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Leveraging food biotech to realise Europe's biotechnology ambitions

Europe has the science, talent, and innovations to lead in food biotechnology. With processes like precision and biomass fermentation, alternative proteins showcase how Europe's biotech and biomanufacturing potential can drive clean industrial growth, linking sustainable food production with industrial innovation.

However, Europe risks losing its competitive edge. While some of the world's largest economies, including the US and China, advance their food biotech industries through national policy strategies and funding programmes, Europe faces regulatory barriers, insufficient investment, and a fragmented policy landscape that could slow down progress.

The EU Biotech Act presents a critical opportunity to set a clear policy framework for food biotechnology. It should aim to recognise food as a key pillar of industrial biotechnology, boost public R&I funding, scale up infrastructure and ensure a safe and efficient regulatory pathway.

Recommendations for the EU biotechnology and biomanufacturing sector

Elevate the Biotech Act into a bold, cross-sectoral industrial strategy that treats food biotechnology on par with other biotech sectors

Food biotechnology is not a novel concept. For decades, it has been used to produce essential food ingredients such as enzymes, vitamins, and fermentation-based products like cheese, beer, and bread. These advancements have continually improved food safety, nutrition, and ingredient functionality, making biotechnology a cornerstone of modern food production.

Fermentation-made and cultivated ingredients build on this legacy, using living organisms to enhance the taste and texture of plant-based foods. While they hold immense potential for sustainability and economic growth, unlocking their full benefits requires a strategic industrial policy approach.

Food biotechnology shares many of the same bottlenecks and opportunities as health biotech and other industrial biotech applications. These cross-cutting issues require a coordinated, ambitious response. The Biotech Act should thus mirror the ambition and structure of other major EU industrial strategies, such as the Net Zero Industry Act, Chips Act and Critical Raw Materials Act, by going beyond regulatory reform. It must combine efficient, fit-for-purpose regulation with strategic public investment and a clear policy vision to accelerate biotech innovation and deployment across sectors.

1) Adopt a **"fermentation for all sectors"** approach to unlock synergies across health and industrial biotechnology.
2) Acknowledge that **food biotechnology and bio-based food ingredients are key drivers of the current and future food economy**.

3) Ensure the Biotech Act goes beyond a mere omnibus regulation by turning it into a **robust industrial strategy**, combining efficient regulation with targeted support mechanisms and incentives, and a clear policy vision.
4) Foster **coordination across relevant DGs** and **align the Biotech Act with overarching EU strategies**, including the **Life Sciences Strategy** and the **Bioeconomy Strategy**, to maximise policy coherence and cross-sectoral impact.

Boost public R&I funding to drive innovation in the food biotech sector

As highlighted in the Vision for Agriculture and Food, Europe is a food innovation leader and must continue to drive progress in this field. While fermentation is a well-established process, its application in alternative proteins presents new research challenges. Targeted investment in low Technology Readiness Level (TRL) research is needed to overcome bottlenecks in taste, texture, and cost – key factors for consumer adoption.

5) Increase **publicly-funded, open-access research and innovation (R&I) funding on food biotechnologies**.
6) Allocate **dedicated R&I funding for biotech under the next EU R&I framework programme (FP10)**. In the context of food and alternative proteins, this funding should ensure that early-stage research improves taste and reduces price to drive high-quality, competitive foods to market.
7) Support the creation of **innovation centres of excellence**, such as CellFood Hub in Denmark, CiPA in Catalonia, Biotech Heights in Sweden, to connect researchers, universities and companies and act as an accelerator.

Support scaling up production and infrastructure

The Competitiveness Compass is clear: biotechnology is a key growth engine for the future economy, and the EU must act urgently to bridge the innovation gap. Europe is already well-positioned to scale food biotech, with nearly half of the world's food-grade fermentation capacity, but as the alternative protein sector grows, investment in infrastructure must accelerate. Expanding pilot- and large-scale production is essential, alongside policies that de-risk scaling efforts and attract private investment in infrastructure.

8) Diversify public financing for biomanufacturing by developing **more non-dilutive options, such as grants, loans, and guarantees.** Consider leveraging **Important Projects of Common European Interest (IPCEIs)** to drive investment in biomanufacturing infrastructure.
9) Strengthen the **EIB mandate in the bioeconomy and biotechnology** by increasing funding for food biotech companies and deepening industry engagement to improve access to financing.
10) Establish public-private partnerships, such as **a Joint Undertaking focused on food biotech**, to accelerate biomanufacturing, mirroring successful models in other strategic sectors.

Ensure a clear and evidence-based path to market for food biotech innovations

Europe sets the global benchmark for high food safety standards, ensuring consumer trust and public health. However, complex and lengthy regulatory approval processes slow down innovation and investment in the alternative protein sector. While other regions advance approvals for new food technologies, European companies face regulatory bottlenecks that undermine industry confidence in the EU path to market, delay market entry and push innovation abroad.

A fair and efficient regulatory framework is not about imposing dietary choices but rather expanding them. Consumers should have access to a variety of safe, high-quality food options and be free to decide what best suits their preferences. A well-functioning regulatory system should allow for innovation and predictability for innovators while respecting individual choices.

11) Ensure the pre-market authorisation process under the Novel Food Regulation is as **efficient and transparent** as possible while **maintaining existing high food safety standards**.
12) Establish a formal **pre-submission consultation** process with EFSA to clarify data requirements and prevent delays. To maintain scientific independence, a dedicated 'front desk', separate from scientific evaluators, should oversee these consultations.
13) Establish **regulatory sandboxes** to pilot best practices in novel food regulation and allow for testing in a real-world environment **with robust regulatory oversight**.

Conclusions

Ensuring food is fully embedded in the Biotech Act, increasing R&I funding, scaling infrastructure, and creating a clear regulatory pathway are critical steps to turn European innovation into economic, environmental and societal benefits. The EU now has a unique opportunity to shape the future of sustainable food production, strengthening resilience, creating high-value jobs, and securing long-term competitiveness.

About the Good Food Institute Europe

The Good Food Institute Europe is a nonprofit and think tank helping to build a more sustainable, secure and just food system by diversifying protein production. We champion the science, policies and investment needed to make alternative proteins delicious, affordable and accessible across Europe. By advancing plant-based foods, cultivating meat from cells and producing ingredients through fermentation, we can boost food security, meet our climate targets and support nature-friendly farming. GFI Europe is powered by philanthropy.

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