

Analysis of Leading Innovators in the Plant-Based Meat Alternatives Market

By Ashley Wilcox

With a huge uptick in public interest surrounding healthier, more environmentally-friendly products, more and more plant-based meat alternatives have begun to flood the market. While there is a variety of brands offering meat alternatives, there are a limited number of brands offered in the Sioux City area. Three of these brands are Morningstar Farms, Beyond Meat, and Impossible Foods. Primary research will be used to pick a winner in product quality, allowing consumers themselves to grade brands on taste, texture, and similarity to meat products. Secondary research will be used to determine which brand has the most successful marketing strategies. Together these factors will be analyzed to determine which of the three brands is best poised to be the most successful in the meat alternative market. In the end, this research will help new consumers in the market make decisions based on actual product reviews, rather than which brand portrays themselves as the best. One major question this research aims to answer is, “Does product quality accurately reflect marketing claims?”

Literature Review

How a brand markets itself is extremely important to its success. There are many different marketing strategies available, but how a company utilizes those strategies is key. This literature review is intended to analyze the marketing strategies of each of the three companies to determine which has the most successful marketing strategy. The analysis focuses on the differences and similarities in each brand’s backgrounds, marketing strategies, competitive advantages, and how they work with current trends.

Morningstar Farms

Morningstar Farms is a plant-based meat alternative brand owned by Kellogg. The brand was originally introduced into supermarkets and grocery stores nationwide by

Worthington Foods in 1975 (Shurtleff & Aoyagi, 2004). At the time, Worthington Foods was the largest and most innovative U.S. company making meat analogs and vegetarian entrees. When Worthington Foods introduced Morningstar Farms, the brand was widely advertised and provided millions of Americans with their first experience of soy used in this way. Even though Morningstar Farms represented the first line of modern meat analogs to be sold at supermarkets, the concept was ahead of its time. Despite initial interest and popularity, the Morningstar Farms line released by Worthington Foods did not succeed. Kellogg purchased Worthington Foods in 1999, along with all of their brands. In 2014, Kellogg sold Worthington Farms but kept the Morningstar Farms line of products (Byrd, 2014).

Marketing Strategy

There are many different strategies within marketing that companies can use to increase and retain sales. Within the marketing strategy section, there will be an analysis of the company's mission statement, marketing growth strategies, strengths, and competitive advantage.

Company Mission Statement. One strong strategy is to have a company mission or values statement that reflects the company in a way that appeals to customers. Morningstar Farms does not have their own specific mission or values statement. However, the brand does have a statement on their website's executive summary page that explains why they did so much research on the environmental impact of switching to a plant-based diet. The statement says, "Morningstar Farms wanted to understand the environmental impacts of meatless versus meat-containing meals and to substantiate with primary research our advertising claims supporting our "Good for the Earth" and "Just What the World Ordered™" initiatives" (Morningstar Farms, 2021a). This statement shows customers that their food choices have a real impact on the environment and that Morningstar Farms is committed to making that impact a positive one.

Kellogg, the parent company of Morningstar Farms, has a vision statement that reflects the brand's overall commitment to making things *better*. Kellogg's statement says, "At Kellogg Company (NYSE: K), our vision is a good and just world where people are not just fed but fulfilled. We are creating better days and a place at the table for everyone through our trusted food brands" (Kelloggs, 2022a). This statement creates a positive image of a better world and better food that encourages consumers to choose Kellogg over other brands.

Marketing Growth Strategies. According to Fusaro (2020), Kellogg Co. plans on spending \$43 million to expand the Morningstar Farms plant in Zanesville, Ohio. The current plan is to expand the facility by 40,000-50,000 sq. ft. and add 40 full time jobs to its current workforce of 303 employees. This plan reflects, in part, market penetration, by increasing production and therefore creating the opportunity to sell more of their current product to existing customers.

In addition, Kellogg has released Incogmeato, a plant-based meat substitute under Morningstar Farms (Food Processing, 2020). Incogmeato is a new line of next-generation vegan, plant-based protein that looks, cooks, and tastes just like meat (Kelloggs, 2022b). This plan falls under the category of product development, since the company is creating a new product to sell in the present market.

Morningstar Farms has also removed eggs from their products, transitioning their products from vegetarian to vegan (Forbes, 2019). This strategy appeals to consumers looking for entirely plant-based and vegan options, falling under the category of market development by attracting new customers to products that have been altered to include a wider variety of consumers.

Key Strengths. An important part of developing marketing strategies is to recognize the company's existing strengths. Three strengths of Morningstar Farms are realistic products, environmental awareness, and exposure/accessibility.

Realistic Products. One of the main reasons for hesitation when consumers switch to plant-based meat products is taste (Forbes, 2021). As Mel Cash, the head of global marketing for Kellogg Co.'s plant-based division, stated in 2019, "With every product, we'll assess whether we can deliver on the taste and texture. If we feel like we can't get there with renovation, it could look more like innovation" (Forgrieve, 2019, para. 14). This shows the company's commitment to better, more realistic plant-based meat alternatives, and puts them at the top when it comes to what consumers want (a plant-based alternative so good, you can't tell the difference). Morningstar Farms has showcased this with their Incogmeato line, specifically their new Chick'n Tenders product that promises to "tear" like real chicken meat (Forbes, 2021). Unlike most plant-based chicken nuggets that are typically blended or "fit and formed," Morningstar Farms has created a chicken product that closely resembles real meat chicken nuggets. The resemblance doesn't just stop at taste, but continues in texture and how the tenders tear. Therefore, consumers are more likely to choose this Morningstar Farms product over other plant-based brands that don't closely resemble real chicken meat.

Environmental Awareness. A main focus of Morningstar Farms is to reduce negative impacts on the environment by the meat-containing food industry. The company commissioned an independent consulting firm to conduct a study called "A Comparative Life Cycle Assessment of Plant-Based Foods and Meat Foods (LCA)" to help understand the impacts on the earth of eating a meatless/veggie meal versus a meat-containing meal, as well as the impacts of eating a Morningstar Farms veggie product instead of the equivalent amount of a meat product (Morningstar Farms, 2021a). The study allowed Morningstar Farms to assess the impact of carbon footprints, greenhouse gas emissions, water use, and land use. By funding the LCA and providing the results of the study in an easily accessible part of their website, Morningstar Farms appeals to those who are switching to plant-based meals for the environmental benefit.

Exposure and Accessibility. With the release of the Incogmeato line, Morningstar Farms was able to roll out their product to thousands of locations (Webber, 2021). The company partnered with Sodexo, a foodservice brand that is popularly used in hospitals, prisons, and all levels of schools (among other entities), to serve their vegan beef burgers. This partnership pushes Morningstar Farms products into over 3,000 hospitals and schools, with the opportunity of expansion as they gain success and traction. Consumers are exposed to and able to access Morningstar Farms products at their place of employment or study, meaning they are more likely to choose Morningstar Farms when they go out to buy products on their own.

Competitive Advantage. As Mel Cash stated in the same interview, “We’re making sure we’re delivering on what customers want and what we believe is right. It’s less about having a competitive advantage and more about being able to satisfy as many people as possible who want to eat plant-based” (Forgrieve, 2019, para. 18). This statement is in relation to the company’s transition from vegetarian to vegan products.

However, the company has a competitive advantage when it comes to how long they have been on the market as a plant-based company. Morningstar Farms has been around since 1975, compared to competitors that started their plant-based journeys in the 2000s. The company was one of the first companies in the plant-based meat alternatives market, giving Morningstar Farms a lengthy plant-based history filled with knowledge and a leg up on competitors who are just starting out. The brand is also the only one out of the three in this analysis to have a parent company, giving them access to more resources than those just starting out on their own.

Impossible Foods

Impossible Foods is a plant-based meat alternative brand founded in 2011 by former Stanford biochemist and professor, Patrick Brown, and his research team in Northern

California (Hoshaw, 2016). When Brown was at Stanford, he studied climate change and the collapse of biodiversity related to animal agriculture. After taking a sabbatical to think over the issue, he realized that the only way to approach it was not academically. Brown decided to create a plant-based version that performed the same way as animal meat in every way, focusing on taste and nutritional profile (Fromm, 2021).

Marketing Strategy

Company Mission Statement. Impossible Foods' mission statement reads, "Our mission is to restore biodiversity and reduce the impact of climate change by transforming the global food system" (Impossible Foods, 2022a). This mission statement reflects a concern for the earth's climate and natural resources. The company then goes on to say that they complete this mission by "making delicious, nutritious, affordable and sustainable meat, fish, and dairy from plants" (Impossible Foods, 2022a). Working with their mission statement, Impossible Foods also has a goal to eliminate animal agriculture by 2035, "turn back the clock" on climate change, and restore biodiversity (Fromm, 2021). Essentially, Brown wants to convince meat lovers to switch to a plant-based lifestyle by creating realistic products.

Marketing Growth Strategies. Impossible Foods has utilized market development, bringing existing products into new markets. The company began a European expansion this year, releasing their chicken nuggets and sausage patties in the U.K. This release included over 300 restaurants and chicken shops, as well as supermarkets. According to Impossible, their plant-based nuggets are preferred two-to-one compared to real chicken nuggets. This European expansion is the first time the company has launched outside of North America (Vegconomist, 2022).

Impossible Foods just launched its new single-serve frozen entrees, Impossible Bowls. This line consists of eight different plant-based meals, including Sweet & Sour Impossible Pork, Teriyaki Impossible Chicken, Chili Mac with Impossible Pork, Barbeque

Impossible Pork, Spaghetti & Impossible Meatballs, Pasta Bolognese with Impossible Beef & Pork, Burrito Bowl with Impossible Beef, and Spicy Enchilada Bowl with Impossible Chicken. Peter Guinness, CEO of Impossible Foods, said about the new release, “Convenience and accessibility are a huge part of this, and we’re excited to give people even more ways to try and buy Impossible products. This is a major milestone that we’re proud of and hope will push the category forward in a meaningful way. It’s never been easier to try a delicious plant-based meal in minutes” (Business Wire, 2022, para. 11). This new product reflects product development, bringing a new product to the existing plant-based market.

In March, Kroger, the largest supermarket chain in the U.S., announced a partnership with Impossible Foods for its private label plant-based protein business. Though details were not released, this partnership will put Impossible Foods in front of thousands of more consumers than before, representing market penetration. Robert Moskow, food retail and food analyst at Credit Suisse, a global investment banking company, voiced concern for Impossible Foods’ competitors after this announcement: “We view this test as a threat to Beyond Meat, because it demonstrates the willingness of a big competitor to ‘margin down’ into co-branded private label products in order to maximize the reach of its products” (Nunes, 2022, para. 7).

Key Strengths. An important part of developing marketing strategies is to recognize the company’s existing strengths. Three strengths of Impossible Foods are realistic products, environmental awareness, and exposure/accessibility.

Realistic Products. Impossible Foods has created a plant-based burger that closely resembles real meat in taste, looks, texture, and even smell. The company, under biochemist Brown, has done extensive research to make sure their products are as realistic as possible. Real meat was analyzed at a molecular level to determine what makes a burger taste, smell,

and cook the way it does. The result is a plant-based burger that is squishy while raw, then firms up and browns on the grill.

Additionally, researchers used coconut oil to replicate fat, which oozes when the burgers are cooked. They also used potato protein to provide a firm exterior when the meat is seared. More impressive is the research that went into the burgers' smell. Researchers put cooked meat into a chromatography mass spectrometry machine, which allowed them to separate and identify the individual components of the meat smell in order to replicate it (Hoshaw, 2016). The plant-based burgers also "bleed" due to soy leghemoglobin, which adds a meaty flavor (IDTechX, 2021).

Environmental Awareness. Impossible Foods' main concern is the impact of the meat industry on our environment, specifically climate change and the use of natural resources. According to Brown, "The demand for meat is going through the roof, and the world is not going to be able to satisfy that using animals -- there's just not enough space, not enough water" (Hoshaw, 2016, para. 4). To address this issue, the company has focused on creating plant-based meat alternatives that are better for the environment. One example is their burgers, which the company says are less resource-intensive, healthier, and will eventually be cheaper to produce than real meat (Hoshaw, 2016). Impossible Foods also offers resources on their website to inform consumers of their impact on the environment when choosing a plant-based vs. real meat product.

Exposure and Accessibility. Impossible Foods products can be found in approximately 25,000 grocery stores and 40,000 restaurants (CNBC, 2022). Major restaurants that offer Impossible products include Burger King, White Castle, Qdoba, Little Caesars, Red Robin, and Starbucks (Twardziak, 2022). The brand is available in several countries, including the United States, Australia, Canada, Hong Kong, Macau, New Zealand, Singapore, the United Arab Emirates, and the United Kingdom (Impossible Foods, n.d.). Consumers'

ability to find Impossible Foods products almost anywhere, whether they're buying groceries or going out to dinner, makes Impossible an easy choice for those who wouldn't go out of their way to try a plant-based product.

Competitive Advantage. A major competitive advantage of Impossible Foods is the depth of research and scientific thought that went into the development of their plant-based meat products. From the start, Brown hired mostly biochemists, many of which were in his professional circle at Stanford. All of these scientists took a reductionist approach to replicating the flavor of meat, Brown stating, "We were approaching [meat] the same way you might approach figuring out the entire system for replicating genes. Basically, start looking at what are all the possible components that could be players ... and then deconstruct and reconstitute the biochemical system" (Oldach, 2019, para. 7). Laura Kilman, a senior flavor scientist at Impossible Foods, agrees, stating one of the things that sets Impossible Foods apart is that "...we really took the time to research meat on the molecular level and understand all the actual reactions that are happening and what the products are that are being created" (Oldach, 2019, para. 21).

Beyond Meat

Beyond Meat is a plant-based meat alternative brand founded by Nathan Brown in 2009 with a goal of aiding the fight against climate change by providing meat alternatives to consumers. Brown originally looked at three different options: lab-grown meat, in vitro meat, and plant protein-based meat. He settled on plant proteins, feeling it would be more satisfactory for consumers. After working with two professors at the University of Missouri on their research using plant proteins to replicate meat musculature, Brown was able to license the technology and develop Beyond Meat (Bronner, 2018).

Marketing Strategy

Company Mission Statement. Beyond Meat’s mission statement focuses on the positive effects of plant-based meat alternatives in all aspects. Their statement says, “By shifting from animal to plant-based meat, we can positively affect the environment, the climate and even ourselves. After all, the positive choices we make every day - no matter how small - can have a great impact on our world” (Beyond Meat, 2022b).

Marketing Growth Strategies. Beyond Meat announced plans for a new state-of-the-art R&D center in Shanghai, China as part of its global expansion strategy. This will be the company’s first dedicated R&D center outside of the United States, utilizing increased capabilities in science, technology, and culinary arts to develop high-quality plant-based meat products for consumers in the Asia-Pacific region. The new center falls into the category of market development by introducing Beyond Meat’s plant-based meat products to Chinese consumers in the foreign market (Beyond Meat, 2021).

The company also opened its first co-manufacturing facility in the Netherlands. This facility is the first outside of Missouri, USA to handle Beyond Meat’s approach to texturizing plant proteins. The addition of the new facility allows for end-to-end manufacturing capabilities in Europe, increasing sales to existing customers. Brown commented on the facility opening: “This latest investment in production capacity reflects our continued commitment to serving global markets. Our new facility in Enschede will not only bring production closer to the consumer, representing an investment in the markets and communities we serve, but is expected to allow us to leverage local supply chains” (Beyond Meat, 2020, para. 6).

Outside of new R&D and manufacturing facilities, Beyond Meat has also entered into a new joint venture with PepsiCo. The joint venture is named Planet Partnership and focuses on combining Beyond Meat’s leading technology in plant-based protein with PepsiCo’s

world-class commercial capabilities. Planet Partnership released Beyond Meat Jerky this year, the first of Beyond Meat's products to be shelf stable. The release of this new product falls into the category of product development, bringing a new type of plant-based meat to consumers (PepsiCo & Beyond Meat, 2022).

Key Strengths. An important part of developing marketing strategies is to recognize the company's existing strengths. Three strengths of Beyond Meat are realistic products, environmental awareness, and exposure/accessibility.

Realistic Products. When developing plant-based meat products, Beyond Meat puts a lot of emphasis on texture. Brown said, "When we look at how to recreate animal protein it's to focus on the texture. Because you can flavor animal protein and meat in so many different ways, but if you don't have the texture right you have no canvas to work with" (Chiang, 2014, para. 4). For example, to create its Beyond Burger, the company uses a food extrusion machine that utilizes heat and pressure to force plant protein into a fibrous, meat-like texture that resembles muscle fibers. Beyond Meat also uses beet juice to replicate blood and coconut oil and cocoa butter to create marbling (IDTechX, 2021).

Environmental Awareness. Beyond Meat was founded to aid the fight against climate change, so environmental awareness is an important aspect of the brand image. The company's website features a page dedicated to its environmental impact. This page includes a Life Cycle Analysis describing the impact of Beyond products compared to regular meat, a list of reasons why eating Beyond is better for the planet, and why the company made meat from plants (Beyond Meat, 2022a). In addition to their website, the company has begun to introduce lighter, more sustainable packaging, which features fully recyclable trays and 30% less material overall by reducing paper and plastic use (Beyond Meat, 2020).

Exposure and Accessibility. Accessibility is important according to Deanna Jurgens, chief growth officer at Beyond Meat, who says, "Our goal is to make plant-based meat

available to consumers, wherever they shop” (Refrigerated & Frozen Foods, 2022). This is part of the reason why the brand expanded distribution into Rite Aid stores nationwide this year. Jurgens states that expanding Beyond Meat’s presence across retail channels, including drugstores, is a natural next step to bringing nutritious and sustainable plant-based protein to communities across the country (Refrigerated & Frozen Foods, 2022).

On top of expanding into new retailers, the brand recently released its new Beyond Meat Jerky, which Dan Moisan, CEO of Planet Partnership, states, “The nationwide launch of Beyond Meat Jerky will make plant-based meat accessible to millions of households. It tastes great, it's a good source of protein, and it's convenient to eat whether you're on the go, at the office or out on adventures” (PepsiCo & Beyond Meat, 2022, para. 4). These increases in accessibility mean consumers can more easily access Beyond Meat products.

Competitive Advantage. Beyond Meat managed to secure several high-profile partnerships with restaurants and food delivery services early on in the plant-based meat alternative “boom.” Some of these partnerships include McDonalds, KFC, Subway, Famous Daves, Hardees, Carl's Jr., TGI Fridays, Denny’s, Dunkin’ Donuts, Del Taco, A&W, and Blue Apron. Securing a partnership with these big names put Beyond Meat out in front of main-stream, non-vegetarian consumers before other plant-based brands, leading consumers to think of Beyond Meat first (Reinicke, 2019).

Marketing Environment

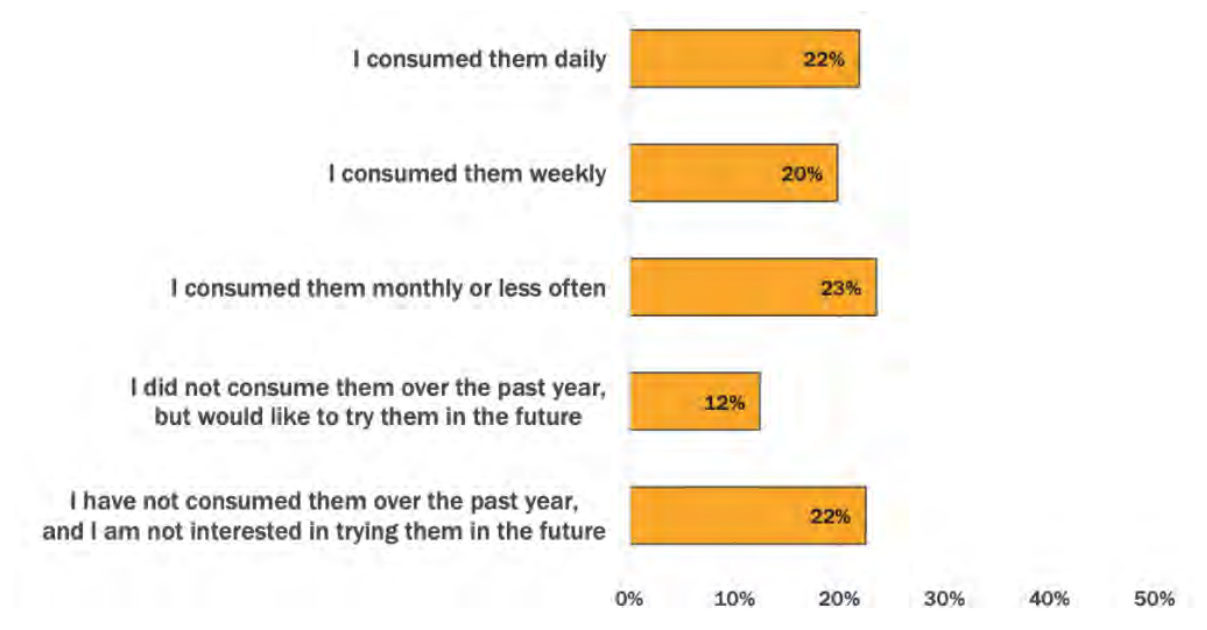
Increase in Consumption/Interest

The first trend affecting these brands is the increase in U.S. consumption of and interest in plant-based meat alternatives. This is definitely an opportunity for plant-based meat alternative brands. More mainstream consumers, especially millennials and Generation Z, are eating more plant-forward foods for many reasons, including taste, health, sustainability, and more choice on menus (John, 2019, para. 7). According to research by

Food Insight, presented in Figure 1, 22% of respondents said they consumed plant-based meat alternatives daily, 20% said they consumed them weekly, and 23% said they consumed them monthly or less often (Informational Food Information Council, 2021, p. 7). Of those who said they did not consume them at all, 12% said they would likely try them in the future. That leaves only 22% of respondents who do not eat or are not interested in plant-based meat alternatives.

Figure 1

Consumption of Plant-Based Meat Alternatives



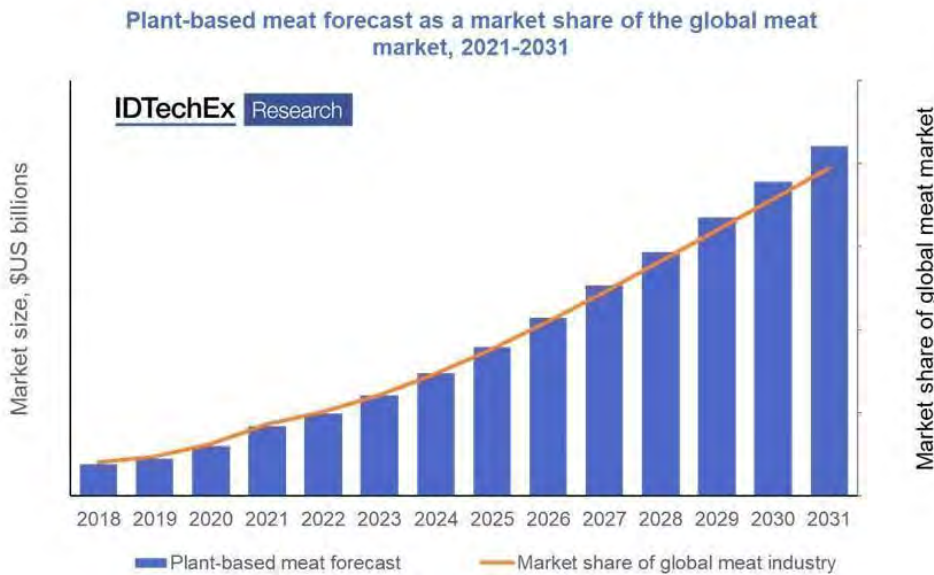
Note. Participants were asked the question, “Thinking about the types of food products you’ve consumed over the past year, which of the following is true about your consumption of plant-based meat alternatives?”

As demonstrated in Figure 1, it is obvious that a large percentage of the population has at least some interest in plant-based meat alternatives. Additionally, the volume of meat substitutes consumed in the United States has risen by 500% since 2013 and is estimated to multiply to 4 times that by 2026 (Statista Consumer Market Outlook, 2021). As seen in

Figure 2, plant-based meat is forecasted to capture an increasingly large share of the global meat market over the next ten years (IDTechX, 2022).

Figure 2

Plant-Based Meat Market Share Forecast



Morningstar Farms

To work with this trend, Morningstar Farms has committed to cutting out eggs and making all of their products 100% plant-based, opening up more options for vegan consumers. Their goal is to enhance the accessibility of great-tasting plant-based options for anyone and everyone. This aligns with an objective of their parent company, Kellogg, to “drive significant impact in plant-based eating by increasing the availability and awareness of plant-based foods and ensuring that consumers have plant-based alternatives across more foods and occasions” (World Business Council For Sustainable Development, 2020). Melissa Cash, head of global marketing, strategy, and innovation for plant-based protein and natural brands at Kellogg, said about their new vegan burger, “the role of a burger is that often it’s kind of your gateway into eating plant based. So if we provide something that’s super indulgent and delicious, but you also know it’s 100% plant based and you can feel good about

it” (Byington, 2019, para. 8). By providing consumers with a “gateway” into plant-based foods, Morningstar Farms makes it easier for people to see plant-based meat alternatives in a positive light. Cash describes this as “delivering products that make it even easier to get from intention to action,” which the brand takes very seriously (Byington, 2019, para. 11). In addition, Morningstar Farms has a leg up on competitors because they are easy to find and readily available on a large scale at easily accessible stores such as Walmart.

Impossible Foods

Impossible Foods has released several new products this year to keep up with the increase in consumer interest in plant-based meat alternatives. Some of these new products include Impossible Chicken Patties, Impossible Sausage Patties, Impossible Wild Nuggies, Impossible Sausage Links, and most recently, Impossible Bowls (Business Wire, 2022). See an example of the new Impossible Bowls in Figure 3. Additionally, Impossible Foods plans to release a plant-based filet mignon product as soon as Brown believes the product can compete with real steak “head to head” (Xu, 2022). By releasing new types of frozen food products, Impossible Foods is able to reach a wider customer base and appeal to a much larger audience. Consumers are much more likely to eat plant-based if they have the option to do so with all of their favorite kinds of meat products. The company doesn’t seem to be slowing down anytime soon, with Brown stating, “Anything you can imagine we might be working on, we’re working on” (Xu, 2022, para. 11).

Figure 3

Impossible Foods' New Impossible Bowls



Beyond Meat

To work with this trend, Beyond Meat has entered into a joint venture with PepsiCo, creating Planet Partnership. The partnership's goal is to provide convenient and accessible plant-based snacks and drinks (Lucas, 2022). This partnership is beneficial for both parties, since Beyond Meat can leverage PepsiCo's production and marketing experience and widespread distribution, while PepsiCo can utilize Beyond Meat's plant protein technology to deepen its investment in plant-based categories and work towards its sustainability and health goals (Buxton, 2022; Lucas, 2022). The first product Planet Partnership released was Beyond Meat Jerky, seen in Figure 4.

Figure 4

Beyond Meat's New Jerky



Use of Popular Individuals/Groups

The second trend affecting these brands is the use of celebrities or popular individuals/groups to promote products, typically through social media and collaboration. It is an opportunity for brands to gain more exposure and reach groups outside of their typical consumer base. It has been shown that celebrity endorsement builds credibility and can expose a brand to new markets (Hashaw, 2019). This is because of the celebrity effect—the ability of famous people to influence others. Celebrity endorsements and branding can also significantly increase sales. Looking specifically at dietary choices, a survey found that one in three adults make dietary choices based on what they see on social media. A Harvard review published in 2015 also found that celebrities can help draw attention to an issue and that celebrities can help link the impacts of climate change to consumption habits (Barrabi, 2022).

Morningstar Farms

Helping the company utilize this trend, Morningstar Farms is the first-ever official plant-based protein of the NFL franchise. San Francisco 49ers games at Levi's Stadium will offer a new menu of “next-generation plant-based protein that looks, cooks, and tastes just like the real thing” (Kellogg Company, 2021, para. 2). See an example of the new Incogmeato burgers being offered at Levi's Stadium in Figure 5. On top of bringing plant-based protein to the Levi's Stadium, the brand is also using the partnership to continue their commitment to making plant-based protein more accessible to everyone as well as giving back to the community. For every goal the 49ers score, the brands will donate 30,000 Incogmeato Chick'n Tenders, up to one million tenders, to Feeding America food banks in the Bay Area (Kellogg Company, 2021, para. 3).

Figure 5

Incogmeato Burger at Levi's Stadium



Impossible Foods

Adding to the trend of using popular individuals/groups, Impossible Foods was the official food partner in June of the event Overheated, a six-day, climate-action event hosted by musical artist Billie Eilish, environmental non-profit Reverb, and plant-based food initiative Support + Feed. London's O2 arena replaced all animal products with plant-based Impossible Foods products and replaced all dairy milk with plant-based alternatives (Starostinetskaya, 2022). The event was intended to highlight the consequences of animal agriculture and promote plant-based living. Impossible Foods helped advocate for sustainable meat products to aid in the fight against climate change (Rabb, 2022). CEO Peter McGuinness said about the event: "I'm thrilled to be bringing our food to our friends and fans at Overheated and to support the next generation of changemakers shaping the future of our planet" (Starostinetskaya, 2022, para. 4). The event certainly helped the company get in front of thousands of consumers, including the 23,000 in attendance as well as any who joined the livestream of the event on Eilish's YouTube channel, which has 45.7 million subscribers

(Jemima, 2022). Eilish was named PETA’s 2021 Person of the Year award for her dedication to sustainability in every industry (Rabb, 2022). Additionally, other high-profile celebrities were involved in the event, including musicians Sigrid, Finneas, and Ellie Goulding, who, with Eilish, have a combined 121 million Instagram followers (Jemima, 2022). Figure 6 shows a picture of Billie Eilish and others at the event.

Figure 6

Billie Eilish at Overheated



Beyond Meat

To work with this trend, Beyond Meat has made influencer and reality television star, Kim Kardashian, “Chief Taste Consultant” for the brand. Kardashian, who has over 300 million followers on Instagram alone, should bring massive awareness of the brand to everyday consumers. Outside of chief taste consultant, the star will also share details about her favorite Beyond Meat items and personalized plant-based recipes. Kardashian said, “I am really inspired by Beyond Meat’s mission and love that they are not only making plant-based eating delicious and accessible, but are doing so in a way that benefits both people and the

planet” (Barrabi, 2022, para. 4). Kardashian’s Instagram post announcing the new role can be found in Figure 7.

Figure 7

Kim Kardashian’s Instagram Post



Consumer Awareness - Climate Change

The third trend affecting these brands is an increase in consumer awareness of the connection between the meat industry and global warming/negative environmental effects. The number of news stories mentioning beef and climate change has increased almost 800% since the early 2000s (Lusk, 2019, para. 1). This is no surprise, considering the fact that the agriculture industry is now the number one contributor to an increase in rates of methane and CO₂ (The University of British Columbia, n.d., para. 2). These are greenhouse gases, which accelerate the increase in global temperatures, leading to global warming. The majority of greenhouse gas production results from waste products of livestock, most of which is methane. Methane is much more destructive than CO₂; to put the whole situation into

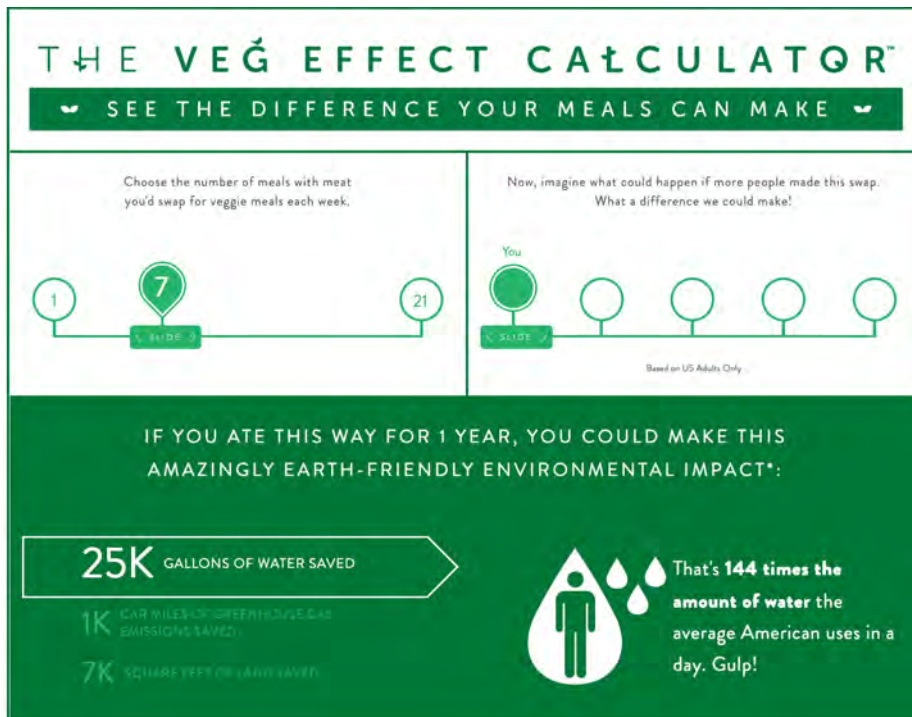
perspective, agriculture is an even bigger contributor to greenhouse gas emissions than the auto/transportation industry. This trend is an opportunity for plant-based meat alternative brands as consumers become more concerned with the negative impacts of meat consumption on the environment.

Morningstar Farms

Morningstar Farms is using this trend to their advantage in many ways. For example, the brand has a “Veg Effect Calculator” on their website that allows consumers to compare plant based and meat-based foods and see the difference their meals can make (Morningstar Farms, 2021a). An example of this calculator is shown in Figure 8. In this example, the calculator shows the environmental effects of one person swapping out one meal a day for a veggie meal. The calculator can also be adjusted to show the effect of swapping anywhere from 1-21 meals, from an individual person to the entire United States.

Figure 8

The Veg Effect Calculator



Morningstar Farms also has a webpage dedicated to their study called “A Comparative Life Cycle Assessment of Plant-Based Foods and Meat Foods” (referred to as LCA). This study was conducted by an independent consulting firm to help understand the environmental impacts on the earth of eating a meatless/veggie meal versus a meat-containing meal and eating a MorningStar Farms veggie product instead of the equivalent amount of a meat product. In addition, the brand states that they want to encourage “more plant-based deliciousness and less water-wasting, carbon-emitting, land-gobbling animal protein consumption” (2021b, para. 4).

Impossible Foods

Impossible Foods uses this trend in many ways, highlighting their mission statement and main goal to eliminate the negative impacts of the meat industry on the planet. Part of this is trying to help consumers understand the power that they have in everyday choices around food. The company has found, through consumer data, that 72% of the people buying Impossible products are buying them in place of the animal version. Jessica Appelgren, VP of Communications at Impossible Burgers, says they call this understanding of consumer power “the plate to planet connection.” The company has an impact calculator on their website that allows consumers to visualize the impact that their choice has on the environment, including greenhouse gases, water, and land usage (Fromm, 2021). This calculator details how choosing a plant-based alternative lowers your footprint with respect to GHG and carbon dioxide emissions as well as land and water use. Consumers can see the effect of beef, chicken, pork, or sausage in measurements of pounds, bricks, patties, or kilograms. The background changes as the slider is used, going from barren to full of life (Impossible Foods, 2022b). An example can be found in Figures 9 and 10.

Figure 9

Impact Calculator at 0 lbs

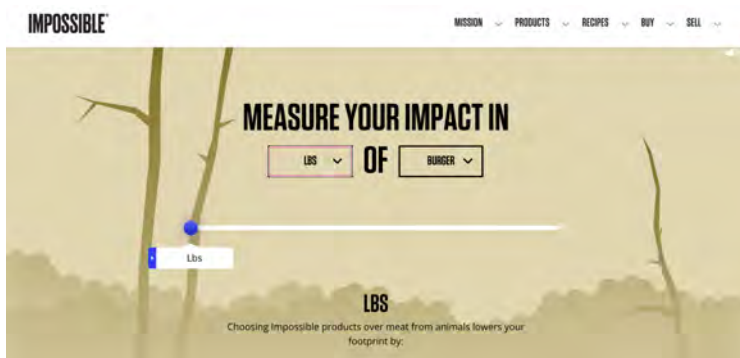
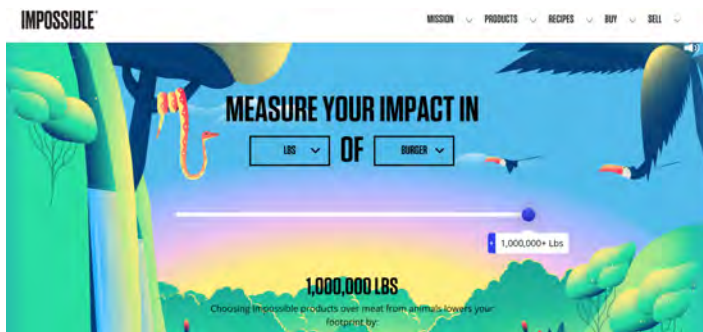


Figure 10

Impossible Calculator at Maximum lbs



The bottom of this webpage includes a section dedicated to two science-based life cycle assessments (LCAs) Impossible Foods had conducted to understand the calculation of environmental resource reductions in the section above. Additionally, there are resources linked to help consumers understand the environmental impact of meat production (Impossible Foods, 2022b).

Impossible Foods also launched a campaign called “birds in the trees.” It’s a conversation guide for teenagers to have with their parents about climate change, helping them answer parents’ questions about the issue and create informed consumers (Fromm, 2021).

Beyond Meat

Since a major goal of Beyond Meat is to aid in the fight against climate change, the company uses this trend to its advantage in many ways. First, there is a link on their website under the “Our Impact” page to a peer-reviewed Life Cycle Analysis (LCA) conducted by the University of Michigan to compare the environmental impact of the original Beyond Burger to a ¼ lb. U.S. beef burger. Underneath this link is a scrolling list of statistics regarding the impact discovered in the LCA. Reference Figure 11. Next comes a video that explains why eating a Beyond Burger is better for the planet, and then a section titled, “Why make meat from plants?” This section includes reasons such as: fight climate change, preserve natural resources, help animals live better lives, and help humans eat healthier.

Figure 11

Beyond Meat’s Impact Page



Primary Research

One of the biggest deterrents to consumers who are looking to switch to a plant-based lifestyle is the unknown. Business models and savvy marketing strategies will not be sufficient for long term growth if the product is not consumer accepted. Not knowing which brand to choose out of the large variety now offered, all claiming to be the best, can also lead to unnecessary stress or spending money on products that don't measure up to expectations. Therefore, the goal of this research was to determine which of the three main meat alternative brands in the Sioux City area has the overall best quality products based upon a blind taste

test. Each brand was judged based on the three categories most commonly used by meat alternatives to evaluate quality—overall taste, texture, and similarity to real meat.

Research Design

Each brand was assigned a different color to avoid any bias that may come from the human instinct to order objects when labeled a certain way (ex: 1,2,3 or a,b,c). Brands were tested on two different product categories: “ground beef” patties and breaded “chicken.” To avoid overwhelming participants and cross-contamination, the “chicken” and “beef” products were tested on different days. To simulate the recommended cooking method (oven) and provide fresh samples, products were cooked in an airfryer at the taste test site. To avoid any accidental revealing of which brand is which, products were transferred to a clear storage bag labeled with the respective brand color before being transported to the taste test site. Product samples were cut to the same size, using separate utensils and separate air fryers to avoid cross contamination. All samples were cooked according to the package directions and served promptly without any seasonings, sauces, or otherwise extra flavoring that would alter results. Once cooked, samples were served in individual sample cups as sets of three on a paper plate (one sample of each brand, each cup labeled with the appropriate color using colored dot stickers). Taste testing took place in a common area with medium to high flow foot traffic on campus (Lincoln Center lobby) on November 14 and 15th from 11-11:45 am in order to maximize the number of student participants when the test samples were hot and fresh (right before/after class). Participants were instructed not to discuss their ratings in the test location and to remain quiet when tasting each sample. Participants were given a QR code linked to a Google form survey for ease and convenience. Participants filled out the survey on their cellphones immediately after tasting each product. Participants were asked to rate each brand on a five-point scale from extremely dissatisfied to extremely satisfied on

three factors: taste, texture, and similarity to real meat. In addition, participant gender was recorded. Forty responses were collected for both the beef and chicken alternative products.

One limitation of the primary research is the location. Research was held in Sioux City, IA with Morningside University students and staff. Iowans have a “beef culture,” raising cows for beef production; many Iowans even purchase entire cows from nearby farming friends or neighbors. In this sense, the opinion on plant-based meat alternatives in this area is negatively biased. There is a concern that some results may be skewed due to preexisting ideas about plant-based meat alternatives. However, this could be seen as a positive for brands depending on the outcome of the research study. If the brand receives positive ratings, one could argue that their product is so good, even beef-loving Iowans approve. A second limitation was the setting. Participants were not given any process to cleanse their palate between samples and some students may have tasted samples that were not hot out of the oven.

Findings

All data collected was analyzed using a mean system. Participant responses were assigned points as follows: extremely dissatisfied = 1 point, dissatisfied = 2 points, neutral = 3 points, satisfied = 4 points, and extremely satisfied = 5 points. Points were totaled for each brand’s score in each category of taste, texture, and similarity to real meat and then divided by the total number of responses to get a mean score.

Beef

Where the highest possible mean score was 5, brands scored in each category as follows in Figure 12:

Figure 12

Mean Brand Scores in Beef

	Taste	Texture	Similarity
Beyond Meat	2.575	2.475	2.55
Morningstar Farms	3.25	3.125	2.625
Impossible Foods	3.1	3.179	3

As seen in Figure 12 above, none of the brands were rated highly overall on any of the tested characteristics with a mean of three representing the neutral point. However, of the brands tested, Morningstar Farms was first in taste, followed by Impossible Foods, then Beyond Meat. In both texture and similarity to real meat, Impossible Foods was rated the highest, followed by Morningstar Farms, and lastly, Beyond Meat. Overall, males seemed to be more satisfied with plant-based beef products than females, but not by much.

Chicken

Where the highest possible mean score was 5, brands scored in each category as follows in Figure 13:

Figure 13

Mean Brands Scores in Chicken

	Taste	Texture	Similarity
Beyond Meat	3.125	3.125	2.85
Morningstar Farms	3.25	3.6	3.077
Impossible Foods	4.275	4.325	4.15

As seen in Figure 13 above, the chicken analogous products overall rated higher than the beef alternatives. Impossible Foods led in every category (taste, texture, and similarity to real meat), followed by Morningstar Farms, and then Beyond Meat in last. Overall, males seemed to be more satisfied with plant-based chicken products than females.

Analysis

As shown in the aggregated primary research results, consumers were generally more satisfied with the chicken alternative products, having an overall positive view of all three brands. On the other hand, consumers rated all three brands as neutral for the ground beef alternative, meaning none of the plant-based products satisfied consumers in any category.

Based on survey results, the majority of consumers view Impossible Foods as having the highest quality out of the three brands in taste, texture, and similarity to real meat. Morningstar Farms follows, with Beyond Meat in last for every category.

Conclusion

All three brands have strong marketing strategies, with strengths in realistic products, environmental awareness, and exposure/accessibility. All three utilize the marketing growth strategies of product development, market development, market penetration, as well as trends in the plant-based meat alternative market such as increase in consumption/interest, the use of popular individuals/groups, and the increase in consumer awareness of climate change. The main difference between the three brands is in their competitive advantages. Morningstar Farms is the oldest company out of the three, having been around since 1975. Impossible Foods has the most in-depth, detailed research on their products. Finally, Beyond Meat has a vast majority of high-profile partnerships and celebrity endorsements. However, the true test of success lies within the consumers' opinion. The dedication and attention to research has proved successful for Impossible Foods, scoring the highest on taste, texture, and similarity to real meat. Although Beyond Meat is often seen as the closest competitor to Impossible Foods,

Morningstar Farms was actually rated higher in quality than Beyond Meat. That left Beyond Meat last, who may want to focus more on product quality than high-profile partnerships and publicity. There's no point in having successful marketing strategies when the products don't live up to the hype. In a quickly changing world, it's necessary to stay on top of marketing trends and continue to present consumers with what they want, which is high quality products. However, a lot of brands portray themselves as better than they are, so it's up to the consumers to find out which brand is really as good as it seems. According to this research, Impossible Foods is the most successful plant-based meat alternative brand out of the main three found in Sioux City, IA, both in marketing and in product quality.

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