



IPIFF Position Paper

Response to the European Commission's Open Call for Consultation on the European Biotech Act

International Platform of Insects for Food and Feed (IPIFF)

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Executive Summary

IPIFF, the International Platform of Insects for Food and Feed, warmly welcomes the European Commission's initiative to develop a European Biotech Act as announced in the 2024-2029 Political Guidelines. **As the umbrella organisation representing the European insect-producing sector, we recognise the transformative potential of biotechnology to address pressing societal challenges while strengthening Europe's competitiveness and strategic autonomy.**

The European insect sector exemplifies the innovative, sustainable biotechnology that the Biotech Act aims to foster. With over 250 production facilities across Europe, the sector has attracted over €1.5 billion in investments, created 3,500 jobs to date, and is projected to deliver up to 30,000 jobs by 2030. **However, the sector faces significant barriers—regulatory delays, limited access to capital, market fragmentation, and skills shortages—that mirror the challenges identified in the Commission's impact assessment.**

- **The geopolitical context demands urgent action.** China is entering the insect sector with extraordinary ambition. The Chinese Ministry of Agriculture has explicitly identified black soldier fly (BSF) as a strategic resource for protein diversification and has included insect protein in its official "Feed Materials Catalogue". China's national "Livestock Industry Grain Saving Action Implementation Plan" (2025) targets the development of 10 million tonnes of non-grain feed resources—including insect protein—by 2030, with insect protein development as a priority pathway. The scale, speed, and coordination of Chinese investment are striking: **significant state-backed investments, fast-growing production capacities, and a national strategy centred on protein sovereignty, circularity, and bioeconomy development.**
- **Southeast Asia is emerging as an equally formidable competitor.** Full Circle Biotechnology, a Singapore-based company with operations in Thailand, has secured funding to build a 7,000-tonne-per-year insect protein facility in Kanchanaburi, Thailand, with groundbreaking starting in 2025 and production commencing by the end of the year. The company's entire capacity is already reserved by existing customers, primarily aquaculture farmers across Thailand. The founder has stated: *"The future of food isn't in California; it's not in Europe. The future of food is happening now, right here in Thailand"*. This illustrates how rapidly insect biotechnology is scaling in Asia, with companies developing semi-automated facilities that combine insect and microbial protein to replace up to 75% of fishmeal in aquaculture—the highest commercial substitution rate to date.
- **European insect producers, who are currently global leaders, risk being overtaken if the EU does not act decisively. The global protein market is being re-ordered, and Europe must act now to bolster its own protein self-sufficiency.** Without timely policy action, the EU risks losing its global leadership in this strategic sector, with companies and investment relocating to third countries. **The Biotech Act represents a critical opportunity to reverse this trajectory.**



The Full Spectrum of Insect Biotechnology Applications

As documented in the Samuel Neaman Institute's comprehensive review "*Insects in the Service of Humankind*", the insect sector encompasses three main application areas, each representing significant biotechnology potential:

1. Insects in Agriculture and Public Health: This includes pollination services, biological pest control (including Sterile Insect Technique - SIT), medical materials extraction (entomotherapy), and organic waste treatment. The biodegradable waste market alone is estimated globally at approximately €750 billion annually. Recent advances in programmable biology and genetic engineering are opening new frontiers: Biocentis, a spin-out from Imperial College London, recently raised €19 million to develop genetically modified insects for precision pest control, targeting disease-vector mosquitoes (*Aedes aegypti*) and fruit flies threatening global fruit production.

2. Insects as a Source of Food and Feed: One of the most promising application areas, with the edible insect market projected to reach between €0.5-1.5 billion within 5-8 years, and the global animal feed market estimated at approximately €460 billion. Insect-derived proteins offer high nutritional value—mealworms contain protein concentrations of 13-77% on a dry basis, with amino acid profiles comparable to beef, while containing less fat and more vitamins. The black soldier fly (BSF) can be reared on organic waste and converted into protein-rich feed, oils, and frass fertiliser.

3. Insect-Based Systems and Materials: This spans robotics, electronics, software, biochemistry, and materials engineering—applications inspired by insect mechanics or integrating insect biology with technology. Potential applications include aviation systems for search and rescue, autonomous flight algorithms, motion detectors, and biomimetic materials. Insect-derived chitin and chitosan can be converted into biopolymers for textiles, cosmetics, and chemicals. Recent research explores insect genetics and synthetic biology to produce high-value biomolecules including omega-3 fatty acids, digestibility enhancers, pharmaceuticals, and even human insulin through engineered BSF platforms.

I. Recommendations on the Scope and Implementation of the Biotech Act

Recommendation 1: Clarify that Insect Biotechnology Falls Within the Biotechnology and Biomanufacturing Ecosystem Addressed by the Act

Relevant provisions:

- Recitals 1, 2, 4, 20 and 28
- Article 2(1), points (1), (3), (4) and (5)
- Article 3(1)



- **Issue:** While IPIFF welcomes the broad definition of biotechnology and biomanufacturing, the proposal predominantly refers to health biotechnology, biological medicines, ATMPs and biosimilars. **This creates a risk that biotechnology platforms based on insects may receive less visibility, despite being established biotechnology and biomanufacturing technologies contributing to food safety, nutrition, feed innovation and public health objectives.**

As the Samuel Neaman Institute review highlights, *"the various applications of insects in the service of human are a good example of the connection of several foci of Israel's relative advantage, in that they require integration and synergy between the knowledge that was originally designed to serve the agriculture sector, for example, and the knowledge in chemistry and medicine"*. **This multidisciplinary nature is precisely what makes insect biotechnology a compelling case for inclusion under the Biotech Act.**

Recommendation: Clarify where appropriate that biotechnology platforms based on insects are among the technologies that can contribute to the objectives of the Act, particularly where they support food safety, nutrition, health, food security, and sustainable biomanufacturing.

Such clarification would be consistent with:

- The broad biotechnology definition in Article 2
- The Act's references to food and feed legislation
- The One Health approach
- The recognition of biotechnology's contribution to food security and sustainable food systems
- The emerging role of insect genetics and synthetic biology in biomanufacturing

Expected impact: Explicit recognition would ensure that insect biotechnology receives appropriate visibility and support under the Act, enabling the sector to contribute fully to the EU's competitiveness, sustainability, and strategic autonomy objectives.

Recommendation 2: Welcome the EFSA Reforms and Encourage Broad Implementation for Insect-Derived Products

Relevant provisions:

- Recitals 107-113
- Amendments to Regulation (EC) No 178/2002
- **Issue:** Applicants for insect-derived innovations often face complex scientific questions relating to nutritional composition, production processes, and safety assessment requirements. As the Samuel Neaman Institute report notes, *"the cultivation of insects as an agricultural activity for food is expected to face tightening food safety regulation—regulation which is mostly still in its early formation stages"*. **Regulatory uncertainty remains one of the sector's greatest challenges.**



Recommendation: Support the proposed expansion of EFSA pre-submission advice to include scientific matters such as study design and testing strategies and encourage broad implementation for insect-derived products.

Specific support for:

- The strengthening of EFSA's role
- Efforts to improve consistency between scientific panels
- The reduction of procedural delays
- Measures intended to improve the quality and completeness of applications before submission

Expected impact: These changes should help create a more predictable environment for innovative biotechnology-derived food and feed products, reducing regulatory complexity and compliance costs for insect biotechnology companies.

Recommendation 3: Remove the Exclusion of Novel Foods from Regulatory Sandboxes

Relevant provisions:

- Recitals 113-116
- **Issue:** Novel foods are explicitly excluded from the scope of the regulatory sandbox framework, despite a substantial proportion of biotechnology-derived food innovations—including many insect-based ingredients and applications—being regulated under the Novel Food Regulation.

Recommendation: Remove the exclusion of novel foods from the regulatory sandbox framework. At a minimum, allow novel food applicants to participate in regulatory sandboxes under appropriate safeguards, ensuring that food safety and consumer protection remain fully guaranteed while enabling innovation-friendly regulatory approaches.

- **Justification:** The rationale provided in Recital 115 does not appear to justify a blanket exclusion of novel foods. Novel foods are often among the most innovative products entering the EU food system and are precisely the type of technologies that could benefit from controlled experimentation, data generation, and early regulatory dialogue.
- **Expected impact:** Including novel foods would make the sandbox framework more coherent with the overall objectives of the Biotech Act and better support Europe's biotechnology innovators in bringing sustainable and scientifically validated products to market.



Recommendation 4: Recognise the Importance of Insects in the Strategic Mapping Exercise

Relevant provisions:

- Recitals 20 and 21
- **Issue:** The strategic mapping of the Union biotechnology ecosystem must accurately reflect the full diversity of European biotechnology innovation.

Recommendation: Ensure that insect biotechnology and insect biomanufacturing are adequately reflected within the strategic mapping exercise, including:

- Rearing capacity and production facilities
- Fermentation-based production platforms
- Pilot and demonstration facilities
- Food and feed applications
- Biotechnology clusters active in insect innovation
- Research on insect genetics and synthetic biology platforms
- Insect biorefinery capacities for chitin/chitosan, enzymes, and biomolecules

- **Expected impact:** This would contribute to a more complete understanding of the Union biotechnology ecosystem and its strategic capacities, enabling targeted policy support and investment.

II. Sector-Specific Recommendations for the Insect Sector

A. Speed and Streamlining: Reducing Time-to-Market

Current Challenges

The European insect sector faces significant regulatory delays and administrative burdens that impede innovation and market access. Critical regulatory bottlenecks include:

1. **Restrictive classification of insects and insect-derived products:** The classification of invertebrates as "farmed animals" under EU animal by-products legislation prevents operators from upcycling underused biomasses, including food losses containing meat and/or fish, consistently with the EU Food Waste Pyramid. The recent EU Protein Plan and Livestock Strategy provides the clear policy orientation for the needed regulatory developments:



According to the recent EU Protein Plan, with a view to promoting a circular bioeconomy, using former foodstuffs, by-products and co-products from food production as animal feed supports circular bioeconomy goals by reducing waste, preserving nutrients, and delivering economic and environmental benefits. EU policy encourages Member States to prioritise safe use in animal nutrition over lower-value options such as biofuels, composting, biogas, incineration or landfill, provided all relevant feed-safety and other legal requirements are met. Circular feed may also involve considering new sources of nutrients for use in animal nutrition, such as protein derived from insects.

In line with the EU livestock Strategy, Sustainability and circularity are a strong business case for the farmers. Circular practices and the bioeconomy enhance feed autonomy and maximise biomass valorisation (including animal by-products), which in turn reduce waste, and provide more predictable income for farmers.

2. **Regulatory delays for novel food authorisations:** Despite achieving novel food authorisations from 2021 onwards, the sector continues to face lengthy approval processes that delay market entry and discourage investment.

There are EFSA positive Opinions on the Safety Assessment of Novel food applications that are experiencing over a year delay by the European Commission to publish the respective Commission Implementation Regulation authorizing the commercialization of these Novel food products.

3. **Regulatory fragmentation for insect by-products:** The absence of clear regulatory pathways for insect frass (excrements/dejecta) as fertilising products and for biogas production creates uncertainty and delays commercialisation.

The European Commission Delegated Act amending Regulation (EU) 2019/1009 of the European Parliament and of the Council to include additional derived products as component materials in EU fertilising products, which includes insect frass under CMC 10, is experiencing a concerning delay to be published.

4. **Inconsistent implementation across Member States:** Divergent interpretations and implementations of EU regulations create a fragmented regulatory landscape that is complex and costly to navigate for start-ups with limited resources.

Recommendations

Recommendation 1.1: Broaden the Range of Authorised Biomasses for Insect Diets

- **Issue:** Current restrictive categorisation prevents the upcycling of food losses containing meat and/or fish, limiting the circular economy potential of insect farming.



Recommendation: Amend Regulation (EU) No 142/2011 to broaden the range of biomasses currently authorised in insects' diets, thereby maximising the bio-conversion potential of insects and effectively addressing food waste at European level.

- **Expected impact:** This reform would reduce input costs for insect producers by up to 30%, enhance circular economy contributions, and support the EU's waste reduction targets.

Recommendation 1.2: Accelerate Novel Food Authorisations for Insect-Derived Products

- **Issue:** Lengthy novel food authorisation processes delay market entry and discourage investment in innovation.

- **Recommendation:**

- Implement streamlined, proportionate risk assessment procedures for insect-derived novel foods, building on the positive experience of EFSA's pre-submission advice expansion
- Establish clear timelines for novel food authorisations with binding deadlines
- Create a dedicated pathway for insect-derived ingredients that have demonstrated safety in other jurisdictions

- **Expected impact:** Reduced time-to-market would lower capital requirements for start-ups during the critical pre-revenue phase and encourage further investment in product development.

Recommendation 1.3: Establish Clear Regulatory Pathways for Insect By-Products

- **Issue:** The absence of clear regulatory pathways for insect frass and other by-products creates uncertainty and delays commercialisation.

Recommendation:

- Accelerate the registration of processed frass under the EU fertilisers legislation (Regulation (EU) 2019/1009) to enable its commercialisation as a fertilising product
- Establish clear timelines and predictable processes for approvals of insect-derived products across all applications

- **Expected impact:** These reforms would enable insect producers to fully valorise their by-products, creating additional revenue streams (estimated at €150-200 million annually by 2030) and contributing to the EU's bioeconomy and circular economy objectives.



Recommendation 1.4: Mandate the Inclusion of Insect-Derived Ingredients Under the Sustainable Food Systems Legislative Framework

- **Issue:** The absence of binding sustainability standards for protein ingredients limits market development for sustainable alternatives.

Recommendation:

- Introduce binding provisions through the Sustainable Food Systems legislative framework that include a minimum percentage of alternative and sustainable protein sources, such as insects, in feed products where appropriate
- Establish sustainability criteria for protein ingredients purchased through public procurement, including mandatory minimum percentages of sustainable protein sources

- **Expected impact:** These measures would create stable demand for sustainable protein sources, incentivising investment in production capacity and innovation.

Recommendation 1.5: Establish a One-Stop-Shop for Regulatory Guidance

- **Issue:** Start-ups and SMEs lack the resources to navigate complex, multi-sectoral regulatory requirements.

Recommendation:

- Establish a dedicated "Insect Biotech Regulatory Hub" within the European Commission or a designated agency to provide:
- Consolidated guidance on all applicable regulations for insect-derived products (feed, food, fertilisers, waste)
- Pre-submission advice and scientific consultation
- Coordination between different regulatory bodies and services

- **Expected impact:** Reduced compliance costs and uncertainty would accelerate time-to-market and lower barriers for start-ups and SMEs.

B. Financing: Improving Access to Capital

Current Challenges

The European insect sector, despite its demonstrated potential, faces significant financing challenges:



1. **Capital-intensive nature of scaling:** Building industrial-scale insect production facilities requires substantial capital investment (typically €50-200 million per facility), creating a significant funding gap between pilot and commercial scale.
2. **Limited access to risk-tolerant capital:** European insect producers report growing difficulties in attracting venture capital in the context of ever-scarcer financial resources, with many companies forced to seek financing abroad.
3. **Challenges in accessing public funding:** While the sector has received some EU research funding, access to larger-scale deployment and scaling-up funding remains limited.
4. **Investment gap for late-stage scale-up:** The "Valley of Death" between R&D and commercial-scale production is particularly acute for insect producers, as demonstrated by the recent financial difficulties faced by several European insect companies.

Recommendations

Recommendation 2.1: Recognise Insect Protein Production as a Strategic Priority for EU Funding

- **Issue:** Current EU funding frameworks do not adequately recognise the strategic importance of insect protein production for EU food security, climate objectives, and industrial competitiveness.

Recommendation:

- Explicitly recognise insect protein production as a strategic priority following its recognition in the EU Protein Strategy, in the European Biotech Act's investment priorities
 - Designate insect biomanufacturing as a strategic sector eligible for accelerated permitting, public investment, and dedicated support programmes
 - Allocate dedicated funding under Horizon Europe and other EU programmes for insect biotechnology and biomanufacturing scale-up
- **Expected impact:** Recognition as a strategic priority would unlock dedicated funding streams, facilitate access to public and private capital, and signal EU commitment to the sector's development.

Recommendation 2.2: Establish Dedicated Financial Instruments for Biotech Scale-Up

- **Issue:** European insect producers face a significant funding gap during the critical scale-up phase, with limited access to risk-tolerant capital at the scale required.

Recommendation:

- Establish a dedicated "EU Biotech Scale-Up Facility" to provide patient capital (equity, convertible debt, and loan guarantees) for innovative biotechnology companies during the scale-up phase



- Prioritise sectors with demonstrated sustainability benefits and strategic importance, including insect biotechnology
- Adopt risk-sharing mechanisms to encourage private investment in scale-up companies

- **Expected impact:** Access to patient capital would enable insect producers to build the industrial-scale production capacity needed to compete globally, reducing the risk of relocation to third countries.

Recommendation 2.3: Create Public-Private Partnerships for Biomanufacturing Infrastructure & dedicated line for financing under the European Competitiveness Fund

- **Issue:** The capital-intensive nature of industrial biomanufacturing creates a significant barrier to scaling, particularly for start-ups and SMEs.

Recommendation:

- Establish public-private partnerships to fund shared infrastructure (e.g., pilot plants, demonstration facilities, testing laboratories) that supports alternative protein production and distribution.
- **Following the indication of the European Protein Plan, ensure that the European Competitiveness Fund supports the scale-up of industrial plants for the production of alternative proteins, such as insects.**
- Provide co-investment mechanisms where public funding matches private investment in production facilities
- Create investment incentives (tax credits, accelerated depreciation) for biomanufacturing infrastructure

- **Expected impact:** Shared infrastructure reduces capital requirements for individual companies, enabling faster scaling and reducing the risk of failure. Co-investment mechanisms leverage private capital while providing public support for strategically important sectors.

Recommendation 2.4: Leverage the EU Sustainable Finance Framework to Support the Insect Sector

- **Issue:** While the insect sector offers significant sustainability benefits, companies struggle to access green finance due to the absence of recognised classification standards.

Recommendation:

- Ensure that insect farming and insect-derived products are explicitly recognised under the EU Taxonomy and other sustainable finance classification systems
- Develop clear criteria for classifying insect production activities as sustainable investments
- Explore the extension of the Emission Trading Scheme (ETS) to agricultural activities, including producers and importers of animal feed ingredients, to financially reward the best-performing actors (such as insect producers) for reducing their environmental footprint



- **Expected impact:** Recognition under sustainable finance frameworks would improve access to green finance, reduce the cost of capital, and create market incentives for sustainable production practices.

Recommendation 2.5: Establish an EU Biotech Innovation Fund

- **Issue:** European biotech start-ups and scale-ups face a persistent investment gap compared to competitors in the US and China.

Recommendation:

- Establish a dedicated EU Biotech Innovation Fund, capitalised with €10 billion, to provide equity and quasi-equity investments in innovative biotechnology companies
- Allocate specific funding for sustainable biotechnologies, including insect biotechnology
- Ensure streamlined application procedures and fast-track approvals for companies demonstrating significant sustainability benefits

- **Expected impact:** A dedicated fund would provide the scale of investment needed to support European biotech companies through the critical scale-up phase, reducing the risk of relocation to third countries.

C. Scale: Strengthening Europe's Biomanufacturing Capacity

Current Challenges

The European insect sector faces significant scaling challenges:

1. **Fragmented production landscape:** Over 250 production facilities across Europe, predominantly SMEs and start-ups, operating at different scales and with different production models, leading to inefficiencies and limited global competitiveness.
2. **Regulatory barriers to scaling:** Restrictions on substrate use and by-product valorisation hinder cost reduction and circular economy contributions, limiting the sector's scaling potential.
3. **Limited market access:** Restrictive classifications of insects and insect-derived products, combined with the absence of mandatory origin labelling, limit market development and consumer acceptance.
4. **Infrastructure gaps:** Limited access to pilot facilities, demonstration plants, and testing laboratories slows the scaling process and increases costs.
5. **Intensifying global competition:** China's strategic investment and Thailand's rapid industrial scaling demonstrate that the EU cannot afford complacency.

Recommendations

Recommendation 3.1: Recognise Insect Production as Part of the EU Industrial Strategy

- **Issue:** The insect sector is not currently recognised as a strategic industrial sector, limiting access to industrial policy support.



Recommendation:

- Explicitly recognise insect production as part of the EU Industrial Strategy, including under the Net Zero Industry Act
- Ensure that insect producers can access support for industrial infrastructure, including through the proposed "EU Strategic Technologies Platform for Europe" (STEP)
- Include insect biotechnology in the strategic mapping of the EU biotechnology ecosystem

- **Expected impact:** Recognition as a strategic industrial sector would unlock industrial policy support, improve access to permitting and infrastructure investment, and signal EU commitment to the sector's development.

Recommendation 3.2: Accelerate Market Access for Insect-Derived Products

- **Issue:** Regulatory delays and restrictions on market access hinder scaling and limit commercial viability.

Recommendation:

- Guarantee market access for whole dried larvae for use in animal feed
- Open markets for other insect-derived ingredients beyond protein-based products (e.g., dried insects, fat, and chitin)
- Establish a clear regulatory pathway for insect-derived fertilisers under the EU fertilisers legislation
- Mandate origin/provenance labelling for insect food products to inform consumers and support demand for EU-produced products

- **Expected impact:** Expanded market access would create new revenue streams, support the development of diverse insect-derived products, and strengthen the sector's business case for investment.

Recommendation 3.3: Ensure the Competitiveness of EU-Derived Insect Products

- **Issue:** EU insect producers face competition from imported insect ingredients of lower quality and/or not complying with equivalent safety standards.

Recommendation:

- Impose stricter safety controls and checks on insect products imported from outside the EU
- Ensure that imported insect products comply with equivalent safety standards to those applicable to EU producers
- Mandate origin/provenance labelling for insect products to inform consumers and support EU producers



- **Expected impact:** These measures would ensure a level playing field for EU producers, maintain high safety standards, and support consumer confidence in insect-derived products.

III. Cross-Cutting Recommendations

Recommendation C.2: Address the "Third Country" Relocation Threat

- **Issue:** European insect companies facing challenges in scaling within the EU may be forced to seek financing abroad or relocate operations overseas.

Recommendation:

- Prioritise timely implementation of the regulatory reforms outlined above to reduce uncertainty and support investment
- Provide dedicated support for insect biotechnology scale-up through the European Biotech Act
- Monitor the relocation of insect companies and develop targeted measures to retain European leadership

- **Expected impact:** Timely action would reduce the risk of relocation, maintain European leadership in insect biotechnology, and secure the economic and environmental benefits of the sector.

Recommendation C.3: Ensure a Level Playing Field with Third Country Imports

- **Issue:** The EU faces increasing competition from third countries, particularly China (which has identified insect protein as a strategic resource through its "Livestock Industry Grain Saving Action Implementation Plan" targeting 10 million tonnes of non-grain feed resources by 2030) and Southeast Asia (where Full Circle Biotechnology is building a 7,000-tonne-per-year insect protein facility in Thailand). Without equivalent safeguards, European producers risk being undercut by imports that do not meet the EU's high safety, environmental, and sustainability standards.

Recommendation:

- Impose stricter safety controls and checks on insect products imported from outside the EU
- Ensure that imported insect products comply with equivalent safety and sustainability standards to those applicable to EU producers
- Explore the introduction of carbon border adjustment mechanisms or sustainability criteria for imported protein ingredients
- Mandate origin/provenance labelling for all insect-derived products placed on the EU market



- **Expected impact:** These measures would ensure a level playing field for EU producers, maintain high safety and sustainability standards, support consumer confidence, and protect the EU's strategic autonomy in protein production.

Recommendation C.4: Dedicated funding for R&I and the scaling-up of the insect sector

- **Issue:** Recent advances in insect genetics and synthetic biology demonstrate the potential to significantly enhance the value of insect-derived products, but Europe risks falling behind competitors investing in this frontier.

Recommendation:

- Increase funding for research on insect genetics, artificial selection, and biomanufacturing under Horizon Europe and other EU programmes
- Support the development of different insect species (e.g. black soldier fly and *Tenebrio Molitor*) as synthetic biology platforms
- Facilitate the translation of research on insect genetics into commercial applications
- Establish regulatory frameworks that enable safe development and deployment of genetically improved insects
- Ensure that the Biotech Act financing instruments are aligned with the EU Protein Plan as to dedicate R&I towards the competitiveness of alternative protein sources
- Ensure alignment with the EU Protein Plan as to ensure that the European Competitiveness fund supports the scale-up of industrial plants for the production of alternative protein sources

- **Expected impact:** Investment in insect genetics and synthetic biology would enable Europe to capture higher-value segments of the insect biotechnology value chain, including pharmaceuticals, biomolecules, and advanced biomaterials, strengthening the EU's competitive position.

IV. Conclusion

IPIFF supports the objectives of the European Biotech Act and welcomes the proposed measures to strengthen Europe's biotechnology and biomanufacturing ecosystem. The European insect sector represents a remarkable biotechnology success story and a model for the type of innovation that the European Biotech Act seeks to foster. With over 250 production facilities across Europe, €1.5 billion in investments, and the creation of 3,500 jobs to date, the sector has demonstrated its potential to contribute to the EU's competitiveness, sustainability, and strategic autonomy.

However, the sector faces significant barriers that mirror the challenges identified in the Biotech Act's impact assessment. These include regulatory delays, limited access to capital, market fragmentation, skills shortages, and limited use of digital tools. Without timely policy action, the EU risks losing its global leadership in this strategic sector, with the potential relocation of companies and investment to third countries.

China's extraordinary ambition in the insect sector—demonstrated through strategic recognition in national policy, explicit inclusion in the "Feed Materials Catalogue," and the ambitious target of 10 million tonnes of non-grain feed resources by 2030—serves as a powerful reminder that **the global protein market is being re-ordered**. **Southeast Asia's rapid industrial scaling**, exemplified by Full Circle Biotechnology's 7,000-tonne-per-year facility in Thailand with



customers already committed, further demonstrates that **Europe cannot afford complacency**. Europe must act now to bolster its own protein self-sufficiency and maintain its competitive position.

To ensure the Act fully delivers on its ambitions, IPIFF encourages the Commission to:

1. **Explicitly recognise insect biotechnology and biomanufacturing within the scope of the Act**
2. **Implement the proposed EFSA reforms in a way that benefits insect-derived food and feed innovations**
3. **Remove the exclusion of novel foods from the regulatory sandbox framework**
4. **Ensure that insect-related activities, infrastructure and value chains are adequately reflected in the strategic mapping of the European biotechnology ecosystem**
5. **Establish a dedicated EU Insects Strategy** with binding targets, dedicated funding, and a coherent policy framework
6. **Ensure alignment with the EU Protein Plan as to ensure dedicated R&I funding for the competitiveness of alternative protein sources and that the European Competitiveness Fund supports the scale-up of industrial plants for the production of alternative protein sources**
7. **Ensure a level playing field** with third country imports through equivalent safety and sustainability standards
8. **Invest in insect genetics and synthetic biology research** to capture higher-value segments of the insect biotechnology value chain

These targeted improvements would help ensure that the Act supports the full diversity of European biotechnology innovation and strengthens the EU's competitiveness, resilience, and food and feed security.

We stand ready to work with the European Commission and other stakeholders to develop and implement these proposals, building a stronger and more competitive European biotechnology ecosystem for the benefit of society, the environment, and the economy.