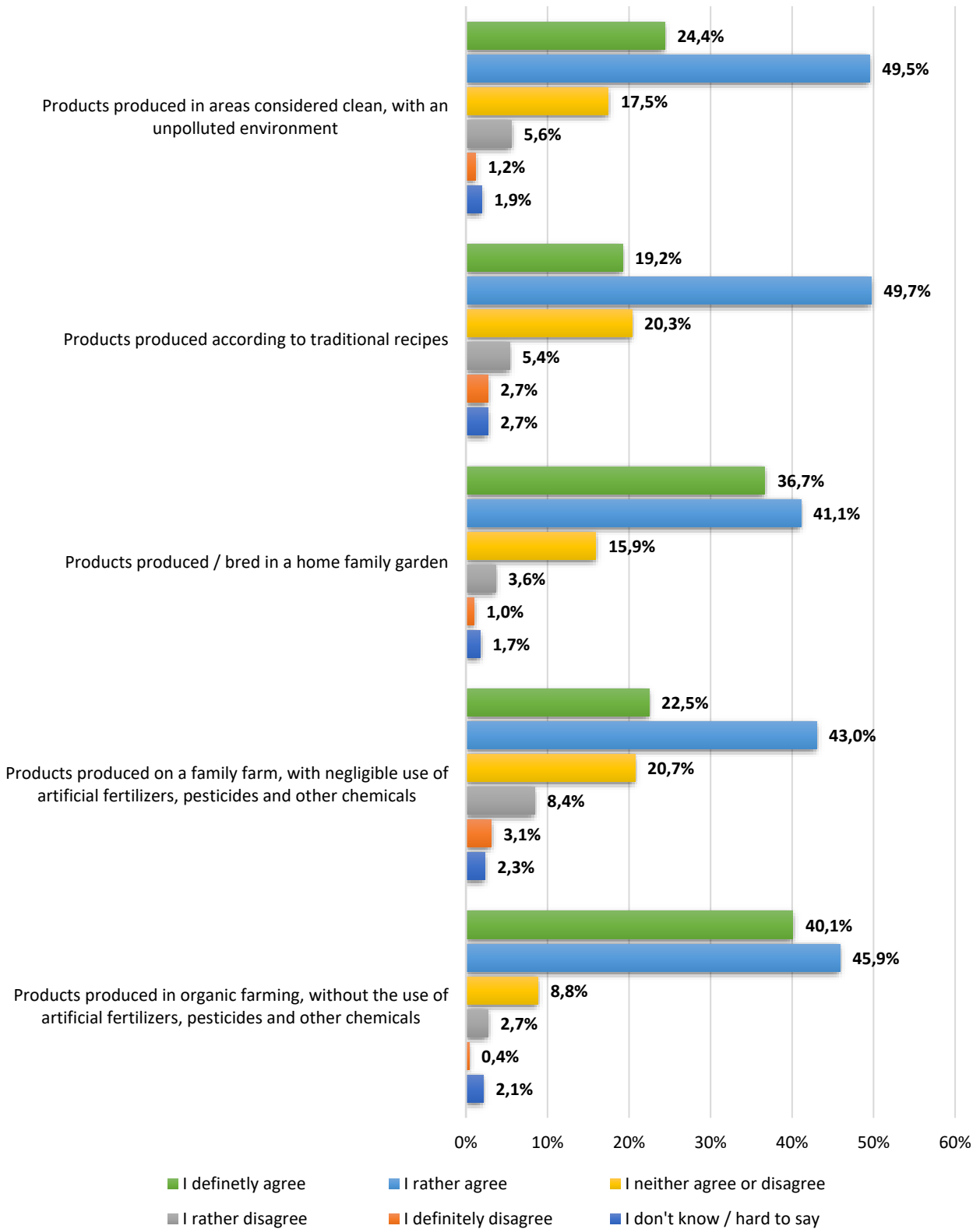


Do you think the concept of "healthy food" and "safe food" mean the same?



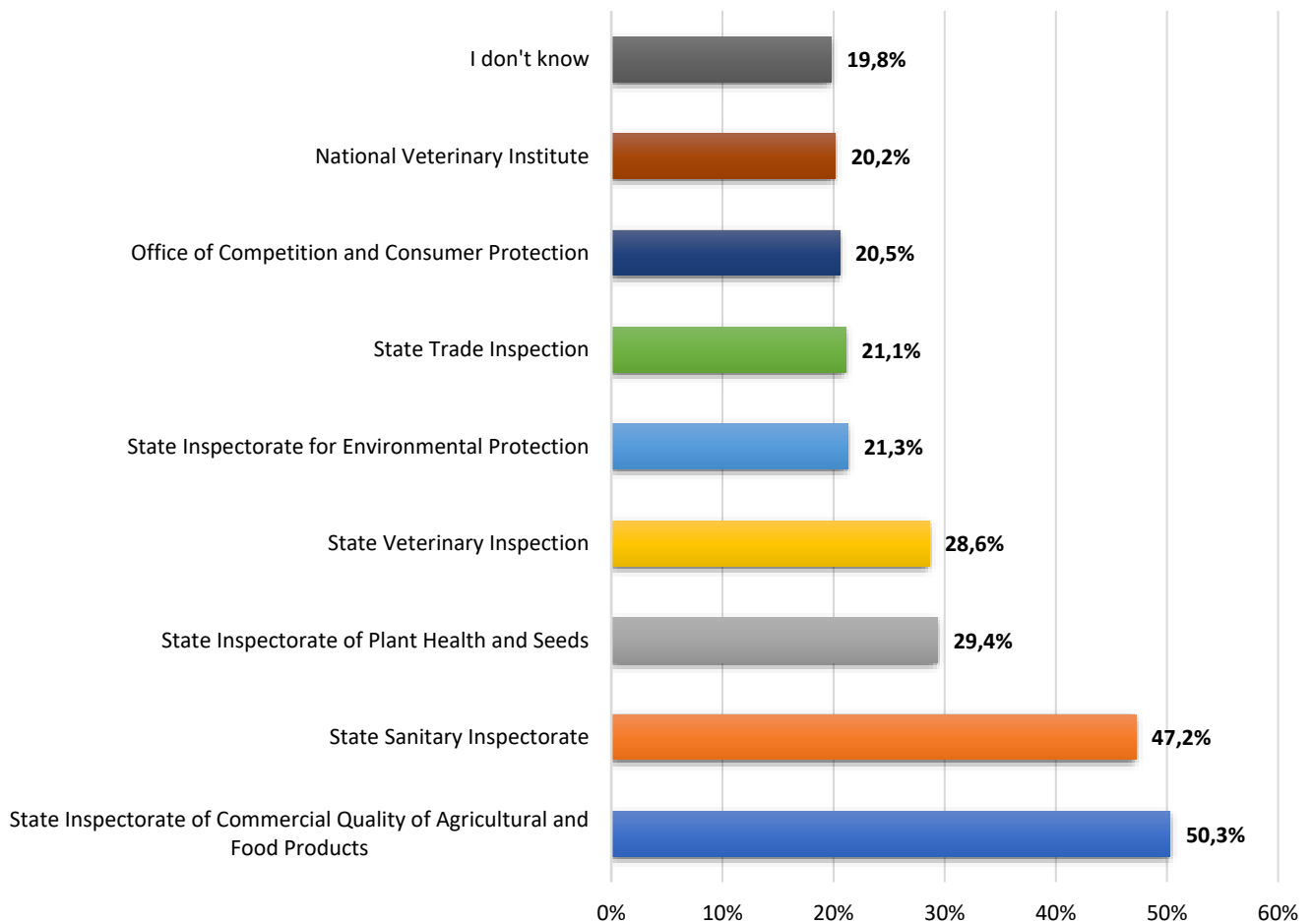


## Ecological food is



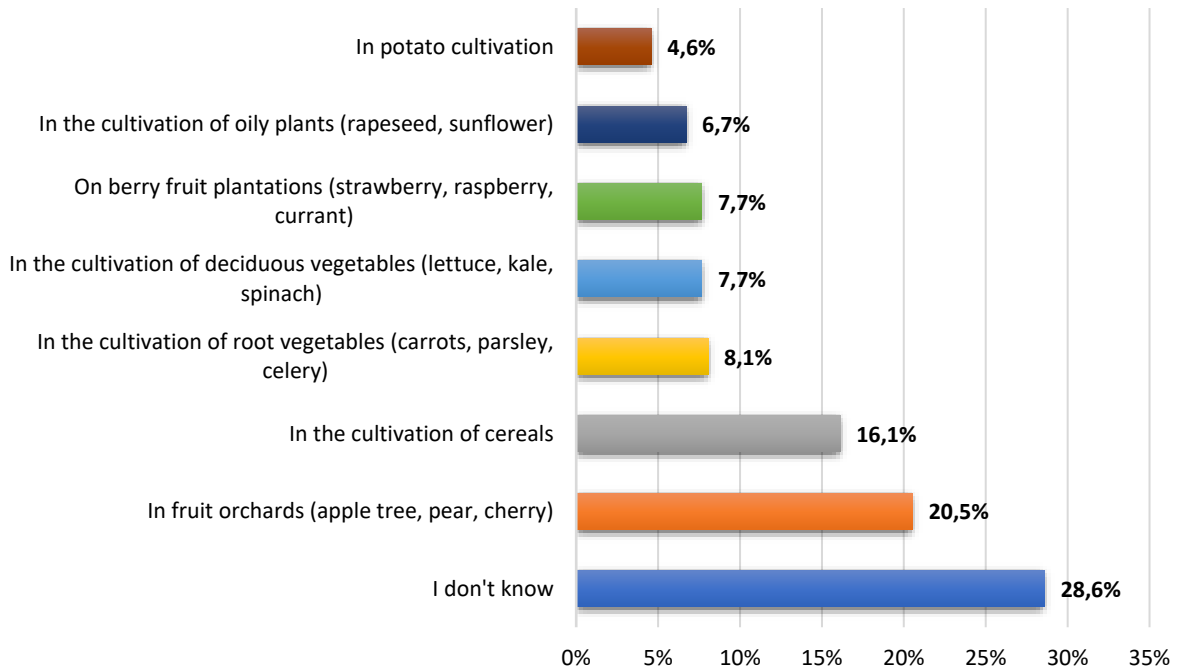


Which of the following institutions, to your knowledge, are responsible for the quality and safety of food in Poland?

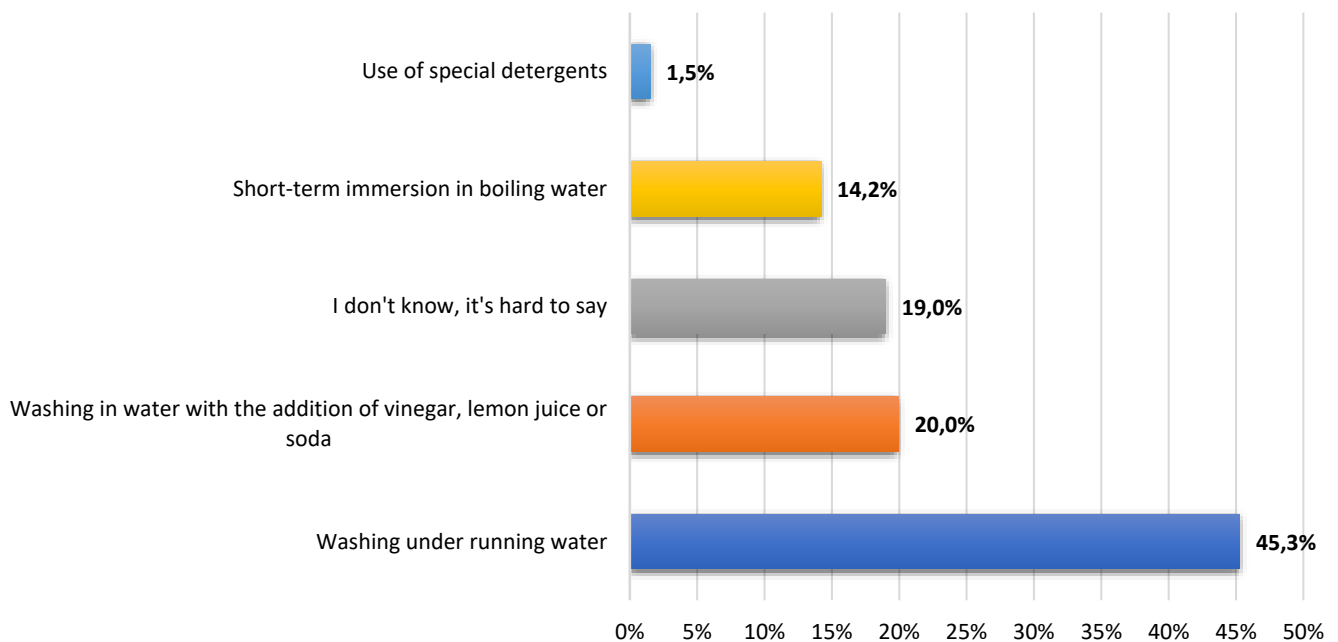




## Where you think the most pesticides are used?

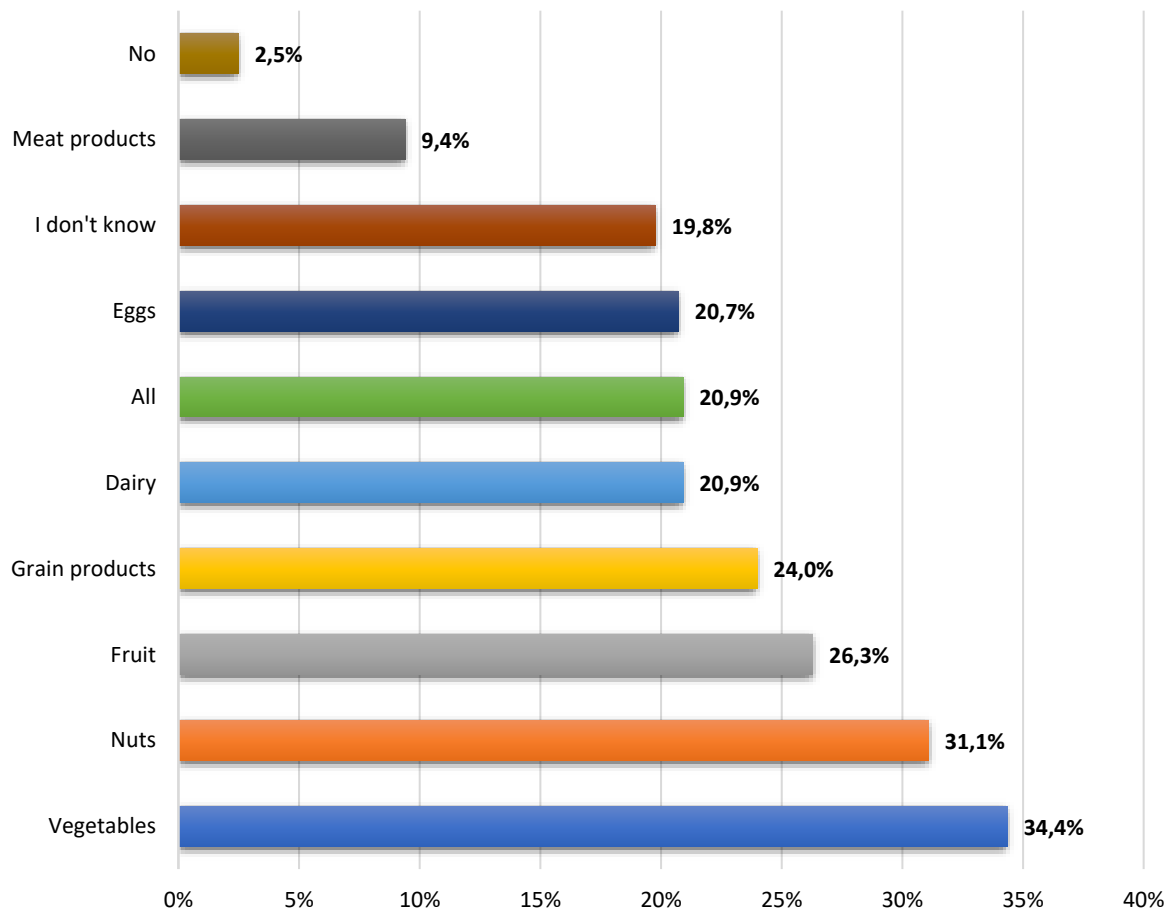


## The most effective home way to get rid of pesticides from the surface of fruit and vegetables is:



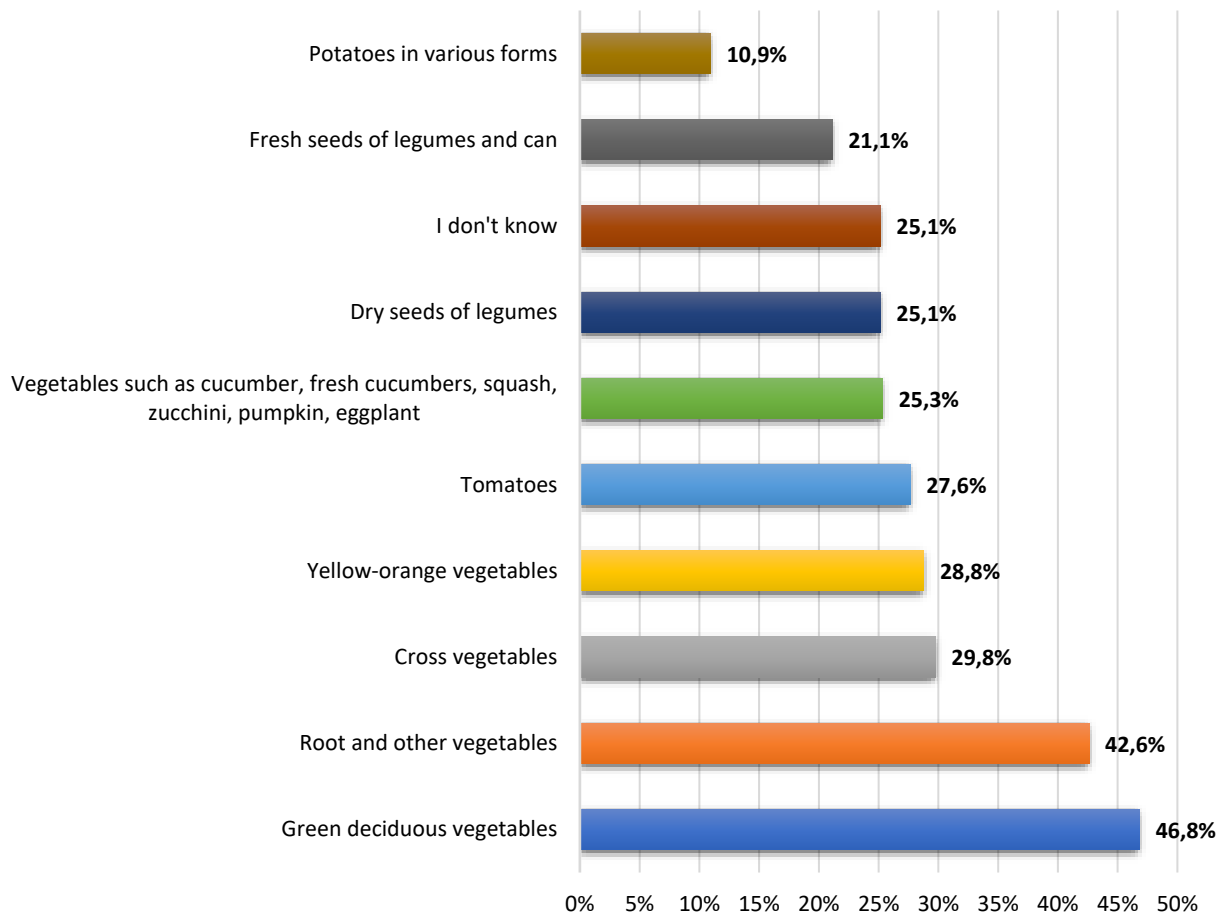


Which product groups so-called healthy food are characterized by a higher content of minerals beneficial to health compared to their counterparts, widely available at sales points?



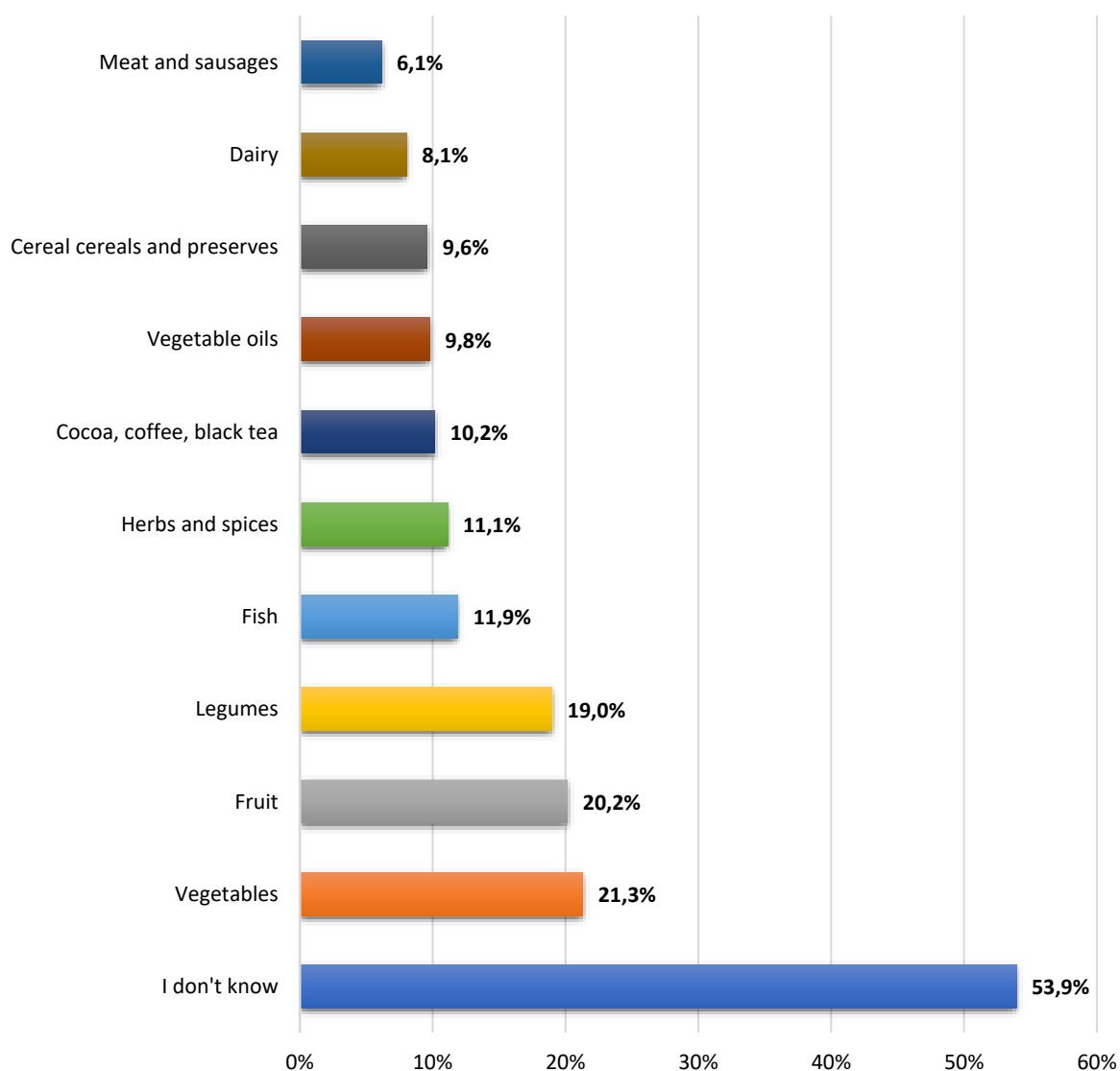


## Which vegetables have the most favorable content of minerals?



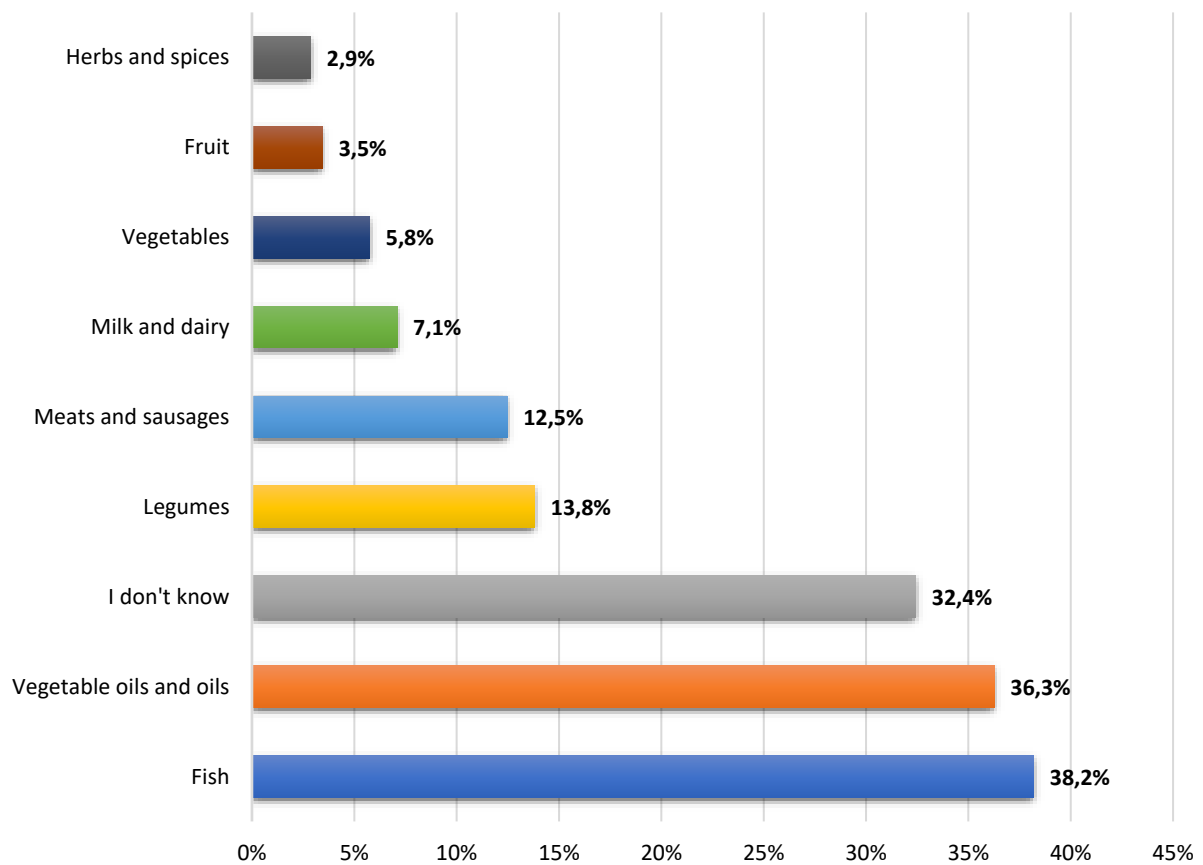


### A valuable source of phenolic compounds in the human diet are:





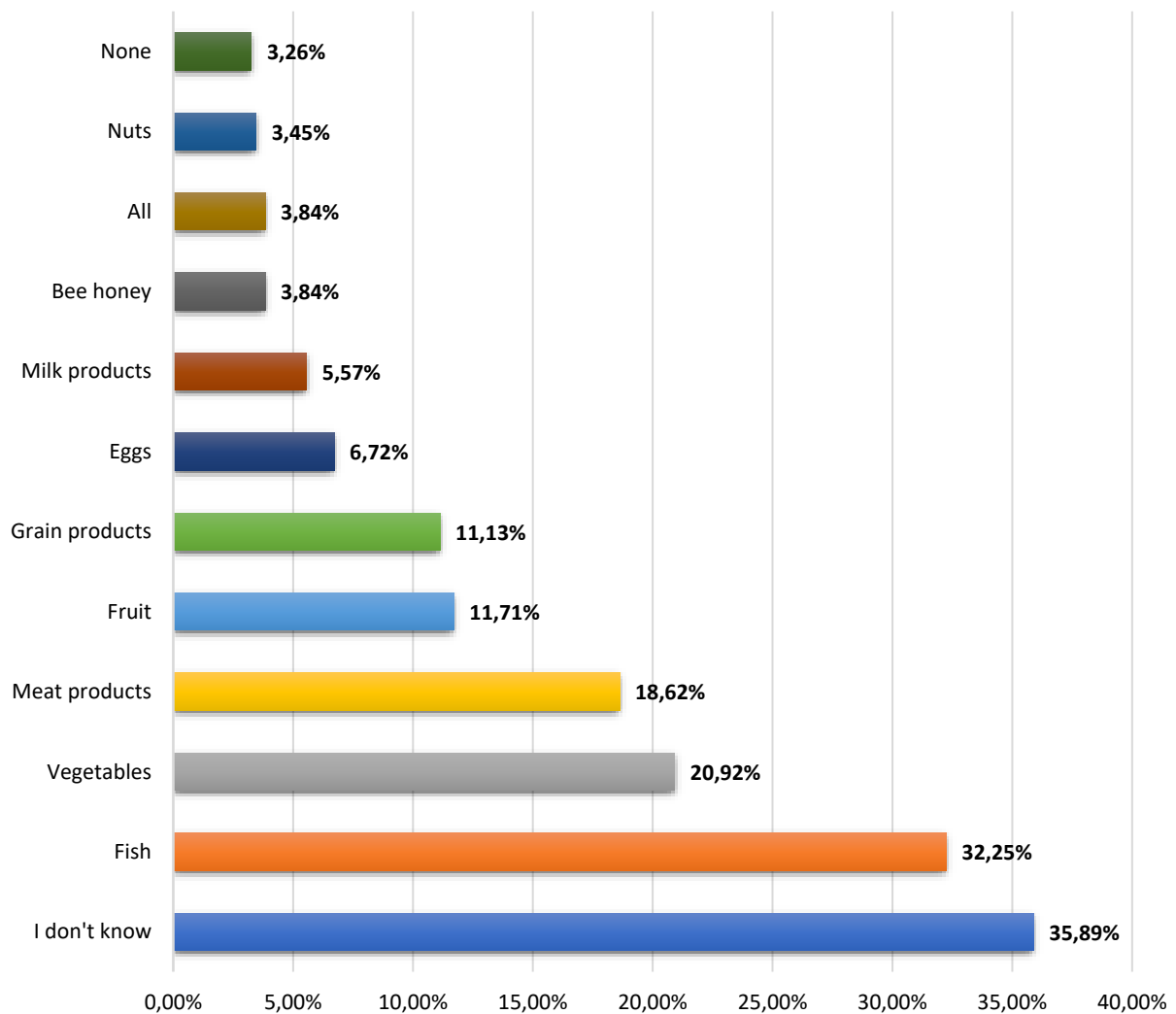
### The most unsaturated fatty acids are found in:





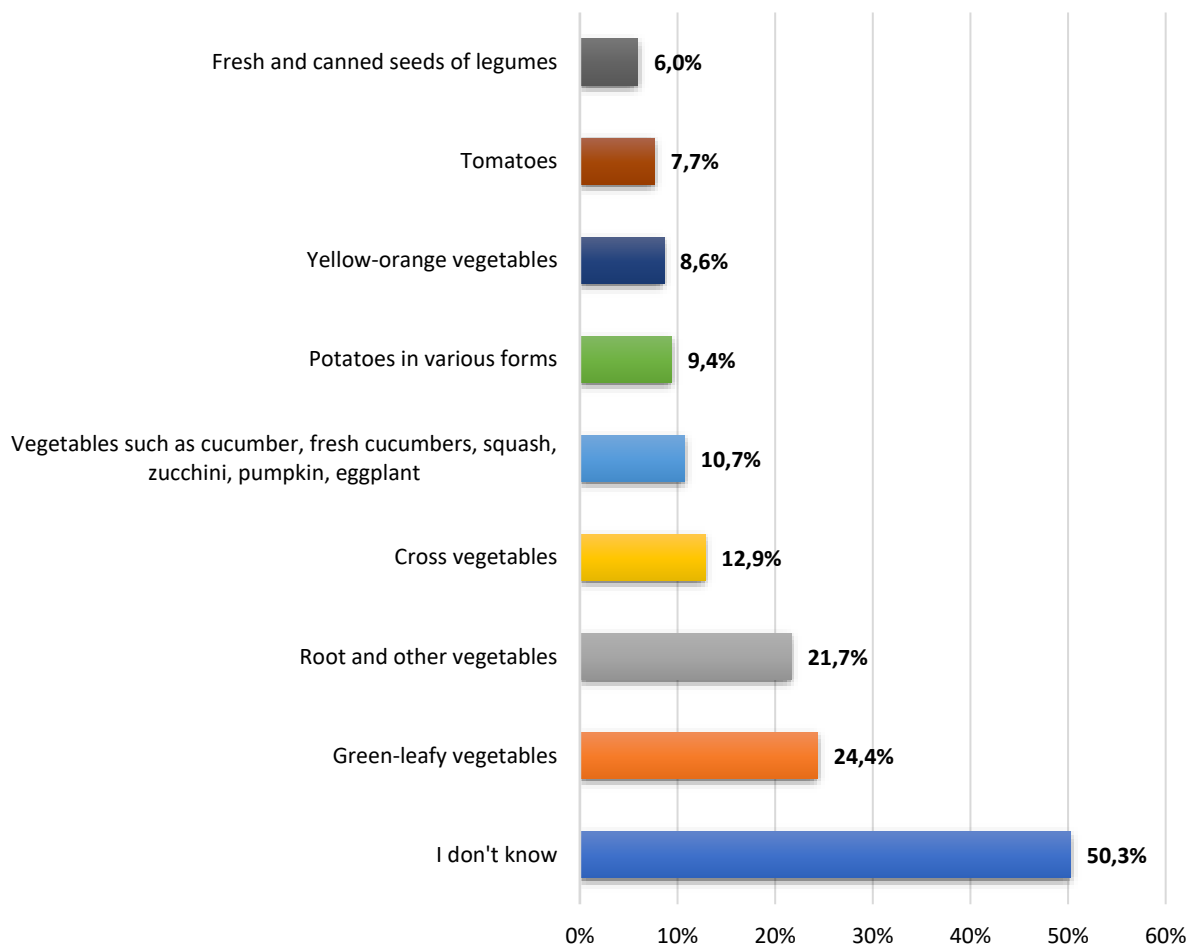


Which groups of conventional food products are characterized by the highest content of minerals unfavorable to health compared to so-called products healthy food?



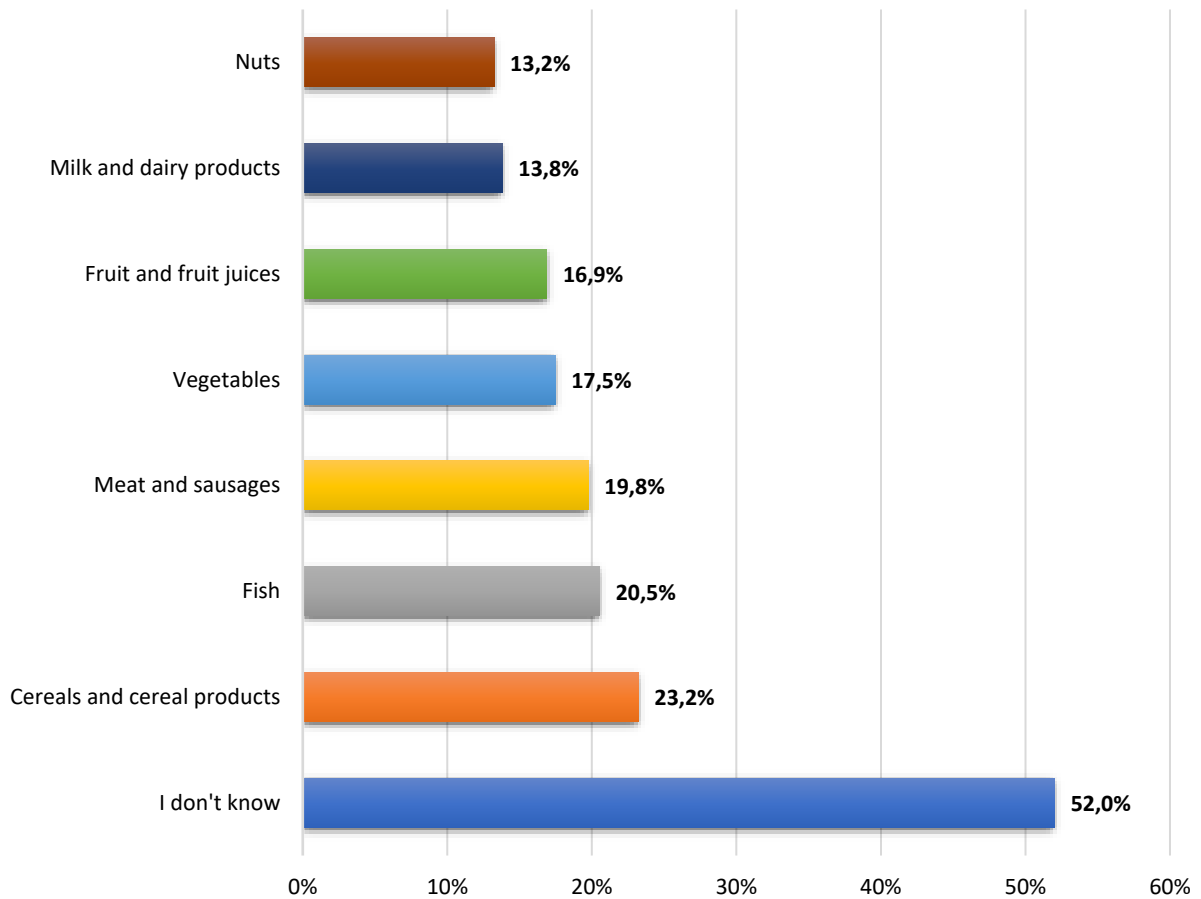


### Which vegetables have the greatest possibility of accumulating heavy metals?

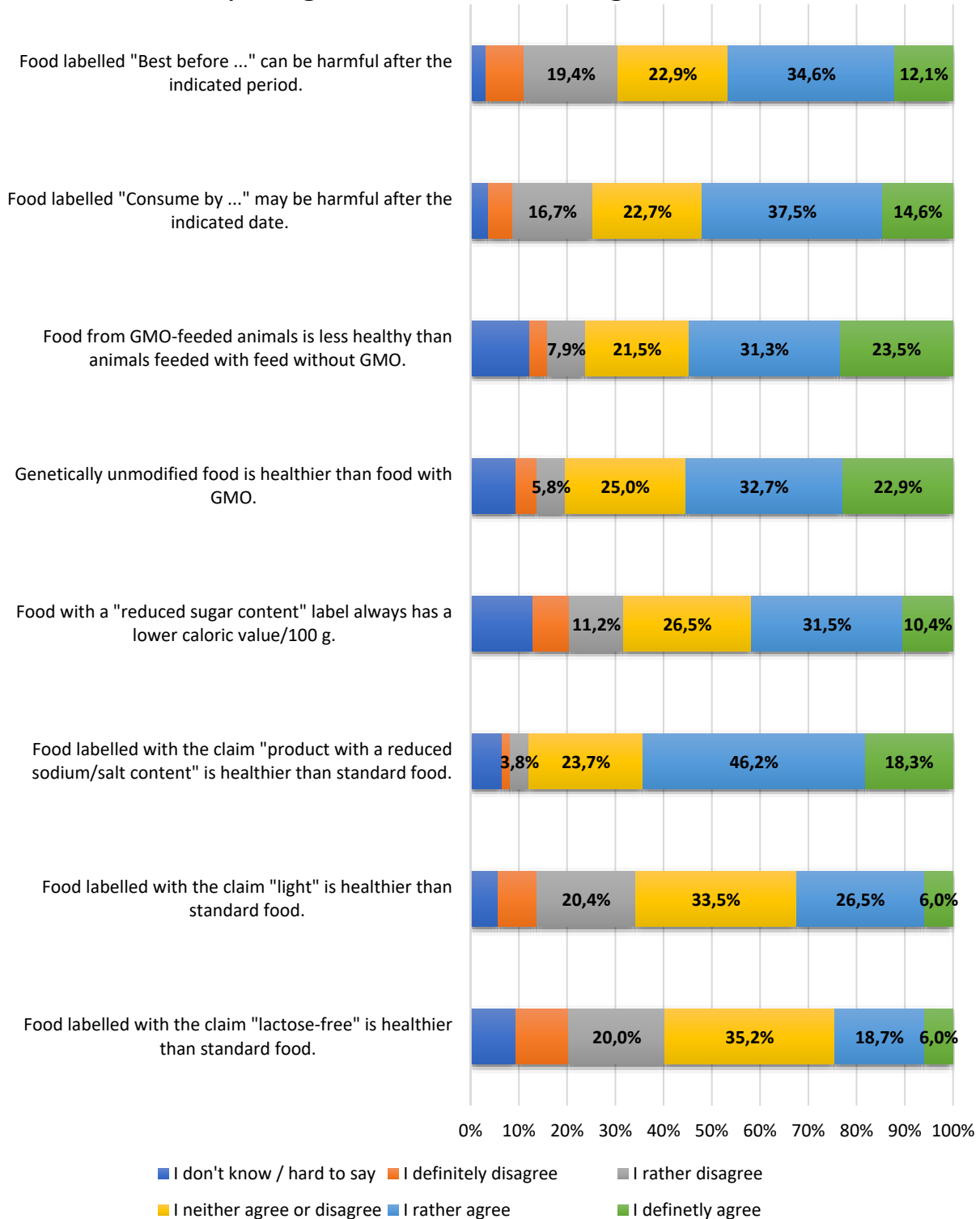




### Which products that can be characterized by the presence of mycotoxins?

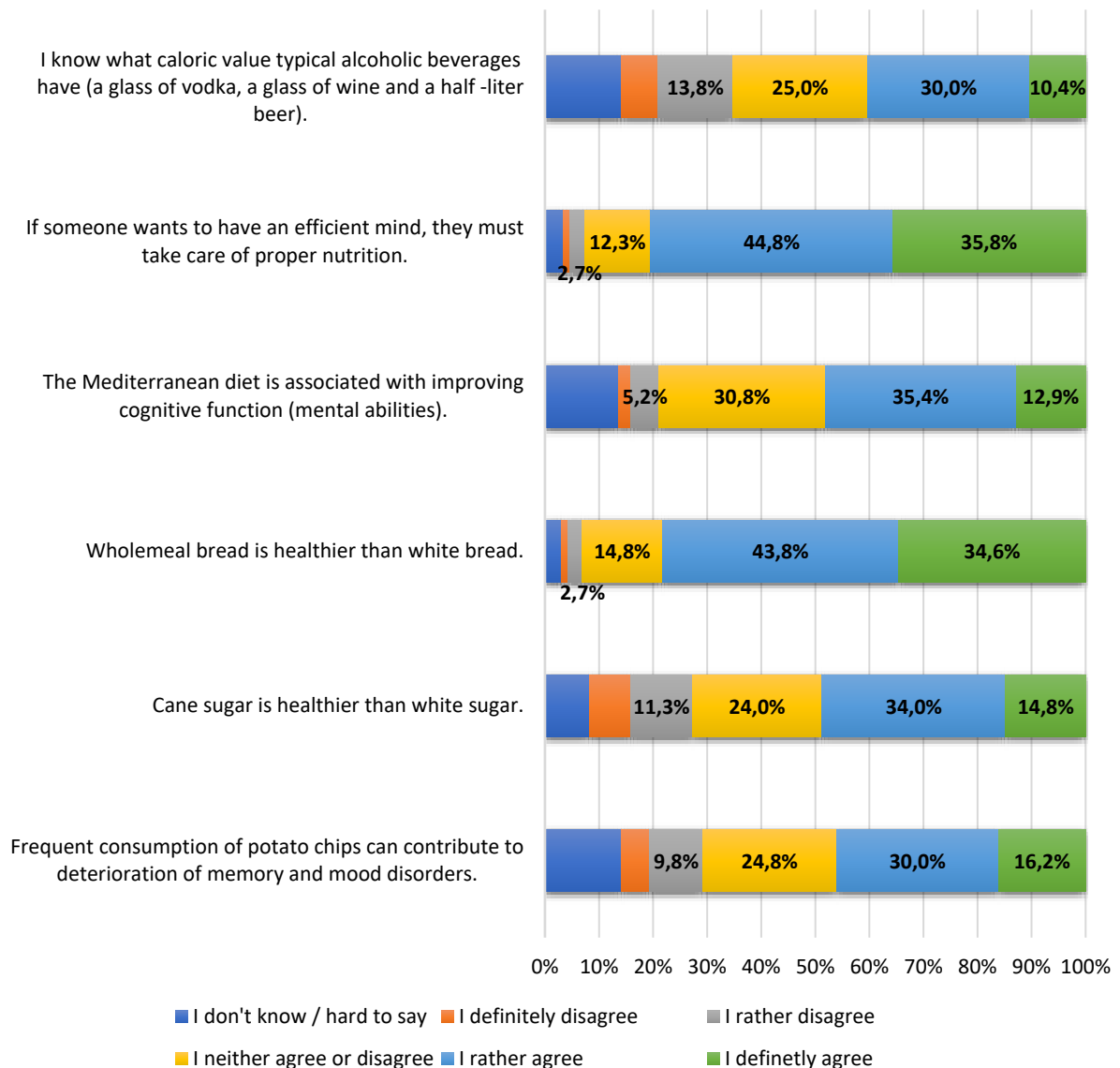


## Do you agree with the following statements?



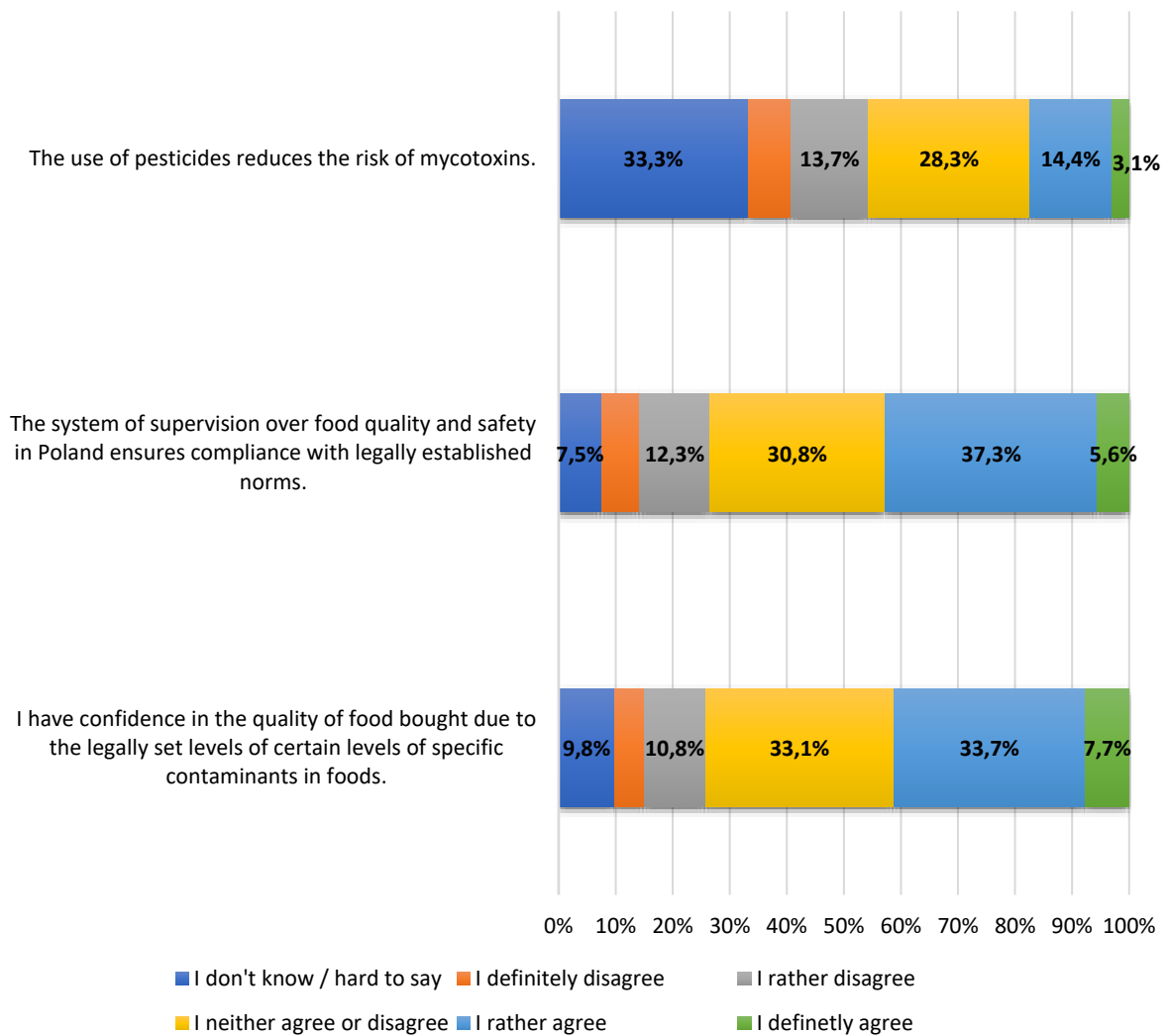


## Do you agree with the following statements?



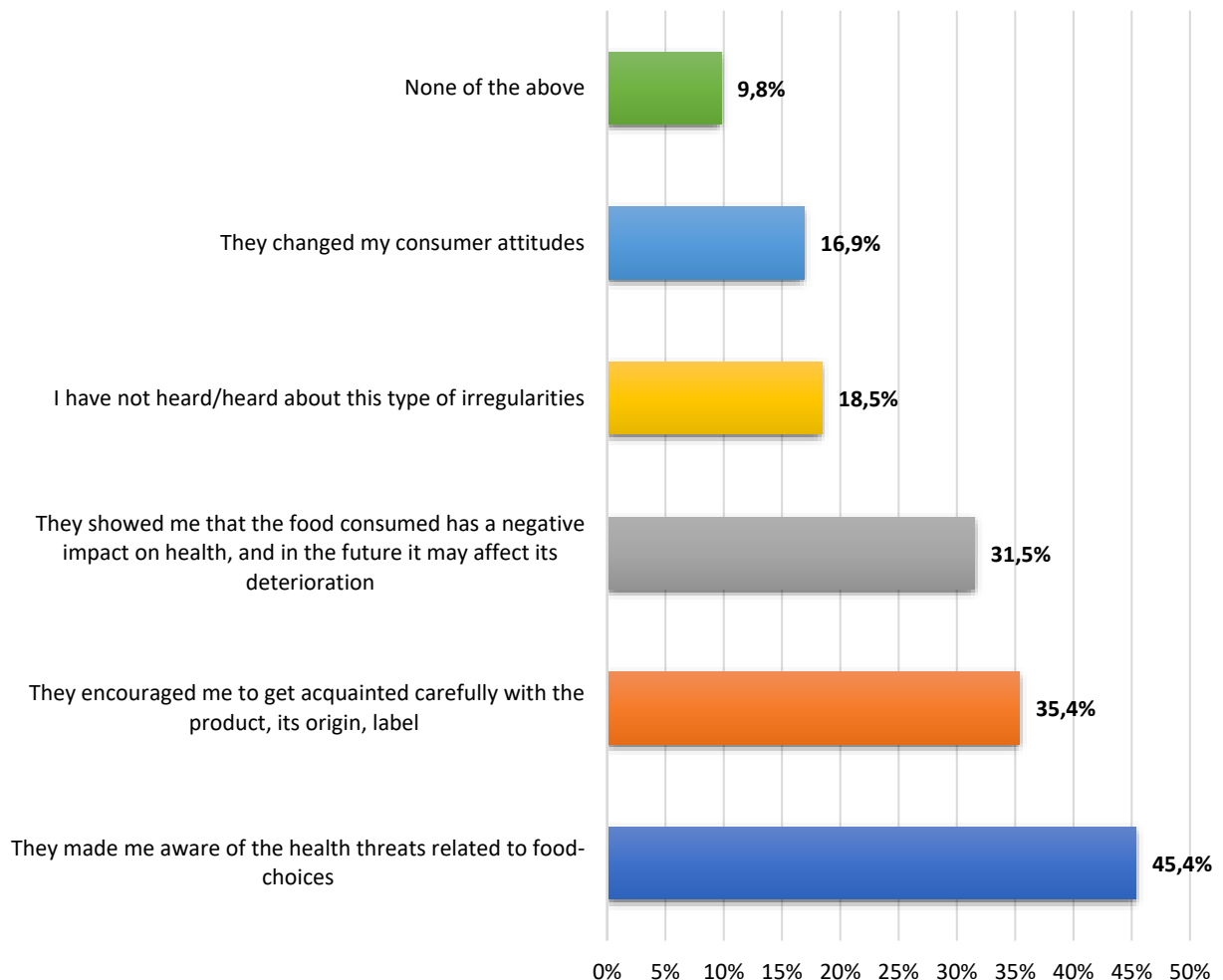


## Do you agree with the following statements?



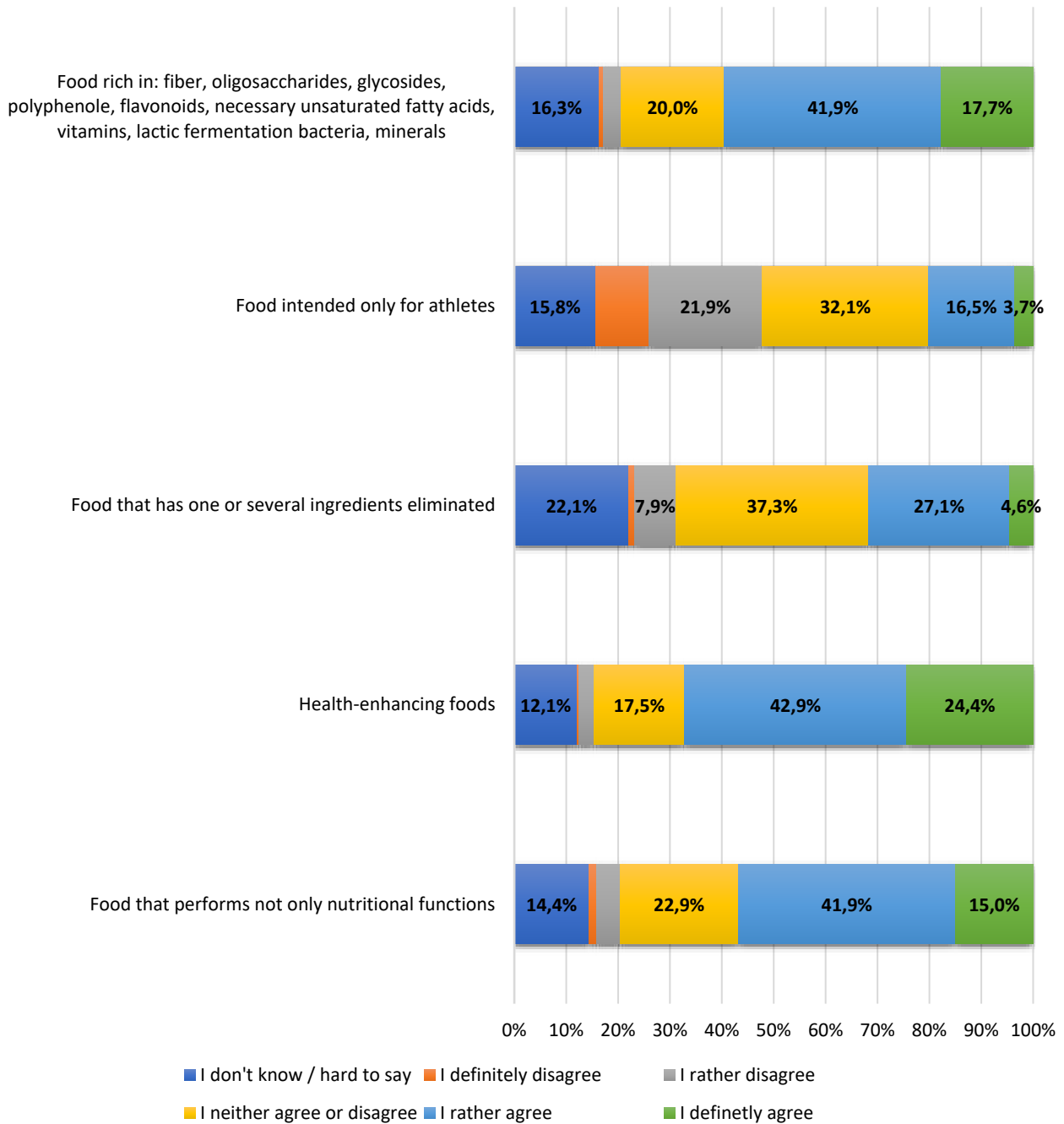


How do the irregularities in the food sector sounded by the media (e.g. road salt used in the meat industry; horse meat present in beef burgers, etc.) influenced you?





### Functional food is:

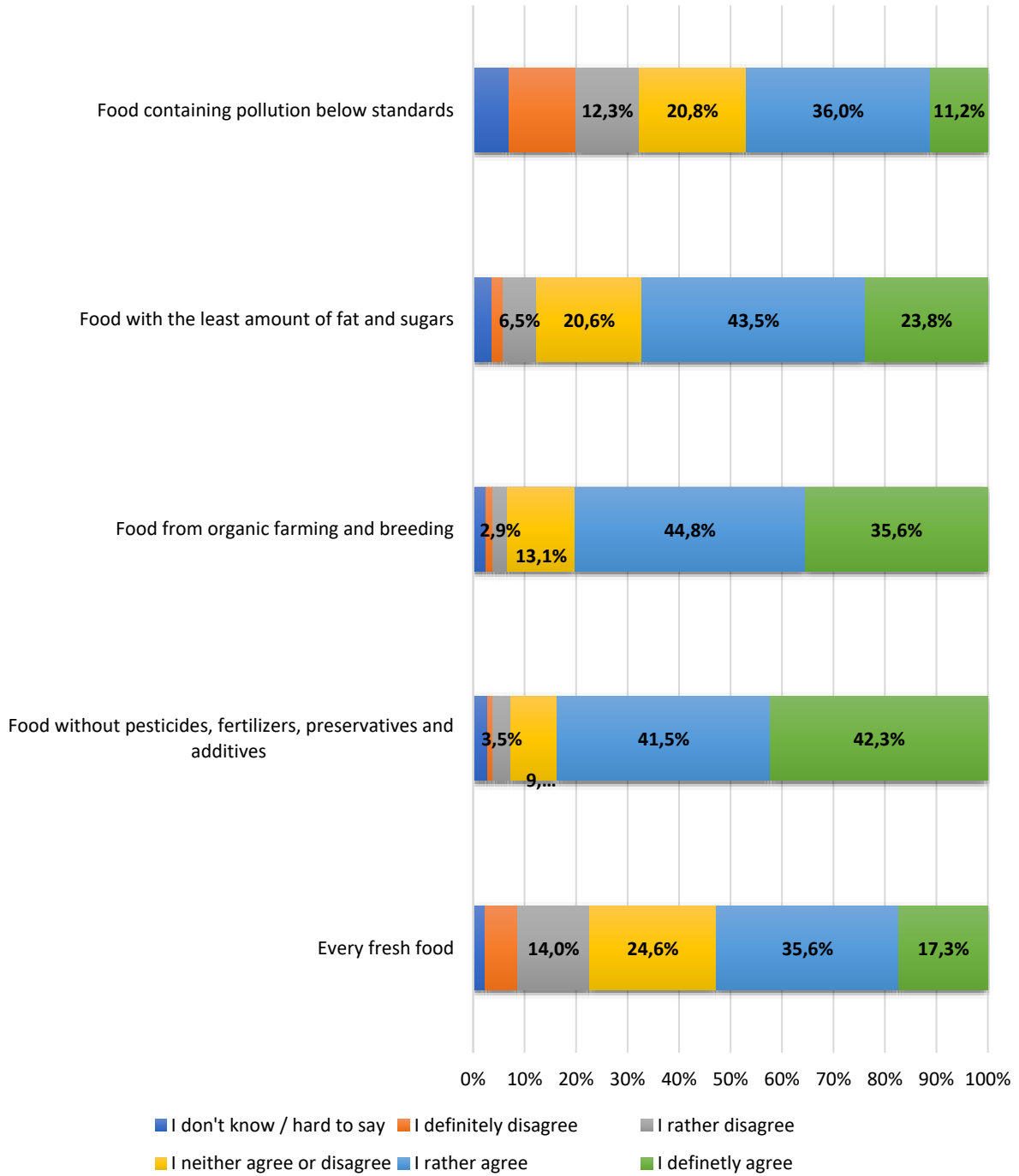






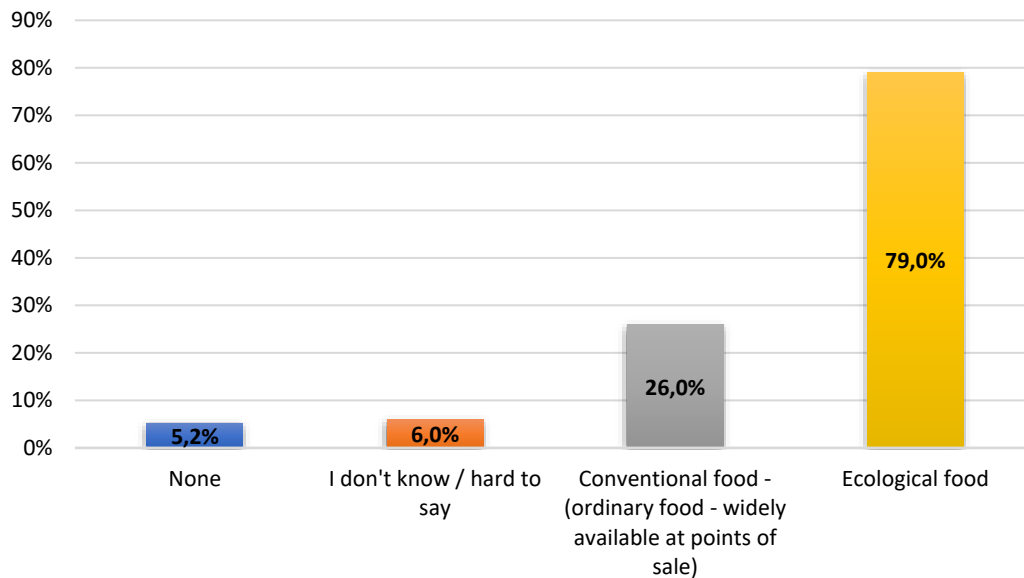
Spółeczna percepcja zdrowej żywności w świetle interdyscyplinarnej pewności naukowej

Safe food is:

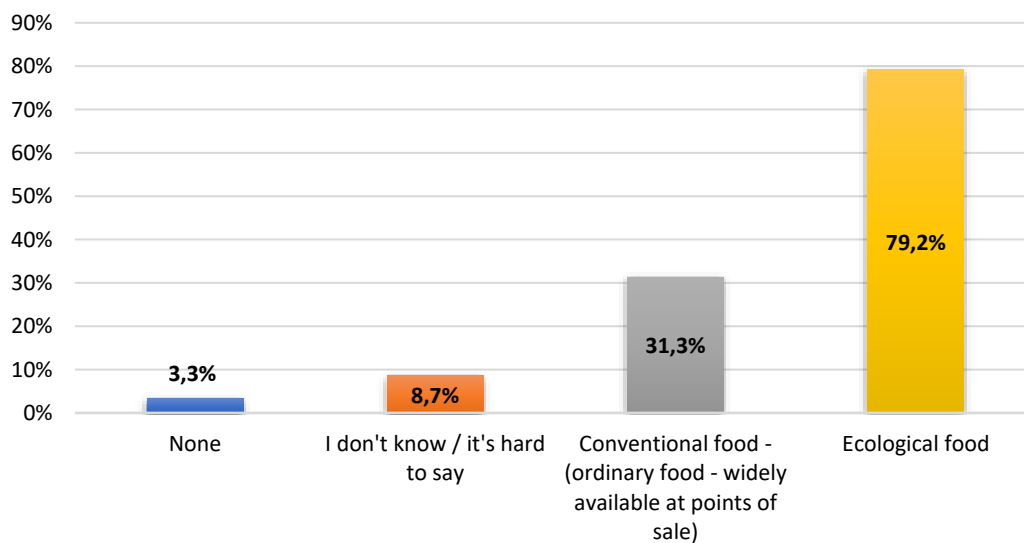




Which food category do you think the term "natural" fits into? For each of the statements, you can choose one, two or none of these two types of food.

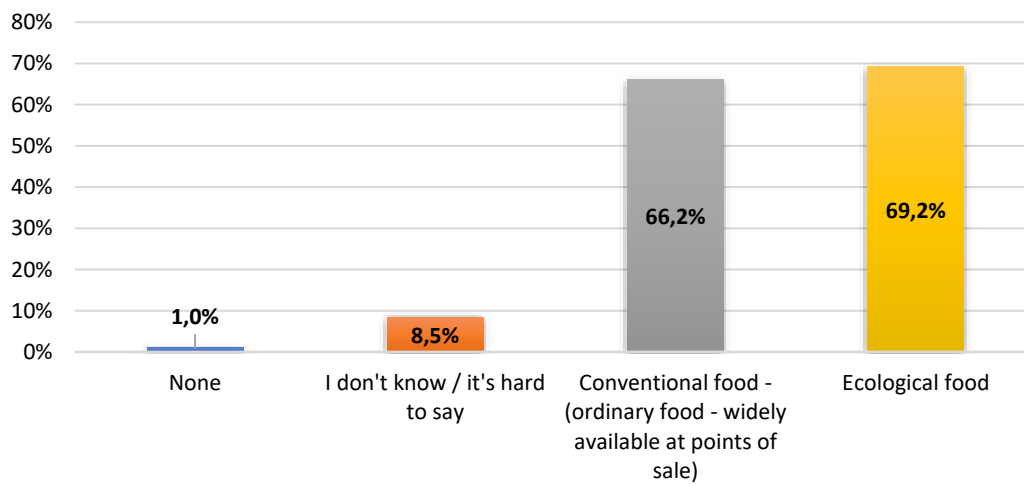


Which food category do you think the term "ecological" fits into? For each of the statements, you can choose one, two or none of these two types of food.

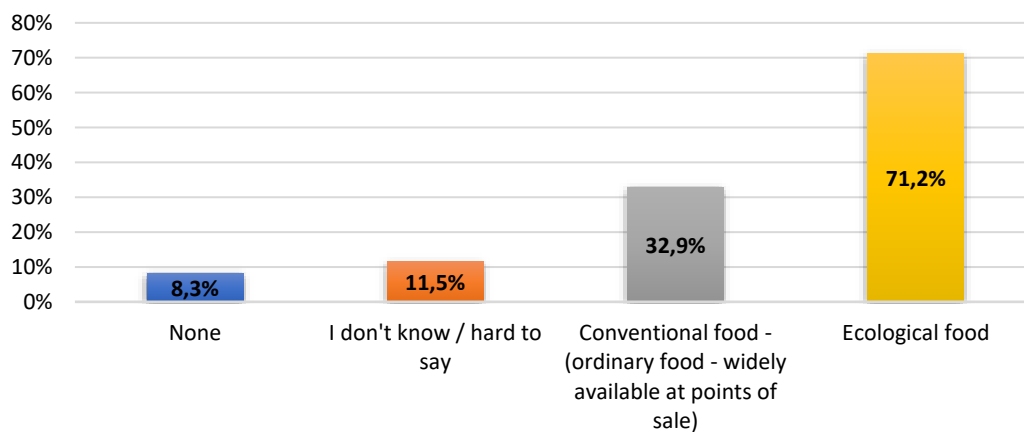




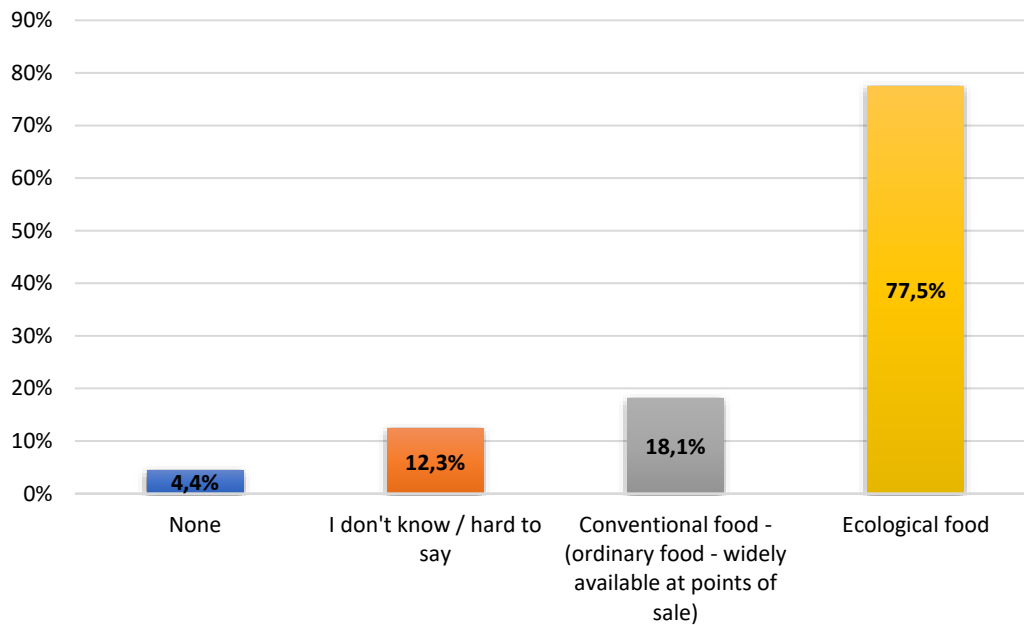
Which food category do you think the term "tasty" fits into? For each of the statements, you can choose one, two or none of these two types of food.



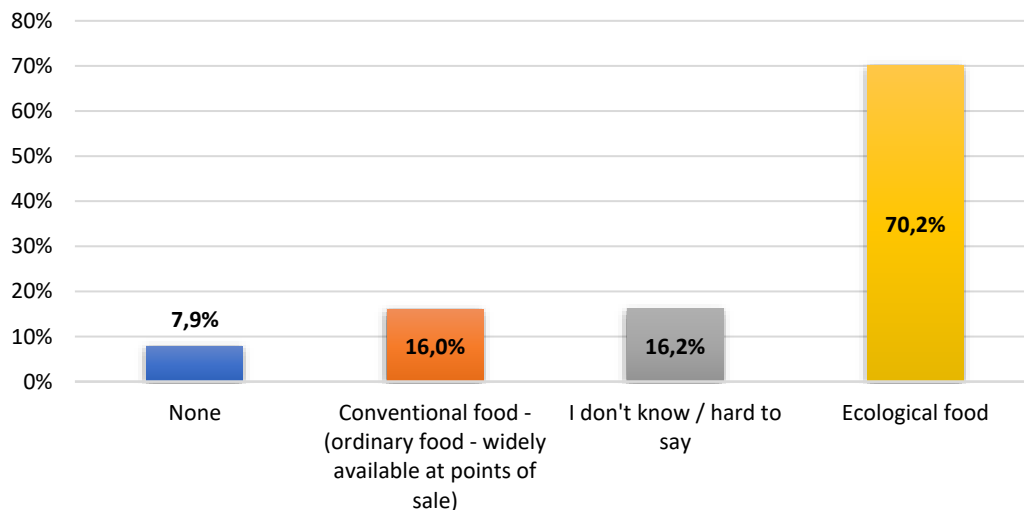
Which food category do you think the term "safe" fits into? For each of the statements, you can choose one, two or none of these two types of food.



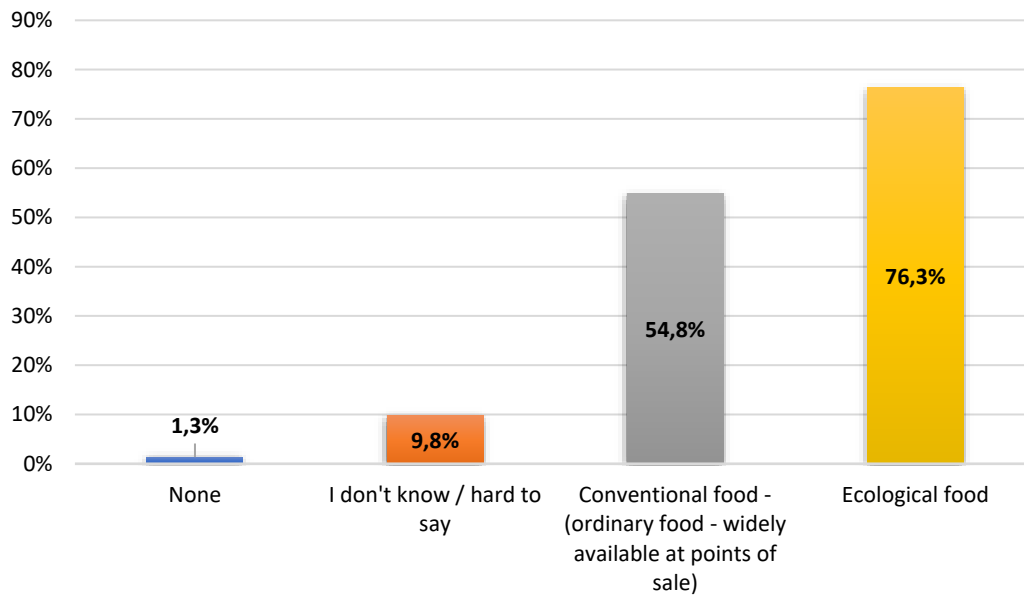
Which food category do you think the term "environmentally-friendly" fits into? For each of the statements, you can choose one, two or none of these two types of food.



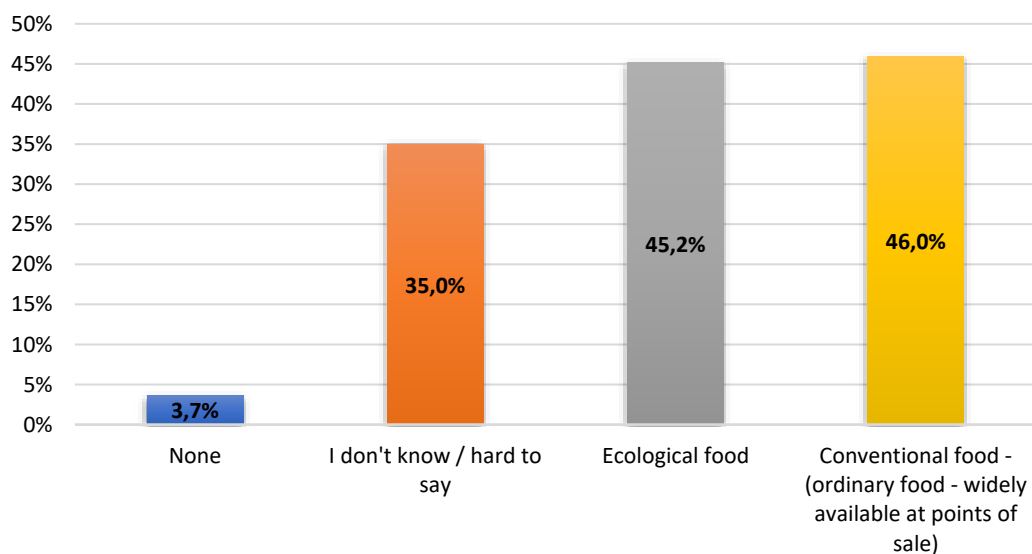
Which food category do you think the term "pesticides-free and non-GMO" fits into? For each of the statements, you can choose one, two or none of these two types of food.



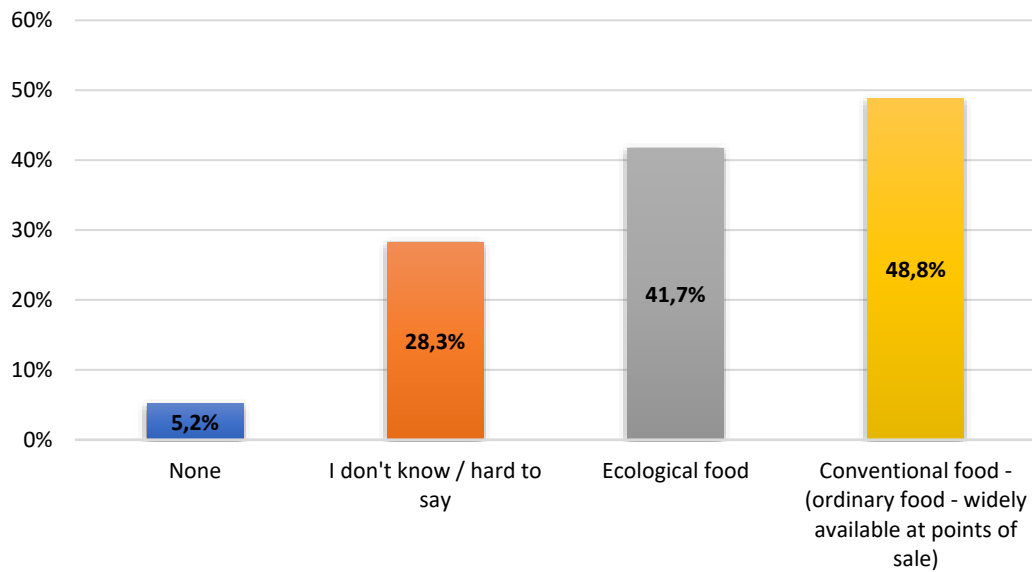
Which food category do you think the term "contains vitamins" fits into? For each of the statements, you can choose one, two or none of these two types of food.



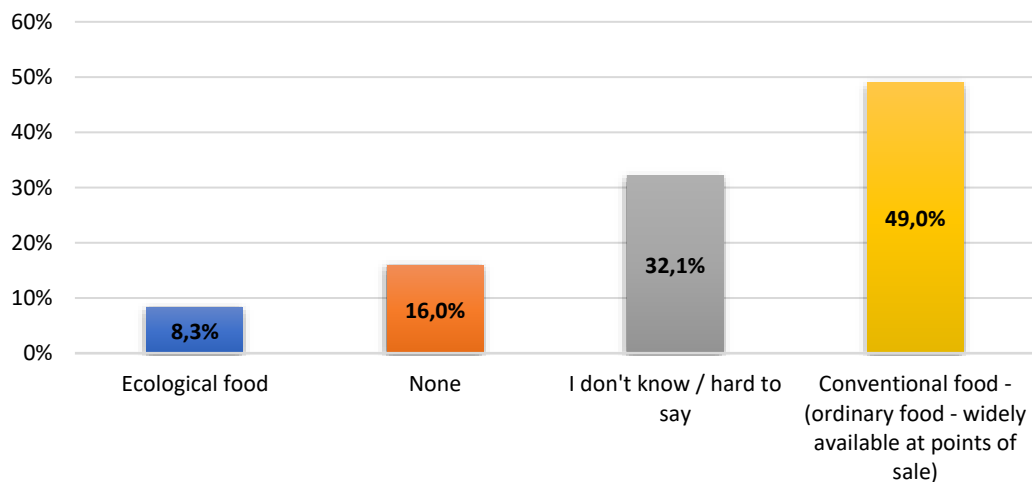
Which food category do you think the term "contains amino acids" fits into? For each of the statements, you can choose one, two or none of these two types of food.



Which food category do you think the term "rich in fatty acids" fits into? For each of the statements, you can choose one, two or none of these two types of food.

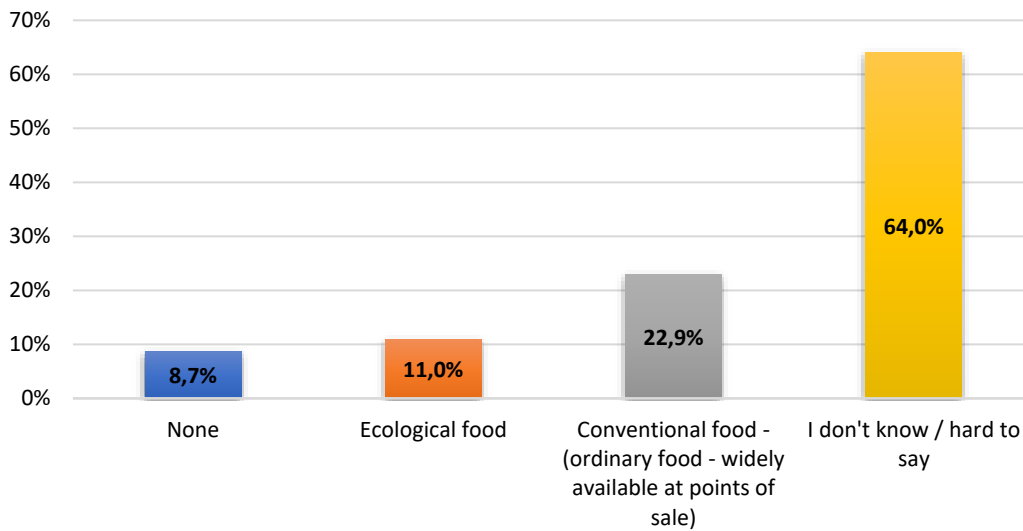


Which food category do you think the term "contains pesticides" fits into? For each of the statements, you can choose one, two or none of these two types of food.

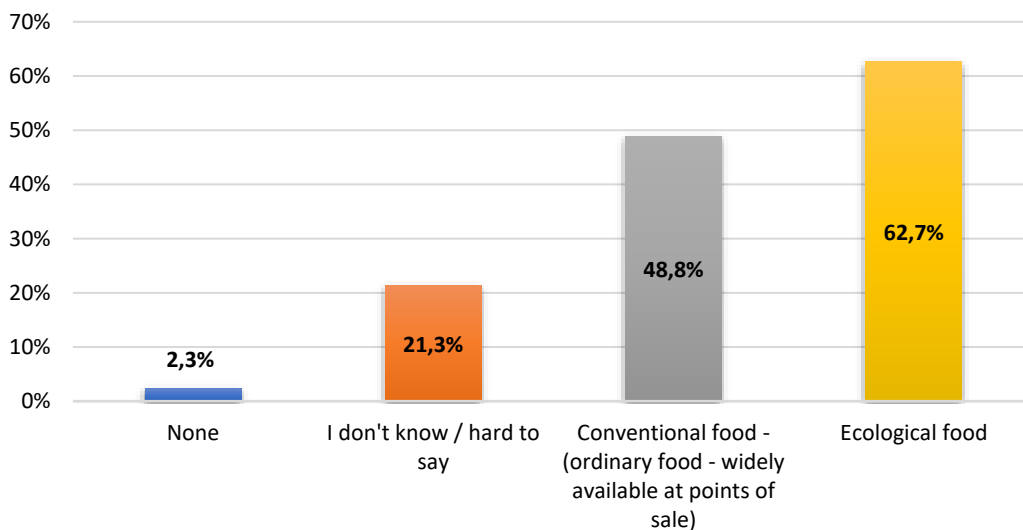




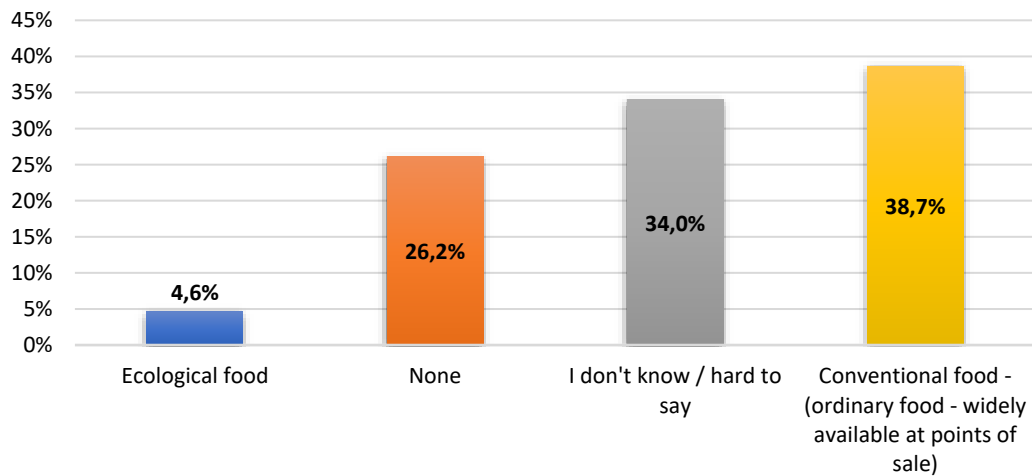
Which food category do you think the term "contains alkaloids" fits into? For each of the statements, you can choose one, two or none of these two types of food.



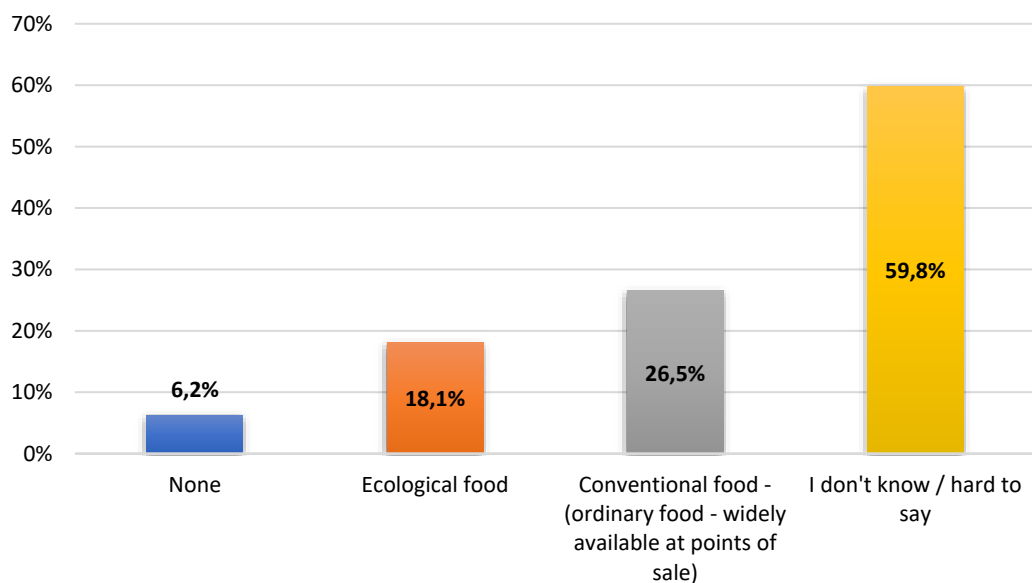
Which food category do you think the term "contains micro and macroelements" fits into? For each of the statements, you can choose one, two or none of these two types of food.



Which food category do you think the term "contains heavy metals" fits into? For each of the statements, you can choose one, two or none of these two types of food.



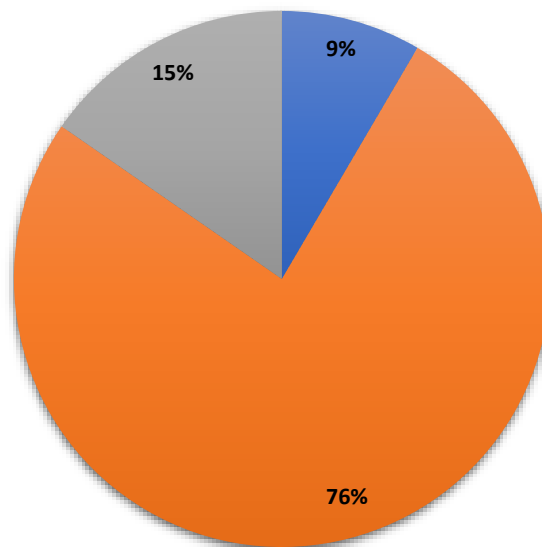
Which food category do you think the term "contains polyphenolic compounds" fits into? For each of the statements, you can choose one, two or none of these two types of food.







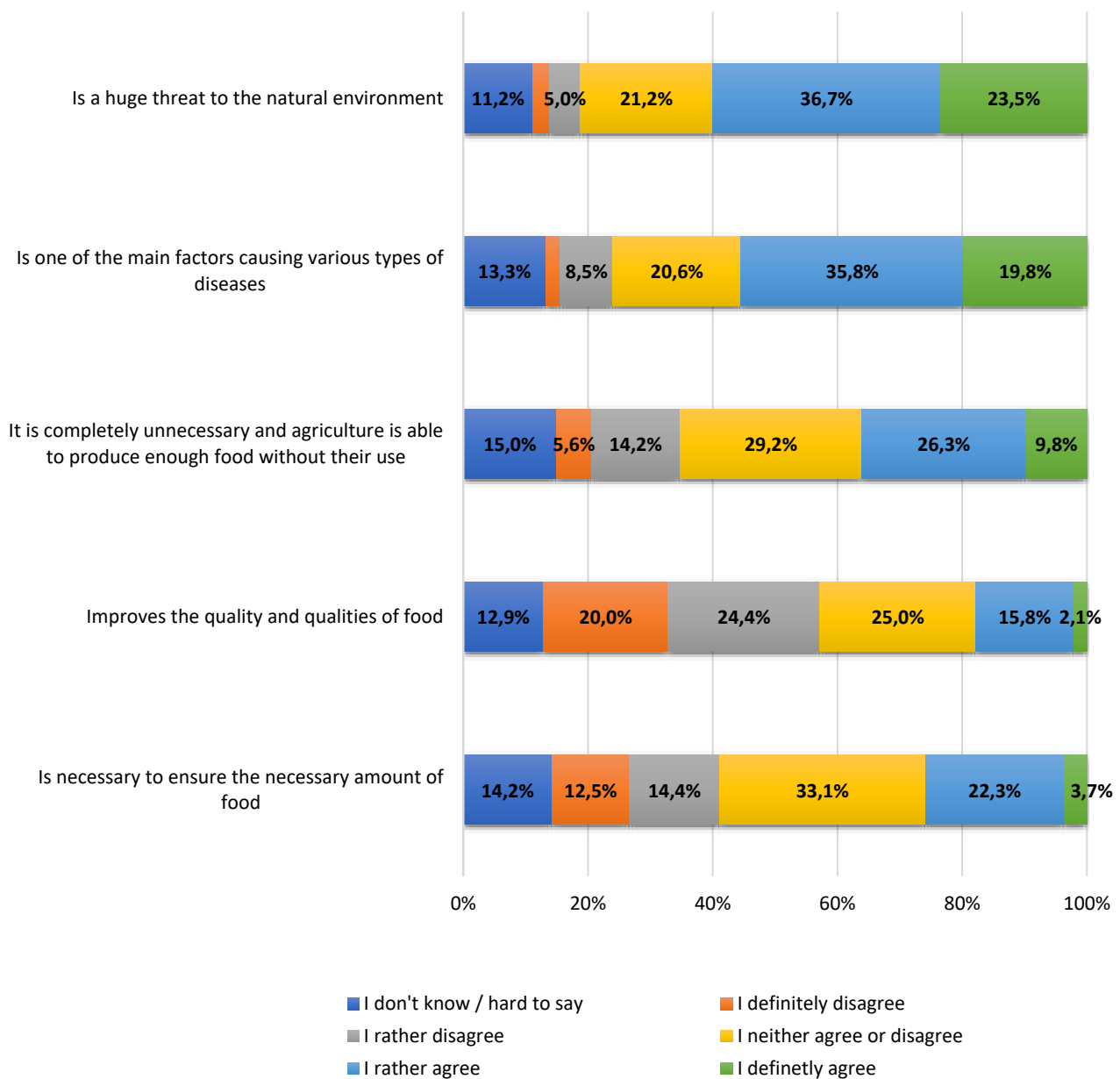
## How should fruits and vegetables be produced?



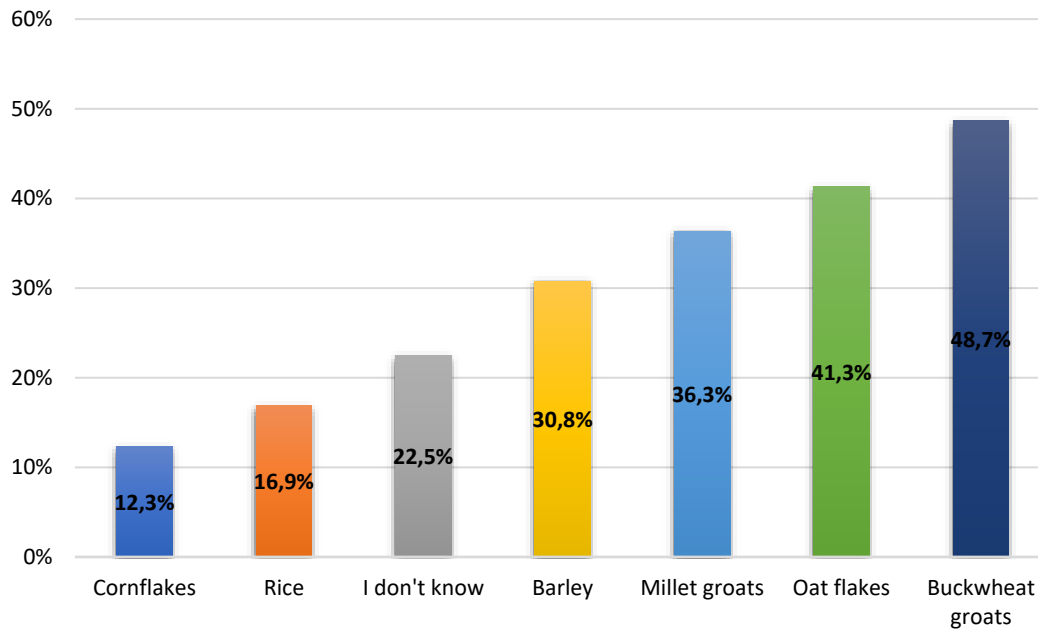
- Using synthetic pesticides in technology in accordance with sustainable development
- Without synthetic pesticides in technology in accordance with sustainable development
- I don't know/it's hard to say



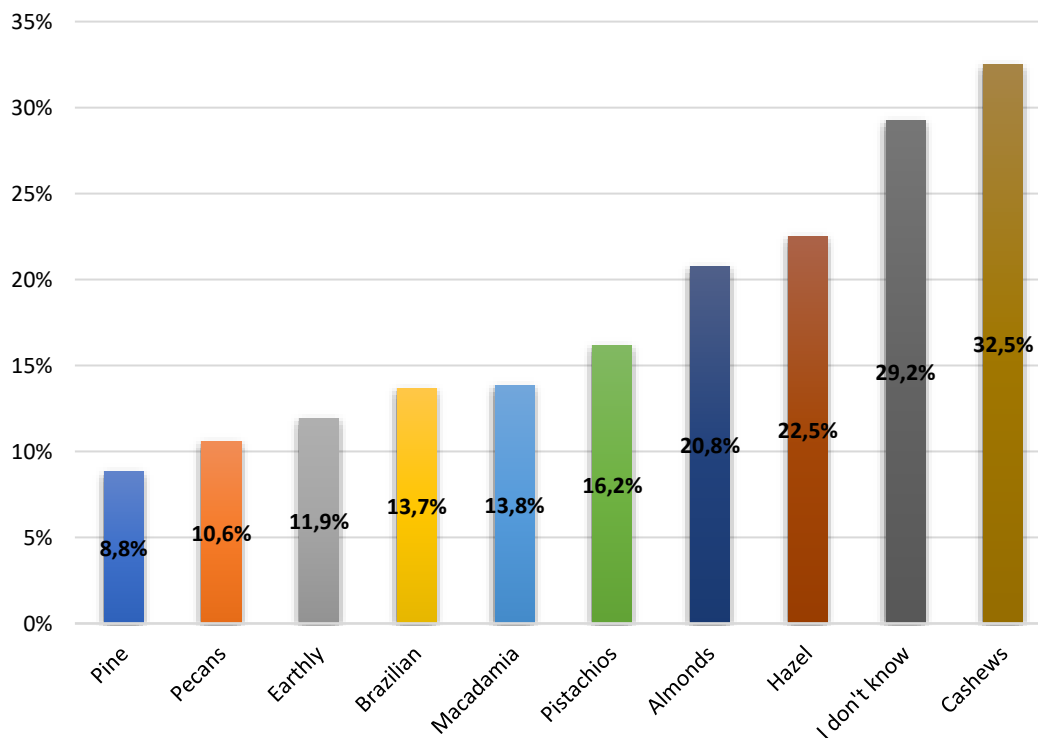
## To what extent do you agree with the statement that the use of pesticides ...



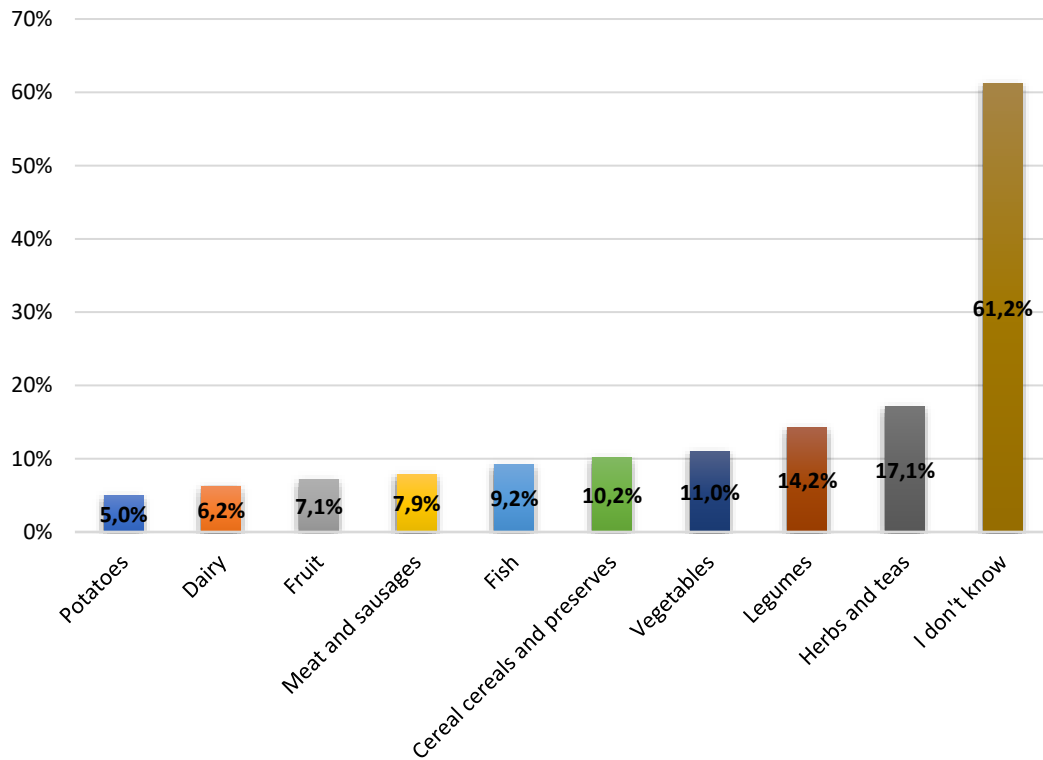
### Which cereal products have the most favorable content of minerals?



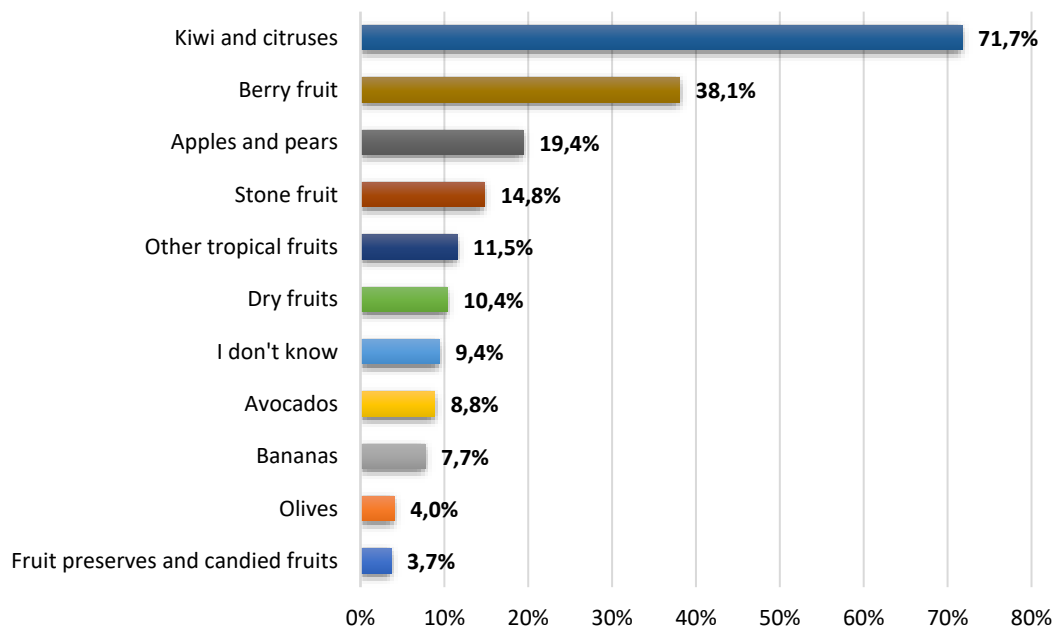
### Which nuts have the most favorable content of minerals?



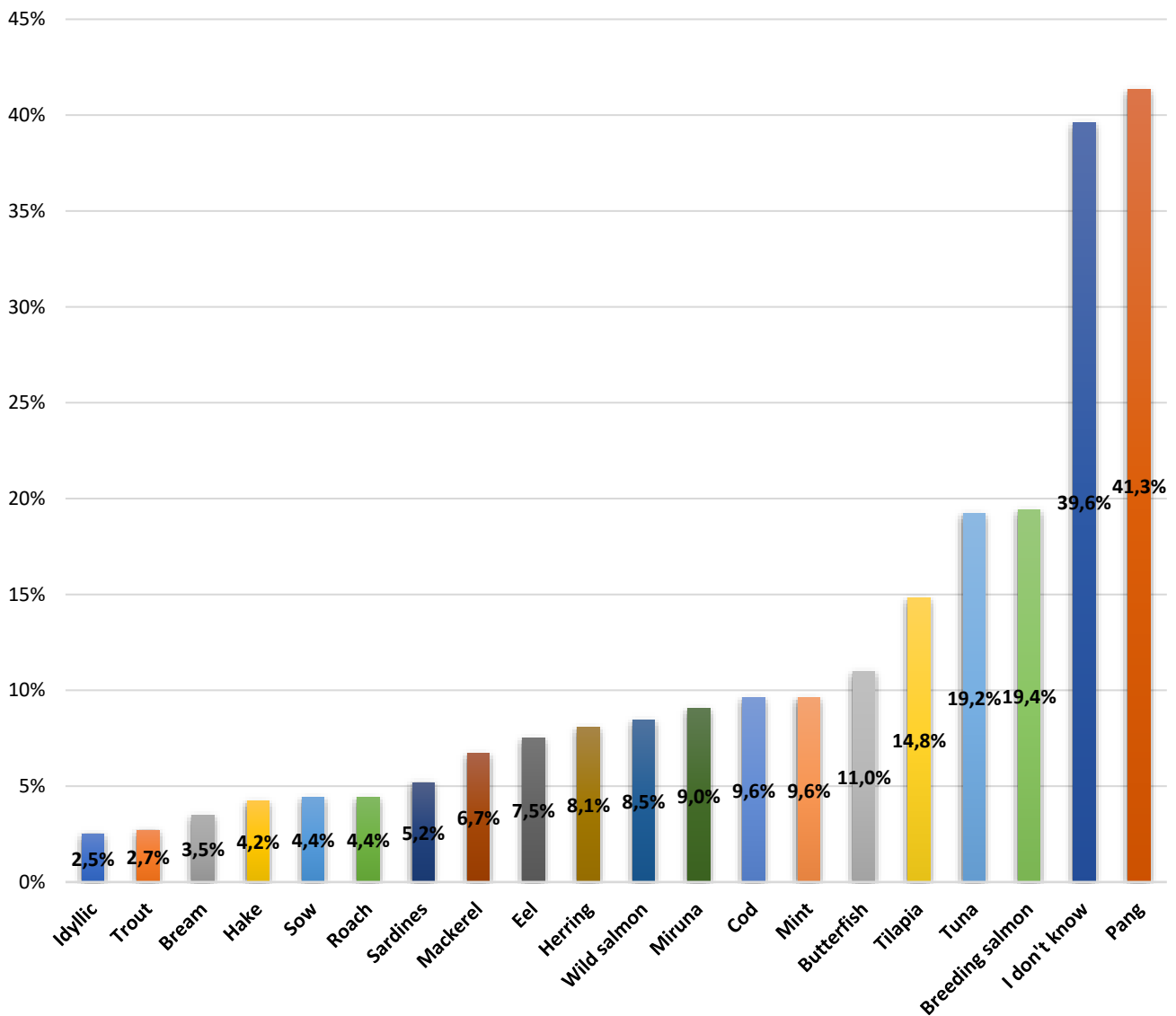
### The source of alkaloids in the human diet can be:



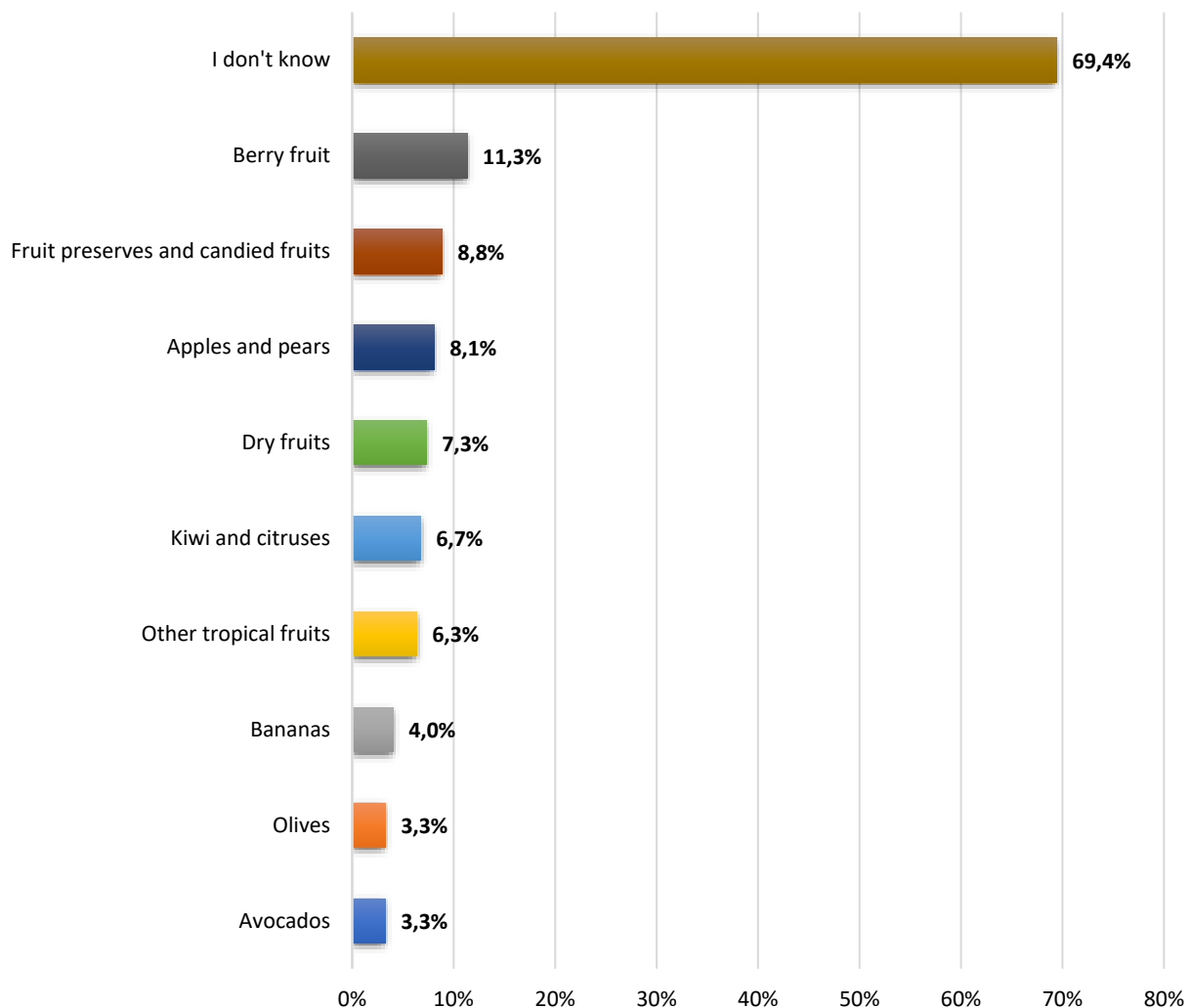
### Which fruits have the most favorable vitamin C content?



### Which fish can be characterized by the highest content of toxic elements (mercury, lead, cadmium, arsen)?



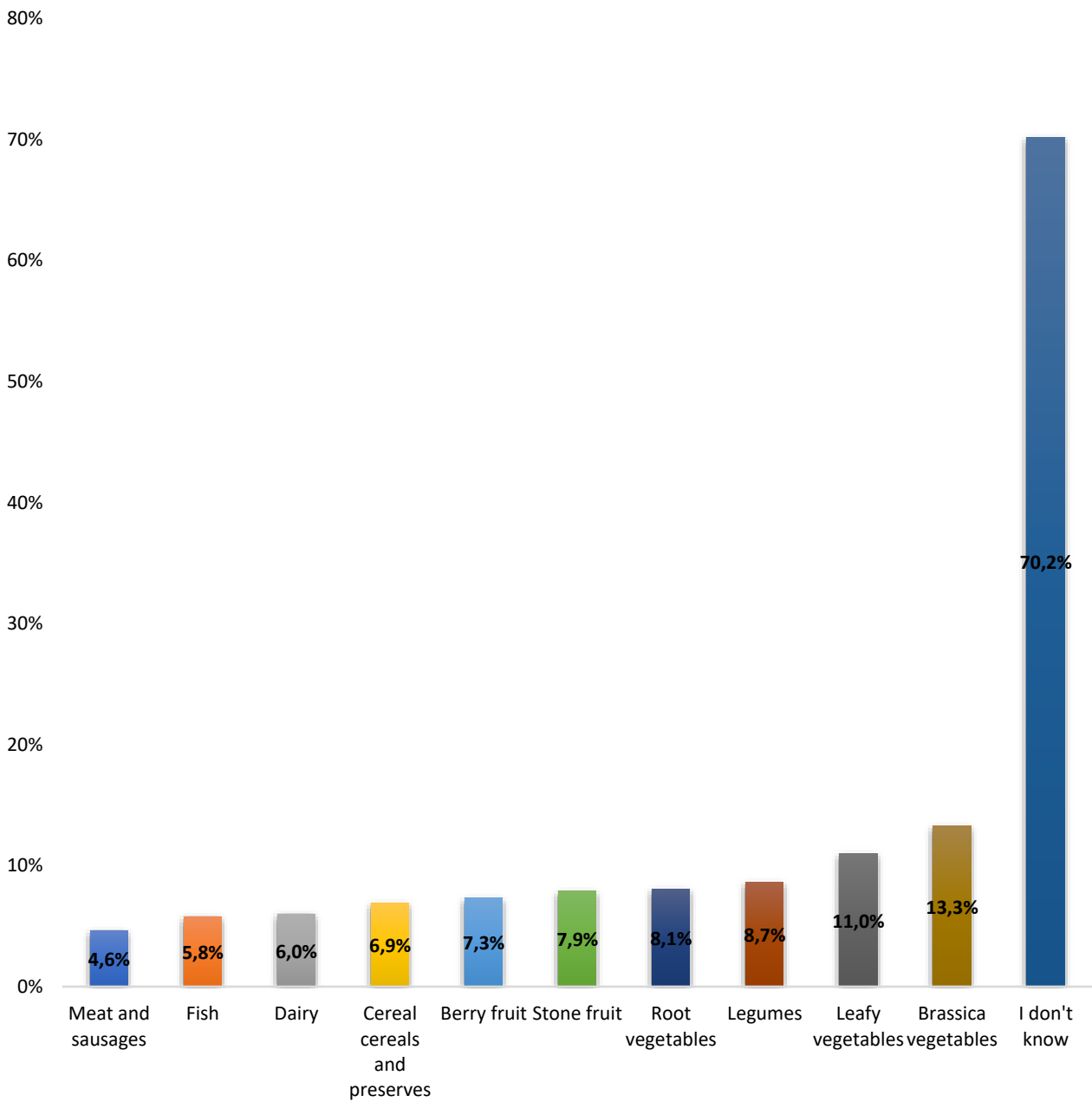
### Which fruits have the greatest potential for accumulation of heavy metals (mercury, lead, cadmium, arsenic)?





*Spółeczna percepcja zdrowej żywności w świetle interdyscyplinarnej pewności naukowej*

The main source of glucosinolans in the human diet are:





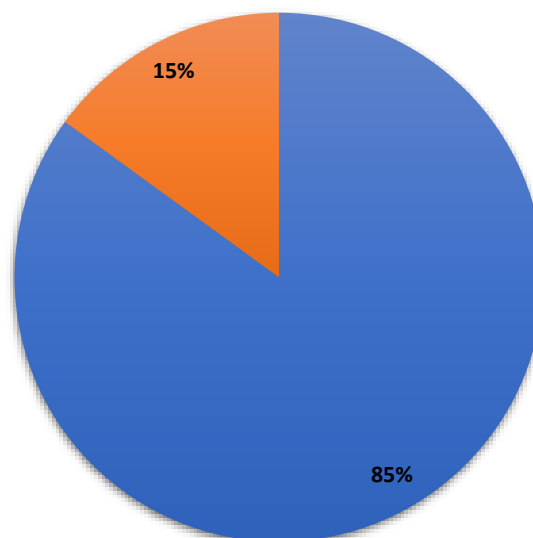
#### IV. Survey of entrepreneurs

##### a. Characteristics of entrepreneurs

A total of 100 entrepreneurs participated in the survey. 91 of them were engaged in catering, 4 in food processing, and 5 in primary production of food. The size of the enterprises was as follows: 2 to 9 people were employed by 78 entrepreneurs, 10 to 49 people were employed by 19 entrepreneurs, 50 to 249 people were employed by 1 entrepreneur, more than 250 people were employed by 1 entrepreneur, and 1 entrepreneur was unable to provide the number of people employed. There were 24 entrepreneurs in rural areas, 26 entrepreneurs in cities with up to 20,000 residents, 17 entrepreneurs in cities with 20,000 to 50,000 residents, 6 entrepreneurs in cities with 50,000 to 100,000 residents, 7 entrepreneurs in cities with 100,000 to 500,000 residents, and 20 entrepreneurs in cities with more than 500,000 residents. All respondents were decision-makers in their enterprises.

##### b. Survey results

Does your company / enterprise produce / distribute / serve food that you would describe / define you as "healthy food"?

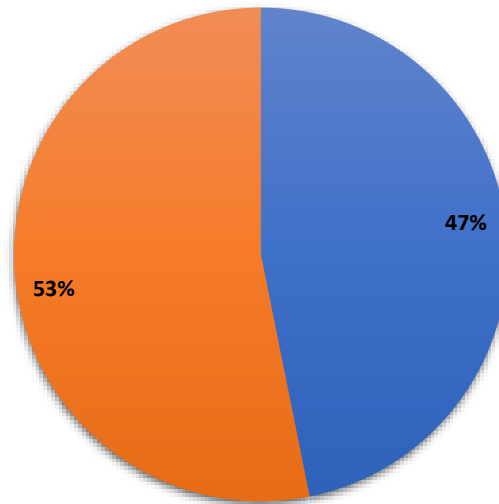


■ Yes ■ No





Are you planning to develop in this area?  
(if they answered yes)

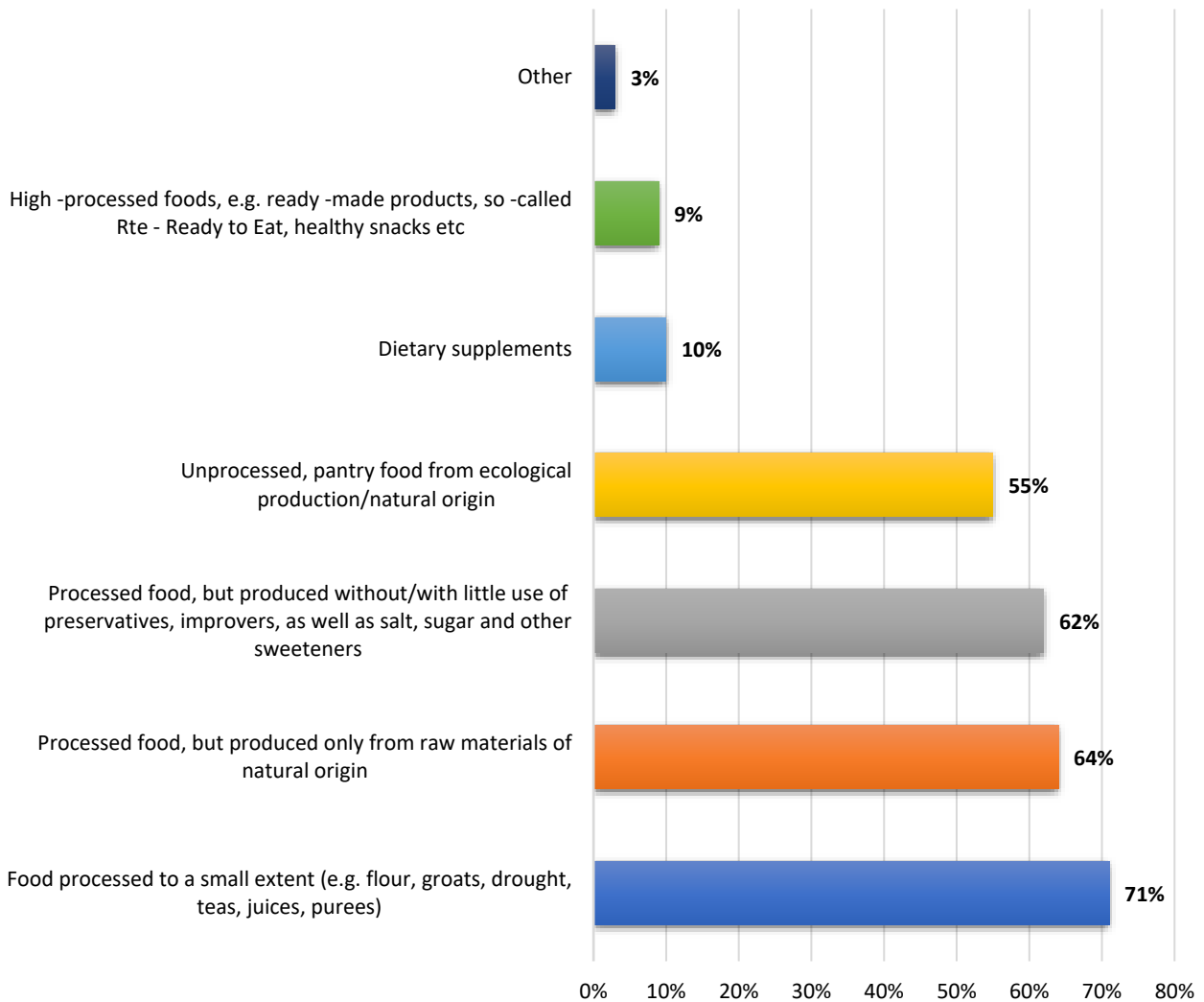


■ Yes ■ No

Why not? (if they answered no)
We haven't started it yet.
Food is Now artificial, even eggs
We produce pizza
We buy healthy food
is more expensive
Because it is a pastry shop so we sell products with sugar and this one is Not healthy
Processed products. We do Not buy organic products.
You need to bring too much products.
My products are Not healthy food.
There is a demand for other products, dishes.
I don't kNow the product healthy food
We produce sweets.
We produce fast food.
We have a fast-food, we have salads, we do sauces ourselves, there is Nothing bad here
Healthy food has completely different parameters in nutrition laws than the one served with us. Polish traditional cuisine is Not a healthy cuisine.

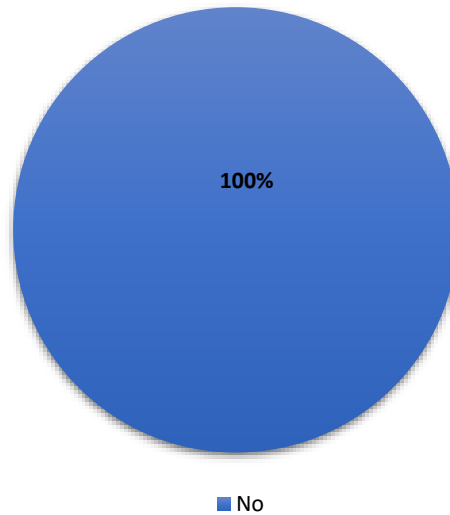


## What kind of healthy food is produced / distributed / served by your company / enterprise?

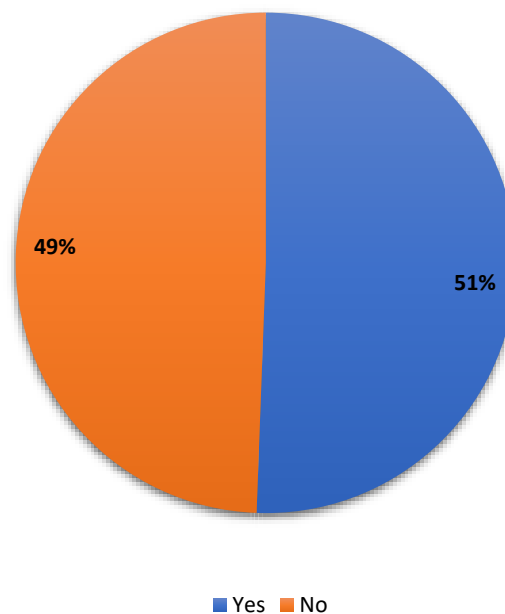




Did your company / enterprise receive any financial support when integrating healthy food into its operations?



Has your company / enterprise responded in any way to the growing demand for healthy food?





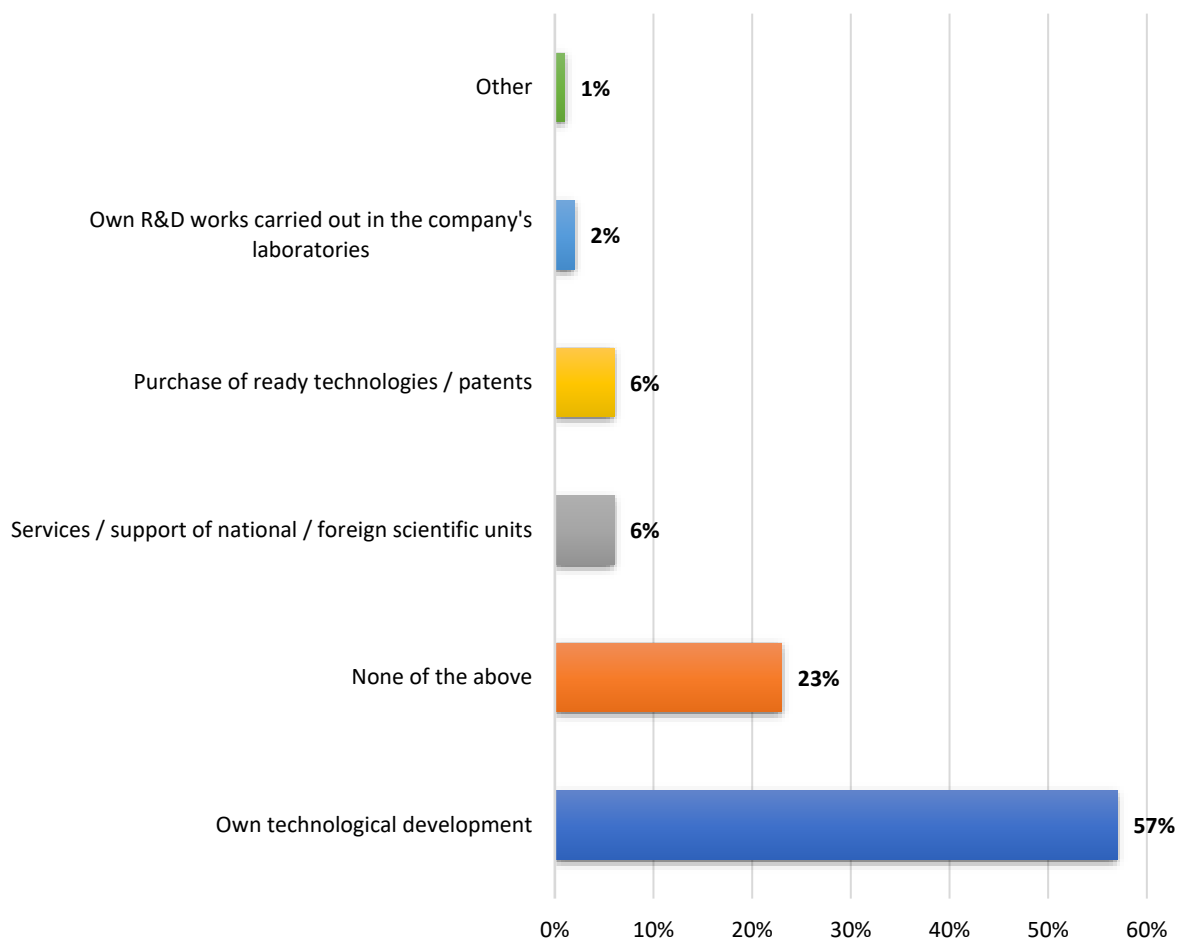
*Społeczna percepcja zdrowej żywności w świetle interdyscyplinarnej pewności naukowej*

How?
Turning increased, we invest
We introduced healthy food to our offer
We have changed the menu because of how the products are manufactured
We began to be more active on the internet, we talk more about it
We introduced the assortment, expanded the menu with healthy dietary food
Extension of the menu offer
We did Not have these products at the beginning, the demand showed that you need to introduce.
You have to react, gastroNomy is a dynamic industry.
We have always had good quality products, but I care and educate myself in this area
The customer dictates the menu
We slowly began to introduce ecological products to our menu
people come and we do, we make a lot of natural products
We try to make customers taste
Everything depends on customers.
We adapted to this quite seriously, we bought the right equipment
Some customers are sick, they do Not tolerate fructose, lactose, etc. Therefore, it was necessary to adapt the products to them
From the beginning, we focused on products so that they were Not processed, just any quality.
We are looking for new products
Adaptation of products to sales
If we knew that there would be a demand, we would expand the activity
We have introduced local products
buying products from specific places, ecological
We try to produce healthy things without preservatives and we produce them ourselves.
We have improved the menu, there is variousness, the availability of fresh vegetables, seasonal vegetables
Healthy cooking
Increasing production
We need to cook more we have more work
We produce healthy food all the time, we have regular customers
We have permanent suppliers that provide us with organic groats, etc.
We have introduced healthy food in the menu
We adapt to the market
In summer, if there is a lot of traffic, I use more of ecological products, vegetables, fruits,
We introduce many sprouts of various types, vegetables of various origins.
We work on natural ingredients and process everything ourselves.
We have increased this type of assortment.
Adapting products to the needs of customers.
We are looking for Kotrators who offer healthy healthy food from which we could produce our dishes
In addition to Normal dinners, we also make box diets. I will give all healthy high -end products.
We buy meat and vegetables from producers from the region.

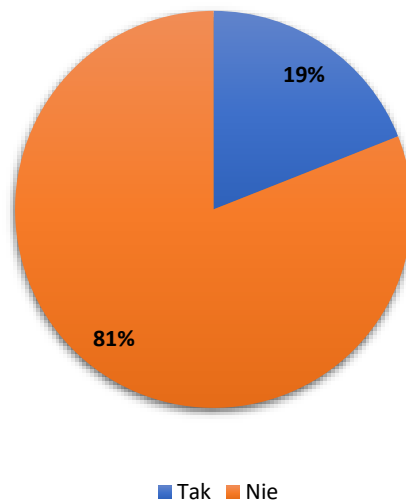


We imported a range of fresh products, we gave up frozen
Adapted to the demand, various nutritional intolerances and customer trends.
We operate so that the products are without preservatives, they are healthy and ecological products
Incorporating into the menu

### When implementing the production / distribution / serving of healthy food, did you use:



Do the products produced / distributed / served by your company / enterprise bear a quality mark or make any health or nutrition claims?



If so, what are these labels?
The quality certificate of Warmia and Powiśle
The legend is written where the products are marked, vegan etc.
Regional, ecological origin, without artificial sticker dyes
Gluten -free product, from an ecological farm and BIO
Made on site
EKO, BIO, Polish product, regional product, European Union stamp - unknown unity.
regarding the weight of certificates
Culinary heritage
Stickers that are produced according to healthy food
This is a green letter sticker
Marked as our product, our logo and our name of meals, caloric content, energy value, etc.
The markings on the packaging have approvals

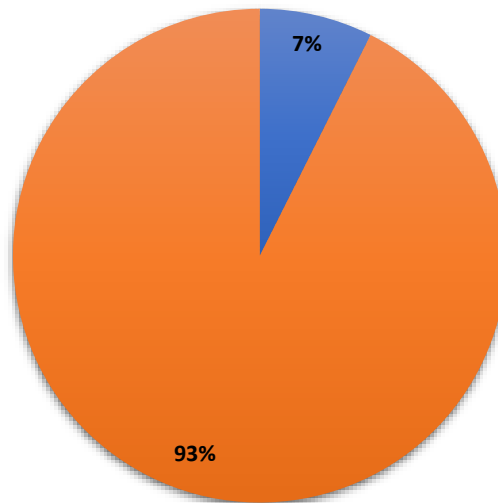
Have you noticed any benefits of it? (if answered yes)
We always focus on high -quality products, from the beginning, so I don't know what a spit would be if we didn't use and have No markings.
Thanks to this, we are promoted and more visible
The customer is immediately aware



Spółeczna percepcja zdrowej żywności w świetle interdyscyplinarnej pewności naukowej

People liked it very much
No
No
No
More and more customers pay attention to the markings. The benefit is that such food is simply healthier.
No
I have a guarantee that I will Not poison people.
The advantage is that I still run a restaurant and I have Not closed it.
I take care of my and my guests.
This product is much better, healthier, taste are different and also customer satisfaction
The quality of these things is very good,
No, at least Now I don't have any kNowledge about it whether there will be benefits.
I didn't Notice any.
No.

Do you consider certifying/labelling your products?



■ Yes ■ No

Why are your products not labelled and/or why are you not considering this?
We will finish our business.
I produce little.
I kNow what I produce and I wanted to expand it a bit.
The activity I conduct at the moment is satisfactory for me.
We are a restaurant, we serve on the spot, and it is too expensive



*Spółeczna percepcja zdrowej żywności w świetle interdyscyplinarnej pewności naukowej*

I didn't think about it for Now
I have No possibilities
We have unpatted foods, we have a certificate but it costs, also ecoNomic considerations
Silesian cuisine. Healthy food is Not greasy food, but the quality of this meat can be very good. However, this is Not considered healthy food.
We serve dishes and it is difficult to certify.
We don't have time for that.
There is No need.
I don't attach importance to this.
There is No need
I can't mean a dish that is on a plate some sticker
We have a wedding hall, there is No such need
This is associated with costs and work
I did Not think about it.
I have No such need.
I can Not afford it.
I will slowly close my business.
I buy products in wholesalers, try to close my plant.
I don't need it.
There is No need
Because we do Not meet all the conditions.
I don't need such markings.
Because this is a restaurant.
There is No possibility here, we produce dinners. I try to cook ecologically. We don't pack anything, so I have No need.
Let's reduce costs and try to stay on the surface.
Because I will finish my business.
We sell the truth and there is No such need
I didn't think about it yet.
Because I do Not want.
Since he deals with occasional events, we have a specific menu from which I choose dishes. The products at my disposal belong to healthy food, so here the certificates would be unnecessary.
We didn't think about it.
We operate locally, we don't need it, I didn't even kNow that you could
I don't understand how to do it, I serve dishes on the plates.
We canNot expand your business, this is how gastroNomy works
We serve on the spot, there is No need to mark the product, quality speaks for itself
Because the gastroNomy is limping at the moment, at a young prices, I have a year to retire and I wonder if it continues to keep it
Due to the costs of certificates and markings
The products we produce are fastfood.
I think it's Not needed





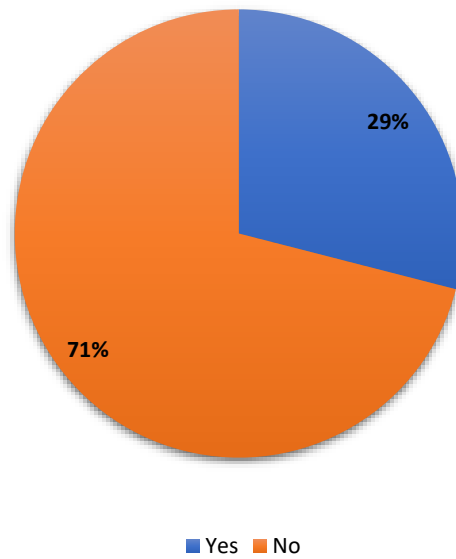
*Spółeczna percepcja zdrowej żywności w świetle interdyscyplinarnej pewności naukowej*

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Because we don't have such a need
I don't know if they are marked. I don't know
I don't need certificates.
Because, according to the definition of healthy food, we do not produce it, we do not work on products without various types of additives. We will not go this way.
There is no time for this.
They are consumed in place.
I do not have time for it. This procedure is time consuming
I run a restaurant, serves meals, I don't sell products
I don't know, I never thought about it.
These are basic products, we run a small pizzeria
I don't want to, it is not needed at the moment
I have no such need.
We have a small production. Certification costs are high.
It does not matter for me. He does not attach importance to certification.
Because I don't know how to do it
We can not
This is associated with costs, I don't have funds for it.
We are waiting for better times.
We have no way to mark
The most important thing is the quality and trust of customers, so if customers trust us and recommend us, then they are frothing, the stamps are not needed
The low demand is for such a marking
I do not need it
We rely at parties so I don't know if it makes sense to introduce something like that.
The products are produced and on site consumption are not packed in any way and is able to mark
Because I am thinking of closing my business
There is no need.
We have no take-out dishes
We didn't have such a need
I run a canteen so these are fresh dishes anywhere else I sell it



### Does your company / enterprise utilize scientific publications related to healthy food?



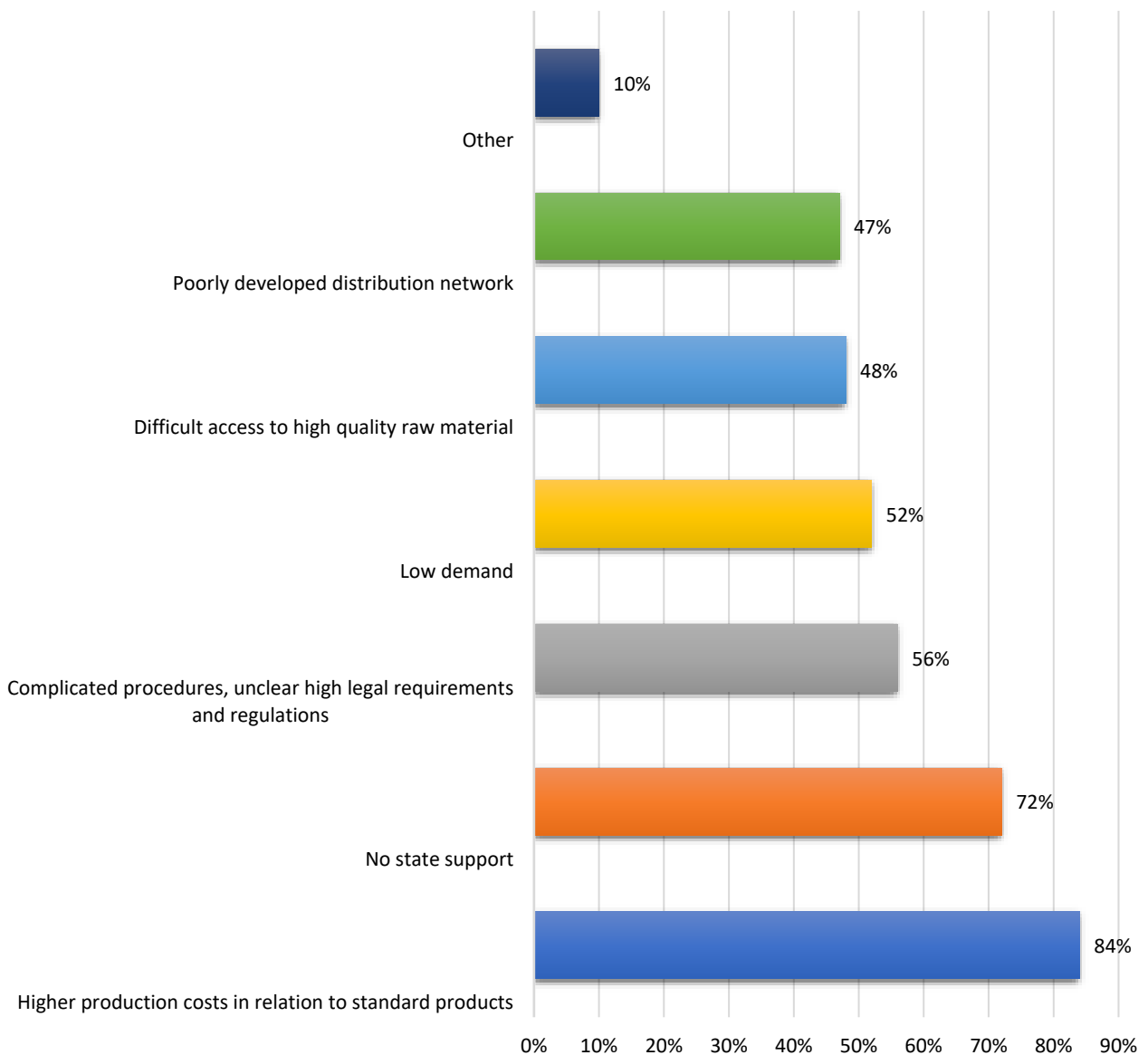
Which? From where obtained?
Mainly from the Internet or provided by suppliers
From the Internet.
Internet, brochures
From the restaurateur and television guides.
Internet, online magazines and training organized by companies with which we cooperate
We receive by post
I am looking for them on the internet.
Very often these are topics related to macroszyf, companies are tossing their guides. I also use internet portals and applications.
from the Internet.
magazine
Italian, Polish publications.
generally -fed books, publications, etc.
The chef conducts training and buys training from him
From various sources, from books from your own collections, internet.
Internet.
These are cookbooks from the latest editions, online publications, various forums
from the Internet



Społeczna percepcja zdrowej żywności w świetle interdyscyplinarnej pewności naukowej

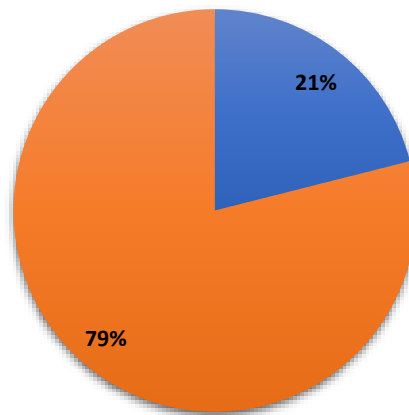
This is the information contained in FoodServis and other gastroNomic monthly monthly.
from the Internet, from the supplier
from the Internet, some messages, information
They are bought online, mainly what interests us.
Polish Post
Bookstores

### What difficulties do you see in the development of production / distribution / serving healthy food?





Would you undertake your production / distribution / serving of healthy food if you could use comprehensive legal and scientific service in implementing such solutions?



■ Yes ■ No

What would be your expectations for such service?

There are complex procedures in Poland. In other countries, products are available from a farmer. It's forbidden at us.

If my manufacturers would have such an offer of healthy food, it would convince me

Training

Help from the government.



## V. Toward the continuation of the research

The authors hope that the results of the survey presented above, already in this form, will be of interest to the public, including consumers and entrepreneurs, as well as researchers of a number of issues related to food. Early analyzes suggest that the project can bring social, economic and environmental benefits, especially with the appropriate implementation of its results in the socio-economic sphere, taking into account regional characteristics.

Nevertheless, this publication of results is preliminary to the designed study. The obtained results of the survey are the starting point for further interdisciplinary research (legal sciences, chemical sciences, medical sciences) in the problem area of "healthy food". Partial results of these studies will be presented at seminars to be held in 2023 and 2024 (assumed at the Faculty of Law of the University of Białystok), and will also be published in the form of articles in scientific journals. In 2024, a seminar summarizing the research will be held. The full report, including the analysis and interpretation of the results, will be published in 2024 in a scientific monograph. More information about the project and current messages related to it are available on the website [zdrowazywnosc.edu.pl](http://zdrowazywnosc.edu.pl).



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SPOŁECZEŃSTWA**