

Abstract: The aim of the research is to assess the behaviour of the consumers of organic products, with a particular focus on the frequency of consumption, the groups of purchased products, the preferred sales channels, the consumer motivations, and the impact of the COVID-19 pandemic on the market development. The data from the online questionnaire survey were analysed by descriptive statistical and relationship analysis methods. In 2020 and 2021, the frequency of purchase of organic products increased. The regular customers are mainly middle-aged, highly educated women with higher incomes, who mostly buy fruit and vegetables, mainly in discount stores. The respondents with relatively low frequency buy directly from organic producers, although the use of short supply chains could be a remarkable price-reducing factor.

Keywords: organic food, consumer behaviour, sales channels, motivations, Hungary

Összefoglaló: A kutatás célja a biotermékek fogyasztói magatartásának felmérése, különös tekintettel a fogyasztási gyakoriságra, a vásárolt termékcsoporthoz, a preferált értékesítési csatornákra, a fogyasztói motivációkra és a COVID-19 pandémia piacra gyakorolt hatására. Az online kérdőíves felmérés adatait leíró statisztikai és kapcsolatvizsgálati módszerekkel elemeztük. A 2020–2021-es években növekedett a biotermékek vásárlási gyakorisága. A rendszeres vásárlók elsősorban középkorú, magas iskolai végzettséggel rendelkező, magasabb jövedelemből élő nők, akik leginkább zöldség- és gyümölcsfélét vásárolnak, elsősorban diszkontokban. Viszonylag kis gyakorisággal vásárolnak a válaszadók közvetlenül biotermelőtől, pedig a rövid ellátási láncok használata jelentős árcsökkenő tényező lehetne.

Kulcsszavak: bioélelmiszer, fogyasztói magatartás, értékesítési csatornák, motivációk, Magyarország

Highlights

- Half of the respondents increased their purchases of organic products in 2020–2021.
 - There is a need to raise awareness to promote the recognition of organic labels.
 - The main factor that supports consumption growth is the reduction of consumer prices.
 - The use of short supply chains could be a remarkable price-reducing factor.
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1. Introduction

According to experts, the organic production system plays an important role in the increase of the population retention ability and attractiveness of the countryside and the development of rural life, so, in a more complex approach, it also has social and economic effects (Sarudi, 2002). The depopulation of the countryside is a major problem throughout Europe, including Hungary, as well as the provision of a livelihood for the people living in the countryside. To these problems, agricultural production systems with a greater demand for labour, thus increasing the proportion of organic farming, could be a solution. One important element of ensuring the livelihood of rural people is to ensure that the producers receive as much of the consumer price of the locally produced products as possible. This can be achieved, inter alia, (among others), through the use of short supply chains, i.e., by leaving out intermediaries (traders, exporters, etc.) and selling directly to the consumers (e.g., online sale, farmers market, farm gate sales) (Kujáni, 2017; Peterson et al., 2019).

The concept of sustainable development and the objectives of the Green Deal of the European Union assign a special role to the consumption of organic products (European Commission, 2019). Our research aimed to assess consumer behaviours regarding organic products, in particular the frequency of purchases, the awareness of choice, the factors of motivation of the consumers and the main sales

channels, as well as to analyse the effects of the COVID-19 pandemic on this market. The knowledge of consumer habits will enable us to identify the challenges facing the organic sector and the possible improvement directions, thereby helping its development.

2. Challenges of the organic sector

Climate change, food safety and quality are real challenges for modern society and future generations. Due to the adverse effects of industrial, agricultural production and the increase in health risks, sustainability and environmental awareness are becoming increasingly important in terms of farming and consumption. Organic food (synonyms for 'bio', 'eco', and 'organic') is the most successful green food, and organic farming is one of the most sustainable agricultural production systems in terms of environmental and social well-being (Boone et al., 2019; Kowalska et al., 2021; Panyor, 2020; Reganold & Wachter, 2016; Smith et al., 2019). By now, the principles of organic farming have been applied in many countries around the world. Organic farming is a farming method and food production system that prohibits or limits the use of certain pesticides, fertilizers, soil conditioners, artificial veterinary drugs and yield enhancers. Organic production applies high animal welfare standards and promotes the protection and sustainability of the natural environment. The operator applies the principles and rules expected during farming under increased control, from production through processing to trade (European Council, 2018).

The current crisis situations (pandemic, climate crisis, economic recession due to the Russian-Ukrainian war, energy crisis), despite the difficulties, can continue to strengthen the development of organic farming since the resilience of organic farming is much greater than that of conventional farming based on chemical inputs. Organic farming methods are less dependent on external factors, such as the rising prices of fertilisers and synthetic pesticides, and shorter supply chains make organic farming less exposed to the hectic nature of the global market (European Commission, 2022). It is important to note that in extreme climatic conditions, the productivity of organic farming is particularly remarkable, analyses show that it performs 10–30% better than conventional farming (Pimentel et al., 2005; MacRae et al., 2007; Durham & Mizik, 2021).

The growing spread of conscious consumer behaviour, including scientifically based and sustainable food consumption, can be an answer to global challenges. Sustainable and planet-friendly dietary recommendations, known as the “planetary health diet”, are becoming more widely known (Willett et al., 2019). In addition, not only the composition of the diet but also the rise of environmentally friendly production of ingredients, is an important aspect which has led to an increase in the environmental awareness of European consumers over the last decade. Organic farming as an alternative model is particularly interesting because it has been proved that people in Western Europe who consume considerable amounts of plant-based produces also consume more organic food (Lacour et al., 2018). They have a growing interest in conscious consumption and the environmentally sound properties of products, which increases their willingness to pay for organic products (Wägeli et al., 2016; Schäufele & Hamm, 2017; Katt & Meixner, 2020). According to a meta-analysis by Li and Kallas (2021), consumers pay on average 29.5% more for sustainable products compared to conventional products (Li & Kallas, 2021).

The latest FiBL-IFOAM survey on organic farming shows that the size of organic farmland and organic trade sales continued to grow worldwide (Willer et al., 2023). In 2021, 76.4 million hectares of organic farmland, including areas under conversion, were registered. The regions with the largest areas of organic farmland are in Oceania (36 million hectares – almost half of the world’s organic area) and Europe (Willer et al., 2023). Out of all agricultural land, the second highest organic share per region was in Europe. (Willer et al., 2022). In 2021, 17.8 million hectares of agricultural land in Europe were under organic farming (15.6 million hectares in the European Union). Ranking the individual countries, France is in first place (with almost 2.8 million hectares), followed by Spain (2.6 million hectares), Italy (2.2 million hectares) and Germany (1.8 million hectares) (Willer et al., 2023). In Europe, the areas cultivated with organic farming account for 3.6 percent of the total agricultural areas, in the European Union, this ratio is 9.6 percent (Willer et al., 2023).

The world market for organic products has grown significantly over the past years (USDA Foreign Agricultural Service, 2022; Willer et al., 2022). This expansion is partly due to the significant increase in consumer interest in healthy foods as a result of the COVID-19 pandemic (Hassen et al., 2021; Guiné et al., 2022; Brata et al., 2022). While the environmental and biodiversity benefits of organic farming are widely recognised, the economic benefits have also become increasingly important (Durham & Mizik, 2021). The organic market has become a very dynamic sector in Europe over the last 8–10 years, with a turnover of €54.5 billion in 2021 (Willer et al., 2023). This made the European Union the world's largest single market for organic products (overtaking the United States as well). In 2021, European consumers spent an average of €65.7 per person on organic food (€104.3 per person in the EU). Broken down by country, Swiss consumers spent the most on organic food (an average of €425 per person), and Denmark still had the highest market share of organic food with 13% of the total food market. Per capita, consumer spending on organic food in EU member states doubled between 2012 and 2021.

According to the latest data, 293 597 hectares, i.e., 5.9% of the agricultural area, are under organic farming in Hungary (Willer et al., 2023). Regarding the domestic situation of organic agriculture, it is still in the middle of the European range. In 2021, 5129 farmers, 498 food processing companies and 61 companies importing from outside the EU were operating according to the principles of organic farming (Willer et al., 2023). In Hungary, however, the market share of organic products is low, estimated at only 0.5–1 percent of total food sales (Gauvrit & Schaer, 2012; Ministry of Agriculture, 2022). In the most significant “organic consumer” countries (southern and western European and Scandinavian countries are the leaders), a person spends more than 100 euros per year on buying organic products, while in Hungary, the estimated value of this is only 2.5–3 euros (Apáti et al., 2019, Willer et al., 2023). If we compare the level of expenditure on organic products with the average per capita net income of countries, we can clearly conclude that the level of organic product consumption in each country correlates very closely with the average household income (Apáti et al., 2019). Organic food consumers can also be inspired by knowing the individual who produces the food rather than buying the product of an unknown company or distant producer (Strenchock, 2012). At the same time, parallel with this, an important condition is the easy availability of the organic producer, both geographically and in terms of contact. According to a survey in Hungary, the origin is also an important criterion and organic food consumers pay attention to local origin (Szente, 2015). It must be added that the alternative and modern form of direct sales are not that popular yet in Hungary. However, in some European countries, most consumers prefer traditional short-supply chains such as farmers' markets and organic markets (Schifferstein & Oude Ophuis, 1998; Elghannam et al., 2019; Stanco et al., 2019, Vittersø et al., 2019). For example, in the Netherlands and in France, most consumers prefer traditional short supply chains, such as local farmers' markets and organic markets, to long supply chains (Schifferstein & Oude Ophuis, 1998, Kapała, 2022). Other researchers describe that price is considered to be the main limiting factor in market development, and Hungarian consumers are particularly price-sensitive (Drexler & Dezsény, 2013; Soós et al., 2013; Szente & Torma, 2015; Wu & Takács-György, 2022). Consequently, organic food remains difficult to access for lower-income groups.

3. Materials and methods

The aim of the research is to assess the consumption habits of Hungarian consumers regarding organic products. The research examines consumer attitudes towards organic food, in particular the frequency of purchase, the awareness of choice, the factors of the consumers' motivation, main sales channels and the impact of the COVID-19 pandemic on the market development. The research focuses on the following questions:

1. How important is the choice of organic products in consumers' food purchases?
2. How did the frequency of the purchase of organic food change between 2020 and 2021?
3. What impact has the COVID-19 pandemic had on the consumption of organic food?
4. Which product groups are most likely to be purchased by organic food consumers? Which product groups do organic food consumers buy the most?

5. What are the main motivations for buying organic food?
6. What are the main factors that promote the start and the growth of the purchases of organic food?
7. What is the relationship between consumer behaviour and demographic factors?

The results of the research provide the organic sector and researchers with the opportunity to have a better understanding of the operation of the market and the potential of organic production and to make recommendations to stakeholders on how to tackle the challenges related to the organic food market.

The study of consumer behaviour towards organic food was carried out through an online questionnaire survey via Google Forms, using snowball sampling. The survey was conducted between 28 January and 17 March 2022. The questionnaire was shared on social media and thematic channels (e.g., sites related to organic and conventional agriculture, nutrition, lifestyle and sustainability). A total of 555 responses were received. Due to the limitations of the sampling method, the findings derived from the results cannot be generalised to the whole Hungarian population. However, the large number of sample elements ($n = 555$) makes it possible to draw conclusions and look for patterns. The questionnaire was mainly filled in by those who are already interested in consuming organic food, so non-consumers are underrepresented. This is a typical and expected limitation of this sampling method. However, as the aim was to assess the consumption of organic products, the under-representation of the non-consumers does not pose a problem from the point of view of our research, especially as the study does not rely on the representativeness of the sample.

The data from the questionnaires were evaluated using the SPSS statistical program. Descriptive statistical and relationship analysis methods were used in data processing. Relationship analysis was performed by cross-tabulation analysis, for which relationship coefficients were calculated.

In the case of an association relationship, we used Cramer's coefficient for symmetric scales and Goodman and Kruskal's tau uncertainty coefficient (λ) for asymmetric scales. It is important to note that income level was not measured by a metric variable (e.g., net income per capita) in order to obtain a higher response rate, but on an ordinal scale (1 – I have difficulty living on my income, 4 – I have substantial savings). For this reason, income-related studies fall into this category. For two ordinal scales, we used Kendall tau-b in the symmetric case and Kendall tau-c in the asymmetric case (Sajtos & Mitev, 2007). The correlation was measured with the correlation coefficient (r).

The strength of the mixed relationship was tested using the χ^2 coefficient and the correlation relationship was tested using Pearson's correlation coefficient. ANOVA tables were used when the independent variable was nominal, and the dependent variable was metric. Only significant results are presented in our analysis ($\alpha = 0.05$).

The composition of the sample is shown in Table 1.

Tab 1. Overview of the composition of respondents (n = 555). Source: own research

No	Distribution [%]	Educational level	Distribution [%]
Male	26.1	8 general	0.9
Female	73.9	vocational school/apprenticeship	1.1
Age	Distribution [%]	secondary school graduation	25.2
18–24	21.1	higher education	64.5
25–34	21.1	academic degree	8.3
35–44	21.9	Position	Distribution [%]
45–54	21.8	senior manager	3.6
55–64	8.5	middle manager	6.7
65+	5.6	lower-level leader (e.g., supervisor)	9.4
Region	Distribution [%]	employees	53.3
Western Transdanubia	5.4	other	27.0
Southern Transdanubia	8.8	Residence	Distribution [%]
Central Transdanubia	5.1	capital	39.3
Central Hungary	61.8	city	45.0
North Hungary	5.9	municipality	15.7
Northern Great Plain	6.2		
Southern Great Plain	6.8		
Income situation			Distribution [%]
I find it difficult to live on my income			4.0
I can live on my income, but I can't save			29.5
I can live on my income and put some aside			56.6
I have substantial savings			9.9

4. Results

4.1 Frequency of organic food purchases

Even though the sample is not representative, we still obtained useful information, as nearly 88% of the respondents buy organic food. The frequency of purchase shows a less favourable picture. 2% of the respondents buy organic food daily, 28% weekly, 35% monthly, 23% every six months or less, and 12% never.

A significant relationship was found between the purchase of organic food and age ($\chi^2 = 31.010$, $df = 5$, $\alpha = 0.000$). A higher proportion of those seeking the product group are in the 35–54 age-group, while a higher proportion of younger people (18–24 years) do not purchase these products compared to other age-groups. The frequency also develops similarly. The majority of daily customers come from the 45–54 age-group, while the majority of weekly customers are in the 35–44 age-group. The proportion of “non-buyers” is the highest in the 18–24 age-group ($\chi^2 = 80.181$, $df = 35$, $\alpha = 0.000$).

Respondents were asked to rate on a five-point scale how important it is for them to choose organic products in their food purchases. The distribution follows an almost perfect bell curve, illustrating that respondents have diverse views about this issue (Figure 1).

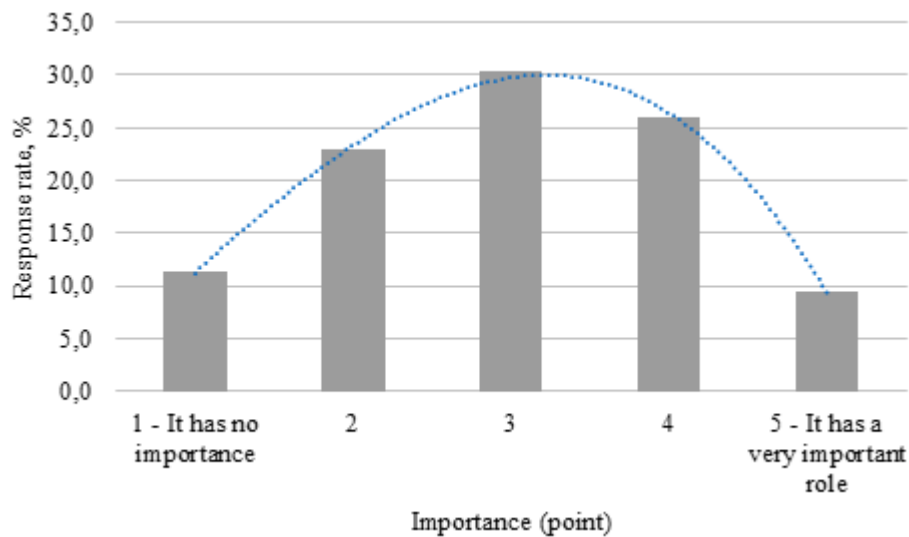


Fig 1. Distribution of consumers who attach varying degrees of importance to purchasing organic food (n = 555). Source: own research

This implies that the “average consumer’s” need for organic food consumption is reflected in their choices, but it is not the most important factor. However, there are also differences, as 9.4% of respondents consider access to these products to be very important, while 11.4% do not consider them to play any role in their consumption.

4.2 Buying patterns during the pandemic

In addition to static factors, dynamics are also important, such as how the share of organic products in the basket has changed recently. Figure 2 shows that 6% of respondents have increased their organic product purchases by more than 50%, 12% have increased their organic product purchases by between 20% and 50%, and 34% have increased their organic product purchases by less than 20%. This means that more than half of the respondents (52%) increased their purchase of organic products in 2020 and 2021 compared to the previous period (indicated in dark colours), while there is a narrow group of respondents who have never purchased this type of product (4.7%, indicated in stripes). More than a third of the respondents (36.4%) have not changed their purchase of organic food in the period that includes the five COVID waves. Age also plays a significant role in this change. The young age-group did not change their organic food purchasing habits, while consumption increased to a lesser extent among those over 35 ($\chi^2 = 62.915$, $df = 35$, $\alpha = 0.003$).

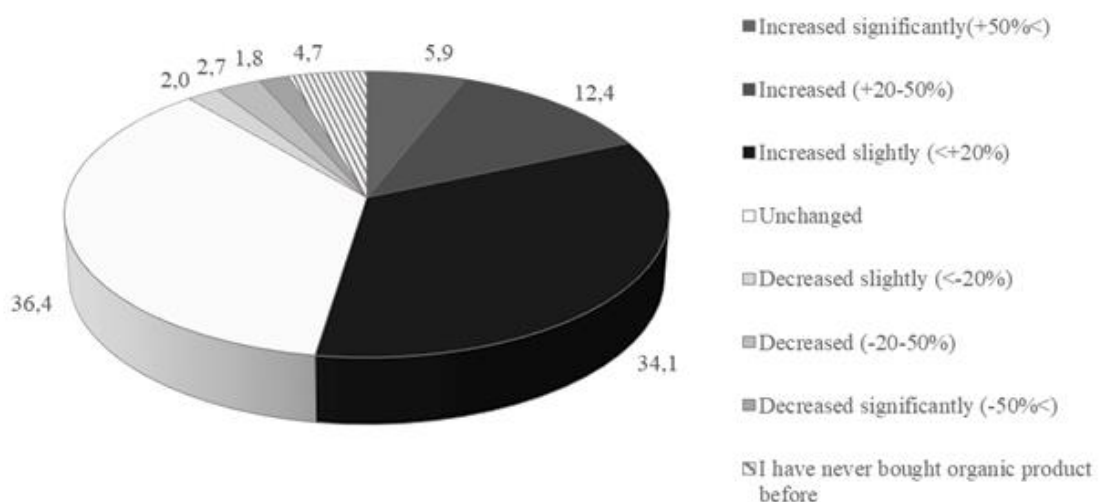


Fig 2. Distribution of respondents on how their organic food purchasing habits changed during the COVID-19 outbreak (first five waves) (n = 555). Source: own research

As a topical question, the impact of the pandemic on the consumption of organic food was examined in a short question (Figure 3). Respondents were asked to rate their agreement on a five-point scale. The results are shown in the figure below:

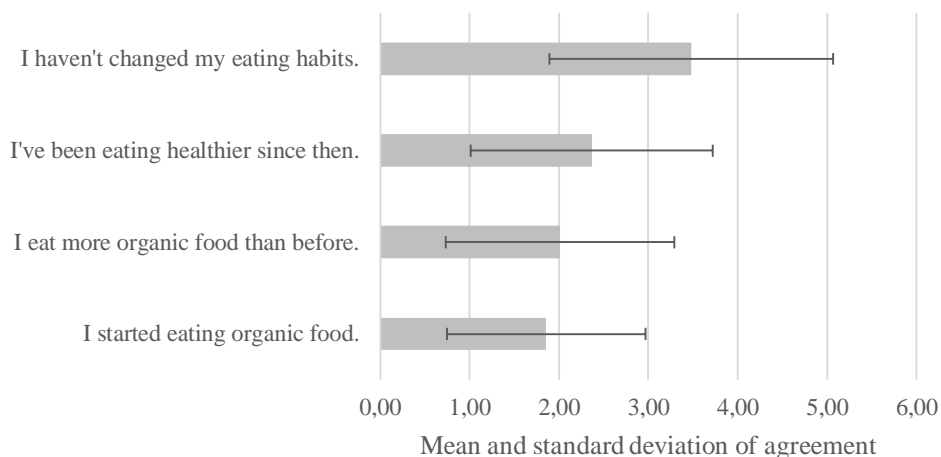








Fig 3. Impact of the COVID-19 pandemic on organic food consumption, based on Likert scale responses, 1 – not true for me, 5 – absolutely true for me (n = 555). Source: own research

Interestingly, the responses generally show that the pandemic has not increased the consumption of organic food significantly and even the demand for healthier food has been lower than expected. Thus, the pandemic had an impact on organic food consumption but it was not significant among the surveyed respondents.

4.3 Awareness of the organic trademark

In the following, the research focused on the extent to how much the trademark helps consumers in choosing organic products, i.e., to what extent they recognise the organic label. A total of 6 different logos were included in the questionnaire and respondents had to select the ones that they believed to indicate organic certification. Out of these, only three marks indicate organic food certified by control bodies: the Euroleaf (EU organic label), which certifies that the product is 100% compliant with the EU organic farming regulation. The other two organic labels are those of the two recognised certification bodies currently operating in Hungary: Biokontroll Hungária Kft. (HU-ÖKO-01) and Bio Garancia Kft. (HU-ÖKO-02). In addition, there were also eco-friendly, sustainable labels: the Environmentally Friendly Product, a domestic eco-label certifying the environmentally friendly origin of the product, the Vegan OK, a label for products containing no animal ingredients or the products were not tested on animals, and the ZÖLD label, a label for products that are outstanding for their environmentally friendly properties, which promote sustainable consumption and strengthen environmental awareness. The results are summarised in Table 2:

Tab 2. Organic trademark recognition rates (n = 555). Source: own research

Response rate (%)						
	1. (valid trademark)	2. (valid trademark)	3. (not a valid trademark)	4. (not a valid trademark)	5. (valid trademark)	6. (not a valid trademark)
Correct answer	45.9	71.7	87.7	90.5	68.6	85.2
Incorrect answer	54.1	28.3	12.3	9.5	31.4	14.8

It was interesting that a high proportion of respondents did not even mark the trademarks that are not used organic trademarks (3, 4, 6), while a lower proportion of respondents marked the used organic trademarks (1, 2, 5) correctly, i.e., many of them knew well which trademarks were not official, while the uncertainty was much higher for the real trademarks. Thus, a significant proportion of consumers were familiar with the logos of the two Hungarian organic control organizations, while only almost half of the respondents were familiar with the EU Green Euroleaf.

4.4 Product groups

Figure 4 shows the distribution of purchase frequency of different organic product groups. In our survey, organic fruit and vegetables are the most popular and most frequently purchased products. Eggs, cereals, flour, milk and dairy products follow the line. Bakery products are in the middle, followed by processed fruit products, oils, oilseeds, sweets and snacks. Concerning milk replacers, sweets and snacks, no correlation was found between purchase frequency and age, residence and income status, while a weak correlation was found for gender. Women purchased these product groups slightly more often than men ($\lambda = 0.017, \alpha = 0.002$).

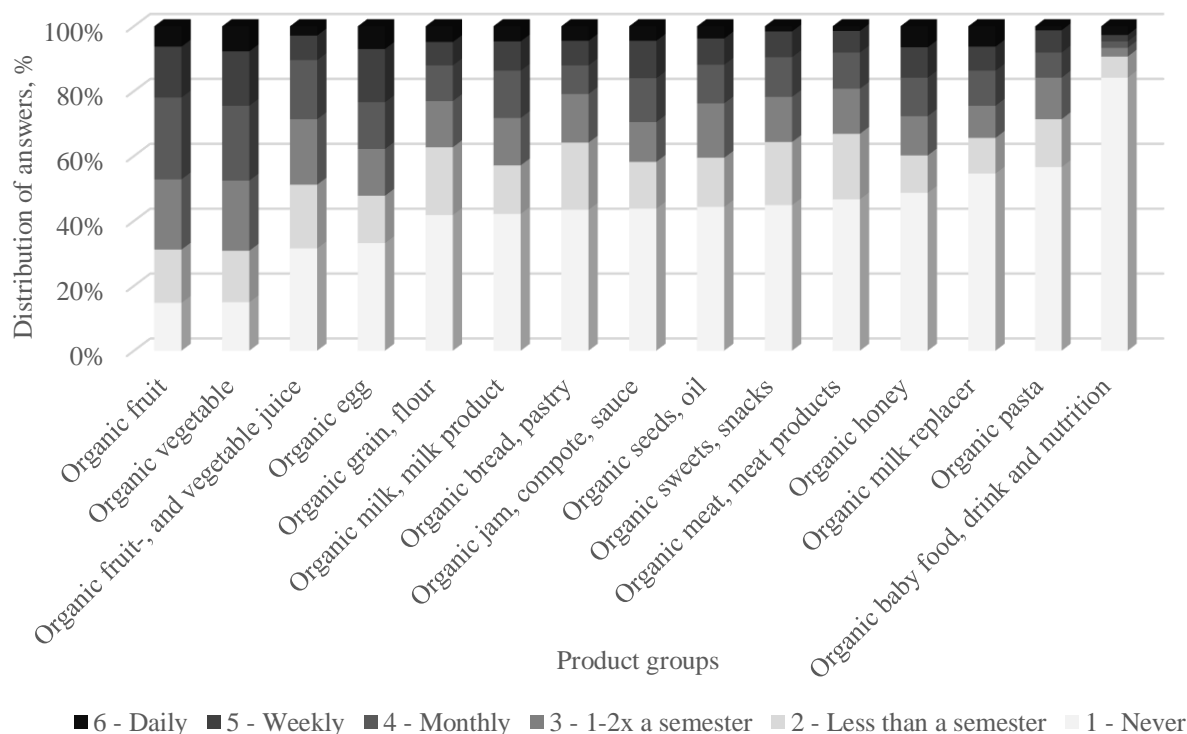


Fig 4. Distribution of respondents in terms of frequency of purchase of each type of organic food (n = 555). Source: own research

Respondents agree that organic food is, even if not unaffordable, but significantly more expensive than conventional types. Almost half of the respondents (48.6%) see a difference of up to 50–100%, while 37.3% indicate a price difference of 20–50% and 7.4% a difference of 10–20%. Only 6.3% of respondents think that organic food is unaffordable. A significant correlation was found between the frequency of purchase and the willingness to pay a premium for each product group for all product groups. The Cramer coefficient ranged from 0.3 to 0.58 (a moderately strong relationship). For example, those who buy organic food more often have a higher propensity to pay more for organic fruit, while those who never or rarely buy organic food would not pay more. Among the responses, the 20% representing willingness to pay more stands out as a significant difference.

4.5 Sales channels

The availability of products is an important decision factor, thus the place of purchase, where the product can be regularly and reliably accessed by the consumer, is essential. As shown in Figure 5, the most common places of purchase are discounters, drugstores and hypermarkets, with an outstanding proportion of daily-weekly shopping in discount stores. Organic food is also frequently purchased by respondents in health food shops, traditional markets and supermarkets. Frequency is lower at organic producers, independent retailers and via domestic retail chains. Organic shops and online shops are the least frequent places where respondents buy these products.

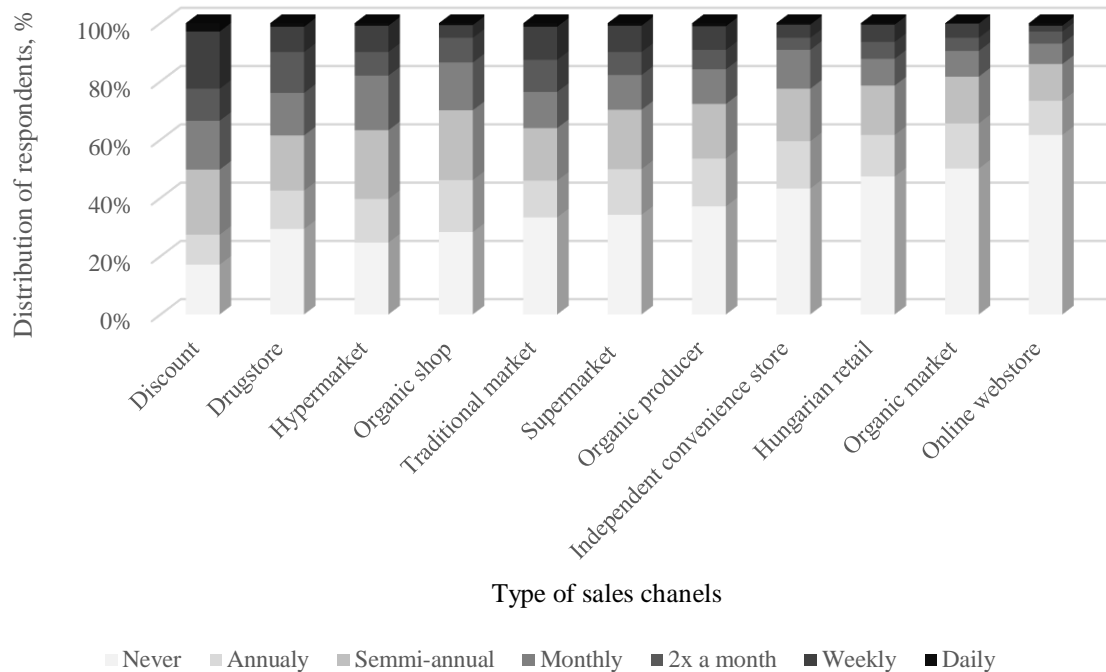


Fig 5. Distribution of respondents according to where they regularly buy different organic food products (n = 555). Source: own research)

4.6 Decision preferences

When choosing organic products, the order of importance of the usual food choice criteria may vary since, in general, consumers who choose organic products in larger quantities tend to make more informed choices and possess more information (Kertész & Török, 2021). In order to design the marketing strategy of sellers effectively, it is important to understand what aspects consumers consider when choosing between substitutes (e.g., organic or premium conventional products) and what importance the buyer attaches to these aspects. In the context of an informed purchase, the failure to meet a particular criterion itself can lead to fewer purchases (Tanner, 1996). Figure 6 shows how respondents assessed the importance of each of the decision criteria influencing the purchase of organic food. It can be clearly seen that quality, composition, price and to a medium extent, place of origin are the most important aspects of the decision, while presentation, packaging and advertising are considered less important.

Composition (ingredients) and place of origin were significantly more important for women than for men ($\chi^2 = 19.243$, $df = 4$, $\alpha = 0.001$ and $\chi^2 = 11.067$, $df = 4$, $\alpha = 0.026$, respectively). Price was more important in younger age groups (under 35) and over 65 than in other age groups ($r = 0.133$, $\alpha = 0.002$). Place of origin is most important for the age group over 35 years ($r = 0.167$, $\alpha = 0.000$). Interestingly, no significant relationship was found between price and income status, although there was a difference in the data between the relationship of lower and higher income groups to price. On the other hand, the relationship with quality showed a significant result, as expected, for those with higher incomes, quality is more important ($\chi^2 = 25.213$, $df = 12$, $\alpha = 0.014$).

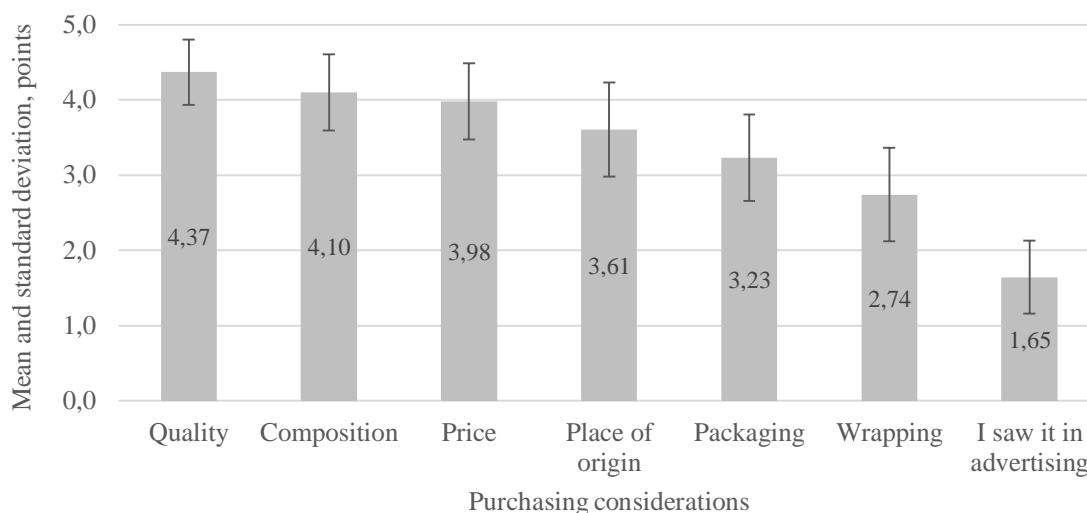


Fig 6. Importance of decision criteria influencing the purchase of organic food, based on Likert scale response, 1 – not important, 5 – very important (n = 555). Source: own research)

4.7 Factors contributing to consumption growth

There is still potentials for Hungary to develop the organic food market. To achieve this, it is necessary to know which of the market factors are important for the consumer. In the next question, it was asked to what extent the different factors motivate consumers to buy more organic food, and if they do not consume organic food yet, what would motivate them to start purchasing it. Figure 7 shows the mean and standard deviation of the scores in order of importance. Among the main factors that encourage consumers to start buying organic food or increase their current consumption, the reduction of consumer prices clearly ranks first. As demand for organic food increases, technological innovation and economies of scale should reduce the costs of producing, processing, distributing and marketing organic products (FAO, 2022). Availability is also unresolved, as these products are not generally available via all distribution channels. In this context, supply is also scarce. Although the availability of organic food has been steadily increasing in recent years in Hungary, it still represents a very small share of the food supply compared to conventional products.

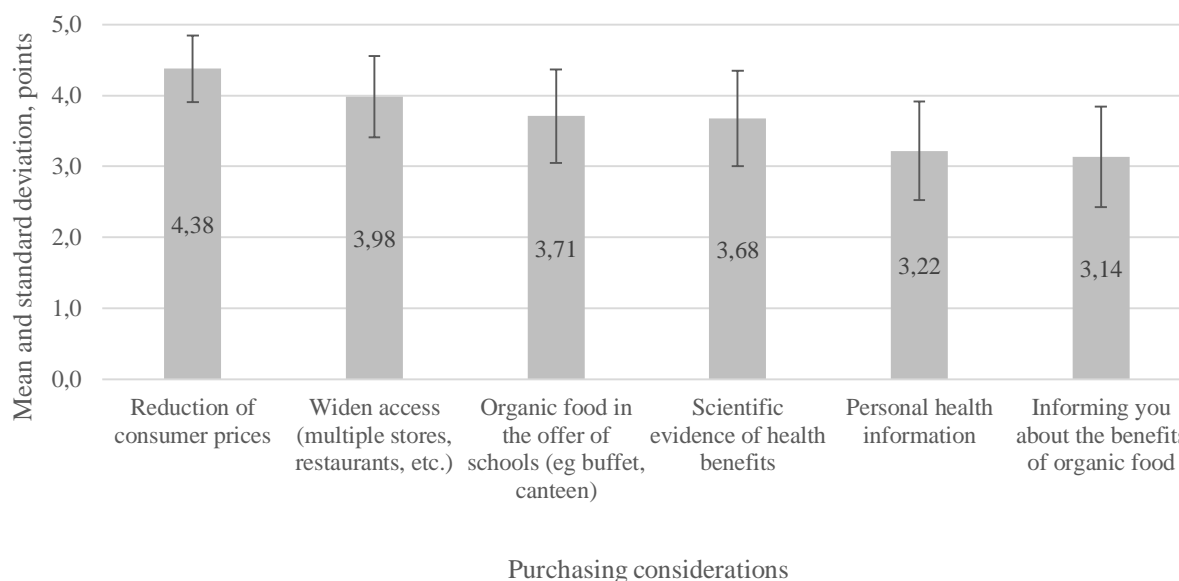


Fig 7. Importance of organic food market aspects, based on Likert scale responses, 1 – not at all important, 5 – very important (n = 555). Source: own research

Interestingly, in this ranking, health impact was less important than price and availability, which does not mean that physiological impact is not important but rather that other factors are likely to take precedence. Similarly, introduction to school canteens is not considered a priority and the need for personalized information and education is also lagging behind. In the segment attracting conscious consumers, the need for information comes at the bottom of the ranking, although the importance, in this case, is also above average (Likert scale 3). This can be explained by the fact that consumers giving that answer are better informed than the average. However, information and provision of health impact are more important for the young (18–24 years) age group ($r = 0.200$ and $r = 0.016$, $\alpha = 0.000$, respectively). The situation is similar to education, with the need for information on health impact increasing with education ($\chi^2 = 39.208$, $df = 16$, $\alpha = 0.001$).

The region of the country in which the respondent lives did not significantly influence any of the responses.

5. Conclusions and discussions

5.1 Frequency of organic food purchases

In recent years, the consumption of organic products has been growing steadily both globally and in Hungary, but the main difference lies in the extent of the growth trend in each country (Willer et al., 2022). Whereas in some Western European countries (e.g., Germany and France), the growth of organic food consumption is very dynamic, in Hungary only a small segment of the population still regularly consumes organic food (Willer et al., 2022). In our survey, we found divergent purchasing patterns: almost a third of the respondents buy organic products weekly, almost two-thirds at least once a month, almost a quarter less frequently, and 12% do not buy organic products at all. Regular buyers are mainly women aged 35–54, with a high level of education, living on a higher income, who tend to buy fruit and vegetables. In many developed countries, organic products are included in the shopping basket of consumers (Kesse-Guyot et al., 2013). More than half of Danes (52% in 2018) buy organic food weekly, almost double the proportion in our survey (Pekala, 2020). In Australia, the proportion of people who buy organic food weekly is much lower (around 10%) (Pearson et al., 2013). A similar purchasing frequency to our survey results can be seen in Greece, where the proportion of consumers who bought organic food on a daily basis (7%) is very low, while the proportion of weekly (19%) and monthly (31%) consumers who bought organic food occasionally was higher (Malissiova et al., 2022). According to Polish research, only 7.0% of our respondents claim they buy organic food very often, and 23.8% report they do it rather often. 37.6% reported 'average frequency', and 16.7% said they purchased organic food rather seldom (Bryła, 2016). The results of the latter survey showed a high similarity with the results of our study. The above also confirms that the level of consumers' disposable income also has a major impact on the frequency of consumption of organic products. Accordingly, consumption of organic products is higher in Western European countries (e.g., Denmark, France, Germany) than in Central and Eastern or Southern European countries (e.g., Hungary, Greece). Encouraging consumers to increase the frequency of their organic food purchases and persuading current non-consumers to try this category of food is a challenge from a marketing perspective. It should also be noted that the frequency of purchases depends, among other things, on the product categories within the portfolio of available organic products in the organic food retailer's assortment.

In our survey, more than half of the respondents increased their purchases of organic products in 2020 and 2021 compared to the previous period, while more than a third of them did not change their purchases of organic food over the five COVID-19 waves. Among the surveyed respondents, the pandemic had at most a weak impact on organic food consumption, therefore the increase was, presumably due to other reasons. Our survey is indirectly inconsistent with the results of international surveys showing that the pandemic increased organic consumption (Sahota 2022; USDA Foreign Agricultural Service 2022; Willer et al. 2022). This may also stem from differences in income, health and environmental awareness across countries. The results of Madarász et al. suggest that the epidemic did not significantly change consumer attitudes in Hungary, but the sequence of factors influencing food purchase did change food purchasing behaviour during the first wave of COVID-19 (Madarász et al., 2022). The results of a survey in

the Romanian county of Bihor reported no significant differences in the frequency of organic food consumption before and after the pandemic (Brata et al., 2022). Further analyses by Sohn and colleagues (2022) have shown that the effects of the pandemic are not equal across all consumer segments and that consumer income plays a crucial role, depending on the age, gender and education level of consumers (for example, epidemics tend to increase the health awareness of lower rather than higher income consumers) (Sohn et al., 2022). This assumption is confirmed by a Romanian survey, where regular organic consumers either maintained or increased their consumption during the pandemic, while more indifferent consumers did not change or reduce their organic consumption habits (Brata et al., 2022).

5.2 Organic logo awareness

As regards the authenticity of organic products, the visibility of the organic label is crucial. It enables consumers to identify the organic origin of the product and add it to their shopping basket with confidence. Respondents are moderately well informed about the green euro leaf logo and well informed about the Hungarian organic label. In one-fifth of the cases, respondents confused organic labels with labels carrying an environmentally friendly and vegan message, which can also lead them to mistakenly believe that they are buying organic food. It is important to provide information, credible and clear communication and education to consumers about organic labels in order to increase the proportion of consumers who correctly recognise the organic label and do not confuse it with other labels. Labelling, especially labelling of origin, is important to the majority of consumers and, contrary to expectations, eye-tracking showed very little difference in the perception of organic labelling by gender (Drexler et al., 2018). Organic product labelling may play a role in decision-making, but regardless, 27% of participants in the experiment did not engage with or pay attention to organic labels (Drexler et al., 2018). According to Nagy-Pércsi and Fogarassy's research among organic food consumers, branding or product labelling is not as important in Hungary as previously thought (Nagy-Pércsi & Fogarassy, 2019). The results of our research show that in Hungary, there is a need for knowledge of the correct definition of organic products and for awareness-raising to promote the recognition of organic labels, especially among consumers who do not or rarely consume the product, in order to avoid misconceptions due to misinformation.

5.3 Product groups

In line with other national and international results, organic fruit and vegetables are the most popular and most frequently purchased organic products in our survey (Malissiova et al., 2022; Nomisma, 2018; Rodríguez-Bermúdez et al., 2020; Szente et al., 2011; Szente & Torma, 2015a; Bryła, 2016; Viganò, 2019; Wu & Takács-György, 2022). We found a significant correlation between purchase frequency and willingness to pay more in each product group. Among the responses, the 20% representing willingness to pay extra price stands out significantly. The main reasons for paying a premium price are to protect their health and avoid the risk of disease (Szente et al., 2011). In addition, they are willing to pay higher financial burdens due to factors associated with high quality (reliability, control) (Szente et al., 2011). A study conducted in 5 European countries found that most organic consumers were willing to pay more for organic products with added ethical attributes (Zander & Hamm, 2010).

It is important to see that there are differences between the diets of non-organic and organic consumers (Nagy-Pércsi & Fogarassy, 2019). The latter group is the most frequent consumer of fruit and vegetables and therefore has a healthier diet than non-organic food consumers, whose ranking of fruit and vegetables is only in fourth and fifth place among the consumption of certain food products (in the first place for the eating of bakery products, followed by salami).

5.4 Sales channels

In our research, the most popular sales channels are discounters, drugstores and hypermarkets, with discounters having a high proportion of day-to-week shopping. This is similar to international trends, where in countries with significant organic markets, such as Denmark, the vast majority (~80%) of organic

sales are made through retail outlets and online shopping (Pekala, 2020). According to Willer et al., online retailers are the clear winners of the COVID-19 crisis in food retailing (Willer et al., 2022) This was not confirmed by our research, as online sales were ranked last in our survey. This may be explained by the fact that the share of organic food in online food sales in Hungary is still very low.

Previous research showed that in Hungary, the majority of consumers prefer traditional short-supply chains such as farmers' markets and organic markets (Szente, 2015). According to their survey, 27.4% of respondents buy organic products directly from the producer, but retail outlets are also popular, although to a slightly lesser extent (Szente & Torma, 2015). In contrast, in our present survey, the use of short supply chains (buying directly from the organic producer or from organic marketplaces) was much lower than several other long supply chains. This may also mean that alternative and modern forms of direct marketing are still less widespread in Hungary, but their expansion would be of particular importance for producers.

Given that organic products are a kind of credence goods, it is not surprising that most health and environmentally-conscious consumers tend to buy directly from producers (Szente & Torma, 2015). According to the survey conducted by Szente, the origin is partially or fully important to consumers (72.9%) and organic food lovers also pay attention to local origin (Szente, 2015). This is contradicted by the results of our research, which show that origin and the identity of the producer are less important for consumers, especially for younger consumers. In order to change this, it would be necessary to launch targeted awareness campaigns and training for younger consumers. This would increase local sales and thus contribute to the development of rural areas.

5.5 Decision preferences

Our survey shows that the most important decision-making factor for consumers is quality, followed by composition and price. Literature shows that the major barrier for consumers to buy organic products is market prices, as they are, although not unaffordable, significantly more expensive than conventional products (Drexler & Dezsény, 2013; Szente & Torma, 2015; Bryła, 2016; Yadav et al., 2019; Wu & Takács-György, 2022).

According to Szakály et al., the most important factors for Hungarian consumers choosing food are organoleptic qualities, price and convenience (convenience of purchase and preparation) (Szakály et al., 2018). Hungarian consumers are particularly price-sensitive when it comes to organic food (Drexler & Dezsény, 2013; Szente & Torma, 2015b; Wu & Takács-György, 2022). It should be noted that price is the most important limiting factor in the evolution of the market. A Serbian survey found that price and promotion have the strongest influence on consumer acceptance and purchase decisions, and their analysis revealed that attitudes towards organic food, price/quality ratio, distribution barriers and modern media as a promotional tool are the factors that most influence consumer perceptions (Melovic et al., 2020).

5.6 Factors contributing to consumption growth

Our research has shown that the main factor that encourages consumers to start buying organic food and increase existing consumption is the reduction of consumer prices, confirming the findings of Hungarian and international literature, which often cite high prices as a barrier to consumer purchase of organic food (Marian et al., 2014; Szente & Torma, 2015; Bryła, 2016; Yadav et al., 2019; Wu & Takács-György, 2022; Brata et al., 2022). Other barriers to consuming organic food are low availability, satisfaction with conventional food, the non-attractive appearance of organic products (Fotopoulos & Krystallis, 2002), problems in local organic food supply chains (Tavella & Hjørtsø, 2012). According to Polish consumers, the main barrier to the development of the organic food market is the high price of these products, and more than a third of respondents cited insufficient consumer knowledge, followed by low availability of this type of product (Bryła, 2016). With the use of marketing tools, especially in the area of positioning, communication, and distribution, all these barriers can be reduced or removed (Bryła, 2016). The use of direct sales or other short supply chains could be a significant price reduction factor (Györe & Juhász,

2012), but our survey found that respondents relatively rarely buy directly from organic producers. As a result of community-supported agricultural activities, producers can play a significant role in reducing barriers to organic food purchases by increasing trust in organic food through closer contact with consumers. Developing closer links could also help to increase direct sales, which could have a positive impact on rural development and rural employment. A second factor that could help the growth of the organic food market is the enhancement of accessibility. The need to buy may exist but difficult access, geographical distance, or lack of information, may prevent this. The promotion and expansion of alternative supply systems (e.g., box schemes and trade fairs) in Hungary, in line with several Western European examples and the provision of wider accessibility in certain retail chains, especially discounters, could be a good way of achieving organic food consumption growth. It can be further increased by presenting relevant research on the benefits of organic food and its effects on health.

The concept of sustainable development and the objectives of the European Union's Green Deal give priority to the consumption of organic products, and the recommendations to policymakers in this context, may make future research on organic consumption particularly important (European Commission, 2019). The results of this research could also strengthen theoretical and practical education on organic food and its production.

The period covered by this research was exceptional due to the emergency caused by the COVID-19 pandemic. Consumption habits and preferences may have differed significantly from previous practice. Therefore, the results and findings of the study are only valid for this period and broader conclusions should be drawn with caution. Further studies on the post-pandemic period are necessary to gain a deeper understanding of organic food consumption patterns in Hungary. The results of our research cannot accurately represent the purchasing behaviour of organic food consumers in Hungary due to the limitations of the sample, but the results can show the trends of the consumer community and can provide guidelines and inspiration to researchers and food businesses.

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