

Press release

Food Wasting, Shopping and Consumption Behaviour of Czech Households – Food 2020

- ⊗ Less than one-seventh (15%) of the respondents do not consider food wasting to be a society-wide problem. More than two-fifths (42%) of the respondents were of the opinion that food wasting is not right but that there were more current problems that needed to be addressed and that they considered food wasting to be a big problem.
- ⊗ More than half (51%) of the respondents declared that the total amount of food disposed of by their households did not exceed 10%. One-fifth (20%) of respondents then agree with the option that their household disposes of more than 10% but less than a quarter of food. One-twentieth (5%) of the respondents admitted disposing of more than a quarter but less than half of food, while a statistically insignificant 1% discarded even half of food or more. On the contrary, less than a fifth (19%) of the respondents say that their household does not dispose of any food.
- ⊗ According to the respondents, the most important reason for reducing food wasting is the financial savings of their household (79%), the least important is the personal experience with lack of food (32%).
- ⊗ More than half (51%) of the respondents went shopping several times a week, a quarter (25%) once a week, 15% of respondents shop every day.
- ⊗ Monthly expenses for the purchase of food for the whole household most often ranged from 2 to 8 thousand crowns.
- ⊗ According to the Czech public, catering services account for the largest amount of disposed of food, while households account for the lowest. Compared to EU estimates, the results were significantly different.
- ⊗ The majority (75%) of the Czech public correctly uses the designation "use by..."; on the other hand, the meaning of the "best before" term is less clear and less than half (48%) give it the same meaning as the "use by".

Prepared by:

Radka Hanzlová

Centrum pro výzkum veřejného mínění, Sociologický ústav AV ČR, v.v.i. (Public Opinion Research Centre of the Institute of Sociology of the Czech Academy of Sciences)

Phone: 210 310 587; e-mail: radka.hanzlova@soc.cas.cz



In a special study called Food 2020, CVVM SOÚ AV ČR (Public Opinion Research Centre of the Institute of Sociology of the Czech Academy of Sciences) asked for the opinions and attitudes of the Czech public on the issue of food wasting. The respondents assessed the severity of the problem of food wasting, estimated how much food their household disposes of and possibly, how much of the disposed food could be avoided, what were the causes of food disposal and stated the reasons for not disposing of food. In the next part of the research, we focused on the shopping and consumer behaviour of the respondents, asking in particular where and how often they shop, how much they spend on food and what activities they do in connection with buying food. We were also interested in finding out who, according to the respondents, has the largest share in the total amount of disposed of food and on the contrary, who according to them, strives the most to reduce food wasting in the Czech Republic. Another part of this block of questions was focused on the Czech public's familiarity with the terms "best before" and "use by".

The Context of the Food Wasting Issue

Food wasting is a major social, environmental and economic problem in today's society but it is often overlooked. Experts began to systematically address the issue only after the year 2000. For the time being, the coverage of this topic in the Czech Republic is rather at the level of partial studies focused on a certain dimension of this problem, as there is no study or research team that would deal with the problem comprehensively. CVVM has been conducting a survey of the attitudes of the Czech public in connection with this issue since 2016, as part of its involvement in the Strategy AV21-Food for the Future research program,¹ where it addresses the "Food waste as a local and global problem" topic. In particular, its research focuses every year on general attitudes to food wasting, shopping, and consumer behaviour of respondents, shopping for so-called "crooked" vegetables and fruits, while each year it also addresses sub-topics such as views on genetically modified food, buying organic or local food, labelling the shelf life of food, awareness of a gluten-free diet or packaging issues.

The 2012 European Union aggregate statistics estimate that an average of 88 million tonnes of food is disposed of each year (calculated from all parts of the food distribution chain - from agricultural production to household final consumption); if we distribute this figure among all EU citizens, then there is 173 kg of food disposed of per person per year. The total volume of food produced in 2011 was about 865 kg per EU citizen. In conclusion, about 20% of this total food volume is then disposed of.²

Gross estimates provided by the European Commission³ show that it is relatively low in our country at various stages of the food chain compared to other EU countries. According to a more indulgent estimate, 829,851 tons of food is disposed of in the Czech Republic (i.e. 6.4% of total food production), not counting potential agricultural waste. According to the same estimate, there are 254,124 tons of food disposed of by households, which is 25 kg per capita in the Czech Republic. A similar figure was reached by researchers from Mendel University in Brno, when they studied how much food is disposed of by people in Brno households and the result was that the average Brno inhabitant throws away 37.4 kg of food per year, while the subjective estimate of people themselves was only 4.2 kg. ⁴Of course, the purchase of food is not a negligible item in the budget of Czech households. According to the Czech Statistical Office, in 2018 expenditure on food (excluding restaurants and beverages) was CZK 26,320 per year per household member, i.e. less than 18% of all consumption expenditures.⁵

Food waste accounts for about 30% of all household waste.⁶ It is also important to be aware of the very definition of food wasting and what is being discarded. The discarded food includes not only food that ends up in the consumer's trash bin, waste shredders, etc. This includes the food that is composted, fed to animals (e.g. hard bread) or otherwise not consumed by the consumers themselves. However, food is thrown away not only at the level of the individuals and households but is also wasted in other dimensions of the entire food production chain.

To get an overview, it is worth adding that wasting is part of the broader issue of food consumption and distribution in general. Experts have been addressing this topic for decades, especially in the context of unequal distribution of access to food from a global perspective. According to UN estimates, the number of malnourished people in the world has been growing in recent years, rising by 43 million to 820 million in three years since 2015, when there were 777 million of them, as the latest records from 2018 show.⁷ Although the current number of malnourished and hungry people is significantly lower than at the beginning of the 20th century, when it reached 900 million, it is still a very high number and therefore a very significant global problem. Eradicating hunger and ensuring access for all people to have safe, nutritious and adequate food throughout the year and eliminating all forms of malnutrition by 2030 is one of the Sustainable Development Goals (SDGs), which according to current data, is still very far away.⁸

¹ <https://www.potravinav21.cz/>

² Stenmarck A., Jensen C., Quested T., Moates G. 2016. *Estimates of European food waste levels. Report of the project FUSIONS* (contract number: 311972) granted by the European Commission (FP7). ISBN 978-91-88319-01-2. Dostupné z: <https://www.eu-fusions.org/phocadownload/Publications/Estimates%20of%20European%20food%20waste%20levels.pdf>

³ Priefer, C., Jörissen, J., & Bräutigam, K. R. (2013). Technology options for feeding 10 billion people-Options for cutting food waste. *Institute for Technology Assessment and Systems Analysis*. Dostupné z: [http://www.europarl.europa.eu/RegData/etudes/etudes/join/2013/513515/IPOL-JOIN_ET\(2013\)513515_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/etudes/join/2013/513515/IPOL-JOIN_ET(2013)513515_EN.pdf)

⁴ Do not waste food. Mendel University in Brno. <http://neplytvejpotravinami.mendelu.cz/>

⁵ Czech Statistical Office Household consumption expenditures - 2018. Available from: <https://www.czso.cz/csu/czso/spotrebni-vydaje-domacnosti-2018-pgj0e6toh7>

⁶ FAO. 2011. *Global food losses and food waste – Extent, causes and prevention*. Rome. Available from: <http://www.fao.org/docrep/014/mb060e/mb060e.pdf>

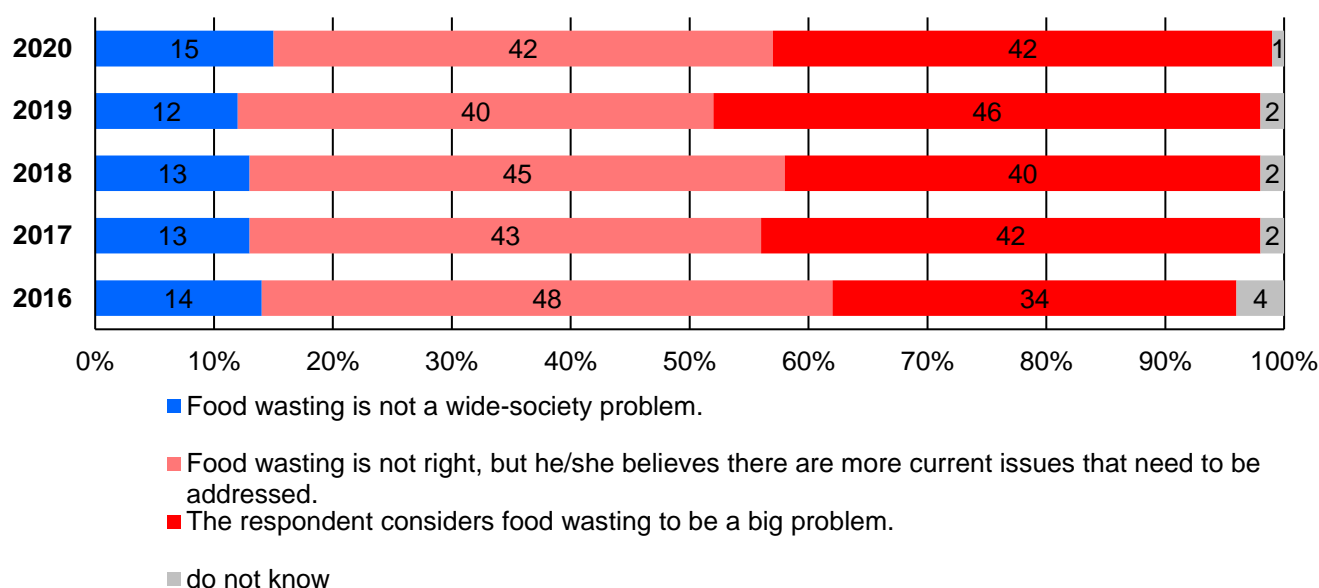
⁷ FAO, IFAD, UNICEF, WFP and WHO. 2019. *The State of Food Security and Nutrition in the World 2019. Safeguarding against economic slowdowns and downturns*. Rome, FAO. Available from: <http://www.fao.org/3/ca5162en/ca5162en.pdf>

⁸ OSN. 2020. Sustainable development goals [online]. Available from: <https://www.osn.cz/osn/hlavni-temata/sdgs/>

Food Wasting in Czech Households

The respondents first expressed their position on the issue of food wasting. Less than one-seventh (15%) of the respondents did not consider food wasting to be a societal problem. More than two-fifths (42%) of the respondents were of the opinion that food wasting is not right but that there were more current problems that needed to be addressed, while the same proportion (42%) of the respondents described food wasting as a big problem (see Chart 1 for more details).

Graph 1: Assessment of the urgency of food wasting (in %)⁹



Source: CVVM SOÚ AV ČR (Public Opinion Research Centre of the Institute of Sociology of the Czech Academy of Sciences) Food 15th - 31st August 2020; 979 respondents over 15 years old, personal interview.

Compared to the previous survey from April 2019, the share of people who consider food wasting to be a big problem has decreased slightly (by 4 percent), bringing the figure back to the level of 2017 and 2018 after last year's maximum. On the other hand, compared to 2019, the share of people according to whom wasting is not a society-wide problem increased slightly (by 3 percent and thus within the statistical error) to a maximum value of 15% so far (however, this value is statistically comparable with all surveys since 2016). In general, however, from a longer-term perspective (or since 2017), we can state that people's attitudes to the issue of food wasting are relatively stable.

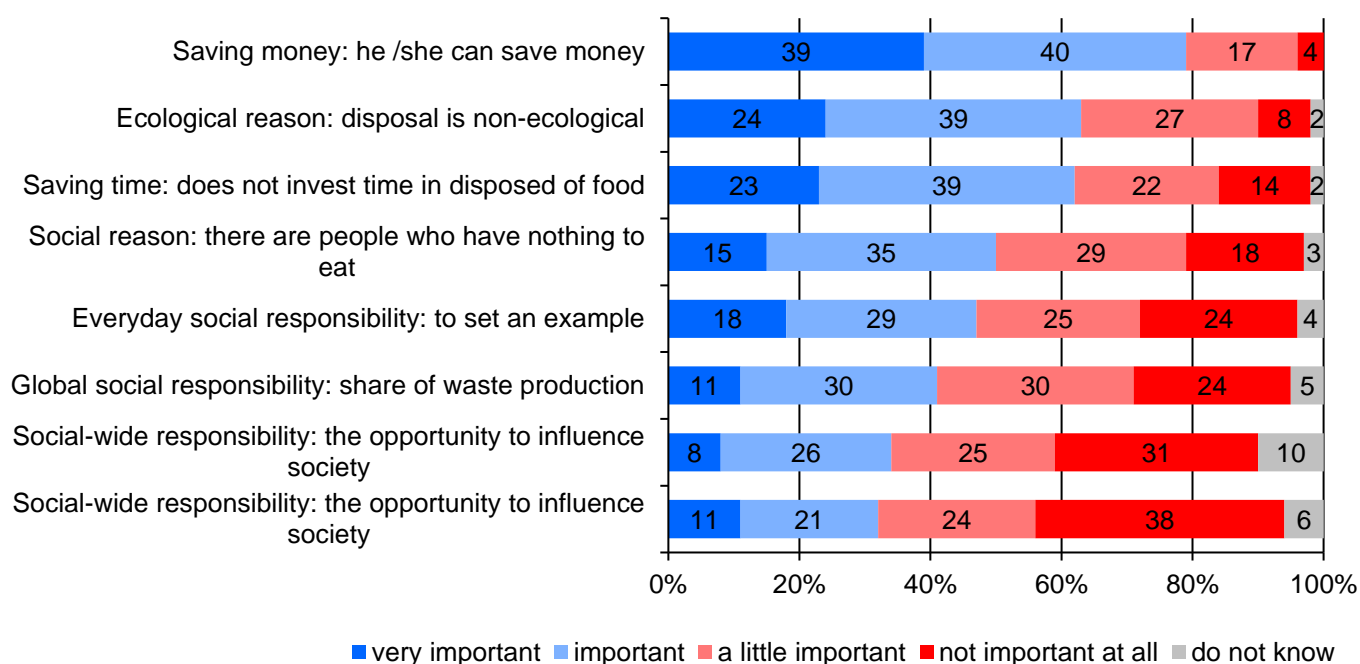
Attitudes towards food wasting are related to where people shop. The respondents who shop (regularly or sometimes) at farmers' markets, a farmers' shop or a health food shop were more likely to believe that food wasting is a big problem. The same opinion was more often expressed by women (48% of women, 37% of men) and people with a high school diploma or university education.

As for the assessment of the specific reasons for reducing food wasting (see Chart 2), the respondents mentioned the financial savings of their households as the most important. This reason is important for almost four-fifths (79%) of the respondents. More than three-fifths of people saw the reduction of food waste as a benefit to the ecological burden of the planet (63%) and they also considered important the saving of time which they would have to spend preparing or

⁹ Question wording: "Please indicate which of the following opinions best appeals to you: Food wasting is not a social problem. Food wasting is not right but you believe that there are more current problems that need to be addressed. You consider food wasting to be a big problem. "

buying food (62%). Half (50%) of the respondents also attributed importance to the ethical and social side of the problem and identify starving people as an important reason, while less than half (47%) of the respondents see the possibility of influencing the behaviour of their loved ones by changing their own behaviour, leading by example. Just over two-fifths (41%) of the respondents stated their own feeling of guilt for waste production in general as a reason to reduce food wasting. The least common reasons stated by about one-third of the respondents included the feeling that people can change society through their own behaviour (34%) and the impact of personal experience with the lack of food (32%).

Chart 2: Importance of the urgency of food wasting (in %)¹⁰



Source: CVVM SOÚ AV ČR (Public Opinion Research Centre of the Institute of Sociology of the Czech Academy of Sciences) Food 15th - 31st August 2020; 979 respondents over 15 years old, personal interview.

The importance of reasons for reducing food wasting is strongly linked to age, education, gender or the household standard of living. People over the age of 60 and respondents who rate their household standard of living as bad often described the reasons of saving money and time as "very important", as well as the fact they had experienced lack of food themselves, while the latter reason was "not important at all" especially for men, young people aged 15 to 19, university-educated people and the respondents with a good household standard of living. The explanation is clear, older people are more aware of the value of food because they have experienced food shortages themselves, while young people have never had such an experience and need to be educated in this regard, telling them that food waste is bad and what the negative consequences are. From a gender perspective, women were also more likely to say that time and environmental reasons were "very important" to them and that they wanted to lead by example. People with a university degree are more likely to attribute great importance to environmental and social reasons. On the contrary, social reason as well as global social responsibility are more often "not important at all" for young people aged 15 to 19, the respondents with elementary education and the respondents with a poor home standard of living.

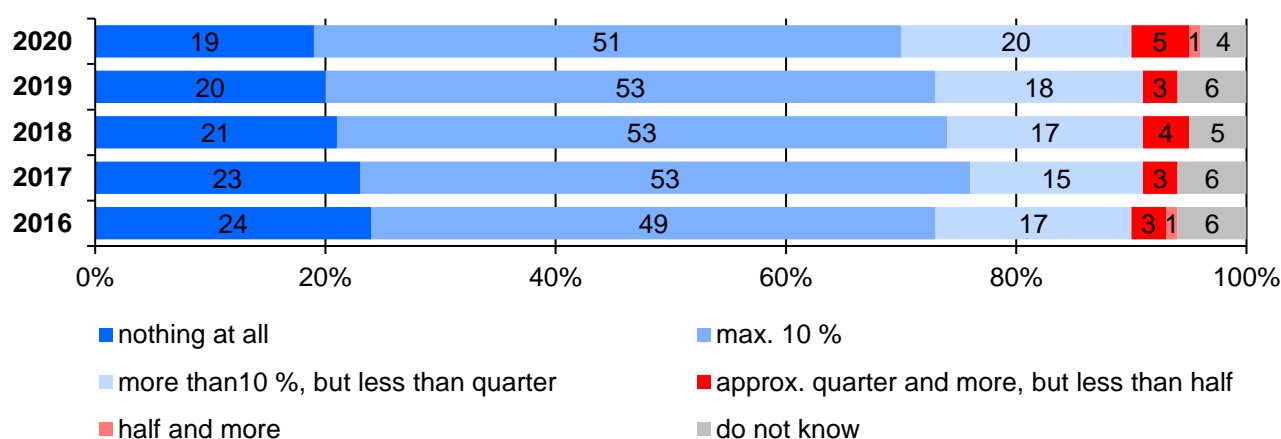
¹⁰ Question wording: "People stated various reasons that led them to dispose of food. I will read some of them to you and please always state how important or unimportant such a reason is for you. a) You think you can save money. b) You think that disposing of food is non-ecological. c) You think of people who have nothing to eat. d) You feel sorry for the time spent shopping or preparing food that is not eaten. e) You feel guilty about the production of waste in general. f) You think that by what you do, you can the change society by yourself. g) You want to lead your close ones by example. h) You have experienced not having enough food yourself." Response variants: very important, important, a little important, not important at all.

Reasons for Disposing of Food and its Quantity

We also asked the respondents to estimate the amount of food disposed of in their households (see Chart 3). The respondents were asked to also include in this amount such food that they put on compost or feed to animals, i.e. non-consumed food. More than half (51%) of the people declared that the total amount of food disposed of by their households did not exceed 10%. One-fifth (20%) of respondents then agree with the option that their household disposes of more than 10% but less than a quarter of food. One-twentieth (5%) of the respondents admitted disposing of more than a quarter but less than half of food, while a statistically insignificant 1% discarded even half of food or more. On the contrary, less than a fifth (19%) of the respondents say that their household does not dispose of any food. The remaining 4% of the respondents were unable to answer this question and chose the "I don't know" option.

If we take a look at the time development since 2016, there are no statistically significant shifts in the distribution of responses to the declared amount of year-to-year disposed of food. The only exception is a slight increase (by 4 percent) in the share of those who declared that they disposed of a maximum of 10% of food between 2016 and 2017. In the long run, however, we can observe a trend of a slight decrease in the share of those who declare that they do not dispose of any food (a decrease of 5 percent from 2016 to 2020).

Chart 3: Declared quantity of food disposed of in the household (in %)¹¹



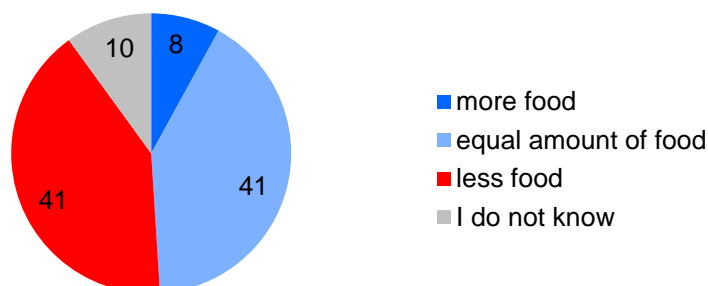
Source: CVVM SOÚ AV ČR (Public Opinion Research Centre of the Institute of Sociology of the Czech Academy of Sciences) Food 15th - 31st August 2020; 979 respondents over 15 years old, personal interview.

A more detailed analysis showed that according to their own statement, "nothing at all" is disposed of more often by women, people over the age of 60 and those who "always" buy exactly according to the shopping list. Men, young people aged 15 to 19 and the respondents with elementary education were more often unaware of the proportion of food disposed of in their households. This tendency is also evident for people who do not ensure household purchases (which is something relatively closely related to age).

Subsequently, we asked those who disposed of at least a small amount of food, how they think they are doing with food disposal compared to households of the same size (see Chart 4). More than two-fifths (41%) of the respondents think that their household disposes of the same amount or less food than other households of the same size, less than one-tenth (8%) think that their household disposes of more food than other households of the same size and the remaining one-tenth (10%) of the respondents answered "I do not know".

¹¹ Question wording: "What percentage of household foods do you not eat but throw in the trash, give to animals or put in a compost? Please try to think and estimate the percentage of food disposed of by your whole household. Response variants: Nothing at all; maximum of 10%; more than 10% but less than a quarter; about a quarter and more but less than half; half and more. "

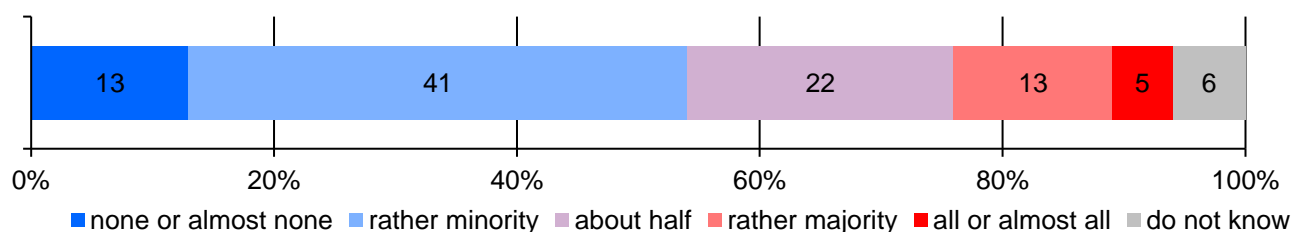
Chart 4: Disposal of food compared to households of the same size (in %, only those who disposed of at least some food)¹²



Source: CVVM SOÚ AV ČR (Public Opinion Research Centre, Institute of Sociology of the Czech Academy of Sciences) Food 15th - 31st August 2020; 789 respondents over 15 years old, who stated that they dispose of at least a small amount of food, personal interview.

Furthermore, we asked the respondents who declared that they discarded at least a small amount of food if they thought disposal of food could be avoided in some cases and how large they thought the amount of such food was (see Chart 5). More than two-fifths (41%) of people believed that the disposal of a "rather minority" of food that their household does not consume could be avoided, with more than a fifth (22%) estimating this amount at "about half" and more than one-tenth (13%) of the respondents think that they could eliminate the "rather majority" of food waste that they dispose of in their household. One-twentieth (5%) of people were of the opinion that they could avoid "all or almost all" disposed of food. On the other hand, approximately one-eighth (13%) of the respondents said that the amount of food disposed of in their household could not be reduced. The remaining 6% of the respondents were unable to answer and chose the "I don't know" option.

Chart 5: How much could be avoided (in %, only those who dispose of at least some food)¹³



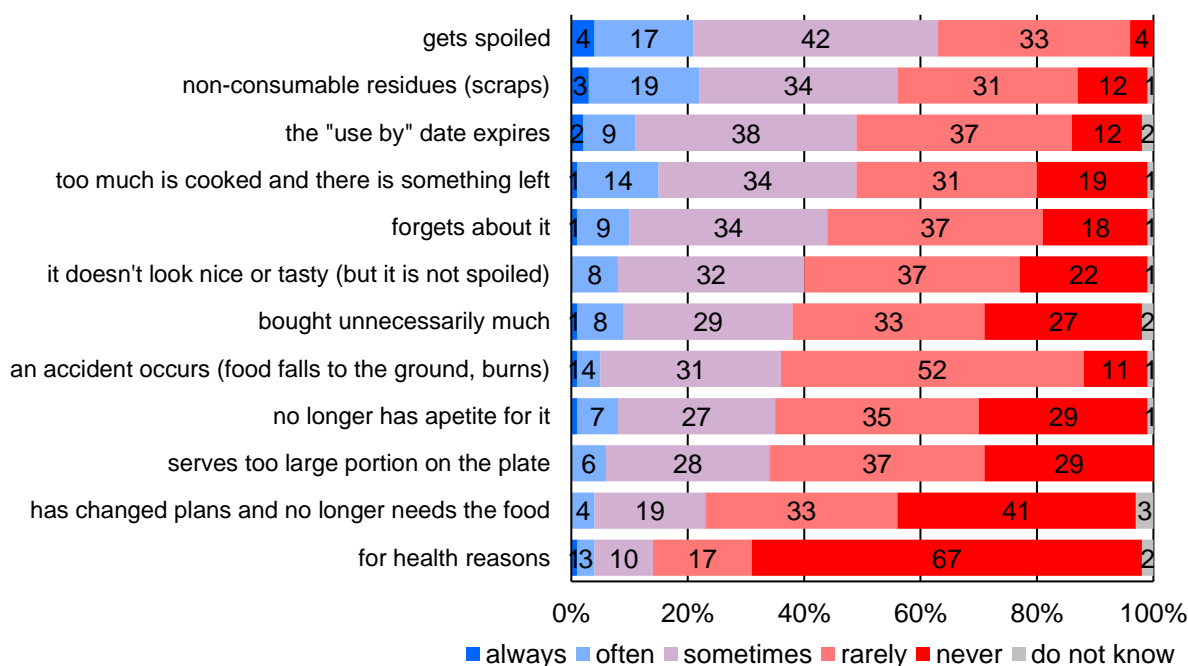
Source: CVVM SOÚ AV ČR (Public Opinion Research Centre, Institute of Sociology of the Czech Academy of Sciences) Food 15th - 31st August 2020; 789 respondents over 15 years old, who stated that they disposed of at least small amount of food, personal interview.

The most common reasons for not consuming food reported by those who disposed of food include deteriorating quality (it spoils, the expiration date passes, it doesn't look very nice) and scraps. Often mentioned were the reasons associated with an excessive amount of food are also relatively common (too much is cooked, forgotten, too much is bought, too large of a portion is served on the plate). Among the frequently cited reasons, there was also the fact that an accident occurred when handling food (food fell to the ground or was burned) or that a person no longer had an appetite for this food (see Chart 6 for details).

¹² Question wording: "Do you think that compared to households as large as yours, you dispose of: more food, the same amount of food or less food?"

¹³ Question wording: "How much of such discarded food do you think could be avoided? None or almost none; rather a minority; about half; rather the majority; almost all of it."

Chart 6: Reasons for not consuming all food in households (in%, only those who dispose of at least some food)¹⁴



Note: Items are listed in descending order of the sum of the "always", "often" and "sometimes" responses.

Source: CVVM SOÚ AV ČR (Public Opinion Research Centre, Institute of Sociology of the Czech Academy of Sciences) Food 15th - 31st August 2020; 789 respondents over 15 years old, who stated that they disposed of at least small amount of food, personal interview.

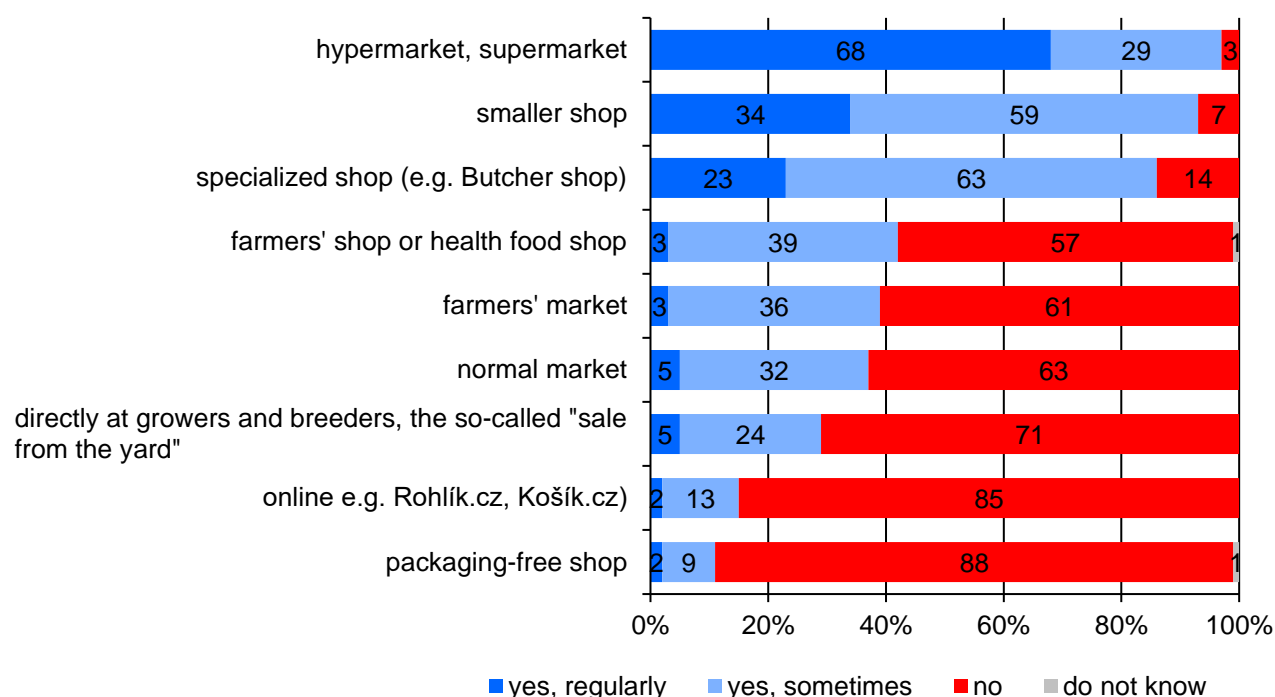
Shopping and Consumer Behaviour of the Respondents

In the following part of the press release, we will present the results of questions related to the respondents' purchasing and consumer behaviour. In particular, where people most often shop, how often, how much they spend on food purchases per month and what shopping activities they do (e.g., whether they write and use a shopping list when shopping, whether they buy discounted food or food they do not need).

Chart 7 shows where respondents most often buy food (at least 92% of respondents buy food sometimes, 8% never buy it). Most respondents bought food (regularly or sometimes) in a hypermarket / supermarket (97%), in smaller shops (93%) or in specialized stores such as butcher shops or bakeries (86%), other options were significantly less frequent. More than two-fifths (42%) of the respondents went shopping in a normal market regularly or sometimes, less than two-fifths went to the farmers' market (39%) or to farm shops and health food shops (37%). Almost three-tenths (29%) of people also at least sometimes buy food directly from growers and breeders. Less than one-seventh (15%) of the respondents stated that they regularly or sometimes used online purchases (e.g. Rohlík.cz, Košík.cz, iTesco). Among Czech citizens, shopping in a packaging-free shop is the least frequent, with only a little more than one-tenth (11%) of the respondents stating that they shopped regularly or sometimes in this type of shop.

¹⁴ Question wording: "There are a number of reasons why you can dispose of some food. I will present you with some of them; please tell me how it is in your home. a) It gets spoiled, b) it doesn't look nice or tasty (but it is not spoiled), c) the expiration date passes, d) too much is cooked and something is left, e) for health reasons (allergies, etc.), f) you no longer have appetite for it, g), an accident (food falls to the ground, it is burned, etc.), h) you forget about it, i) you bought too much food (too large a package, you buy something you already have at home), j) you changed your plans and you no longer need this food, k) unconsumable leftovers (cut-offs), l) you serve too large portion on the plate." Response variants: never, rarely, sometimes, often, always.

Chart 7: Places, where the respondents bought food (in %; only those who buy food)¹⁵



Note: Items are listed in descending order of the sum of the "yes, regularly" and "yes, sometimes" responses.

Source: CVVM SOÚ AV ČR (Public Opinion Research Centre, Institute of Sociology of the Czech Academy of Sciences) Food 15th - 31st August 2020; 902 respondents over 15 years old, who stated that they at least sometimes purchased food for their household, personal interview.

From the time comparison since 2018, which is shown in Table 1, we can see that there are almost no statistical shifts in the respondents year-to-year' answers and the results can thus be considered relatively constant. The most common reasons for not consuming food reported by those who disposed of food include deteriorating quality (it spoils, the expiration date passes, it doesn't look very nice) and surpluses in the form of scraps. Compared to the previous research from 2019, there was only a decrease in the share of people who shopped at least sometimes in a farmers' shop or health food shop (by 6 percent). Since 2018, there has been very slight decrease in the trend concerning the share of those who shop at least sometimes at farmers' markets (5 percent in total) and directly with growers and breeders (7 percent in total), while there has been a slight increase in the share of people shopping online (however, the overall increase of 3 percent is statistically insignificant and in the range of statistical error)¹⁶.

¹⁵ Question wording: "Do you buy food in the following places? a) In a hypermarket or supermarket, b) in a smaller shop, c) in a specialized shop (e.g. butcher shop, bakery shop), d) in a farmers' shop or health food shop, e) on the farmers' market, f) in a regular market, g) directly at growers and breeders, so-called "sales from the yard", h) online (e.g. Rohlík.cz, Košík.cz), i) in a packaging-free shop. " Response variants: yes, regularly; yes, sometimes; no.

¹⁶ This year's research took place in the second half of August 2020, i.e. after the spring wave of the pandemic and yet we did not notice a significant change in the shopping habits of Czech citizens.

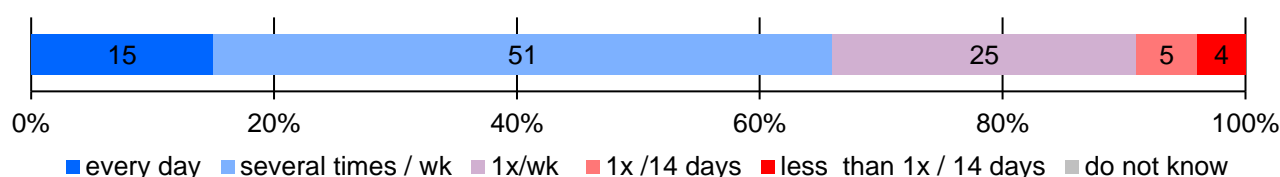
Table 1: Places, where the respondents bought food (in %; only those who buy food) - time comparison

	VI/2018	IV/2019	VIII/2020
hypermarket, supermarket	97	97	97
smaller shop	91	91	93
specialized shop (e.g. butcher shop, bakery shop)	89	88	86
common marketplace	48	40	42
farmers market	44	41	39
farmers shop or health food shop	42	43	37
directly at growers and breeders, the so-called "sale from the yard"	36	32	29
online (e.g. Rohlík.cz, Košík.cz, iTesco)	12	13	15
packaging-free shop	-	-	11

Note: The values in the table are the sum of the answers "yes, regularly" + "yes, sometimes". The remaining 100% consists of the "no" and "do not know" answers. The items are sorted in descending order according to the results of the current research.

Source: CVVM SOÚ AV ČR (Public Opinion Research Centre of the Institute of Sociology of the Czech Academy of Sciences), Our Society, Food.

We were also interested in how often people shop. More than half (51%) of the respondents went shopping several times a week, a quarter (25%) went once a week and less than one-tenth of the respondents went shopping less often (5% went shopping once in 14 days and 4% even less often than once in 14 days). On the contrary, approximately one-seventh (15%) of the respondents declared that they went shopping every day. Every day shopping or shopping several times a week is more common in women, while men shop less often.

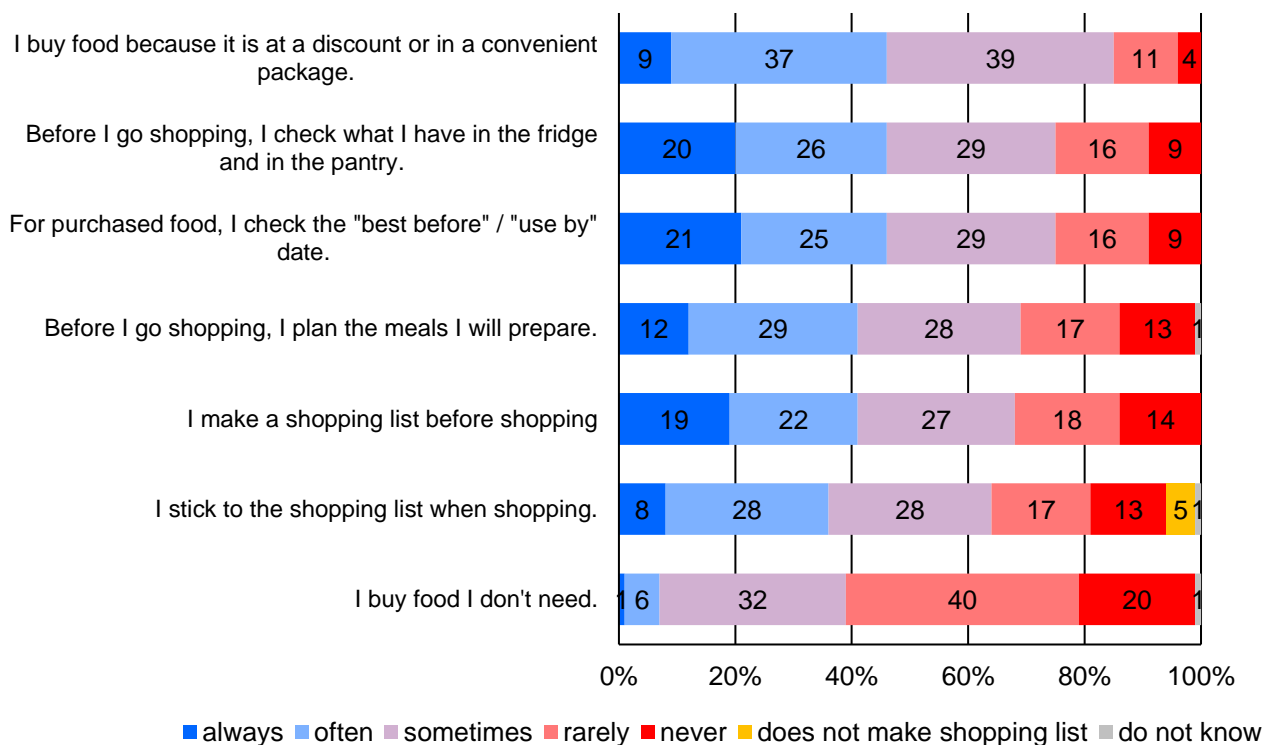
Chart 8: Frequency of shopping (in %, only those who buy food)¹⁷

Source: CVVM SOÚ AV ČR (Public Opinion Research Centre, Institute of Sociology of the Czech Academy of Sciences) Food 15th - 31st August 2020; 902 respondents over 15 years old, who stated that they at least sometimes purchased food for their household, personal interview.

We asked the respondents a group of questions, which were focused on various activities related to food shopping, which are recommended (not) to be done as a prevention from wasting, in order to find out whether and possibly how often people do / do not do these activities. From Chart 9, we can see that of the activities that contribute to food wasting, people most often buy food because it is discounted or in the convenient packs (85% of the respondents do that at least sometimes) and least often they buy food they do not need (39% of the respondents do that at least sometimes). The results for the remaining activities, which are recommended as prevention against wasting are encouraging, as all activities were done at least sometimes by more than three-fifths of the respondents. Before buying, people most often check what they have in the fridge and in the pantry, and when purchasing food they check the "best before" date / "use by" date (both 75%). Approximately two-thirds of the respondents also planned meals to be cooked before purchasing (69%), wrote a shopping list (68%) and stuck to a written shopping list (64%).

¹⁷ Question wording: "How often do you buy food?" Every day, several times a week, once a week, once every 14 days, less often than once every 14 days. "

Chart 9: Frequency of activities related to food shopping (in %; only those who buy food)¹⁸

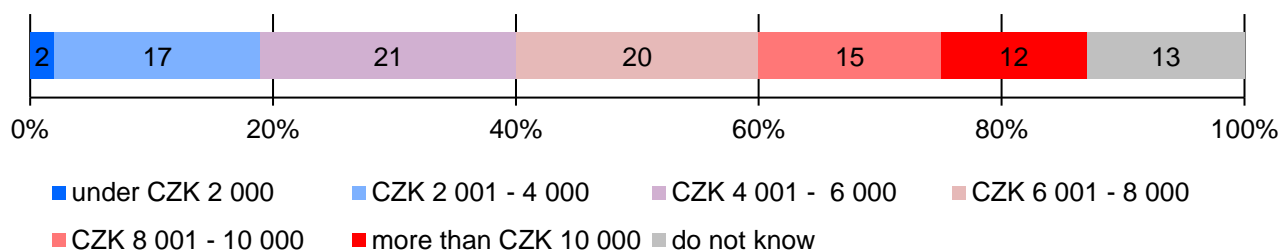


Note: Items are listed in descending order of the sum of the "always", "often" and "sometimes" responses.

Source: CVVM SOÚ AV ČR (Public Opinion Research Centre, Institute of Sociology of the Czech Academy of Sciences) Food 15th - 31st August 2020; 902 respondents over 15 years old, who stated that they at least sometimes purchased food for their household, personal interview.

At the end of this block of questions, the respondents had to state what the monthly expenses of their entire household for the purchase of food are. From Chart 10, we can see that most often households spent from 2 to 8 thousand crowns on the purchase of food, in particular 17% spent CZK 2 001 to 4 000, 21% spent CZK 4 001 to 6 000, while 20% spent CZK 6 001 to 8 000. Approximately one-seventh (15%) stated that their household spends CZK 8 to 10 thousand a month on the purchase of food and another more than one-tenth (12%) spent more than CZK 10,000. Only one-twentieth (2%) of the respondents believed that they spent more than CZK 2,000 a month for food. About one-eighth (13%) of the respondents were unable to answer this question and chose the "I don't know" option.

Chart 10: Monthly expenditure of the whole household for the purchase of food (in %)¹⁹



Source: CVVM SOÚ AV ČR (Public Opinion Research Centre of the Institute of Sociology of the Czech Academy of Sciences) Food 15th - 31st August 2020; 979 respondents over 15 years old, personal interview.

¹⁸ Question wording: "How often do you carry out the following activities related to food shopping? a) Before you go shopping, you make a shopping list., b) Before you go shopping, you check what you have in the fridge and in the pantry., c) Before you go shopping, you plan the meals you will prepare. d) When shopping, you stick to the shopping list firmly., e) You check the "best before" / "use by" date of purchased food., f) You buy food because it is at a discount or in a convenient package. Response variants: never, rarely, sometimes, often, always.

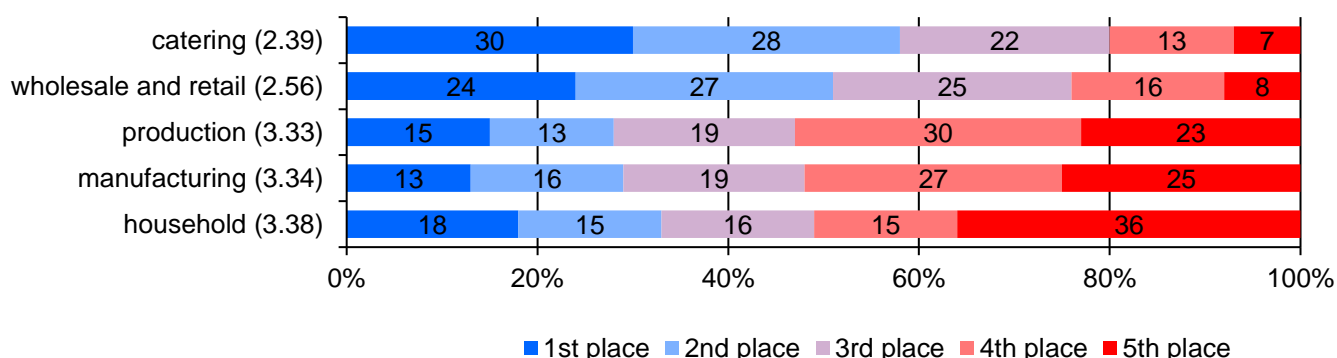
¹⁹ Question wording: "How much money does your whole household spend on food per month? Up to CZK 2,000; CZK 2,001 - 4,000 ; CZK 4,001 - 6,000; CZK 6,001 - 8,000; CZK 8,001 - 10,000; CZK 10,001 - 12,000; CZK 12,001 - 14,000; more than CZK 14,000.

People over the age of 60, pensioners, the unemployed, the respondents who rated their household standard of living as poor and households without children spent less on the purchase of food per month. Expenditures of more than CZK 10,000 are more often incurred by entrepreneurs, managers and households with two or three children. At the same time, men more often do not know how much their household spends on food per month. As for the size of the household, a one-member household most often spent 2 to 4 thousand crowns a month on food, a two-member household often spent 4 to 8 thousand crowns and households with three or four members most often spent 6 to 10 thousand crowns. For households with more than four members, monthly food expenditures are even higher.

Where does wasting take place and who strives the most to reduce food wasting in the Czech Republic?

The disposal of food does not only concern households and individuals, although it is seemingly the most visible component. Wasting occurs in all dimensions of the entire food production chain - from agricultural production to final consumption in households. According to EU estimates from 2012²⁰, the greatest wasting occurs at the household level (it is stated that it is up to 53% of the total volume of disposed of food), approximately one-fifth (19%) of the total volume of disposed food was produced by the processing industry and catering (12%). Wasting that is part of the production itself is about one-tenth (11%). The remaining 5% was attributed to wholesale and retail business. We asked the respondents a question²¹ in which they were supposed to rank these five dimensions of the whole food production chain according to how they believe they contribute to the total amount of disposed food. The results are shown in the following Chart 11.

Chart 11: The order of the dimensions of the food production chain according to the share in the total amount of disposed of food (in %)



Note: The items are ranked according to the average rating (in parentheses) from the lowest average value to the highest. The data in the chart represents the distribution of responses excluding the "I do not know" responses which make up 2% of the entire set.

Source: CVVM SOÚ AV ČR (Public Opinion Research Centre of the Institute of Sociology of the Czech Academy of Sciences) Food 15th - 31st August 2020; 979 respondents over 15 years old, personal interview.

If we take a look at EU estimates, the greatest wasting occurs at the household level and the least on the wholesale and retail level. When compare them with the respondents' opinions, we get quite interesting results. More than one-third (36%) of the respondents identified households as the ones wasting the least food, while three-tenths (30%) of the respondents said that the greatest wasting occurred in the catering establishments. The respondents ranked wholesale and retail as the second largest "wasters", while according to EU estimates, the least food wasting takes place in these areas. On the contrary, second place when it comes to the rankings of the largest "wasters" according to EU estimates belongs to the processing industry, which the Czech respondents ranked as fourth. However, it should be noted that there were no statistically significant differences in the average values between 3rd and 5th place. In conclusion, however, we can state that the opinions of the Czech public differ significantly from the given

²⁰ Stenmarck Å., Jensen C., Quedstedt T., Moates G. (2016). Estimates of European food waste levels. Report of the FUSIONS project (contract number: 311972) granted by the European Commission (FP7). ISBN 978-91-88319-01-2. Available from: <https://www.eu-fusions.org/phocadownload/Publications/Estimates%20of%20European%20food%20waste%20levels.pdf>

²¹ Question wording: "Rank the following options from 1 to 5, depending on how much you think they contribute to the total amount of disposed of food. (1 means maximum, 5 means minimum, NO DIGIT MAY BE REPEATED IN ORDER)". Options: households, production (e.g. farmers), catering services (restaurants, etc.), wholesale and retail, processing industry

estimates of the EU in the order of "wasters". The respondents participating in the research tended to greatly underestimate the role of households in food wasting and looked for culprits on the side of catering establishments as well as retail and wholesale.

We also asked the respondents who, in their opinion, strives the most to reduce food wasting in the Czech Republic.²² It was an open-ended question, which the respondents answered in their own words and had the opportunity to provide up to three answers. We received a total of 1,607 responses. Since there were often answers which had the same meaning, we created several categories into which we sorted the specific answers.

As can be seen from Table 2, which shows the results of the open-ended question, according to the Czech public opinion, people and households themselves and various non-governmental, non-profit or environmental organizations and activists are striving the most to reduce food wasting in the Czech Republic. The respondents also relatively often mentioned the state sector (government, ministries, state administration) and farmers. According to the respondents, retail chains, catering establishments, as well as international organizations and the EU are also striving to reduce food wasting in the Czech Republic but these answers have appeared in only about one-twentieth of the respondents. Other responses that could not be categorized often included the media, hospitals or technical / cleaning services.

Table 2: Who, according to you, strives the most to reduce food wasting in the Czech Republic? - results of an open-ended question

Response Category	Frequency	Percentage (%)
Individuals, households, people themselves, specific groups of the population	362	23
Non-governmental, non-profit, ecological, and charitable organizations, activists	334	21
Government organizations, ministries, state administration	140	9
Farmers, food makers, producers	134	8
Retail chains, shops, supermarkets, hypermarkets	81	5
Catering facilities (restaurants, canteens, school canteens)	80	5
EU and other international organizations	57	4
Manufacturing industry	25	2
Green Party	15	1
Nobody	8	0
Other	58	4
Do not know	313	19

Source: CVVM SOÚ AV ČR (Public Opinion Research Centre of the Institute of Sociology of the Czech Academy of Sciences) Food 15th - 31st August 2020; 1 607 respondents over 15 years old, personal interview.

"Best before" and "Use by..."

In the following block of questions, we focused on how the respondents work with the terms "best before" and "use by...". The meaning of these terms is often confused, even though it is a relatively important factor in food purchases and consumption. Research in EU countries has shown that up to 10% of total food waste, i.e. 8.8 million tonnes, is caused by consumers not understanding these terms.²³

The State Agricultural and Food Inspection Authority states that the "best before" date is used to indicate food that is not perishable and is durable (e.g. pasta, canned food, biscuits, etc.). It is generally stated that food can be safely consumed even after this date, provided that it is stored in the required conditions and its packaging is not damaged.

²² Question wording: "Who, according to you, strives the most to reduce food wasting in the Czech Republic? You can provide up to three answers."

²³ EU. 2018. *Market study on date marking and other information provided on food labels and food waste prevention*. ISBN: 978-92-79-73421-2. Available from: https://ec.europa.eu/food/sites/food/files/safety/docs/fw_lib_srp_date-marking.pdf

They are therefore usually not bad after this date but their taste and nutritional qualities can no longer be guaranteed.²⁴

In contrast, "use by..." is also sometimes referred to as the expiration date. Food bearing this sign is usually perishable and must be consumed soon. Such foods include, for example, dairy products, fish, chilled meat, cold kitchen products, etc. Food that passes this date is no longer considered safe and may be unhealthy.²⁵

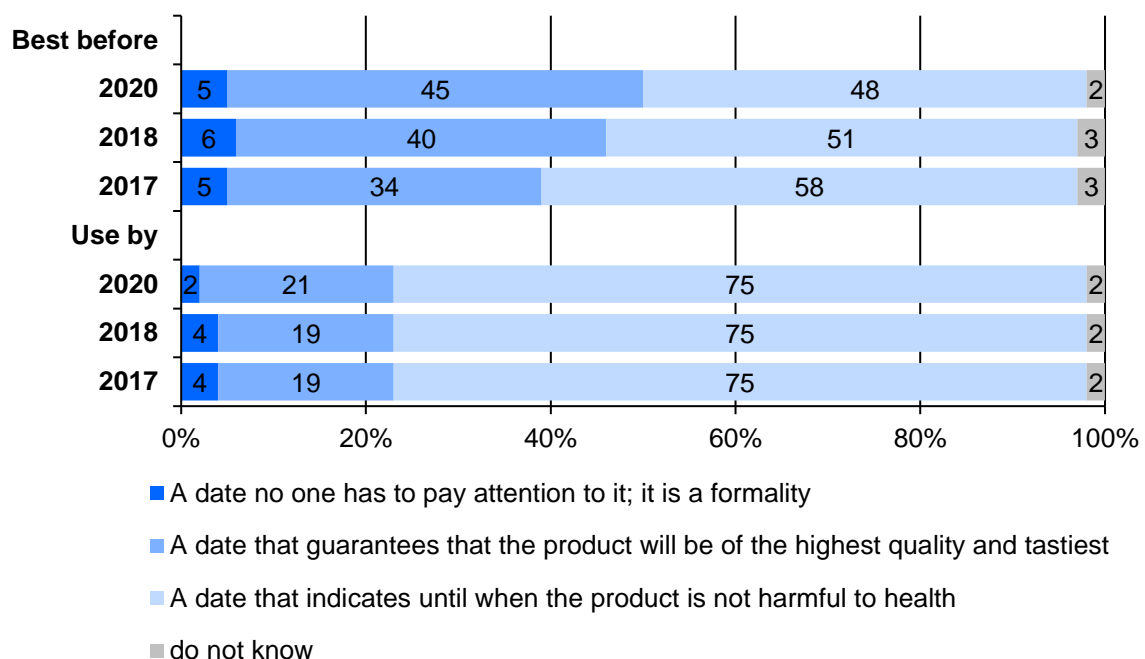
There is also a group of food that does not need to be labelled with either the "best before" date or the "use by" date. Such food includes fresh fruit and vegetables, mushrooms, spirits and other alcoholic beverages with an alcohol content of at least 10% by volume, wine, chewing gum, vinegar, etc.²⁶

If we take a look at how these terms are distinguished by the Czech public (see Chart 12), we can see that in the case of the "use by..." marking that the vast majority (75%) of the respondents correctly associated its meaning with the health safety of the product. For more than one-fifth (21%), it is an expression of the period in which the product will be of the highest quality and tastiest. Only 2% of the respondents considered it a formality without a deeper meaning for consumers and the same proportion (2%) of the respondents could not answer and chose the option "I do not know".

Less than half (48%) of the Czech public perceived the "best before" date as an indicator of the health safety of food - in other words, they attributed the same importance to it as to the "use by..." date. More than two-fifths (45%) of the people then correctly described it as a date that guarantees that the product will be of the highest quality and tastiest. Only a small part (5%) of the respondents perceive it as irrelevant information, which has only a formal meaning. The remaining 2% of respondents did not know the answer to this question and chose the "I don't know" option.

Proper knowledge of the term "best before" increased with the increasing education of the respondents; the term "use by..." was more often used correctly by women and university graduates, while young people aged 15 to 19 more often gave it the same meaning as the term "best before".

Chart 12: What is the meaning of the terms "best before" and "use by" (in %)?²⁷



Source: CVVM SOÚ AV ČR (Public Opinion Research Centre of the Institute of Sociology of the Czech Academy of Sciences) Food 15th - 31st August 2020; 979 respondents over 15 years old, personal interview

²⁴ <http://www.szpi.gov.cz/clanek/datum-minimalni-trvanlivosti-a-datum-pouzitelnosti.aspx>

²⁵ <http://www.szpi.gov.cz/clanek/datum-minimalni-trvanlivosti-a-datum-pouzitelnosti.aspx>

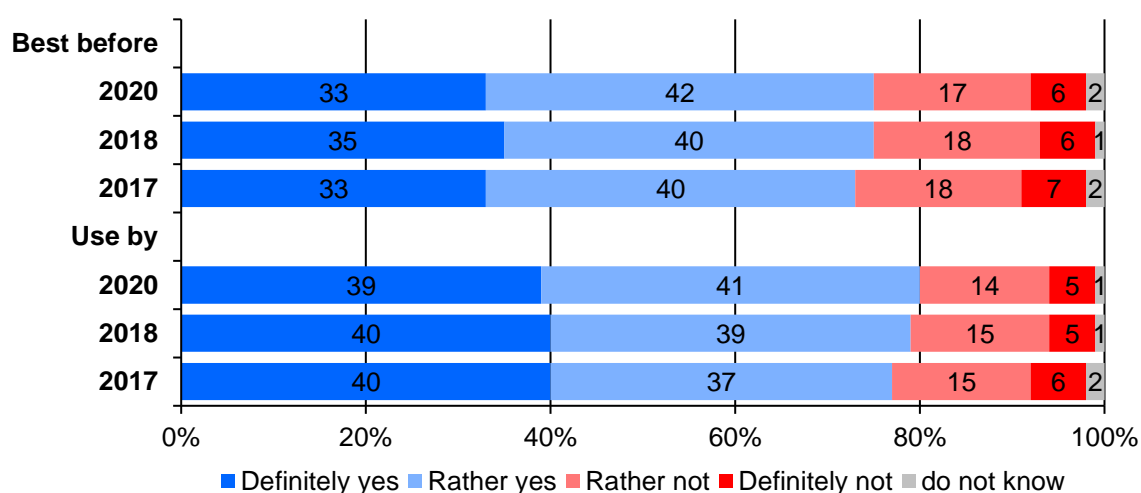
²⁶ <http://www.szpi.gov.cz/clanek/datum-minimalni-trvanlivosti-a-datum-pouzitelnosti.aspx>

²⁷ Question wording: "What do you think the food label "Minimum shelf life" / use by" represent?" A date that no one has to observe; it is a formality. A date that guarantees that the product will be of the highest quality and tastiest. A date that indicates until when the product is not harmful to health.

If we take a look at the results in the time perspective, i.e. from 2017, we can observe that in the case of the "use by..." the distribution of opinions of the Czech public remains constant, while in the case of the "best before" there is an increase (11%) in the number of those according to whom "best before" indicates the date that guarantees that the product will be of the highest quality and tastiest, to the detriment of the opinion that it is a date that indicates when the product is safe (a total decrease of 10 percent). This is a positive shift signifying better acquaintance of the Czech public with this information.

Subsequently, we were interested in the extent to which the "best before" and "use by..." dates are decisive for the respondents when shopping. As we can see, both figures are about the same for most people when buying food, with three-quarters (75%) of the respondents looking at "Minimum shelf life" (of which for 33% it "definitely" plays a role in shopping and for 42% it "rather" plays a role) and four-fifths (80%) of respondents focusing on 'use by...' (of which for 39% it "definitely" plays a role in their decision-making and for 41% it "rather" plays a role). On the contrary, less than one-fifth (19%) of the Czech public does not consider the "use by..." information to be decisive for the purchase of food, specifically 14% rather did not make decisions based on it and 5% did not decide based on it. The "best before" of the product is assessed by the respondents as somewhat more unimportant, as less than a quarter (23%) of the Czech public perceived it in this way (of which 17% rather and 6% definitely).

Chart 12: Deciding when shopping for food according to "best before" and "use by..." (in %)²⁸



Note: Only those who shopped at least sometimes were included.

Source: CVVM SOÚ AV ČR (Public Opinion Research Centre of the Institute of Sociology of the Czech Academy of Sciences) Food 15th - 31st August 2020; 943 respondents over 15 years old, personal interview.

It is not surprising that this information on food was given more importance by people who associated it with a declaration of quality, taste or health safety. On the contrary, for respondents who consider it formality, it is not decisive when buying food. This information is more significantly observed by women than men, which may also be based on the fact that women are also more often the ones ensuring regular purchases for the household. Checking the "best before" date and the "use by" date information also increases significantly with the respondent's education. In particular, the "use by..." information was also more often checked by the respondents who stated that their household disposed of less food. On the contrary, young people aged 15 to 19 and those who declare a poor household standard of living pay less attention to this information.

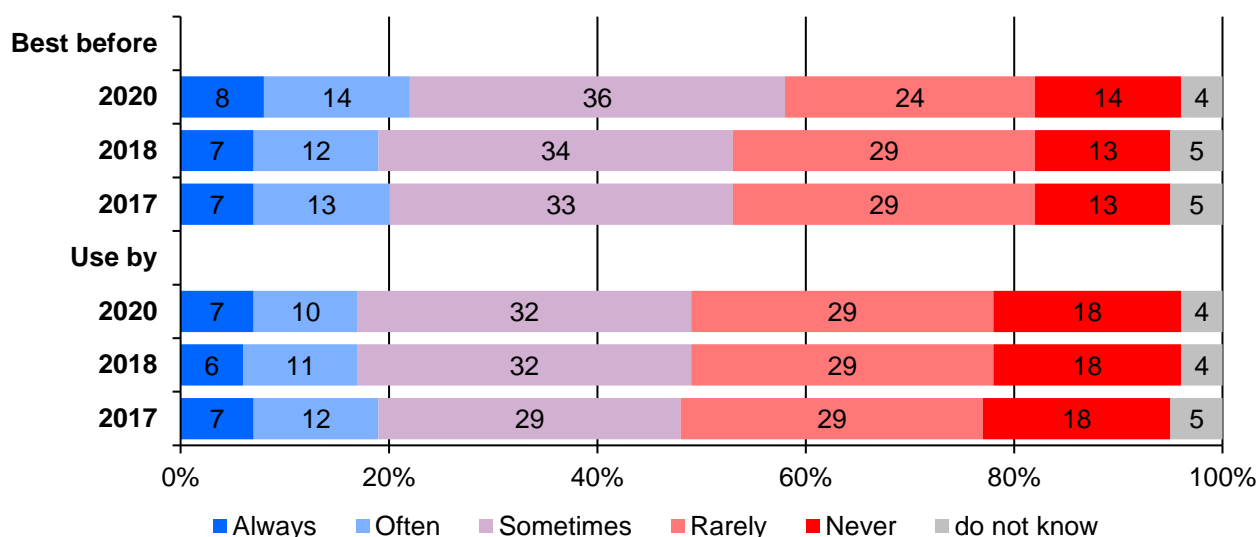
Almost three-fifths (58%) of the respondents consumed food with an expired "best before" date in their households, with 8% consuming this food "always", approximately one-seventh (14%) "often" and more than a third (36%) "sometimes". Less than half (49%) of the respondents (7% "always", 10% "often" and 32% "sometimes") consumed food with an expired "use by..." date. On the contrary, less than a quarter (24%) of the respondents "rarely" consume food after the "best before" date and 29% of the respondents after the "use by..." date. Less than one-fifth (18%)

²⁸ Question wording: "Do you decide when buying food for your household according to its ... a) "best before" date, b) the "use by" date?." Response variants: definitely yes, rather yes, rather not, definitely not.

“never” consumed food after the “use by...” date, approximately one-seventh (14%) of the respondents “never” consumed food after the “best before” date (see Chart 13).

Chart 13 also allows a comparison of current results with the results of previous surveys from 2017 and 2018. As we can see compared to 2018, there was a slight increase in the share of those who at least sometimes consume food after the period of their "best before", which is most likely related to a certain increase in awareness of this term among the Czech public. Conversely, the shares of households that consume food with an expired “use by...” date did not change over time.

Chart 13: Consumption of food with the "best before" and "use by..." days expired (in %)²⁹



Source: CVVM SOÚ AV ČR (Public Opinion Research Centre of the Institute of Sociology of the Czech Academy of Sciences) Food 15th - 31st August 2020; 979 respondents over 15 years old, personal interview

²⁹ Question wording: "Do you normally consume at home food in which a) the "best before" date, b) "use by" date has expired?" Response variants: never, rarely, sometimes, often, always.

Technical Parameters of the Research

Research:	<i>Food 2020</i>
Implementer:	<i>Centrum pro výzkum veřejného mínění, Sociologický ústav AV ČR, v.v.i. (Public Opinion Research Centre of the Institute of Sociology of the Czech Academy of Sciences)</i>
Project:	<i>Strategy AV21 "Foods for the Future"</i>
Date of field investigation:	<i>15th August - 31st August 2020</i>
Selection of the respondents:	<i>Quota sampling</i>
Quotas:	<i>Region (NUTS 3 areas), size of the area of residence, sex, age, education</i>
Data weighting:	<i>Education X NUTS 2, age X NUTS 2, sex X region, size of the area of residence X age, education X age</i>
Source data for quota sampling and data weighing:	<i>Czech Statistical Office</i>
Representative rate:	<i>Population of the CR, 15 years old and older</i>
Number of the respondents:	<i>979</i>
Number of interviewers:	<i>161</i>
Data collection method:	<i>Personal interview of the interviewer with the respondent - a combination of CAPI and PAPI interviews</i>
Research tool:	<i>Standardized questionnaire</i>
Questions:	<i>PL.7, PL.10, PL.11, PL.12, PL.13, PL.14, PL.15, PL.27, PL.28, PL.29, PL.30, PL.31, PL.38, PL.39, PL.40, PL.41, PL.43</i>
Message code:	<i>OR201113</i>
Published on:	<i>13 November 2020</i>
Prepared by:	<i>Radka Hanzlová</i>

Dictionary of Terms:

Quota sampling - it mimics the structure of the basic set (in our case it is the population of the Czech Republic older than 15 years) by setting the size of selected parameters, the so-called "quotas". In other words, the quota selection is based on the same percentage of selected properties. We use data from the Czech Statistical Office to create the quotas. Our research sets quotas for gender, age, education, region, and community size. The sample is therefore selected so that the percentage of e.g. men and women in the sample corresponds to the percentage of men and women in each region of the Czech Republic. Similarly, the percentage of the population of individual regions of the Czech Republic, citizens of different age categories, people with different levels of education and from differently sized municipalities is preserved.

A representative sample is such a sample from the whole population, from the characteristics of which it is possible to validly conclude the characteristics of the whole population. In our case, this means that the respondents are selected so that we can generalize the data to the population of the Czech Republic older than 15 years.

Data weighting - a way to increase the representativeness of the file with respect to selected characteristics of the population by assigning a weight to each respondent. The weights are generated using the iterative proportional weighing method and they range from 0.333 to 3.

Public Opinion Research Centre (CVVM) is the research department of the Institute of Sociology of the Czech Academy of Sciences (Sociologický ústav AV ČR, v.v.i.) Its history dates back to 1946, when the Czechoslovak Institute for Public Opinion Research began operating as part of the Ministry of Information. The current Centre was established in 2001 by transferring its predecessor (IVVM) from the Czech Statistical Office to the Institute of Sociology of the Czech Academy of Sciences. Incorporation into a scientific institution guarantees a quality professional background and workplace credit; as a part of the academic environment, CVVM SOÚ AV ČR (Public Opinion Research Centre of the Institute of Sociology of the Czech Academy of Sciences) must meet all requirements and thus reach the highest professional level. The main task of the department is the "Our Society" research project, within which ten surveys are conducted annually. This is public opinion research on a representative sample of the Czech population from the age of 15 years old, in which it is always participated in by approximately 1,000 respondents. The omnibus form of the questionnaire makes it possible to cover a wide range of topics, and therefore such political, economic and other general social issues are regularly included in the research. The research uses repeated questions, which make it possible to monitor the development of the studied phenomena, as well as new topics that respond to current events. Due to its long-term and continuous nature, this scientific project of public opinion research is unique in the Czech Republic.

The activity was supported by the AV21 Strategy of the Academy of Sciences within the "Food for the Future" research program. <http://www.potravinav21.cz/>