Demand for meat substitutes is growing

Against the backdrop of climate change and the consumer trend towards an increasingly meat-free diet, sales of meat substitutes have become established in the Swiss retail sector in recent years. To date, however, no comprehensive overview of the Swiss market has been available. How has demand for meat substitutes developed in recent years? What is the potential for Swiss agriculture and the economy? The Federal Office for Agriculture has analysed the market for meat substitutes in the Swiss retail sector from various perspectives: answers are provided by the first Swiss Meat Substitutes Report.

The growing importance of meat alternatives in Switzerland has previously been described on the basis of ad hoc surveys or using qualitative approaches (e.g. GDI, 2019; SwissVeg, 2020). Other studies on this topic have focused on individual companies (Coop, 2021). A quantitative, data-driven analysis of the development of the meat substitutes market has not been available to date – a gap now filled by this study. The present analysis was prepared by the Market Analysis Unit of the Federal Office for Agriculture on the basis of the most recent retail and consumer panel data from Nielsen Schweiz. The report has three aims:

1. to provide a quantitative account of developments in the meat and meat substitutes market, thus creating a better understanding of the market;
2. to increase transparency in rapidly evolving food markets;
3. to identify possible potentials for production of plant protein for human nutrition in Swiss agriculture.

Content of the study

The study examines developments in the market for meat substitutes in the Swiss retail sector from 2016 to 2020. The category of meat substitutes is first placed in the context of the development of demand for meat, so as to illustrate the relative proportions and thus the current importance of meat and meat substitutes overall (see the chart on the next page). The development of sales value and volume, prices and market share is analysed overall and for various
product groups. Within the meat substitutes category, the three product groups “tofu/tempeh/seitan”, “vegetarian convenience” and “meat analogue” are examined in more detail, using the combined retail and consumer panel data from Nielsen. In addition, using consumer panel data, the purchasing behaviour of households with regard to meat substitutes and in comparison with meat is considered in relation to sociodemographic characteristics. The analysis section concludes with a comparison of consumer expenditure on meat substitutes in various countries, considering not only Nielsen data for Switzerland but also market data from Nielsen MarketTrack and Eurostat. Finally, the study looks ahead to possible future developments for meat substitutes at the global level and considers the implications of these demand trends for Swiss agriculture.

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MEAT SUBSTITUTES IN THE SWISS RETAIL TRADE

Revenue of meat and meat substitute products

Revenue in millions CHF

2020

<table>
<thead>
<tr>
<th></th>
<th>Fresh meat</th>
<th>Deli meats</th>
<th>Canned &amp; rest of meat</th>
<th>Meat substitute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deli meats</td>
<td>2 275</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poultry</td>
<td>998</td>
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<tr>
<td>Beef</td>
<td>815</td>
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<td></td>
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<tr>
<td>Total</td>
<td>5 433</td>
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<tr>
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<tr>
<td>Lamb</td>
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<tr>
<td>Veal</td>
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<td>117</td>
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<tr>
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<td></td>
</tr>
<tr>
<td>Meat</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Sources: FOAG, Market Analysis; Nielsen Switzerland

Retail trade vs overall market

Currently, the development of the meat substitutes market is essentially determined by the retail sector. The study therefore focuses on this key market. Out-of-home consumption of meat substitutes is not discussed, as so far, compared to the retail trade, this has been of minor importance for the overall market development of this product category.

Supplementary information and data

The various info boxes included in the report are designed to explain or define key terms, to provide further information on methodology, or to explore additional topics in more depth. The various charts, with the underlying data and further information, can be found in a separate Excel file on the website of the Federal Office for Agriculture (supplementary tables). By way of introduction, the study begins on page 5 with a brief review of current consumer trends.
which are important in the context of demand for meat and meat substitutes.
Against the backdrop of societal debate on climate change and livestock-based food production, alternative protein sources for human nutrition in the form of meat substitutes are of growing importance. In the present report, the development of the meat substitutes market in the Swiss retail sector is comprehensively analysed for the first time.

Over the past five years, demand for meat substitutes has risen sharply. In 2020 – partly as a result of the pandemic – Swiss retail sales of meat substitutes totalled CHF 117m, compared to CHF 60m in 2016. With a compound annual growth rate of 18.4%, sales thus almost doubled over this period. Compared to meat, however, meat substitutes are still a niche market, with a market share of 2.3% in the retail sector.

The highest growth rates were achieved by so-called meat analogue products (i.e. products designed to look and taste like meat). This subcategory alongside the tofu/tempeh/seitan and vegetarian convenience subcategories now accounts for over 60% of total sales of meat substitutes.

Over the past five years, the number of retail products launched in the meat analogue and vegetarian convenience subcategories has more than doubled; these include, in particular, burgers, cold cuts, or reformed meat, such as schnitzel and nuggets.

Particularly in demand are plant-based burgers. One in six burgers sold in the retail sector is now plant-based. With sales of CHF 22.2m, tofu/tempeh/seitan is still the best-selling subcategory in the entire meat substitutes range.

In 2020, the average price (in unit value terms) paid by Swiss consumers for a kilogram of meat substitutes was CHF 20.53 – 5.1% less, on average, than for meat products. However, direct comparison of individual product groups shows that meat substitutes are significantly more expensive than meat products. For example, plant-based burgers cost 42% more, on average, than meat burgers, and for shredded meat the price differential is +16%. Overall, since 2016, the price gap between meat and meat substitutes has closed, with meat substitutes becoming less expensive.

With a market share of 90%, traditional retailers are the most important distribution channel for meat substitutes. Over the past five years, however, sales have grown most strongly at discounters, with average annual growth exceeding 60%. Here, meat analogue products accounted for the bulk of sales.

Purchases of meat substitutes by households are strongly influenced by their sociodemographic characteristics. Demand for meat substitutes is markedly higher in households (a) with up to two children, (b) in German-speaking Switzerland, (c) headed by a person under 50, (d) with a high income and (e) in urban areas. Conversely, demand for meat substitutes is lower in rural areas, in French-speaking Switzerland, and in low-income households.

With sales of around EUR 500m, the UK is Europe’s largest meat substitutes market. Switzerland is the country with the highest per capita expenditure (EUR 11.50) on meat substitutes in Europe. This high per capita expenditure is essentially due to the fact that the sales value of meat substitutes is, on average, around EUR 8 per kilogram (71.8%) higher in Switzerland than elsewhere (EUR 19.0 vs 11.1). Comparison of the quantities purchased shows that both the Netherlands and the UK (0.86 kg per capita in each case) are ahead of Switzerland.

Various studies forecast a continued growth trend for meat substitutes over the next 5–20 years. In addition to existing product groups, it is expected that cultured (lab-grown) meat will also be commercialised and become established on the market.

For Swiss agriculture, the meat substitutes market also offers considerable potential, especially with regard to the production of raw materials for plant-based meat alternatives. To date, this potential has scarcely been exploited. At present, virtually all vegetable raw materials for domestic production of meat substitutes are imported.
Current consumer trends

Consumer decisions now influenced by many factors

The needs of consumers in industrialised countries are becoming increasingly individual and thus also more diverse. A shift in values is observable in the development of society, with a general decline in “obligation and acceptance values” and a general rise in “self-realisation values” (Klages & Gensicke, 2002). The focus is no longer on basic physiological needs, such as hunger or thirst, but on the human need for self-fulfilment. Deficit needs, formerly more important, are being replaced by the desire for personal development. What we eat now depends on numerous criteria. Consumer needs are much more multifaceted than in the past and can be roughly divided into three levels (Dürnberger, 2020):

- **Level I**: energy intake, price, health, taste, quantity
- **Level II**: habit, status, naturalness, enjoyment, convenience
- **Level III**: ecological, social and ethical aspects (climate, fair trade, animal welfare)

The importance of the various criteria has changed over time. With economic growth since the beginning of the 1960s, the mere satisfaction of physical needs has increasingly given way, in the western industrialised world, to a desire for health, convenience, enjoyment and a lifestyle that conserves natural resources (Siegrist, 2005). Increasingly associated with this trend are considerations such as the traceability of products from farm to fork, the avoidance of residues of any kind (hormones, antibiotics, pesticides), animal welfare, but also rapid meal preparation or the fortification of products with health-promoting additives. In addition, over the last two decades, there has increasingly been a broad consumer focus on aspects such as climate change, sustainable use of scarce resources (e.g. water, soil and biodiversity) and fair trade (Bolliger, 2012). In the age of social media, food, diet and cooking have also become lifestyle topics (GDI, 2019).

Meat substitutes: a social trend and a growth market

Against this complex background, meat consumption has been the subject of intense social debate for around ten years now. In particular, intensive animal farming – with its adverse impacts on the environment, the climate and animal welfare – has been criticised by some parts of society, thus promoting the rise of diets in which the consumption of animal products or meat is avoided or reduced, such as vegetarianism, veganism or flexitarianism (for explanations of the various types of diet see page 6). These societal requirements have now been recognised by the domestic and international food trade and industry, which have been investing heavily in the development of meat substitutes for a number of years (GDI, 2017). Numerous plant-based meat alternatives have already been successfully established on the market, with the total number steadily rising. Products made from cultured meat, however, have yet to be launched, though there is also intense research and investment in this area.

Meat substitutes have become a social trend. But how has the market for meat substitutes developed in Switzerland in recent years, and how does it compare with the meat market? These and other questions are addressed in the market analysis starting on page 8. The meat substitutes referred to in this study are defined on page 7. Explanatory notes on the data used in the analysis can be found on page 30.
People reduce their consumption of meat and animal products, or avoid them altogether, for a variety of reasons, and such diets thus take various forms:

**Vegetarianism/veganism**
Vegetarians abstain from eating products derived from slaughtered animals, such as meat and fish. Vegans abstain from eating any animal products, including those obtained from live animals, such as eggs, milk or honey. The motives for adopting these diets vary. They include environmental reasons and ethical concerns about farm animal welfare, as well as health and religious aspects. The proportion of vegetarians and vegans in the Swiss population is estimated by SwissVeg at around 5% (SwissVeg 2020), with a slightly rising trend.

**Flexitarianism**
Flexitarians’ avoidance of meat is less pronounced. Members of this growing consumer group enjoy eating meat, but deliberately restrict their consumption, without wishing to forgo the experience altogether. Their reasons vary and include concerns about the effects of livestock production on climate change, the welfare of farm animals, and their own health. According to SwissVeg, almost 20% of the Swiss population can be classified as flexitarians (as of 2020).

Flexitarianism is focused on enjoyment. Seeking to meet this need, in particular, are imitation meat products (designed to mimic the texture, taste, appearance and protein content of meat).
A large number of products can essentially be subsumed under the term “meat substitutes”. This term generally covers all products designed as alternatives to meat, mimicking its various characteristics (e.g. its texture and taste or its function as a source of protein or a regular dietary component). For the purposes of the present study, to facilitate interpretation of the results, the term “meat substitutes” needs to be more precisely defined. The definition used in this study is based on the data provided by Nielsen Schweiz, in consultation with Proviande and the Federal Office for Agriculture. For the present study, “meat substitutes” thus comprises the following three subcategories: “tofu/tempeh/seitan”, “vegetarian convenience” and “meat analogue”.

**Tofu/tempeh/seitan**

Tofu, a traditional meat substitute, is primarily made from coagulated soya milk and has a high protein content. Tempeh is also made from soya, but the whole beans are fermented with a fungus, forming a solid mass. Seitan is a wheat gluten product, prepared by mixing the protein with water prior to cooking.

**Vegetarian convenience**

Vegetarian and vegan convenience are processed products of which the defining feature is essentially the vegetable component, rather than plant-based protein. They are often eaten instead of meat but have their own particular taste. This category includes, for example, falafel. In some cases, these products also include tofu ingredients, but they are processed to a much greater extent.

**Meat analogue**

Products in the “meat analogue” category are primarily defined by their taste, texture, appearance and protein content. These products seek to imitate meat and are thus primarily designed for consumers who essentially enjoy eating meat but are open to alternatives. The product names used are therefore largely based on the original meat products ("burger", "nuggets", "cold cuts", "chicken/pork", "meat", etc.)

**Cultured meat/lab-grown meat**

Cultured meat is defined by the way in which it is produced: it is not plant-based, but is “grown” synthetically in a sterile environment (hence the informal term “lab-grown meat”). Required for the production of cultured meat are animal stem cells, but not animal muscle meat. At the time of publication, no cultured meat products were yet commercially available. This product category is therefore of no relevance in the analysis of the current development of the market in Switzerland.

**Not covered** by the definition used here are processed ready meals with the character of a meat substitute, where the meat content of the standard product does not represent a significant proportion, as in vegetarian lasagne, ready-made kebab, vegetarian pizza, etc. Likewise not covered by the definition or considered in this analysis are distinct product categories such as eggs, cheese, fish, fresh and canned peas/lentils, etc., which may potentially serve as substitutes for meat protein but are traditionally assigned to a separate segment.

Meat substitutes must not necessarily be purely plant-based. In some cases, they are produced using egg or milk protein components as well as plant-based ingredients. However, as the great majority of the product groups considered in the analysis are based on plant materials or fungi, the term “plant-based alternatives” is widely used in practice.
Market analysis

Meat substitutes currently a niche

Based on the evaluation of the combined (retail/consumer) panel data from Nielsen Schweiz, total sales of meat and meat substitutes in the Swiss retail sector amounted to CHF 5.43bn in 2020. Fresh meat (CHF 2.93bn) and deli meats (CHF 2.27bn) together accounted for more than 95% of total sales. While deli meats cannot be clearly segmented by animal type (many processed meat products contain meat from different types of animal), the importance of each animal type can be unequivocally quantified in the case of fresh meat.

With sales of almost CHF 1bn, the highest-selling fresh meat category is poultry (primarily chicken and turkey); this is essentially attributable to high sales volumes of chicken breast and the success of take-away sales of whole and half chickens. In the case of beef – the second most important fresh meat category – sales of minced meat, steak/schnitzel and prime cuts account for the bulk of the total of CHF 815m. With sales of CHF 583m, pork – the most important animal type in the Swiss meat market – is only the third best-selling fresh meat product, with chops, fillets, loins, escalopes and roasts being particularly popular. Pork is, however, the main component of the various deli meat products (sausage, bacon and ham). Veal (CHF 166m) and lamb (CHF 128m) have a high seasonal importance – for example, at Easter or during the Christmas period. The lowest-selling category is canned meat (CHF 31m). Compared with the

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### MEAT SUBSTITUTES IN THE SWISS RETAIL TRADE

**Revenue of meat and meat substitute products**

<table>
<thead>
<tr>
<th>Revenue in millions CHF</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh meat</td>
<td>2 275</td>
</tr>
<tr>
<td>Deli meats</td>
<td>998</td>
</tr>
<tr>
<td>Canned &amp; rest of meat</td>
<td>815</td>
</tr>
<tr>
<td>Meat substitute</td>
<td>583</td>
</tr>
</tbody>
</table>

**Pig**

- 243

**Lamb**

- 128

**Veal**

- 166

**Insects**

- 0,29 million CHF

Sources: FOAG, Market Analysis; Nielsen Switzerland
sales reported for the various meat categories, meat substitutes (CHF 117m) occupy a niche position. The market share for meat substitutes in 2020 was 2.2% of total sales value.

**Strong growth for meat substitutes**

Even though meat substitutes currently represent a niche market, this category has grown strongly in recent years. From 2016 to 2020, sales volumes (in tonnes) of meat substitutes showed a compound annual growth rate (CAGR) of 18.1%, while the CAGR for sales value was even higher (18.4%). Over the same period, the retail meat market (fresh meat, deli meats, canned meat and insects) showed a CAGR of 2.0% (sales volume) and 3.0% (sales value). Sales of insect products, only launched in 2017, declined sharply shortly afterwards (see info box on insects on page 12).

In contrast to meat substitutes, before 2020, sales of meat products were declining slightly.

**Retail demand: special situation in 2020**

The official measures taken to control the COVID-19 pandemic – in particular, the partial closure of the hospitality sector and restrictions on cross-border travel – led to a sharp rise in retail demand for meat. Overall, Swiss retailers reported record sales of food (including beverages). Compared to the previous year, total sales value rose by 11.3% to CHF 29.9bn (BLW 2021c). Sales value of meat and meat substitutes rose by 14.0%. Accordingly, some of the growth seen in the meat substitutes market in 2020 can also
be explained by the extraordinary situation arising from the pandemic.

From the above chart showing monthly sales of meat and meat substitutes, it is evident that demand for meat substitutes had already risen sharply before the pandemic, and that this trend was further accentuated during the pandemic. For example, sales in January 2020 – i.e. before the outbreak of the pandemic in Switzerland – were 32% higher than in January 2019. With the lockdown in March, sales of all other product groups, except insect products, increased markedly. Over the whole year, except in February and March, sales of meat substitutes consistently showed the highest growth rates. The highest growth was recorded in April, with an index value of 178. In February and March, canned meat showed the highest growth rates. This development at the start of the pandemic can be explained by widespread stockpiling of non-perishable goods, which include canned meat. During the rest of the year, the growth rates seen for fresh meat, canned meat and deli meats were not nearly as high as those achieved by meat substitutes. It should, however, be noted that, in absolute terms, the increase in sales value and volume during the pandemic was much greater for meat than for meat substitutes. Sales of meat rose by 27,000 tonnes (12.4%) in 2020, compared to an increase of just under 2000 tonnes for meat substitutes (i.e. just 7% of the overall increase for meat). Given the increase in food consumption at home, pandemic-related effects are a clear driver for the retail meat substitutes market. Demand for meat substitutes is
also likely to have been further boosted by the issues of climate change and livestock production.

49% increase in sales volume in 2020

The development of the value and volume of Swiss retail sales of meat substitutes is analysed using the subcategories tofu/tempeh/seitan, vegetarian convenience and meat analogue. Definitions of these subcategories can be found on page 7.

In 2020, sales of meat substitutes rose by 49.4% to 5705 tonnes, an increase clearly exceeding the record 12.1% overall rise in the volume of meat products sold (see BLW 2021b). This year saw the highest growth ever recorded for meat substitutes, both in absolute and in relative terms. Since 2016, sales of meat substitutes have almost doubled in value (from 2936 tonnes to 5705 tonnes).

Among the various meat substitutes, the strongest-growing subcategory is meat analogue. In 2020, sales of meat analogue products rose by 74.5% over 2019, and these products now account for more than 50% of the total sales volume of meat substitutes. As meat analogue products appeal to a wide range of consumers, major market potential exists. Drivers of consumer demand for meat analogue products are taste aspects, a basic openness and curiosity towards new products, and environmental awareness.
In 2020, demand also grew – though to a lesser extent – both for vegetarian convenience (12.7%) and for tofu/tempeh/seitan (41.1%).

**Record sales of meat substitutes in 2020**

The sales value of meat substitutes developed in line with sales volumes. The highest growth rate in terms of volume (52.3%) was achieved in 2020, with sales also reaching a record value of CHF 117m. The top-selling category was meat analogue (CHF 72m), accounting for over 60% of total sales. The growth rate for meat analogue, compared to 2019, was 82.1% – substantially higher than those seen for vegetarian convenience (10.0%) or tofu/tempeh/seitan (35.2%).

Since 1 May 2017, house crickets, migratory locusts and mealworms have been approved as foodstuffs in Switzerland (FSVO 2017). In August 2017, the first insect products were launched in the retail sector. In 2018, sales of these products amounted to just over CHF 0.4m. Since then, sales have declined, totalling only CHF 0.29m in 2020.

The low and declining market importance of insect products is attributable to the low level of consumer acceptance, the relatively high average prices (CHF 76/kg in 2020) and the small range of products. In view of this poor performance, certain market players have scaled back their efforts to develop the market for insect products for the time being.
Continuous expansion of the meat substitute product range

In recent years, the variety of meat substitutes available on the market has expanded significantly. Compared to 2016, the number of products recorded in the Nielsen data panel has more than doubled, with 823 items recorded at the end of 2020. In 2020 alone, 150 new items (+22.5%) were introduced by Swiss retailers, including over 100 meat analogue products.

It is not surprising to see a sharp rise in new products being launched in a growing market. The trends for sales value and volume in recent years show that increased sales are driven both by greater demand for existing products and by the introduction of new products. According to a ProVeg study (European Consumer Survey on Plant-Based Foods 2020), this reflects consumer demand for a wider product range. The results of the survey indicate that, with regard to plant-based alternatives, consumers want to see more variety in terms of product types, raw materials, textures and flavours.

Comparison with the meat product range (over 37,000 items recorded in the Nielsen data panel) shows that there is still substantial market potential for meat substitutes.

Traditional meat substitutes dominant

While the meat analogue and vegetarian convenience subcategories can be divided into further product groups, the tofu/tempeh/seitan subcategory – comprising classical or traditional plant-based meat substitutes – is not further subdivided. Meat analogue is subdivided into steak/schnitzel, burger, shredded meat, sausage, minced meat, nuggets and cold cuts. The vegetarian convenience subcategory also includes a burger product group, together with falafel, bites and balls. In the treemap chart above, sales for the three subcategories in 2020 are broken down by product group. With sales of CHF 22.2m, tofu/tempeh/seitan was the best-selling product group, followed by meat analogue steak/schnitzel (CHF 19.5m).
A total sales of plant-based burgers, to be found in the meat analogue (more meat-like) and vegetarian convenience subcategories, amounted to CHF 19m. For the first time, sales of over CHF 10m (CHF 10.6m) were recorded for plant-based alternatives to shredded meat, closely followed by plant-based sausage (CHF 9.5m).

The leading product group in the vegetarian convenience subcategory is falafel, with sales of CHF 6.8m in 2020.

The value of sales of all minced products combined (including burger and balls) was over CHF 30m. In terms of volume, this amounted to 1355 tonnes. The volume of steak/schnitzel sales was 880 tonnes. The highest sales volume (1590 tonnes) was achieved by tofu/tempeh/seitan.

**Burger: fastest-growing product group**

In this section, multi-year trends for the various product groups are compared on the basis of the compound annual growth rate (CAGR). An explanation of this method can be found on page 30.

In recent years, no other product group has matched the growth of plant-based burgers. The CAGR for the period 2016–2020 was 62%. Overall, all product groups showed above-average growth rates. For example, a CAGR of over 30% was also recorded for sausage, minced meat and shredded meat, while the CAGR for nuggets was over 20%. In contrast, plant-based steak/schnitzel showed relatively low growth (6.6%).

Sales of vegetarian convenience products also showed strong growth. The CAGR was 23% for falafel and 22% for burgers in this subcategory. Demand for tofu/tempeh/seitan also increased significantly. However, the CAGR was somewhat lower (15%), largely as a result of the baseline effect. Products such as tofu, tempeh or seitan have been on the market for many years, and substantial sales were already recorded before 2016. With a larger market volume, high growth rates are more difficult to achieve. In addition, tofu/tempeh/seitan is increasingly subject to competition from vegetarian convenience and...
meat analogue products. The products in these subcategories offer consumers a superior experience in terms of taste and texture and are also generally easier to prepare. The exceptional growth seen in the case of burgers is driven by a large number of new products. The success of the Beyond Meat Burger as a classic meat substitute burger led to a me-too effect. At the same time, the taste of the traditional (meat) burger is being imitated increasingly successfully. In addition, meat substitutes – especially burgers – have been discovered as a growth market not only by traditional retailers but also by discounters (for an analysis of distribution channels see page 20).

One in six burgers plant-based

Within the meat segment as a whole, meat substitutes are a rapidly growing niche. In terms of sales volumes, market share rose from 1.3% in 2016 to 2.3% in 2020. With regard to market development and market share, however, a different picture emerges if individual subsegments of meat and meat substitutes are considered in detail.

In the burger product group, by 2020, one in six burgers sold was plant-based; in 2016, it had been one in fourteen. No other product group shows such a high share of meat substitutes. In the case of nuggets, plant-based alternatives now account for almost 10% of sales volumes (vs 6.6% in 2016). For shredded meat, the share

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**MEAT SUBSTITUTES IN THE SWISS RETAIL TRADE**

**Annual growth rates in sales value of meat substitute products**

Average growth rate per year in %, **highest value per product group**

<table>
<thead>
<tr>
<th>Product</th>
<th>Average growth rate per year in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burger</td>
<td>62</td>
</tr>
<tr>
<td>Shredded meat</td>
<td>35</td>
</tr>
<tr>
<td>Minced meat without burger/balls</td>
<td>34</td>
</tr>
<tr>
<td>Sausage</td>
<td>32</td>
</tr>
<tr>
<td>Diverse</td>
<td>26</td>
</tr>
<tr>
<td>Nuggets</td>
<td>21</td>
</tr>
<tr>
<td>Cold cuts</td>
<td>19</td>
</tr>
<tr>
<td>Steak / cutlet</td>
<td>6.6</td>
</tr>
<tr>
<td>Balls</td>
<td>2.2</td>
</tr>
<tr>
<td>Falafel</td>
<td></td>
</tr>
<tr>
<td>Burger</td>
<td>23</td>
</tr>
<tr>
<td>Balls</td>
<td>22</td>
</tr>
<tr>
<td>Bites</td>
<td>4.6</td>
</tr>
<tr>
<td>Tofu/ Tempeh/ Seitan</td>
<td></td>
</tr>
</tbody>
</table>

Sources: FOAG, Market Analysis; Nielsen Switzerland
is now 5%; this is mainly attributable to the introduction of new retail products (e.g. planted chicken).

From a food technology perspective, burgers, minced meat and cold cuts can be more readily imitated, as they have a more homogeneous structure and a less complex texture than (natural) grown meat, such as fillet or entrecôte. It is therefore not surprising that burgers have become the best-established product group on the market. In addition, no lab-grown meat products are as yet ready for commercialisation in Switzerland. In the longer term, with this technology, the aim is to develop grown pieces of meat, such as fillets or entrecôtes.

With sales of 22.6m kilograms in 2020, traditional minced meat products were – after poultry breast (24.1m kilograms) – the second most popular fresh meat products. If these figures are compared with the total volume of 1355 tonnes for all plant-based minced meat products, two points become apparent: firstly, there is a striking difference in the size of the market and, secondly, with the current market growth and development of demand for plant-based alternatives in this area, these product groups have further growth potential.
Strong growth in share of sales by value

Sales of meat substitutes as a proportion of the whole meat and meat substitutes market show a similar picture to the share of sales by volume. Overall, meat substitutes have a low market share (2.2%). Certain product groups, however, show disproportionately high growth. The highest sales growth was seen for burgers, nuggets and shredded meat. In 2020, over 20% of burger sales were generated with plant-based alternatives. For nuggets the share was 12%, and for shredded meat almost 6%. The highest growth rates were recorded in 2020, the year of the pandemic.

This development is attributable not only to growth in sales of existing products but also, especially, to expansion of the range by the introduction of new products (for expansion of the product range, see page 13).

Price development driven by product launches

In 2020, the average price (in unit value terms) paid by Swiss consumers was CHF 20.53 per kilogram of meat substitutes. This price has remained relatively constant over the years (2016: CHF 20.31 per kilogram).

Clear price trends can, however, be observed when individual product groups are considered in detail. Within four years, the price of plant-based burgers rose by 13.5% (2020: CHF 23.80 per kilogram). Similar price trends can be seen for nuggets (+13.8%) and shredded meat (+21.7%). Conversely, prices for cold cuts and minced products (excluding burgers/balls) decreased. Tofu/tempeh/seitan also became steadily cheaper, and this continues to be the most attractive subcategory of meat substitutes in terms of price (CHF 13.97 per kilogram). The price trends cannot be explained solely in terms of price increases or reductions for existing

### Sales value shares of meat substitute products compared with the whole segment

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Burger</td>
<td>10.7</td>
<td>7.8</td>
<td></td>
<td></td>
<td>22.1</td>
</tr>
<tr>
<td>Nuggets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12.0</td>
</tr>
<tr>
<td>Shredded meat</td>
<td></td>
<td></td>
<td>2.1</td>
<td></td>
<td>5.9</td>
</tr>
<tr>
<td>Cold cuts</td>
<td></td>
<td></td>
<td>1.5</td>
<td></td>
<td>2.8</td>
</tr>
<tr>
<td>Minced meat</td>
<td>0.8</td>
<td></td>
<td></td>
<td>2.1</td>
<td></td>
</tr>
<tr>
<td>without burger/balls</td>
<td>1.2</td>
<td></td>
<td></td>
<td></td>
<td>2.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>10.7</td>
<td>7.8</td>
<td>2.1</td>
<td>1.5</td>
<td>2.2</td>
</tr>
</tbody>
</table>

Sources: FOAG, Market Analysis; Nielsen Switzerland
products. The large increases seen for nuggets and shredded meat are primarily attributable to the introduction of new, higher-priced products.

**Price differentials: a mixed picture**

In 2020, consumers paid on average 5.1% less for a kilogram of meat substitutes than for a kilogram of meat products (vs 2.3% less in 2016). This means that, across the entire product range, a kilogram of meat substitutes is on average cheaper than a kilogram of meat. The average price differential has developed in favour of meat substitutes; this is essentially due to an increased unit value per kilogram of meat.

In some cases, direct comparison of individual product groups of meat and meat substitutes reveals a different picture with regard to price differentials. At the subgroup level, meat substitutes show significantly higher prices, even though the price gap has closed overall over the past five years. While plant-based burgers were 57.7% more expensive than traditional (meat) burgers in 2016, the differential had decreased to 42.4% by 2020. Conversely, the price differential in the case of shredded meat rose from -3.1% to +16.2%, which is primarily attributable to the launch of more expensive plant-based products. For nuggets, the price differential also increased – to +30.1%. For cold cuts and minced products (excluding burgers/balls), the differential decreased: in the case of cold cuts, the price differential in 2020 (2.8%) was the lowest among all the product groups considered.

The development of price differentials is partly determined by the development of prices for plant-based products. At the same time, the introduction of increasing numbers of premium meat products – e.g. Wagyu or Black Angus burgers – has led to an increase in the average price of meat burgers.

The fact that, overall, prices for meat substitutes are lower than for meat is primarily attributable to the fact that, at present, most meat substitutes are launched in lower-price product groups such as cold cuts, burgers or nuggets, whereas
far fewer alternative products are as yet available in the case of grown meat – and thus more expensive – products such as fillet, entrecôte, steak or dried meat.

Overall, meat substitute prices equal to or lower than those for meat are an important factor promoting (increased) consumer demand for meat substitutes, especially among price-sensitive groups. In a survey conducted by ProVeg, 12% of vegetarian and flexitarian respondents stated that meat alternatives are too expensive (ProVeg 2020).
Discounters advancing

Meat substitutes – particularly meat analogue products – are now well established in the traditional retail sector. In 2020, this distribution channel accounted for the highest sales (CHF 105m), with a market share of almost 90%. Here, from 2016 to 2020, average annual growth amounted to around 16% for sales volume and 17% for sales value.

With sales of CHF 10m in 2020, discounters had a share of almost 9% of the meat substitutes market. At the same time, discounters’ share of meat and meat substitute sales in 2020 was 15%. In the case of meat substitutes, the discounter market thus lies below the market potential. In recent years, however, growth of meat substitutes has been much stronger in the discounter than in the traditional retail sector: average annual growth was around 69% for sales volume and 67% for sales value, with the highest growth being observed from 2019 to 2020. This delayed, but all the more vigorous, response on the part of discounters is not unusual. As a result of their dominant position, traditional retailers more frequently serve as trendsetters, being the first to test new products and concepts. If these prove successful on the market, discounters respond by introducing a limited, low-priced range, consisting of the products with the highest sales potential (e.g. plant-based burgers).

A slightly negative trend was observed for meat substitutes in the specialist trade and other distribution channels (petrol station shops, farm outlets, etc.). Here, sales of meat substitutes...
amounted to around CHF 2.5m in 2020, compared to CHF 2.7m in 2016 – an annual average decrease of 2.4%.

**Discounters favour meat analogue, the specialist trade tofu & co**

In 2020, the leading subcategory in the meat substitutes market – with the highest retail sales – was meat analogue. However, the composition of sales of meat substitutes varies from one channel to another. In the discount sector, meat analogue products account for more than 70% of sales, while vegetarian convenience (17%) and tofu/tempeh/seitan (12%) are much less significant. By contrast, in specialist and other channels, meat analogue products account for less than 50% of sales, while tofu/tempeh/seitan is responsible for 32%. The explanation for this can be assumed to lie essentially in the customer structure and in the small proportion of convenience products offered by the specialist trade in general.

As regards the distribution of sales among subcategories, traditional retailers – the most important sales channel for meat substitutes – occupy an intermediate position between discounters and the specialist trade.

**Increase in households purchasing meat substitutes**

As a measure of market penetration, Nielsen consumer panel data is analysed to determine how many households have purchased a particular product group at least once in the course of a year.

From 2016 to 2020, the market penetration of meat substitutes rose markedly, from 19% to 26%. This means that, while almost one in five households in Switzerland purchased a meat substitute at least once in 2016, it was already over one in four households in 2020.
For vegetarian convenience, penetration rose from around 16% (one in six households) to 21% (one in five households). For tofu/tempeh/seitan, penetration rose from 10% (one in ten households) in 2016 to 15% (one in seven households) in 2020. For many households, interest in meat substitutes has been aroused by a wider selection of products, increased market presence (e.g. at discounters) and additional media attention.

In addition to market penetration, the repeat purchase rate is an important measure for the evaluation of market development. Here, too, it is apparent that a growing proportion of households are repeat purchasers of meat substitutes. In 65% of the households that purchased meat analogue products in 2020, these products were repurchased once (same rate as in 2016), and in 51% they were repurchased at least twice (3% more than in 2016).

The repeat purchase rates both for vegetarian convenience (57%) and for tofu/tempeh/seitan (61%) were somewhat lower than for meat analogue. While the repeat purchase rate for tofu/tempeh/seitan rose between 2016 and 2020, it remained constant for vegetarian convenience. In 2020, 39% of all households purchasing vegetarian convenience products repurchased them at least twice, and this was true of 44% of households purchasing tofu/tempeh/seitan products (3% more than in 2016).

**Meat substitutes popular among young, high-income families in German-speaking Switzerland**

The market penetration of meat substitutes can be analysed in relation to household characteristics such as age, income, number of children or region of residence. According to their purchasing behaviour, the households can then be assigned to various customer segments. With regard to age, in 2020, across all meat substitute subcategories, households headed by a person...
under 50 showed higher market penetration than those headed by a person over 50. Demand was lowest in the segment consisting of households headed by a person over 64.

For households with or without children, the picture is more diverse. Households with three or more children purchased meat substitutes much less frequently (in percentage terms) than those with one or two children. Demand for meat substitutes was also generally lower in households without children, which may be linked to the fact that the proportion of older persons was higher
in this segment. In 2020, the highest market penetration for meat analogue and tofu/tempeh/seitan was seen in households with two children, while demand for vegetarian convenience was highest in households with one child.

Household income was a key factor determining demand for meat substitutes in 2020. A clear correlation was seen between increasing household income and higher demand for meat substitutes, while market penetration was low among low-income households. A significant role here is played by the fact that prices for meat substitutes are higher than those for meat products in the case of burgers, stripped meat, nuggets, cold cuts or minced meat (see page 18).

Region of residence was also a factor influencing households’ demand for meat substitutes in 2020. Overall, demand for meat analogue and vegetarian convenience products was higher among households in urban areas, while demand for tofu/tempeh/seitan was higher among households in rural areas. The precise reasons for this are not known.

Demand for meat substitutes in 2020 was also influenced by a household’s language region. While market penetration for vegetarian convenience and tofu/tempeh/seitan was similar in German- and French-speaking Switzerland, demand for meat analogue products was higher in German-speaking Switzerland (28% vs 21%). This finding may possibly be explained by differences in consumer behaviour: overall, households in French-speaking Switzerland have a greater sense of tradition and generally have a strong attachment to regional specialities and meat and fish products. By contrast, households in German-speaking Switzerland tend to be more open to new food trends. This was already apparent in the development of the organic market or in demand for products in the tofu/tempeh/seitan subcategory, which also first became established in German-speaking Switzerland. Today, however, no clear difference can be observed between the language regions, either for organic products or for tofu/tempeh/seitan. Accordingly, demand for meat analogue products in French-speaking Switzerland is also expected to reach a level similar to that in German-speaking Switzerland after a certain delay.

Differences at the household level
Also of interest, as well as market penetration, are the amounts of meat substitutes/meat products actually purchased in relation to households’ sociodemographic characteristics. In the chart on the next page, the quantities purchased in 2020 are broken down by various sociodemographic characteristics.

While the largest quantities of meat substitutes were purchased by households headed by a person under 35, meat purchases were highest among households headed by a person aged between 50 and 64.

Owing to the size of the household, families with three or more children purchased the most meat (96.4 kg), while also purchasing the lowest quantities of meat substitutes (0.8 kg). As regards the quantities of meat substitutes purchased, there is virtually no difference between households in urban and rural areas (1.2 kg in both cases). However, rural households purchased over 12 kg more meat than urban households (68.7 kg vs 56.5 kg).

Households in French-speaking Switzerland purchased almost a kilogram more meat than those in German-speaking Switzerland. At the same time, their purchases of meat substitutes (0.8 kg) were around a third lower than those in German-speaking Switzerland.

With regard to household income, it can be seen that high-income households purchased both more meat and more meat substitutes. This is attributable to the greater purchasing power associated with a higher household budget.
The comparison of quantities purchased at the household level confirms the niche position occupied by meat substitutes. Nonetheless, it is evident that meat substitutes account for a noticeable proportion of food expenditure, particularly among younger people and families. However, in order to determine statistically significant relationships between purchases of meat/meat substitutes and household characteristics, more in-depth modelling would be required.
UK is Europe’s largest meat substitutes market

Demand for meat substitutes is not only growing in Switzerland. In recent years, this market has also developed strongly in other European countries. In the market study carried out by ProVeg in collaboration with Nielsen (cf. Smart Protein Plant-based Food Sector Report 2021), the development of retail sales of plant-based foods (e.g. meat, fish, milk) was analysed and compared for a number of European countries. The Swiss market data (study periods and currency) was adapted to improve comparability.

For all countries studied, the analysis shows a clear growth trend for the 12-month period from October 2019 to September 2020. The largest increase over this period (almost 130%) was seen in Germany, where the sales value of meat substitutes rose to EUR 181m. Germany is thus, after the UK, the second-largest market for meat substitutes in Europe. In Germany, as in Switzerland, growth is driven by discount stores, which accounted for 35% of sales – a Europe-wide record.

In the UK, retail sales of meat substitutes from October 2019 to September 2020 amounted to EUR 503m. With sales of EUR 99m, Switzerland is in fifth place – behind the Netherlands (EUR 174m) and Italy (EUR 111m), but ahead of France (EUR 80m) and Austria (EUR 25m).
A different picture emerges, however, if sales in each country are expressed in terms of per capita expenditure. In no other European country did the inhabitants spend as much on meat substitutes as in Switzerland (EUR 11.5 per capita). This high per capita expenditure on meat substitutes is essentially due to the fact that the purchase price or sales value per kilogram is considerably higher in Switzerland (EUR 19.0) than in the other countries (EUR 11.1 on average). The sales value of meat substitutes in Switzerland is thus, on average, around EUR 8 per kilogram (71.8%) higher.

Comparison of the quantities purchased shows that both the Netherlands and the UK (0.86 kg per capita in each case) are ahead of Switzerland.

It is clear from these figures that, while its population is small compared to other European countries, Switzerland is an important market for meat substitutes. This is partly to be explained by the fact that, compared to most European

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**Table: Meat Substitutes in the Retail Trade**

<table>
<thead>
<tr>
<th>Country</th>
<th>Expenditure per inhabitant (EUR)</th>
<th>Sales value per kg (EUR/kg)</th>
<th>Quantity per inhabitant (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switzerland</td>
<td>11.5</td>
<td>19.0</td>
<td>0.61</td>
</tr>
<tr>
<td>Netherlands</td>
<td>10.0</td>
<td>11.7</td>
<td>0.86</td>
</tr>
<tr>
<td>UK</td>
<td>7.5</td>
<td>8.8</td>
<td>0.31</td>
</tr>
<tr>
<td>Belgium</td>
<td>4.3</td>
<td>13.7</td>
<td>0.22</td>
</tr>
<tr>
<td>Austria</td>
<td>2.8</td>
<td>12.7</td>
<td>0.16</td>
</tr>
<tr>
<td>Germany</td>
<td>2.2</td>
<td>14.0</td>
<td>0.16</td>
</tr>
<tr>
<td>Spain</td>
<td>1.8</td>
<td>11.2</td>
<td>0.09</td>
</tr>
<tr>
<td>France</td>
<td>1.2</td>
<td>13.1</td>
<td>0.05</td>
</tr>
<tr>
<td>Romania</td>
<td>0.3</td>
<td>5.3</td>
<td></td>
</tr>
<tr>
<td>Denmark</td>
<td></td>
<td>11.6</td>
<td></td>
</tr>
</tbody>
</table>

Sources: FOAG, Market Analysis; Nielsen Switzerland; Nielsen MarketTrack; ProVeg; Eurostat (2019 population figures)
countries, the Swiss population has a relatively high average purchasing power.

**Outlook: studies forecast strong growth worldwide**

For some time now, meat substitutes have been recognised as a growth market at the global level. Accordingly, forecasts concerning the future international development of the meat substitutes market can be found in numerous studies (cf. Barclays 2019; Allied Market Research 2019; Meticulous Research 2020; Kearney 2020). The forecasts vary widely, as regards both time horizon and estimated sales values. The general verdict is, however, largely identical: continued growth over the next 5–20 years. For the purposes of the present study, by way of example, the results of the Kearney analysis are considered in detail.

Based on analytical data and qualitative expert assessments, the above chart shows the projected development of the global combined meat and meat substitutes market until 2040.

Sources: Data: United Nations, World Bank; Expert interviews; Analysis: Kearney (2020); Graph: FOAG, Market Analysis

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**MEAT SUBSTITUTES IN THE GLOBAL CONTEXT**

**Outlook: Global meat and meat substitute market according to the Kearney case study**

Sales value total in billions CHF, shares in %

2025..2040 (annual data)

<table>
<thead>
<tr>
<th>Year</th>
<th>Conventional meat</th>
<th>Plan-based meat substitute</th>
<th>Cultivated meat</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2025</td>
<td>1 200</td>
<td>1 400</td>
<td>1 600</td>
<td>1 800</td>
</tr>
<tr>
<td></td>
<td>10 %</td>
<td>18 %</td>
<td>22 %</td>
<td>35 %</td>
</tr>
<tr>
<td>2030</td>
<td>90 %</td>
<td>72 %</td>
<td>55 %</td>
<td>40 %</td>
</tr>
<tr>
<td>2035</td>
<td>25 %</td>
<td>23 %</td>
<td>25 %</td>
<td>73 %</td>
</tr>
<tr>
<td>2040</td>
<td>10 %</td>
<td>18 %</td>
<td>22 %</td>
<td>50 %</td>
</tr>
</tbody>
</table>

Conventional meat

Plan-based meat substitute

Cultivated meat

Total

When consumers go vegan, how much meat will be left on the table for agribusiness?, copyright A. T. Kearney, 2020. All rights reserved. Reproduced with permission.
The analysts assume that global consumption of meat and meat substitutes will increase by 3% per year. They expect that, by 2025, plant-based meat substitutes will already account for 10% of sales (≈USD 120bn). The analysts estimate that cultured meat products will likewise account for 10% of sales by 2030 (≈USD 140bn). At the same time, the market share of conventional meat is expected to decline. By 2040, meat’s market share is projected to fall to 40% (≈USD 720bn), corresponding to a CAGR of -3%. Conversely, by 2040, plant-based meat substitutes are projected to account for 25% (≈USD 450bn) and cultured meat 35% of sales (≈USD 630bn).

These projections are based on the following assumptions:

• increase in efficiency and scale-up of meat substitute production;
• reduction in the costs of producing meat substitutes;
• above-average growth of the meat substitutes market in Asia, the US and Europe;
• cultured meat ready for commercialisation in the coming years;
• high level of consumer acceptance, with reservations particularly about cultured meat being successfully overcome;
• regulatory approval gained;
• prices for meat substitutes competitive with those for conventional meat products;
• rising global inflation (nominal price rises for meat and meat substitutes);
• growing global population, especially in regions where meat consumption is already low.

Whether such a radical scenario as that described by Kearney materialises in the next 20 years depends on numerous factors – especially on consumer acceptance of meat substitutes. Other prominent studies – e.g. the Agricultural Outlook (OECD, 2020) – forecast continuing marked growth in global meat production, driven in particular by global population growth and rising demand for meat among a globally expanding middle class. In most cases, meat substitutes as a growth market are not taken into account in the projection models used in these studies.

Even though the precise levels projected in the Kearney study may not be attained, the meat substitutes market will continue to grow strongly in the coming years. Accordingly, the development of this dynamic market should be continuously monitored, so that trends and market potentials can be identified at an early stage.

Swiss agriculture not currently benefiting from growth of meat substitutes

From the analysis, it is clear that sales of meat substitutes have grown strongly in Switzerland and Europe in recent years and will continue to grow in the coming years. Against the backdrop of climate change, a growing consumer segment (especially among younger people) is deliberately reducing its meat consumption or even abstaining altogether. These consumers are specifically seeking plant-based alternatives. Increasingly benefiting from this growth market are also Swiss retailers and food industry companies promoting the development of meat analogue products as well as tofu – for example, planted.chicken (Planted), The Green Mountain (Hilcona/Bell; Coop), or V Love (Micarna/BINA; Migros). At the level of agricultural production, however, this trend is as yet barely visible. Within Swiss agriculture, only a handful of projects and initiatives are focused on producing the necessary raw materials – for example, the organic soya cultivation project to support domestic organic tofu production (cf. Organic soya in Switzerland; FiBL, 2019). Otherwise, in virtually all cases, the plant protein sources required for domestic production of meat substitutes are imported.

According to a HAFL/Agroscope study entitled “Vegetable protein as an alternative to meat”
(Heine et al. 2018), the potential certainly exists in Switzerland to grow protein-rich crops for the production of meat substitutes. According to this study, lupins, for example, as well as broad beans and French beans, would be suitable as protein sources. However, to be used as raw materials in the production of plant-based meat substitutes, they would first have to be processed into protein meal, concentrates or isolates. No such processing industry has yet been established in Switzerland.

To ensure that Swiss agriculture can also benefit from this growth market, there is a need for a holistic view of the value chain, extending from the production, preparation and processing of raw materials to specific marketing efforts. This in turn calls for appropriate initiatives and investments, together with collaboration across the entire food value chain. The consumer-side potential already exists.
The analysis of meat substitutes in the Swiss retail sector is based on the database of Nielsen Schweiz, which draws on two data panels:

- the consumer panel
- the retail scanning panel

The consumer panel of Nielsen Schweiz comprises around 4,000 households in German- and French-speaking Switzerland (i.e. excluding Ticino), with purchase data being recorded for each member of every participating household throughout the year. Specifically, the quantities, prices and place of purchase are to be reported for all products purchased by these households.

In the retail scanning panel of Nielsen Schweiz, all products scanned on the conveyors at retailers participating in the panel are recorded. The panel comprises most of the national players in the stationary retail trade, excluding the two German discount retailers Aldi and Lidl. Specialty stores (e.g. butchers) and direct sellers are likewise not represented in the retail panel.

In the combined (consumer and retail) panel, those sales channels not included in the retail panel (e.g. Aldi, Lidl, specialty stores) can be estimated via the consumer panel and brought together with the retail panel to form a global panel for the entire stationary retail trade (including online outlets). The combined retail/consumer panel thus provides a picture of Switzerland's entire stationary retail trade and permits the use of the most precise sales figures (by value and volume). The combined panel serves as the basis for the present analysis.

**Household characteristics distinguished in the consumer panel of Nielsen Schweiz**

Various sociodemographic characteristics of participating households are recorded in the Nielsen consumer panel. The following household characteristics are reported by Nielsen Schweiz in the consumer panel:

- Age of the household reference person: various age groups, from 18 to over 65 years
- Number of children in the household: with/without children, number
- Shopping location: Switzerland/abroad
- Income: various income groups, from under CHF 35,000 to over CHF 110,000
- Household size: number of persons per household
- Region of residence: urban/rural/intermediate
- Language area: German-speaking/French-speaking Switzerland (Western Switzerland)
- Affluence: by income per household member; low to high affluence

**Is the household income gross or net?**

Household income is recorded as gross income.

**What is the compound annual growth rate?**

The compound annual growth rate (CAGR) shows the average annual growth of an indicator (e.g. sales value or volume) over a defined period (comprising more than one year). The calculation is based on the initial and final values and the duration of the period (in years). The present analysis mainly considers the period from 2016 to 2020 (initial value = 2016, final value = 2020, duration of period = 4).
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Detailed figures for the meat substitutes market in the Swiss retail sector can be found at: Supplementary tables

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