



Everything a journalist needs to know about **cultivated meat**

A short handbook of key facts,
statistics and resources.



Image credit: Aleph Farms

What is cultivated meat?

Cultivated meat is the same as the beef, pork, chicken and seafood people enjoy eating today – but made in cultivators (like the fermentors used for brewing beer) instead of by farming animals. It's already available in the United States and Singapore, and European governments are investing in its development – but **how is it made, and why do we need it?**

Quick facts:



Singapore was the first country to approve the sale of cultivated meat to consumers in December 2020.



In June 2023, the **United States became the second** country to grant approval.



In July 2023, the **first regulatory application in Europe** was made to Swiss regulators by Aleph Farms, shortly followed by an application in the UK.



The **Dutch Government invested €60 million in 2022** to help establish an ecosystem for cultivated meat and precision fermentation.



The UK Government announced a **£12 million cultivated meat and precision fermentation research centre** in 2023.



In 2022, Europe's cultivated meat companies saw **private investments jump 30% to €120 million.**

01 How is it made?

In one sentence:

Cultivated meat is the same as the beef, pork, chicken and seafood people enjoy eating today – but grown from animal cells in cultivators, instead of by farming animals.

In a little more detail:

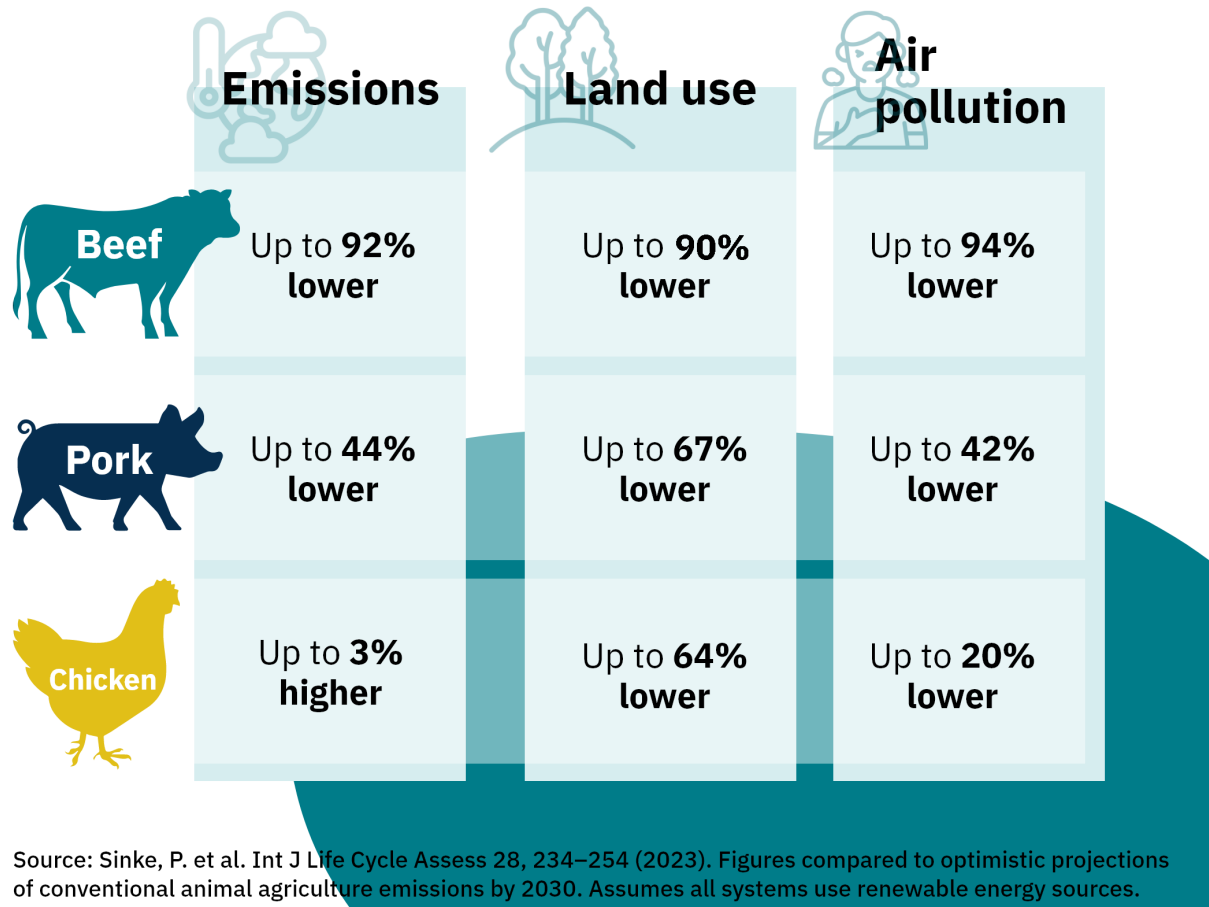
Cultivating meat is similar to growing plants from cuttings in a greenhouse, which provides the warmth, fertile soil, water and nutrients the cutting needs to grow:

1. A small sample of cells is taken from an animal. Of these, the best cells are identified and nurtured into ‘cell lines’, which can keep growing and replacing themselves, like they would in an animal.
2. These cells are placed in a cultivator, which provides the water, nutrients (known as medium) and warmth they need to grow. Sometimes the cells are also given a plant-based ‘scaffold’ to grow on, providing a more distinctive structure and easier access to nutrients.
3. As the cells grow, the conditions within the cultivator are changed to encourage them to grow into different types of cell, such as fat and muscle. This is called ‘differentiation’.
4. Once the cells have grown into a large enough quantity of meat, they are taken out of the cultivator and the medium is removed. Voilà – there you have your cultivated meat, ready to be cooked.

02 Why cultivate meat?

Environmental benefits

A [life cycle analysis](#) (LCA) published in the International Journal of Lifecycle Assessment based on the latest data from cultivated meat companies found that it could have a significantly lower environmental impact than conventionally produced meat across several important metrics.



Food security

Enhancing food security is a priority across Europe, as war, climate shocks and supply chain vulnerabilities drive inflation and food shortages. And yet, Europe feeds [over 45% of the crops it grows](#) to animals, and imports [over 25 million tonnes](#) of soy for animal feed each year.

Cultivated meat is expected to be [up to 5.8 times more efficient](#) at converting feed into meat – so it could help to reduce Europe’s reliance on imported soy, feeding more people with fewer resources.

Europe is the world's [largest importer of seafood](#). Cultivated seafood can help to meet this demand locally – even in landlocked countries.

Public Health Benefits

Making meat with a better nutritional profile. Cultivated meat offers the opportunity to improve the nutritional profile of conventional meat. The Spanish government [has funded research](#) aiming to develop cultivated meat that is healthier than conventional meat to reduce the rates of pressing health issues in Spain associated with red and processed meat consumption, such as high cholesterol and colon cancer.

Making meat without antibiotics. All animals get sick, particularly those raised in intensive conditions, so many farm animals are routinely given antibiotics either as a treatment or as a preventative measure if a disease begins circulating. Because of this [more antibiotics are consumed by farm animals than by people in Europe](#), driving the growing antimicrobial resistance crisis – which causes an estimated [133,000 deaths](#) per year in Europe. Cultivated meat [can be made without antibiotics](#), and could help to protect and preserve these lifesaving medicines while still delivering the foods we love.

Making meat without driving pandemic risk. In Europe, [90% of chickens](#) and [75% of pigs](#) are intensively farmed, creating hotspots for ongoing animal pandemics such as African Swine Fever and Bird Flu. These diseases pose a major risk to public health if they are able to jump into humans. Cultivated meat circumvents this problem entirely.

Making meat free of foodborne illness. Cultivated meat is made in environments free of disease-causing bacteria such as campylobacter and salmonella, reducing the risk of food poisoning and cross-contamination, which affect [hundreds of thousands](#) of Europeans per year.

Nature and sustainable farming

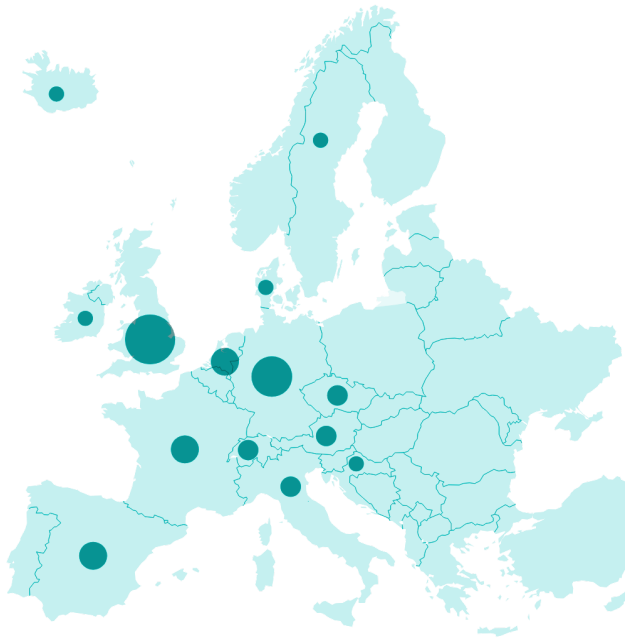
Expanding forests, restoring ecosystems and farming sustainably will be essential for limiting and adapting to climate change – but we can't make space for them without changing how we produce meat.

Animal agriculture is the [biggest driver](#) of deforestation, and global demand for meat is only increasing. Cultivated meat could use up to [90% less land](#), helping to satisfy demand while creating space for nature.

Animal welfare

Cultivated meat can deliver the meat people love, without causing any harm to animals.

03 Cultivated meat in Europe



Map: GFI Europe • Created with Datawrapper

The cultivated meat ecosystem in Europe is diverse and widespread, comprising **48 companies across 13 countries**.

Enabling cultivated meat to flourish in Europe

Europe is the [birthplace](#) of cultivated meat and has the potential to become a world leader in the field. However, as with renewable energy and electric cars, this sector can only deliver on its full potential with the right support.



We need public R&D funding. Cultivated meat is still at an early stage. To make it affordable and accessible to everyone, and maximise the societal benefits, governments must invest in open-access research research to accelerate the pace of progress.



We need a transparent path to approval. European food safety regulations are the most robust in the world, and those standards must be upheld for cultivated meat. But transparency and guidance from regulators can prevent unnecessary delays.

04 Frequently asked questions

When will cultivated meat be available in Europe?

The first application to sell cultivated meat in Europe was [made by Aleph Farms in July 2023](#) to Swiss authorities, and approval is expected to take at least 12 months following a safety assessment and toxicological studies by the Federal Food Safety and Veterinary Office.

Before a cultivated meat product can be sold in EU member states, it must be approved by regulators in a process governed by the Novel Foods Regulation. The approval process will include a thorough and evidence-based assessment of the safety and nutritional value of cultivated meat and is estimated to take at least 18 months. The UK has a similar regulatory framework in place, led by the UK Food Standards Agency.

Why call it “cultivated meat” rather than “lab-grown meat”?

GFI uses the term “cultivated meat” because it is grown in cultivators, which provide the warmth and nutrients cells need to become meat.

Many terms have been used to describe this food – from “slaughter-free meat” to “cultured meat” and “lab-grown meat”. “Lab-grown meat” is an especially misleading term. At scale, cultivated meat is produced in cultivators, in a facility similar to a brewery. All sorts of food, from beer to bread, begins in a food lab – but we don’t call cornflakes “lab-created cornflakes”.

Will people eat cultivated meat?

[A recent study](#) found 80% of UK and US consumers are open to eating cultivated meat, and [research commissioned by GFI Europe](#) suggests between 33% and 65% of consumers in western Europe are already willing to buy it – even at this early stage.

People don’t eat meat from industrial animal agriculture because of how it is produced – they eat meat in spite of how it is produced. And our research suggests a majority of consumers in France, Germany, Italy and Spain want to see alternatives to conventional animal agriculture.

What are the biggest challenges for the cultivated meat sector?

To achieve its full potential, cultivated meat needs to match conventionally produced meat on taste, price and convenience – so researchers and companies are improving processes, scaling up production and bringing down costs.

Government investment in open-access research is crucial for overcoming the key technical barriers companies currently face, and accelerating progress by ensuring key breakthroughs can be exploited by the entire sector – not just the first companies to achieve them.

Priority challenges include reducing cell culture media costs, increasing cell line availability, improving scaffolding and building larger cultivators.

Italy is working to ban cultivated meat – what do you say to that?

This proposal would shut down the economic potential of this nascent field in Italy, holding back scientific progress and climate mitigation efforts, and limiting consumer choice. It could prevent Italian scientists from undertaking crucial work, and ban Italian cultivated meat startups from existing at all. And it could prevent the [54% of Italians](#) who already want to try cultivated meat from doing so.

Nobody wants to be told what they can and can't eat. If cultivated meat is approved by the EU, it should be up to consumers to decide whether or not they want to eat it.

Don't some researchers argue that cultivated meat isn't better for the environment?

Only one [peer-reviewed study](#) has so far been published based on data from actual cultivated meat production by companies. This found that cultivated meat using renewable energy could cut the climate impact by up to 92%, reduce air pollution by up to 94%, and use up to 90% less land compared with an ambitious scenario for conventional beef production. These benefits could be greater still if this freed-up land could make space for rewilding, regenerative farming practices and carbon sequestration.

One recent study, which has not yet been peer-reviewed, received a lot of attention for finding cultivated meat would not be better for the environment than beef. This study is [based on a number of incorrect assumptions](#) about how cultivated meat is produced, and its findings deviate significantly from other published research.

How will cultivated meat affect farmers?

To satisfy rising global demand for meat, we need new ways of producing it. Cultivated will expand the options available to consumers and provide farmers with opportunities to diversify by producing ingredients for cell feed, or even providing the top-quality animal cells needed to start the process. Farmers should play a key role in the transition towards a more sustainable food system, and governments must support them to adapt.

05 Resources

Interested in learning more or need resources to help communicate about cultivated meat? Check out the resources below.

Illustrate your story

- [Library of free-to-use photos of real cultivated meat](#)
- [Toolkit of graphs and visualisations showing the key stats](#)

The sector

- [Latest GFI state of the industry report](#)
- [Latest private investment data](#)
- [Company database](#)
- [European consumer research](#)

The science

- [Guide to the science of cultivated meat](#)
- [Life cycle assessment of cultivated meat's environmental impacts](#)
- [How cultivated meat can help fight antibiotic resistance](#)

The policy

- [Latest GFI state of global policy report](#)
- [Key takeaways from the FAO's report on cultivated meat safety](#)

06 Contacts and experts

GFI Europe experts

[The Good Food Institute Europe](#) is an international NGO helping to build a more sustainable, secure and just food system by transforming meat production. We work with scientists, businesses and policymakers to advance plant-based foods, cultivated meat and fermentation – making these options delicious, affordable and accessible across Europe.

To speak to our experts, contact Conrad Astley and Sophie Armour in our communications team at europa-media@gfi.org or +44 (0)7521 490 839.



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Companies, scientists, chefs, policymakers and more

Our communications team can also connect you with experts from across the sector and all over the world – just contact us at europa-media@gfi.org.