



The Mushroom Report





The Mushroom Miles Report has been born out of the Miles Better initiative, a partnership between local farmers, sellers and growers, to help consumers better understand the journey their food goes on from field to fork.

This report explores the nutritional benefits and sustainability of just one produce type – mushrooms – and explains why, against a backdrop of growing responsible consumerism, this fungi is a hero food.

Using mushrooms as a case study, it also highlights a new way to categorise one of the biggest single considerations for shoppers - food miles - and discusses what more can be done to encourage food to be more locally sourced and consumed.

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Miles Better

With the dawn of the new decade, sustainability and responsible consumerism have become not just a 'nice to have' but an essential consideration for today's shopper. Recent figures reveal that 81%¹ of UK consumers make day to day decisions about the products they buy, the brands they support and the companies they will work for based on their credentials in this space.

And not a minute too soon.

There has been a significant escalation in the media highlighting the irreversible damage happening to the planet by the habits of mankind. Little wonder, therefore, that veganism, vegetarianism and flexitarianism are booming as dietary lifestyle choices.

In 2019 60%² of the UK population reported making active efforts to reduce their meat consumption, and research in late 2019 revealed that 62%³ are making an effort to reduce food miles. But sustainability in terms of dietary choices is a broader issue than simply cutting down on certain food types. Whilst it is irrefutable that opting for a more plant-based diet will have a positive impact on an individual's carbon footprint and thus the mark they leave on the planet, even within these plant-based choices all things are not made equal.

The findings in The Mushroom Miles Report forms the foundations of a debate that will generate considerable attention from the trade, media and consumers. As recently as October 2019 the IGD stated: 'The food and drink we buy and eat have a significant impact not only on our health but also on our environment. We now face a mounting challenge to shift our diet to one that delivers on both health and sustainability'⁴.

1 *Social Consciousness, IGD Shopper Vista, June 2019*

2 *Samworth Brothers research, 'Exploring and Understanding Meat/Fish Reductions' June 2018*

3 *Mushroom Miles Report, survey of 1,500 UK adults, December 2019*

4 *Transitioning to sustainable and healthy consumption, IGD, October 2019*

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The mushroom story



Mushrooms grow abundantly in the UK and Ireland, as the indigenous environment and climate provide ideal growing conditions. They thrive in this cool, damp, low lit northern corner of Europe and are available in UK and Irish supermarkets 52 weeks of the year.

Versatile and with a firm bite, the mushroom is a mainstay of many meal choices. It delivers important nutrients including vitamin D – uniquely amongst vegetables – and, thanks to its high levels of naturally occurring glutamates, is packed with umami flavours that have been linked with satiety.

Mushrooms are one of only a few dietary sources of vitamin D, other than the main food source, oily fish⁵. When exposed to sunlight they produce the sunshine vitamin, which is key to maintaining a healthy immune system. Vitamin D mushrooms, which have been specifically exposed to UV are available in several retailers, and a single portion (100g) contributes 6.9 micrograms of the recommended daily 10 micrograms of vitamin D for adults and children over 12 months⁶.

5 *Food Sources of Vitamin D, Office of Disease Prevention and Health Problems, U.S Department of Health and Human Services*

6 *NHS website, January 2019 & Food Sources of Vitamin D, Office of Disease Prevention and Health Problems, U.S Department of Health and Human Services*

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When considering production sustainability of mushrooms, they are almost unrivalled for several reasons:

- Cultivated on a base substrate made from agricultural and organic waste, the mycelium (fungus) extracts resources from these otherwise 'waste' substrates (made from wheat straw, poultry manure, gypsum) to grow a nutritious food.
- The mushrooms are harvested within five to six weeks, which also makes them an economic food to produce – and all from a fully recyclable farming process.
- While green plants sustain life on the planet, microorganisms, especially fungi [mushrooms] play a vital role in recycling organic matter produced by the green plants on earth. Both are essential for environmental sustainability⁷.
- The spent mushroom substrate is nutrient rich and acts as a soil conditioner for spreading on land. Additionally, it can also be used as a replacement for peat in growing media sold in garden centres.

Mushrooms also have one of the lowest carbon footprints of any food. Because of the ability of farmers to convert agricultural by-products (wheat straw) and waste (poultry manure) to grow mushrooms, mushrooms have a smaller environmental footprint than many other foods.

Mushrooms have 0.5 Kilograms (kg) of CO₂ per pound (454g) of food consumed. In comparison per CO₂ per pound (454g) consumed; chicken has 3.1 kg, pork has 5.5 kg, salmon has 5.4 kg, cheese 6.1 kg, eggs 2.2 kg CO₂, broccoli 0.9 kg and tofu 0.9 kg⁸.

When considering this against the backdrop of the soaring environmental agenda consumers self-report as being hugely important to them, we looked for evidence of this carrying through into action at the tills.

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- 7 *Mushrooms and environmental sustainability, BL Dhar, Neeraj Shrivastava, Mushroom Research Development and Training Centre (MRDTC), DK Floriculture, Usha Farm Near Bamnoli Bus Stand, Bijwasan, New Delhi-61*
 - 8 *The American Mushroom Institute, Sustainability and The Mushroom Sustainability Story: Water, energy and climate environmental metrics by SureHarvest (2017)*

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The green pound

A recent study⁹ found that UK and European consumers are actively looking for evidence of greater sustainability in the food they buy.

- 48% are concerned about food waste
- 35% want fair trade terms with small farms⁹

This shift in consumer demand towards environmentally friendly, ethical production has resulted in UK and Irish farmers increasingly implementing sustainable farming practises to lower carbon emissions and preserve water and natural resources⁹.

In addition, the IGD reported that shoppers have become more socially conscious in 2019¹; the percentage of shoppers who say that local, UK and Irish products are an extremely or very important product choice currently stands at approximately 50% across the major retailers. On top of this, 38% of Tesco (the supermarket with the biggest market share in the UK) and 47% of Waitrose shoppers say that the impact on the environment is influencing their product choice¹.

When specifically asked about mushrooms, UK and Irish grown and sourced lead the way with consumers; 81% trust UK and Irish grown mushrooms and 83% consider UK and Irish grown mushrooms to be local, compared with 28% who trust in European mushrooms and 2% who consider Europe to be locally grown¹⁰.

But what are the factors that contribute towards delivering sustainability in the food supply chain in the eyes of the consumer, and how can they be improved on to meet growing shopper demands?

9 *Sustainable Food Systems, Longitude (Financial Times Company) September 2019 – sample 2,500 consumers France, Germany, Italy, The Netherlands, Poland, UK and Ukraine.*

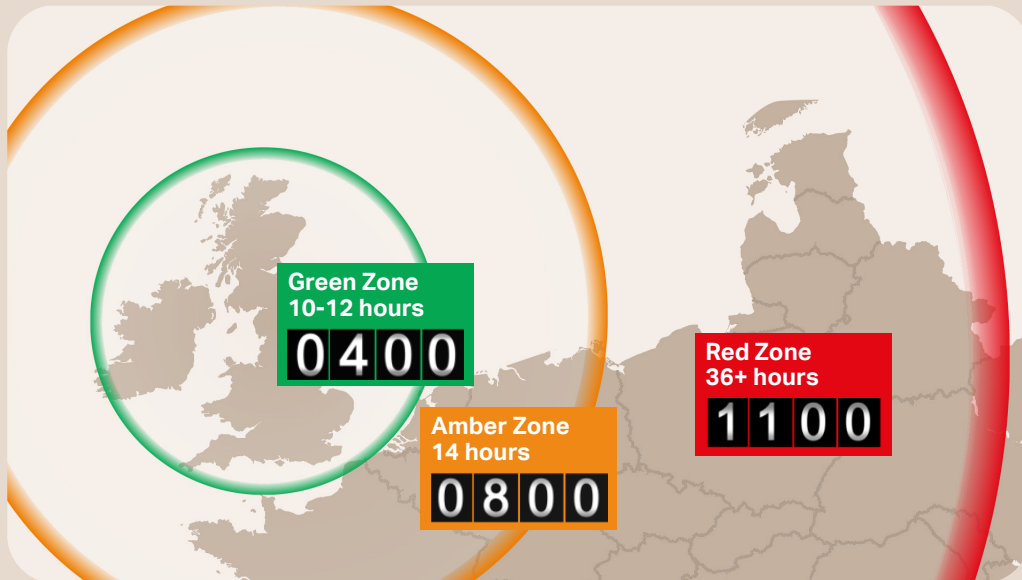
10 *The Thinking House, Bord Bia, October 2016*

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Mushroom miles



One of the biggest single considerations for consumers are food miles - a proxy for several other, more complex measures including carbon footprints which most consumers do not fully understand. Food miles, on the other hand, are a relatively simple concept and are significantly easier for shoppers to quickly make a judgement on in store. The more locally produced, the better.

Food miles contribute negatively towards an effort to develop sustainable farming, which, coupled with supply chain costs (both financial and environmental), represent an easy win for retailers.

Choosing to stock UK and Irish produce over counterparts from Eastern Europe and beyond will reduce food miles, carbon footprints and provide the local producer support shoppers crave.

Reviewing these factors (food miles and the impact of transit), this report highlights a new way to categorise mushroom supply into UK and Irish supermarkets; a system that could be effectively rolled out across multiple produce categories to allow for clear signposting for consumers and retailers alike.

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The Mushroom Bureau reports that whilst 75% of retail mushrooms are supplied from within the green zone – under 12 hours transit and travelling fewer than 400 miles, a not inconsiderable 12% of the market is sourced from the red zone. Clocking up a significant 36hrs+ on the road, and travelling in excess of 1,100 miles, these mushrooms could inherently be less fresh and have a significantly higher carbon footprint than their locally produced counterparts.

UK and Irish mushroom growers give UK supermarkets the maximum shelf life as a result of their minimal food miles from farm to shelf. Shoppers benefit from the longer shelf life of recently picked, fresher and firmer mushrooms as they last longer in their fridge, and ultimately reduce the environmental impact and cost of food waste.

Understanding the provenance of food in this way is something shoppers are showing increasing interest in. Recent IGD research, for example, showed that a third of Sainsbury's shoppers agree that 'where it has been produced' is important to them when choosing food and grocery products in a supermarket¹.

In addition, while research carried out in December found that nearly half of British shoppers admit they've bought food which is native to the UK and Ireland assuming it was sourced here, only to discover later that it had been transported from places like Kenya and Poland³.

It is clear that highlighting provenance and driving awareness of the sustainability of native mushrooms will increase demand, and it is important retailers understand customers concerns over the environmental impact of products made available to them.

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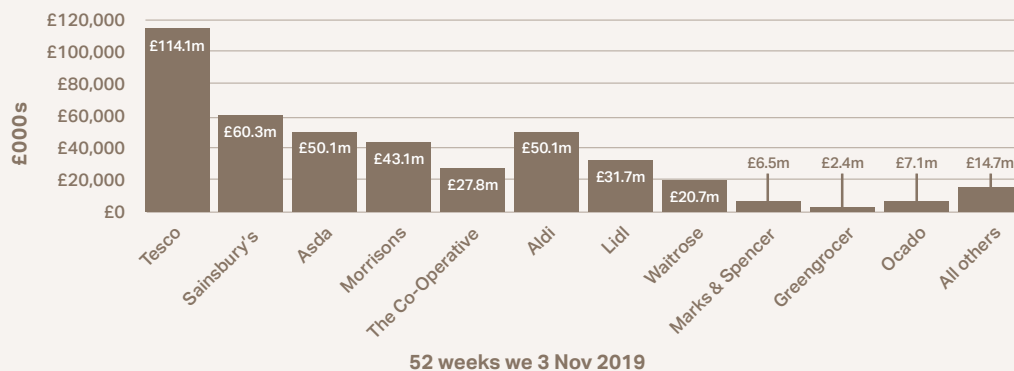
Why mushrooms?

British consumers love mushrooms. Penetration is a huge 81.6% (compared with the trendy avocado which can only muster a penetration of 35%) and are purchased almost 20 times per year⁹.

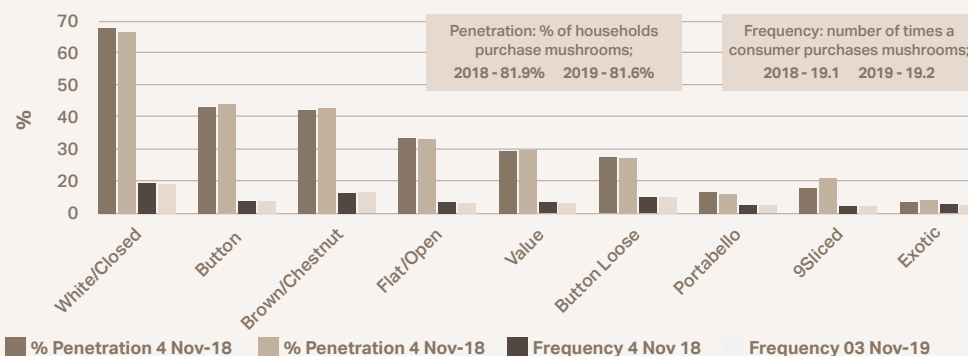
UK retail mushroom sales in the last 52 weeks to the beginning November 2019 accounted for £428.5M with a growth of +2.3% on the same time period of 2018. By contrast, the unit volume sales for the same time period only grew by +0.7%, indicating an element of price inflation to deliver the stronger sales growth¹¹.

Mushroom sales 52 we 3 Nov 19

Total UK sales £428.5m - +2.3% growth yoy



UK penetration and Frequency



11 Kantar World Panel, GB Mushrooms, 52 weeks week ending 3 November 2019

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Beyond the environmental and health benefits already discussed in this report, additional purchase drivers have also been identified for the category. A recent Mushroom Tracking Report revealed that over half (54%) of mushroom purchasers buy them 'because they are versatile and can be used in a variety of dishes'¹².

In addition to this, research conducted in December found that over a third (37%) of shoppers were willing to pay more with 42% admitting their motivation to do so was to receive the freshest produce and 40% being to cut down on their carbon footprint³.



12 YouGov, *Mushroom Tracking Report*, 20 May 2019, 400 women, age 25-45, in Britain and Ireland to find out their reasons for buying mushrooms

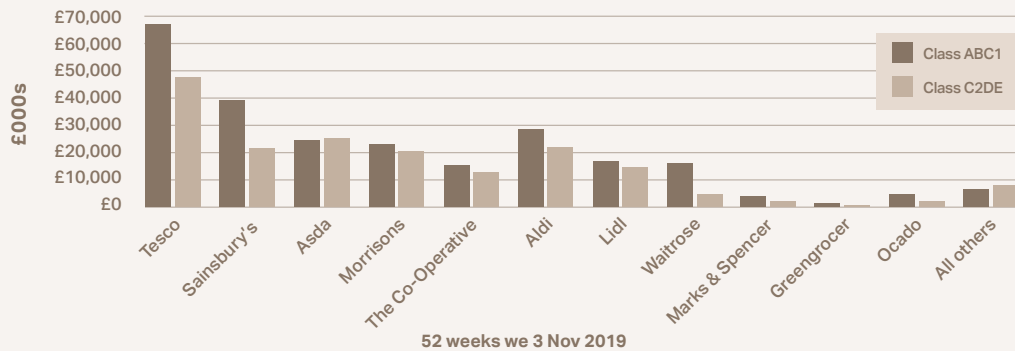
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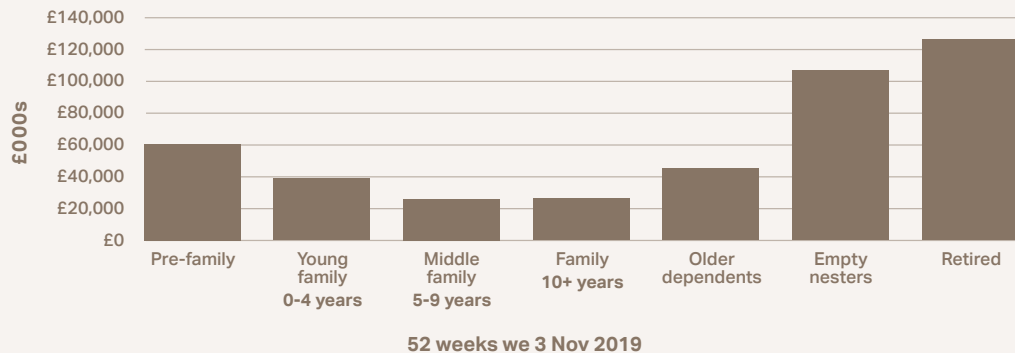


The mushroom shopper

Demographics by supermarket



UK Sales by Lifestage



11 Kantar World Panel, GB Mushrooms, 52 weeks week ending 3 November 2019

When considering who buys mushrooms, ABC1 consumers account for 53% of total sales and C2DE 41% of total sales, with a skew towards those over 45 years old and the highest propensity in the over 65s⁹.

However, the strongest growth in sales year-on-year is coming from families and, when asked 'how often are mushrooms bought in your household?', 24% of new families and 16% of mature families respond 'more often' in 2019 compared to 2018¹⁰. The fact that mushrooms make an easy to prepare, value for money ingredient option for family meals will also be a significant consideration.

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The opportunity

Even though penetration of mushroom purchase is very high at 81.6%, the greatest proportion of sales, 71%, is coming from the 45+ age group⁹.

However, younger, millennial consumers are passionate food explorers and environmentalists and are the largest adopters of vegan, vegetarian or flexitarian lifestyles in recent years². This age group of under 28-34 year olds make up 11.8% of UK and Irish households and 8.9% of grocery spend, but only 9.3% of the mushroom market¹¹.

More broadly, over 60% of consumers are looking to eat more plant-based meals during the week². But flexitarians do not expect to compromise - they demand healthy plant-based meals which taste just as good as a meat-based meal.

Conscious consumption continues to gain momentum thanks, in part, to the media agenda. Not a week goes by without food, health, animal welfare and the environment hitting the headlines, whilst social media stars hero vegetables and plant-based choices, pulling these diets firmly into the mainstream.

This represents a huge opportunity to dramatically grow sales in younger age groups by taking advantage of a number of factors which resonate with these consumers²:

- Concerns about the environment, how to support sustainable food production (including food waste) and reduce food miles
- The increasing popularity of plant-based meals replacing one or two meat meals per week
- Worries about the future cost increases of food

Additionally, mushrooms are easy to prepare and a cheap substitute for meat; a 300g pack of excellent quality mushrooms at 95p will completely substitute a 250g pack of mince beef £2.19¹³ as the key ingredient in a plant-based spaghetti Bolognese.

13 IGD ShopperVista, base: all main grocery shoppers for each retailer, Sep '18-Aug '19

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Supporting consumers

But, whilst intent is clearly there from shoppers, the retailers who are winning in this market are those who are helping consumers easily make changes. The flurry of successfully launched own label plant-based ranges in recent years is a testament to this. In classic 'nudge theory', making changes as simple to make as possible will drive mass uptake.

Another important consideration for consumers is rising food costs. Shoppers are already budgeting their food shop and a massive 81% of big four shoppers (Tesco, Sainsbury's, Asda and Morrisons) agree that the cost of food will be more expensive in the next 12 months¹⁴.

With this in mind, communicating mushrooms as an inexpensive, easy to prepare ingredient for a flavoursome and satisfying meal is key – particularly to the under 45 age group and those with families.

14 1st July 2014, point 15, *The UK food system, UK Food strategy, Food Security – Environment, Food and Rural Affairs committee*

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What more can be done?

In the quest for sustainable consumption and protecting the environment, there are simple changes both retailers and consumers can make. Continuing to promote plant based dietary choices will have a significant positive impact on squeezed consumer budgets, the nation's health and on the environment.

But as this report proves, there is more that can be done. It is not enough to simply indiscriminately choose produce – the impact of farming and the full supply chain should also be taken into consideration.

Britain is not food self-sufficient. A report from the House of Commons environment, food and rural affairs committee¹⁵ stated the UK 'self-sufficiency' ratio for vegetables is 58% and for fresh fruit only 12%. High self-sufficiency foods like cheese and beef are at 80%, while tomatoes and broccoli have a much lower ratio at 45% (the UK has to import the remaining 55%). Mushrooms are the hero food with 75% self-sufficiency at retail¹⁵.

According to The Mushroom Bureau, the UK and Ireland currently produces around 134,000 tonnes of fresh mushrooms each year, with scope to grow; 100% self-sufficiency could be achieved as UK and Irish farms can grow 52 weeks of the year. These local producers are responsible for covering the majority of demand, with the remaining 25% being supplied predominantly by Poland and the Netherlands. When considering the differing impact between sourcing UK and Irish mushrooms and their Polish counterparts, the transit differences alone are significant, travelling in excess of 1,100 miles from farms for over 36 hours vs a maximum of 400 miles within the UK and Ireland.

Where there is the production capacity to be significantly self-sufficient, consumers and retailers should actively choose products that will minimise carbon footprints and environmental impact.

In short, sourcing and consuming locally grown UK and Irish mushrooms delivers better sustainable mushrooms. Better quality. Better nutritionally. Better for the environment. Miles better.

15 1st July 2014, point 15, *The UK food system, UK Food strategy, Food Security – Environment, Food and Rural Affairs committee*

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