

planted.

## Content

D	ate	•	
۸	pril	202	

## Publisher

Planted Foods AG Kemptpark 32/34 CH-8310 Kemptthal

## **Pictures**

Planted Foods AG

## Author

Franziska Rupp Camilla Perotti

## Contact

press@eatplanted.com

1	About this report	4-5
2	Hi from Planted's Executive Board	6-7 8-9
3	The seed is planted	10-11
4	What drives us	12-13
5	Pushing our agenda	14-15
6	It's a team effort	16-17
7	Bite by bite towards a better world	
	7.1 Great taste, tiny footprint	18-19
	7.2 Circularity	23 – 24
	7.3 Better packaging	25 – 26
	7.4 Getting raw materials right	27 – 28
	7.5 Keeping it natural	29-30
	7.6 Transparency is key	31 – 32
8	Striving to become better	33-34
9	Sources	35 – 36



## About this report

The food system has a massive impact on us and on the planet. Humanity's current way of exploiting natural resources and farming livestock on a large scale is unsustainable, destroys our environment and speeds up climate change. Planted recognises its role in the food system and believes it's time to make a meaningful shift towards healthy, plant-based eating habits. This is Planted's first attempt to document and communicate our sustainability journey, from inception to what we've achieved so far, and where that vision is headed.

We are an innovation-driven company, leveraging scientific achievements to quickly implement biostructured-based solutions. We are convinced, that using plants as ingredients in our products is better than animal meat from an economic, environment and societal view. For this reason we take taste, the environment, cost and health as guiding principles on our sustainability journey - as no sustainable change to the food system can happen without taking these into consideration.

Within our young company, we're focusing on improving our resource efficiency and understanding our product's footprint. Planted took an important step towards measuring and monitoring impact by analysing the footprints of four products. Our product portfolio displays huge saving potentials when compared to animal meat, with 74-85% less CO<sub>2</sub>-equivalent (CO<sub>2</sub>-eq.) generated and up to 63% of water saved. This critical supply chain investigation highlighted both our successes and room for improvement. We took action to manage our overall environmental footprint, such as moving to recycled plastic packaging and strengthening our sourcing practices. When outfitting Planted's facility in 2020, we paid great attention to the installation of energy and water conservation systems, as well as avoiding unnecessary waste. We also optimised our operational management approach. We ensured that our line of work allows for resource savings by promoting circularity efforts in products, energy systems and waste concepts.

To achieve impactful change, we want to engage in a dialogue with our stakeholders such as consumers, partners and policy makers. We initiated the "Better Than" educational campaign, presenting to consumers how their food choices impact the environment. Politics also play a significant role in creating the right circumstances to make transitioning to a sustainable food system a reality. We are collaborating with industry partners to promote the topic of sustainable alternative protein sources on the political agenda. We want to demonstrate our dedication to environmental and social responsibility as Planted grows, and thus decided to apply to become a B-corp.

Planted's ambition is to grow sustainably and in accordance with the goals set across our supply chain. For the next reporting period, we are committed to assessing our company footprint, which will allow us to further build quantitative metrics and systematically measure progress across the whole company. We will establish a reporting structure for all our sustainability activities according to international standards. We commit to strengthening our sourcing practices and stepping up our engagement with the scientific community and policy makers to enable sustainable sourcing of raw materials. For production, we set goals to reduce waste production and reduce plastic packaging.

It was 2019 when we realised that our alternative chicken product would shake up the way meat is perceived in Switzerland. As a start-up selling our products out of our laboratory at Swiss Technical Institute of Technology (ETH), we understood that many people love the taste of meat, but no longer at any price. This is when we realised our company's vision, and saw the opportunity to make a change. We set our company ambition to offer products that are better than traditional animal meat, without the negative environmental consequences associated with animal agriculture. We wanted to create clean products to give future generations more choice, that do our planet good and which taste amazing.

That was three years ago and our vision hasn't changed, although our company has grown and evolved. Planted became a fully licensed company in 2019, and in 2020 we moved to our own offices and production facility in Kemptthal, Switzerland. During that time we've conquered new markets and celebrated many more milestones with our amazing team of more than 160 global changemakers - and we're still going strong. We took this opportunity to implement our vision and ideas to establish an impact-driven business that generates profits whilst balancing its purpose.

We not only seek to build a sustainable business, but to lead the transition towards a more sustainable food system. We focused on building a strong in-house science and R&D team to identify new alternative proteins, pioneering novel biostructuring methods and technologies. We have successfully developed products that are better than meat and set priorities to advance further on taste, environmental footprint, health and pricing to generate a positive impact and create food system change. We understand that the food we eat, how it's produced and the amount that's wasted has a major impact on environmental sustainability and human health.

Our young company has established the right steps to reduce our overall environmental footprint through operational and product level improvement, and this is only the start. We are striving to become better, and have set actions to measure and manage our impact. These include reducing plastic consumption, investing in circularity, converting to 100% renewable energy sources, enhancing our responsible sourcing practice and reaching more people with our products. We are committed to systematically measuring, monitoring and reporting the impact we generate in accordance with international reporting standards within the next year.

This is our first attempt to encapsulate our efforts and show you how we live, and how we measure and plan to improve sustainability at Planted. We are still a young company and are learning, and we'd love your feedback. We believe in science, fact-based decision making, transparency and tapping into the power of like-minded team members who share our vision. We are convinced that biostructured proteins will outperform animal meat in the future in terms of taste, sustainability, health, efficiency and price, and Planted is committed to using only 100% natural ingredients and no additives in all its products - making it a healthy and better option for all.

We are beyond excited to keep on growing together, hand in hand and bite by bite.

Chris, Judith, Lukas, & Pascal



## Summer 2019

After endless hours researching, testing & tasting,
Planted is founded

## January 2020

First products available in retail, restaurants in Switzerland and own webshop launch

## January 2021

New products joined the family and there were retail rollouts in Germany at EDEKA and in Austria at SPAR

2'094 pigs saved\*

## 110'043'060 L

water saved\*

Summer 2020

Moved to our new headquarters and production facility in Switzerland

## 5'362'560 kg CO<sub>2</sub>-eq. saved\*

## Spring 2021

Developing new tasty products in our in-house Innovation & Development Lab

## December 2021

Doing right bite by bite – UK and Italy offices join the tasty revolution. Planted has over 160 team players and offers its plant-based meat across Europe

## **Summer 2021**

Planted marks its presence in Switzerland, Germany, Austria and France, offering eight products in four categories: chicken, pulled, kebab and schnitzel

481′547 chickens saved\*



## What drives us

## The science is clear. Climate change is real and happening now

To prevent the worst, we need to drastically¹ cut human-made greenhouse gas (GHG) emissions. When talking about mitigating climate change, there is much talk of clean energy technology. However, the global food system, including production and post-farm processes, is also a key contributor to climate change. Scientists have indicated that even if fossil fuel emissions were eliminated immediately, emissions from the global food system alone would make it impossible to limit global warming to 1.5°C, and it would difficult to realise even the 2°C target².

## Food production has a major impact on the world's GHG emissions

Livestock farming produces higher carbon emissions than growing vegetables, fruits and grains. Moreover, farming takes up half of the planet's habitable surface<sup>3</sup>. Animal agriculture contributes to a loss of biodiversity, as forests and wild lands are turned into fields to grow animal feed, especially in tropical climates. This results in the loss of natural carbon sink that acts to cool global temperature. Humanity's water resources are polluted by animal agriculture discharge, and further strained to irrigate feed crops<sup>4,5</sup>.

## Unsustainable livestock farming practices and animal suffering

Almost all of global meat production comes from factory farming, where large numbers of farm animals are raised in intensive confinement. To maximise efficiency and profits, the animal factory farms generally prioritise rapid growth and production over health and welfare. Inadequate animal welfare practices restrict the animal's ability to engage in natural behaviours, confining it to extremely inhibited movement indoors with poor air quality and unnatural light, and the application of mutilation and inhumane slaughter techniques are prevalent. In the EU the equivalent of approximately 19 chickens per square metre are allowed inside a barn, which means that each bird has less floor space than the size of an A4 sheet of paper<sup>6</sup>. This leads to animals standing in faeces and waste. These overcrowded, unhealthy conditions often depend heavily on the use of antibiotics to control diseases7.

## Potential health consequences of a carnivorous diet concern us all

A meat-heavy diet has been linked to colorectal cancer and cardiovascular disease<sup>8</sup>. The current overconsumption of meat in Western diets is a significant contributor to poor health and increases a person's risk of becoming overweight, obese or developing certain non-communicable diseases<sup>9</sup>. A healthful plant-based diet can reduce these risks, and should focus on the quality of plant-based foods including protein and fibre<sup>10</sup>.

Aside from the health benefits, scientific evidence states that plant-based diets significantly reduce the amount of land needed for agriculture by 76% and further reduce greenhouse gas emissions from food by 49%<sup>11</sup>. To tackle climate change, we must shift to a sustainable food system, move to a plant-based diet and eat fewer animal products to end the suffering of animals. Getting it right with food will be a crucial part of achieving the Sustainable Development Goals of the UN and the targets set out by the Paris Agreement on climate change.

## Proportion of total greenhouse gas emissions from food<sup>15</sup>

One quarter of global emissions come from food

26% Food

74% Other greenhouse gas emissions

More than half of food emissons come from animal products 58% Animal products

42% Other food

## Pushing our agenda

Awareness of the need to protect our environment and animals is growing. The way we see it, there's no plan B for our planet. It's difficult to achieve cultural change of dietary habits, but it's necessary. We use our communication channels to spread the message that change without sacrifice is possible, and that there are plant-based alternatives that taste better and have far fewer environmental consequences than meat.

## It's time to change course, replace animal foods, break old habits and establish a healthy lifestyle

We kickstarted the **Tasty Revolution** in 2020 and launched the "Better Than" campaign in autumn 2021 online and on the streets. The information campaign raised awareness of the consequences of our food choices and was meant to further educate stakeholders. The central element of the campaign was the #BetterThan calculator, which compares the footprint of meat with Planted products.

## We're avoiding food waste and helping the community

At Planted we try to avoid food waste at every stage. Due to the COVID pandemic, in summer 2021 our production generated unplanned surplus. We speedily solved this issue by collaborating with Too Good To Go, an initiative focused on saving and redistributing food from local stores. Together, we redistributed nearly four tonnes of planted.chicken to our community of connoisseurs. This resulted in savings of more than eight tonnes of CO<sub>2</sub>-eq. and nearly 480,000 L of water.

## Journey to becoming a B Corp

This year we decided to apply to become a B Corp. This comprises of a certificate for businesses to balance profit and purpose, enabling them to take their environmental and social responsibility seriously. At Planted, we see this as more than just a label but as a commitment for our business to create a positive impact and learn from like-minded companies. And since we're serious about our vision and mission being at the core of everything we do, our philosophy matches perfectly with that of being a

The rigorous assessment across six categories quantifies and verifies our actions, environment responsibility, management approach, outside stakeholders, suppliers, customers and the community surrounding us. We will be able to benchmark our actions and constantly learn from other experienced companies as a young business. We want to do better every year and commit to all of our team members, our community of food connoisseurs and the planet. Our application is still under review and we are confident - fingers crossed!







## **Nenad Mlinarevic**

1 Michelin star // 16 Gault Millau-Points

"Planted products are versatile, delicious, sustainable and local. An enrichment for every kitchen - a real added value for every restaurateur and their menu."



## Tim Raue

2 Michelin stars // 19 Gault Millau-Points //
The World's 50 Best Restaurant

"Planted is the first vegan protein product that completely convinces me as a meat or poultry substitute. The product is made without additives and preservatives, has a unique texture and structure and its delicate aroma is perfect for creating intense dishes that delight our guests."



## Jan van Berkel

Winner of Ironman Switzerland 2018, 2019 & 2021 // 11th at Ironman Hawaii World Championship 2019

"In professional sports, I need a lot of energy and high-quality proteins. Planted gives me the opportunity to cover my daily protein requirements in a plant-based, natural and sustainable way."

At Planted, we aim to make plant-based alternatives the first option on every menu. We work with chefs and culinary stars to explore the deliciousness and versatility of our products, and have successfully demonstrated that Planted's products are the ideal protein source for any lifestyle - including professional athletes.

# "We cooperate with partners and industry players to drive food system change within the Swiss political agenda."

Dr Judith Wemmer, Executive Board Member & Head of Product Development

To make locally produced plant proteins in the quality needed for the future, we are a founding member of the <u>Swiss Protein Association</u> (SPA). Together with the Bell Food Group, Kündig Group and Migros Industrie, we push alternative protein strategies onto Switzerland's political agenda. We want to sensitise politicians, businesses and consumers to the potential that alternative proteins have to be climate-friendly sustainable nutrition, and to contribute to the future viability of the food system.



To make our vision come true, we rely on our amazing group of dedicated and ambitious team members. The fact that we believe in what we do and go for it sets us apart.

## Support from day one

Our team members take ownership and responsibility for their work from day one, and we offer guidance and training to acquire new skills and support their development. With our company's growth we recognise the importance of continuous training and therefore we newly started two company apprenticeships. And as we expand internationally, our ongoing buddy system supports newbies in their role from the start, and we are encouraging our teams to participate in an office exchange to enhance team spirit.

## More than a nine-to-five job

At Planted we are collaborating in a team of entrepreneurial thinkers and doers to make healthy, tasty and environmentally friendly plant-based meat the new normal. We think a great workplace means providing the right conditions to thrive: healthcare, flexible working hours, free products, free coffee and beverages, subsidised freshly cooked vegan meals, celebrating wins, learning from mistakes, giving and receiving feedback and frequently coming together as company for post-work get-togethers, parties and teambuilding days. Life at a start-up can become busy, requirements can change quickly and it can get stressful. We prioritise mental health and all of our team members have access to free and confidential expert counselling and coaching for professional, private or family-related topics.

## The right working environment

Occupational health and safety is integrated into all our operations to create a safe working environment. At our production site, safety always comes first. We assess risks, implement mitigation measures and devise specific safety training. We track and analyse accidents and near-misses, and use our learnings to avoid similar mistakes. For our Board of Directors, Executive Management and Senior Management we created a code of conduct, outlining ethical business practices and our social and environmental responsibilities, and ruling out misbehaviour such as bribery and corruption.

## Seeking a dialogue with our stakeholders

Sustainability is also about building and nurturing relationships with our co-workers, customers, consumers, suppliers, partners and the communities surrounding us, and the best way to do so is to share our thoughts and experiences in order to thrive together. Despite the pandemic keeping us on our toes we hosted 26 events, including three panel discussions, from June to December 2021, in strict accordance with health and safety requirements. We believe that enabling future generations to drive innovation in the food industry is key to enabling systemic change. We lecture in various courses at the Swiss Technical Institute of Technology (ETH) in Zürich to promote this message, as well as engaging in scientific research with partner institutions.

We thank our scientific partners









# We are hungry for change

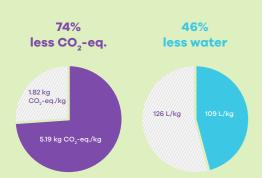


## Bite by bite towards a better world

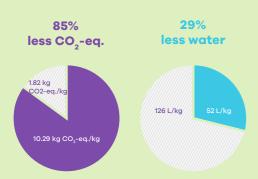
## 7.1 Great taste, tiny footprint

At Planted we leverage scientific achievements and make fact-based decisions. With the help of Eaternity, an independent consultancy, we conducted a life cycle assessment (LCA), an internationally recognised methodology to measure the environmental footprint of products across their full life cycle.

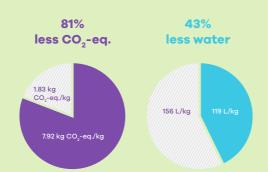
## **Savings with Planted products**



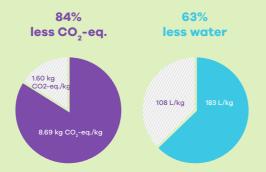
Planted.chicken vs. chicken breast



Planted.kebab vs. animal kebab



Planted.pulled vs. pulled pork



Planted.schnitzel vs. pork schnitzel

### Saving with Planted product

Planted product footprint

## **Better than meat**

The comparative life cycle assessment is made on a cradle to gate basis, since distribution and end-of life pathways for animal meat products are considered to be the same. Planted products are compared to conventional, most similar non-organic animal-based products from Switzerland.

### **Greenhouse gas emissions**

The assessment established that all retail Planted products emit approximately four to six times less CO<sub>2</sub>-eq. when compared to animal products. The potential impact of global warming is consequently reduced by up to 85% per kilogram in favour of Planted products. The most significant reductions come from avoiding animal agriculture emissions.

## Fresh water resources

It's been established that Planted product's largest water savings are generated due to the erasure of irrigating feed crops for animals. All of Planted's products have a low water scarcity footprint, meaning the ingredients we source originate from regions with no or little water scarcity.

## Savings with Planted products

To our consumer, this signifies that the choice of a planted.schnitzel over a pork schnitzel can reduce the environmental footprint by 84% of CO<sub>2</sub>-eq. per kilogram. During the production of one kilogram of pork schnitzel, the equivalent of driving 50km in a conventional car\* is emitted, compared to planted. schnitzel, which generates the GHG emission equivalent of driving 8km.

To produce one kilogram of pork schnitzel or pulled pork, the equivalent of the amount of water needed would run a standard dishwasher 30 times. Planted.schnitzel needs the equivalent of 10 dishwasher runs, saving 63% water.

\*Calculation of emission values for comparison based on ifu Heidelberg emission factor for a mid-life diesel passenger car (6,8 L, with one passenger)<sup>13</sup>.

## **Outlier kebab**

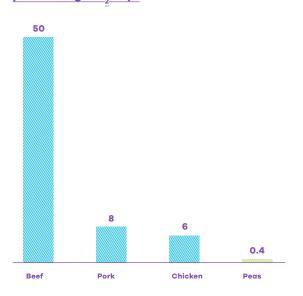
Planted.kebab lags behind its peers slightly when it comes to water savings. Planted.kebab was compared to a typical kebab recipe from Switzerland. Animal meat kebabs are made of a variety of different cuts of animal meat, making up 60% of the kebab, with the remainder being other ingredients such as spices. In the analysis, only the meat part was compared to its counterpart. To analyse the emissions, Eaternity applied a methodology called economic allocation, indicating that meat cuts with higher prices are associated with having a higher impact. Consequently kebabs, usually made of cheap, lowquality meat, have a lower impact. This resulted in a lower water footprint of the animal kebab meat relative to the planted.kebab.

## We are stepping up our impact by replicating bigger and redder kinds of meat in the future

We started with chicken, as it was expected to become the most-consumed animal meat by 2026<sup>14</sup> and the fibres of our first prototype were more similar to chicken than any other meat, making it a natural place to start addressing the negative environmental consequences driven by soaring demand for meat. Planted is going one step further and is currently developing plant-based whole cuts of easily recognisable meat. This will allow consumers to make plant-based positive choices in all situations, without ever compromising on taste or texture.

When it comes to converting feed and other natural resources to provide humangrade food, beef and other ruminant meats are inefficient sources of calories and protein. The negative environmental impacts of animal products exceed by far those of vegetable substitutes, even though they only provide 37% of our protein and 18% of our calories<sup>15</sup>. We're defining a new process of meat production that enables the direct conversion of plant protein into delicious and cruelty-free products.

## Greenhouse gas emission per 100g of protein [kg CO<sub>2</sub>-eq.]<sup>15</sup>



## **Eaternity**

is a Swiss-based organisation that specialises in life cycle analysis to measure the environmental footprint of food products across their full life cycle. Eaternity created an impact score, in which they evaluated Planted products across the following impact categories: carbon footprint, water scarcity footprint, degradation of the rainforest and animal welfare. Spoiler alert: we scored the highest ratings in almost every category!



## The numbers behind the footprint

Total GHG emissions were calculated for one kilogram of Planted product on a cradle to grave basis, including the following life cycle stages:

Bite by bite towards a better world 21

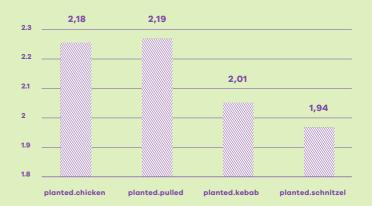
- 1 Production of ingredients: emissions related to the agricultural production of peas and other natural raw materials. This includes emissions from fertiliser or pesticide application, soil management and use of fuel/electricity for harvest tools and machinery. It also includes emissions during ingredient processing, such as electricity needed for drying and milling.
- 2 Production: emissions related to Planted's production facility utilities such as electricity, gas and heating, water and waste generation and infrastructure.
- **3 Packaging:** emissions of material, processing into final packaging and the estimated end-of-life pathway.
- 4 Storage: emissions related to electricity used to store products (cooled and/or frozen) and infrastructure.
- **5 Transport:** emissions from the transport of ingredients and packaging, and transport to storage and distribution.

### **Water footprint**

The impact of Planted products on water resources was analysed. Both the fresh and scarcity water footprints were considered. The water footprint measures how much water is used for the irrigation of crops at ingredient origins. The water scarcity footprint is distinctive in that it explicitly includes the water stress of that region.

### Carbon footprint retail products [kg CO2-eq./kg]

**Sustainability Report 2021** 



### Water footprint retail products [L/kg]





## Planted Production & storage 2.6%

## Packaging materials & disposal 27%

## Transport 18%

## Customer

Product LCA does not include use phase

## Production of ingredients

The cultivation and processing of the product ingredients result in the equivalent of 1.16kg CO<sub>2</sub>-eq., this equals to approximatly 5km of driving\*, which makes up 53% of the total product footprint. Although growing crops generates far fewer emissions than animal agriculture, the ingredients still make up the largest share of the products' footprint. The water used in the recipe is 100% Swiss and does not contribute significantly to the GHG emissions. In fact, Swiss tap water produces approximately 68% less CO<sub>2</sub>-eq. emissions than the European average<sup>12</sup>. It was established that peas, the main ingredient, emitted the most CO,-eq.

## Planted production & storage

At Planted's production facility in Switzerland, ingredients are mixed, biostructured, cut and marinated. The product gets packaged hygienically and safely, just like conventional animal meat, and is well-prepared for its journey across Europe. The production process and storage have been demonstrated to be the two least emission-intensive steps in Planted's value chain. This is because 100% of electricity comes from local hydropower, and around 80% of heating is covered by an energy recuperation system.

## Packaging materials & disposal

The packaging is critical for protecting the quality and safety of product during transport and in retail, and its disposal also contributes to the overall footprint. The emissions generated equal to 0.59kg  $\rm CO_2$ -eq., or around 3km of driving\*, making up 27% of the overall product's footprint. Significant drivers are the material source and its use phase.

## **Transport**

Transport includes emissions from all distribution steps along the value chain, and makes up 18% of the product's footprint, which is equal to 0.38kg CO<sub>2</sub>-eq. or around 4km of driving\*. The analysis is referring to European values, where average distances for transport were used, signifying that within Switzerland the transport values are in fact better as the distances are shorter.

## **Customers**

We use all of our communication channels to reach more people and convince to join the food system revolution and eat climate-friendly. We bring delicious plant-based proteins with a perfect texture and fibre to the table - without any additives.

## Improving our ingredient's footprint:

- → We opt for local ingredients where possible and support research projects to make protein crops available locally
- → We push the topic of alternative protein sources onto the <u>political</u> <u>agenda</u>
- → Our sustainable <u>sourcing policy</u> outlines our commitment to environmental and social responsibilities
- → We <u>use circularity</u> to repurpose products for protein-rich ingredients

## Optimising our operations:

- → We reduce, reuse and recycle resources in <u>circularity projects</u>
- → We installed company-wide resource saving measures

## Striving for better packaging:

- → We're exploring novel packaging solutions to reduce the overall plastic amount
- → We switched packaging in Switzerland to 80% recycled PET and plan to roll this out in other geographies

## Reducing transport emissions:

- → We try to minimise distribution network distances in our expansion plans, to make the gap to get to customers shorter
- → Our company cars are <u>fully</u> electric
- → We highlight the importance of low impact transport modes in our sustainable sourcing policy

## Serving plant-based meat:

- → Planted products include only clean and natural ingredients offering a high quality protein source for everyone
- → We work together with <u>renowned</u> <u>chefs</u> to make plant-based meals the first choice on the menu no matter the lifestyle
- → We believe in a food system change and engage in impactful partnerships on political, industrial and academic level

## 7.2 Circularity

Avoiding waste and opting for circularity is a priority to us both at our own production site and in the entire food system. We continuously optimise our production processes, considering circular approaches in product development and avoiding waste wherever possible.

## **RECYCLE - Upcycling by-products**

By upcycling by-products from other food value chains, we contribute to a more sustainable food system. For our planted.pulled we are using the by-products from sunflower oil production. We use sunflower presscakes, which is the "leftover" meal after pressing sunflowers for their oil, usually used in biogas production, animal feed or as a fertiliser. We recognised its nutritional value (it's rich in both macro- and micro-nutrients) and use this high-quality by-product in our delicious planted. pulled. We are actively collaborating with suppliers and research institutions to implement similar circularity projects in the future.

## **REDUCE - Increasing conversion rate to minimise waste**

From the beginning, we focused on optimising our production processes to avoid waste wherever possible. We implemented a project which allows us to significantly increase our conversion rate to minimise waste generation. The project allowed us to use products to the fullest and helped to cut down product losses by 80% during the production stage.

In terms of turning protein into meat, animal products have a very inefficient feed conversion rate. Large amounts of protein-rich crops are fed to animals, which results in a relatively low protein output per animal. Plant-based meat is far more efficient, with protein-rich plants used to produce plant-based meat directly.

## **REUSE - Finding new purpose**

We separate our waste streams by category so the material can find its way into the correct recycling stream without generating any hazardous waste. We also think outside the box when it comes to finding a new lease of life for the packaging of our raw materials. Empty bags of pea flour find a new purpose at a gardening centre, for example.

Bite by bite towards a better world 24 Sustainability Report 2021



## 7.3 Better packaging

As well as ensuring our packaging suitably protects its product, food safety features and shelf life must also be considered in order to avoid waste. Reducing Planted's environmental footprint by optimising its packaging cannot make up for losses incurred due to wasted resources. We are therefore working on naturally increasing product shelf life, to provide more freedom when choosing packaging materials.



### **Less is more**

Planted aims to have less plastic packaging in general, and is evaluating innovations in the bioplastic space. Planted is all about finding innovative solutions, such as for our webshop packaging. The cold bag we ship in is made of recycled paper and is 100% recyclable, and the cooling pads are filled with tap water. Planted is tireless when it comes to improving and exploring options for both recycled and recyclable materials.

In exciting news, January 2022 saw Planted successfully switch to 80% recycled PET (rPET) for trays and continue to use FSC-certified cardboard in the Swiss market. This allows for more circularity and reduces the products environmental footprint. rPET has a smaller carbon footprint than its counterpart, and has already been recycled at least once. The material has the advantage of being able to be recycled multiple times while remaining safe to use as food packaging.

Recycled materials reduce GHG emissions as they require less energy for production, avoid the need for fossil fuel and require no brand new material. The environmental benefit of recycled PET material, compared to virgin polymers, reduces GHG emissions by up to  $60\%^{16}$ .



## 7.4 Getting raw materials right

Pea proteins and plant fibres are Planted's most important raw materials, and make up the majority of our total ingredient purchase volume. Other protein sources include oats and sunflowers. Planted uses mainly yellow peas as its products' protein source procured from Western Europe. Instead of feeding this high protein legume to animals which humans then eat, we've made the peas themselves into a high-protein plant-based meat.

## We use local ingredients whenever possible

Within the group of ingredients 100% of the rapeseed oil and water are sourced within Switzerland, generating less CO<sub>2</sub>-eq. during production and transport than overseas supply. Until now the demand for Swiss peas for food production has been limited and as a consequence very few yellow peas in the right quality and quantity for human consumption are grown in Switzerland. To change this and explore options, Planted has partnered in a protein crop breeding project with the School of Agricultural, Forest and Food Sciences Bern (HAFL) and the company Peter Kunz e.V (gzpk). Supported by the Swiss government, these partners are currently carrying out initial field trials. This will hopefully enable Planted to source peas from Switzerland in the future. Planted is also collaborating with the Swiss Protein Association along with other industry partners, to push the topic onto the political agenda and create conditions conducive for producing plant proteins locally in the future.

As growing protein-rich crops in tropical regions is strongly associated with deforestation and biodiversity loss, Planted decidedly does not source any agricultural raw materials from biodiversity-rich rainforest.

## It's important to us where we source from and who we partner with

At Planted, we strongly believe that all ingredients must be the best quality and comply with the highest food safety standards to create delicious plant-based products. Next to quality and safety, we pay particular attention to social and environmental risks in our supply chain.

As a first step, Planted has created a twofold approach to strengthening sourcing decisions and screening key suppliers. Our supplier policy defines criteria for sustainable cooperation based on the ILO labor standards and the UN Guiding Principles on Business and Human Rights. This includes complying with minimum social and ecological standards, respecting fundamental human rights such as the exclusion of forced and child labour and taking a stand against all forms of discrimination. We have also set up processes to review our sustainable sourcing and business practices. Where there are potential issues with suppliers and partners, we will ask the questions which need asking and push them to do better.

## of ingredient sourced from biodiversity rich rainforest areas

# Our most important ingredient is the pea protein of the yellow pea

Peas (Pisum sativum) belong to the legume family and have been part of human diet for centuries. Field peas, which includes the yellow pea, differ from the peas we eat as vegetables because the field pea is eaten when mature and dried as opposed to fresh. 20-25% of this pea is protein, making it an ideal crop for humans<sup>18</sup>. Legumes have a unique characteristic in the botanical world - they can "fix" nitrogen (which is necessary for protein synthesis) from the air by entering into a symbiotic relationships with bacteria at the roots of plants. This results in enhanced soil health and quality, as the plant brings nitrogen back to the soil in a natural way. As nitrogen is a limiting nutrients in the soil for agriculture, these peas can be used in crop rotation to relieve the impact of non-organic fertilisers, and benefits crops such as cereals and vegetables. Additionally, the water demand to grow peas is relatively low compared to that of other vegetables.<sup>19</sup>



## 7.5 Keeping it natural

Food is one of the strongest ways to influence and promote health and environmental stability, and Planted products directly contribute to towards creating a world filled with healthy and sustainable food. We only use 100% natural and plant-based ingredients without additives, chemicals, **GMOs, antibiotics or hormones.** 

When choosing a healthful diet, the body needs specific nutrients including proteins, carbohydrates, fibres, fats, vitamins and minerals. Planted's ingredients are rich in protein, dietary fibres and micronutrients and low in saturated fats. Planted products are an ideal alternative to animal protein and is the perfect addition to any diet.



Planted.pulled is made of a combination of proteins sourced from peas, sunflowers and oats. The combination of different plant proteins complement the amino acid profil that the body needs to build muscle, bone and tissues<sup>20</sup>. Pea protein, the primary protein in Planted products, has a well-balanced amino acid composition<sup>21</sup>.

The protein content of planted.pulled 24.9/100g and planted.chicken 24.2 g/100g exceeds that of average animal-based meat (21.6g/100g), making it an ideal replacement and fulfilling the daily protein requirements set out by the European Food Safety Authority<sup>22</sup>.

## Rich in dietary fibre

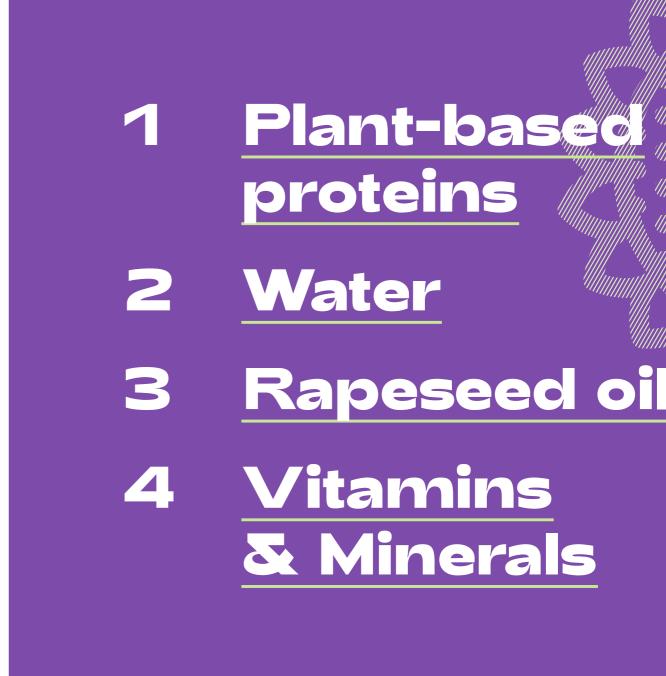
Plant fibres play a vital role in our wellbeing. They can lower the risk of diabetes and cardiovascular disease<sup>23,24</sup> There are 5.1g of fibre in 100g of planted. pulled. Animal meat does not contain any dietary

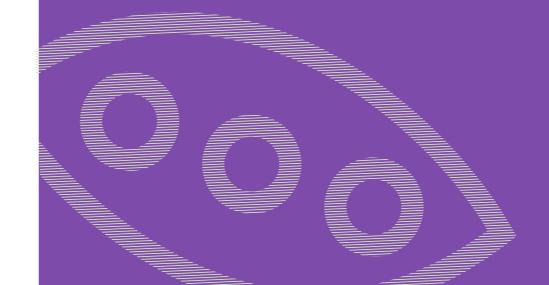
### Very low in fat

Rapeseed oil is our favourite because it's low in saturated fats. Planted.pulled contains 76% less saturated fat than pork<sup>26</sup>

### **Essential micronutrients**

Vitamin B12 ensures a well-functioning metabolism, playing a key role in regulating the blood, the nervous system and the brain<sup>27</sup>. Yellow peas naturally contain iron, essential for blood production and oxygen transportation<sup>28</sup>.







**Sustainability Report 2021** 



## 7.6 Transparency is key

When planning and outfitting our new production site in Switzerland, we wanted to establish smart infrastructure to minimise our operation's footprint from the beginning. We don't have anything to hide, so we built Planted's production site in a building made of glass. We believe everyone should see how food is produced, unlike traditional animal slaughterhouses to which few people have access. The production site can be visited by the general public, including media.

### **Renewable Energy**

- → We are using 100% hydropower from Switzerland, and assessing the best green energy mix available to us for our future energy demand.
- → We are evaluating the option to install solar panels on a nearby south-facing hill, to complement our energy demand.
- → Our energy recuperation system allows us to recover the excess heat from machinery and recycle it. The recovered waste heat is used to displace around 80% of office space heating demand.

## Saving water drop by drop

- → To reduce water consumption wherever we can, we installed office-wide water conservation measures.
- → We handle resources with care and only use as much as is needed. Water is used mostly for the product itself as an ingredient, and for cleaning. We only use as much as needed to comply with our cleaning routine, which has the highest standards for hygiene, quality and safety.
- → Water use in manufacturing gets more efficient as production increases. Further scaling up will allow us to optimise water usage and implement more water efficiency measures
- → Our facility is outfitted with a waste water collection tank where production discharge is mixed and pH levels neutralised so it can safely enter the sewage system.

### Getting around in a green way

- → Planted used bicycles for its first product deliveries, which are good both for the climate and for keeping fit. Admittently, with our company's growth this is not feasable anymore.
- → Our employee policy promotes public transport by subsidising tickets.
- > For business trips we avoid air travel and make sure we balance time requirements with the climatic consequences.
- → All of our company-owned cars are electric.
- → In our sustainable sourcing policy we encourage our partners to choose low-impact transport modes where possible.

## Striving to become better

Our goal is to put a tasty end to the conventional animal meat industry and be a part of a food system revolution. While doing so, we strive for better solutions and to be as responsible and sustainable as possible in all areas of our value chain. We're leveraging our advantage as a young company to continuously improve and make changes.

We have set goals to guide our improvements and show key areas to take action in over the next year. 2022 will be our first year comprehensively recording and benchmarking our activities.

We compiled this report for the first time, please let us know how we did, we love getting feedback.

## Green energy

Ensure we are making use of the best available low-impact combination of green energy. We are working towards switching to solar power and are evaluating options to install solar panels for additional electricity supply for our Swiss production facility.

## Sourcing sustainably and supply chain support

With our growing production capacity and as we enter new markets, supply chains are becoming increasingly complex to navigate. To affirm our commitment to responsible procurement, we want to build upon our existing sustainable sourcing policy and review process. Our aim is to further standardise the screening process and engage in dialogue with our suppliers to improve their performance.

## Increasing circularity

We aim to become more circular overall. We want to further explore circularity of by-products for our products. By optimising our production line and product flow, we aim to reduce organic waste to an absolute minimum by the end of this year.



## Gathering & using meaningful

Getting it right with sourcing and packaging is one thing, but it all starts with our own operations. We are committed to assessing our company's footprint in 2022 and will use the assessment as a solid data foundation to systematically measure our future impact, building quantitative metrics and targets to record progress.

## **Better packaging**

We are challenging our approach to packaging materials, and striving to reduce plastic and increase recycled and environmentally certified materials. For our retail products we are aiming to switch to recycled plastic material in all markets in 2022.

## Pushing our agenda

We want to actively shape the framework for alternative proteins sources and producers in Switzerland. Aligned with our partners in the Swiss Protein <u>Association</u> our goal is to remove regulatory barriers hindering the alternative protein market and make a political push towards the creation of an alternative protein landscape.

## More and better products

We are aiming to expand our product portfolio to offer more choices, making switching to a plantbased diet easy without requiring any consumer sacrifice. We pledge to keep our ingredient list clean and to never use additives and GMO-free raw materials in our products. We are committed to using fewer resource-intensive raw materials and leveraging circular approaches to drive down the impact of our ingredients on the environment.

## **Starting** conversations

We don't see ourselves as standalone system changers. We want to create more attention, continue building partnerships and engage in dialogues to enable people to make an informed food choices for a diverse, rich and sustainable plant-based diet. As well as our communication work, we hope to use our glass meat production facility to trigger discussions.



1	IPCC (2021) Special Report: Global Warming of 1.5 °C. (ipcc.ch)
	& WWF UK (2022) Climate Change and global warming.
	(What are climate change and global warming?)

- 2 Clark, M. A., et al (2020). Global food system emissions could preclude achieving the 1.5 and 2 C climate change targets. Science
- 3 Carbon Brief (2020). What is the climate impact of eating meat and dairy? (Interactive: What is the climate impact of eating meat and dairy?)
- Godfray, H. C. J., et al (2018). Meat consumption, health, and the environment. Science
- 5 FAO (2017). Water pollution from agriculture: a global review. (Water pollution from agriculture: a global review)
- 6 EU Broiler Directive (Dir. 2007/43/EC, Annex II)
- 7 Foodprint (2021) Farm animal welfare.
  (Farm Animal Welfare in the Industrial System)
- World Economic Forum (2018) How our growing appetite for meat is harming the planet. (weforum.org) and EAT Lancet Commission (2019). Brief for Everyone. (eatforum.org)
- 9 EAT Lancet Commission (2020). Summary report. (eatforum.org)
- Harvard Health (2021). The right plant-based diet for you. (Harvard.Health.edu)
- 11 IPCC (2021). Special Report on Climate Change and Land.
  (Special Report on Climate Change and Land)
- 12 Eaternity (2022) The Planted LCA. (<u>The Planted LCA</u>)
- WDR & ifeu Heidelberg (2020). CO2 Rechner für Auto, Flugzeug und Co. (quarks.de)
- 14 OECD-FAO (2021). Agricultural Outlook 2017-26. (oecd-ilibrary.org)
- 15 Poore, J., & Nemecek, T. (2018). Reducing food's environmental impacts through producers and consumers. Science
- 16 NAPCOR (2020) Evaluating environmental impacts of PET Packaging. (NAPCOR)
- 17 OECD (2018). Improving Markets for Recycled Plastics. (OECD)

Sources 36 Sustainability Report 2021

18 C	Elemson Universi	y (2018)	). About fie	eld peas.	( <u>About field</u>	<u>peas brochure</u> )

- 19 FAO (2022). The pea. (FAO Information on peas)
- WHO/FAO/UNU (2007). Joint expert consultation report: Protein and amino acid requirements in human nutrition. (WHO\_TRS\_935\_eng.pdf)
- 21 Lu, Z. X. et al (2020). Composition, physicochemical properties of pea protein and its application in functional foods. Critical Reviews in Food Science and Nutrition
- 22 EFSA (2012). EFSA sets population reference intakes for protein. (EFSA europa.eu)
- 23 Fardet, A. (2010). New hypotheses for the health-protective mechanisms of whole-grain cereals: What is beyond fibre? Nutrition Research Reviews
- 24 Sacks, F. M. et al. (2017). Dietary fats and cardiovascular disease:

  A presidential advisory from the American Heart Association. Circulation
- 25 Schweizerische Gesellschaft für Ernährung (2022). Öle, Fette und Nüsse. (https://www.sge-ssn.ch/media/Didacta-Oel-D2.pdf)
- Swiss food composition database (2017). Nutrient composition of raw pork (average excluding offal, chop, knuckle). (naehrwertdaten.ch)
- 27 Harvard T.H. Chan School of Public Health (2022). Nutrition Source: Vitamin B12. (Harvard T.H. Chan School of Public Health)
- 28 Saunders, A. V, et al. (2012). Iron and vegetarian diets. Medical Journal of Australia