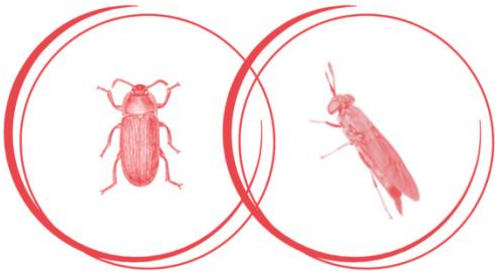
CODE • EFABAR

The commitment to responsible breeding

Species Specific Template
Code EFABAR



INSECTS
Code EFABAR 2023
1st Edition

Company: _____

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The code of good practice for sustainable insects breeding

1 Introduction

1.1 The impact and structure of breeding in the European insect sector

1.1.1 Past and Present

In the last two to three decades, livestock and aquaculture breeding companies/organisations have evolved their breeding programmes by considering sustainability and animal health and welfare. These aspects have been translated into six pillars, which are the foundation of modern responsible and balanced breeding and are fundamental to Code EFABAR.

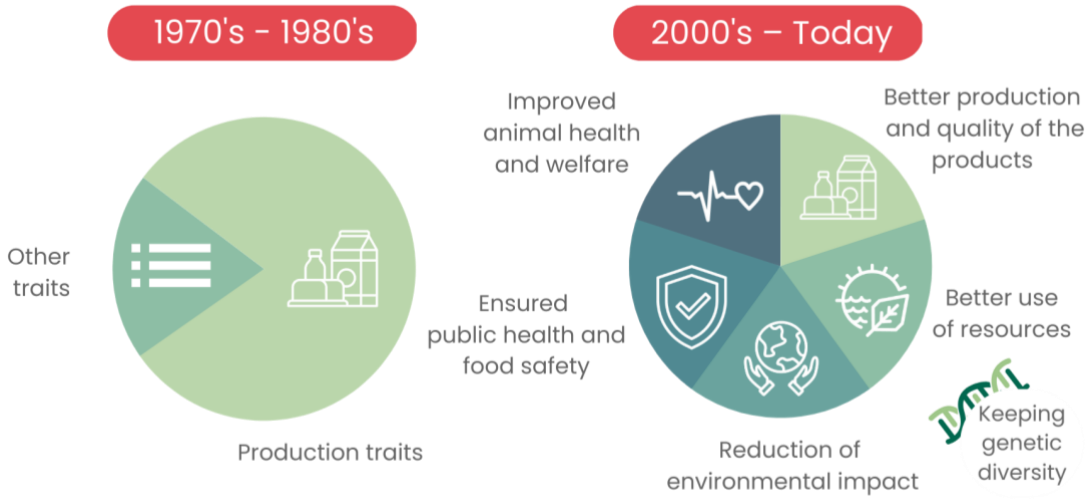

Figure 1 The evolution of animal breeding

Modern insect breeding for food and feed consists of defining a balanced combination of traits to ensure the sustainability of the different production systems. The **combination of these traits varies from species to species, and production system to production system**; the choice of farmers and many other factors related to the availability of resources and other social, environmental, political, and economic situations.

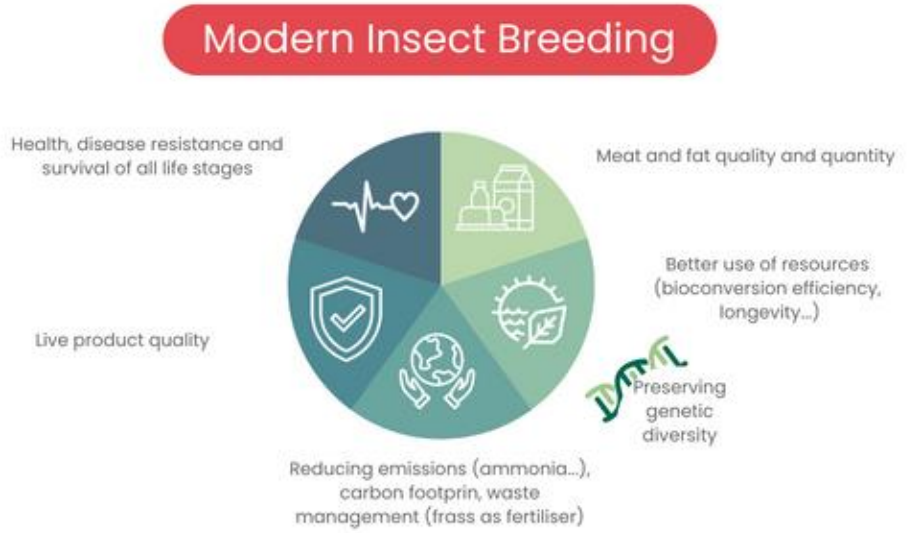

Figure 2 Modern insect breeding: defining a balanced combination of traits to ensure the sustainability of the different production systems.

1.1.2 Modern Insect Breeding

As insect breeding in Europe grows, responsible and balanced breeding principles are employed to breed various insect species for diverse applications. This strategic approach aligns with modern practices and sustainability goals throughout the agri-food chain.

Historically limited to honeybee (*Apis mellifera*) breeding, insect breeding is developing for the production of proteins and lipids (3 species) for food and feed purposes or to protect vegetal cultures (more than 30 species), the direct feeding of Humans being still very in Europe. The core focus of this emerging field is on breeding insects specifically for food and feed industrial purposes. Species like mealworms (*Tenebrio molitor*), crickets (Gryllidae), and black soldier flies (*Hermetia illucens*) have come to the forefront, offering a rich source of protein and essential nutrients. These insects can contribute to the growing demand for sustainable protein sources, serving as part of the solution to protein demand in both animal feed and human diets.

Currently, the Code EFABAR **is limited to insects breeding for food and feed,** with future versions being potentially improved with insect breeders. The application of modern quantitative genetics to improve other insect species (honeybee, pollinators, culture protection) is still in the infancy in Europe and worldwide. As insect breeders, we are confident that these other productions may be interested in joining the code-EFABAR dedicated to insect selective breeding. The code is then open for improvement and adaptation as soon as some companies or organisations are interested and will provide inputs in agreement with the code's objectives.

Breeding these specific insect species involves using specialised techniques, such as selective breeding and advanced genetic analysis, to develop desired traits like high protein content. Dedicated breeding centres play a pivotal role in creating genotypes with specific characteristics. These centres meticulously control mating patterns and genetic traits to achieve desired outcomes. The recent advances in sciences and R&D in quantitative genetics are making selective breeding programs mostly based on principles of quantitative genetics common to all animals and plants. Important R&D is needed to adapt the characteristics of the breeding programs to the different insect biology and market demands.

The breeding structure for these insects typically consists of three key stages: the nucleus, the multiplication, and the commercial level. The nucleus stage involves the establishment of a genetically improved and diverse breeding population. This nucleus serves as the genetic reservoir from which future generations are derived. During the multiplication stage, controlled conditions facilitate rapid reproduction, enabling the production of a larger population with consistent traits. Finally, at the commercial level, scaled-up production meets the demands of various industries, producing insects for food, feed, and other applications.

Modern insect breeding not only benefits the food and feed sectors but also contributes to ecological balance. For instance, honeybee play a crucial role as pollinators, aiding in plant reproduction and ensuring availability of diverse food sources. Additionally, insects like black soldier flies help decompose organic matter, aiding in nutrient recycling. The breeding of such insects supports circular economy models and resource-efficient production paradigms.

This approach to insect breeding leads to a diverse range of products. Apart from protein-rich feed and food for animals and humans, insects like black soldier flies are also utilised for the bioconversion of organic waste into valuable resources like insect-based protein and oil. Furthermore, honeybees contribute to honey production and help sustain agriculture by aiding in the pollination of crops.

In summary, contemporary insect breeding employs responsible and balanced practices to cultivate insects like mealworms, crickets, and black soldier flies for sustainable food and feed sources. This approach not only meets nutritional demands but also fosters ecological harmony through vital roles like pollination, plant protection and waste recycling. The variety of products obtained through insect breeding underscores its significance in addressing modern food security and sustainability challenges. The carefully structured breeding process ensures the production of insects with desirable traits, contributing to the expansion of insect-based industries across various sectors.

1.1.3 Vision for the Future

As the insect breeding sector grows, a well-defined and strategic genetic approach is vital for the future. The diversity among farmed insect species necessitates tailored strategies.

Measuring traits encompassing pedigree data and life cycle analyses is key for the sector. Recording phenotypes, such as physical characteristics and behaviours, is crucial for understanding the underlying genetic variations. This data-rich approach enables us to assess trait performance, reproductivity, and fecundity effectively. Balancing mass and sibling selection, production traits, and resource management are key. This includes storage methods for genetic resources and cost-effective strategies like cryopreservation. These are all techniques used in other species that can provide insights to fill the gaps in the insect sector.

Innovative technologies can also help the sector. Leveraging advanced genomics tools enables the rapid and accurate analysis of insect genomes, pinpointing valuable genetic traits. Moreover, precision breeding techniques can accelerate the development of desired traits. This is complemented by the rise of automation and data-driven analytics, streamlining processes, and improving efficiency in various facets, ranging from trait measurement to data recording and overall breeding program management.

Looking ahead, the growth of the insect breeding sector demands a robust and all-encompassing research strategy. Evident gaps require emphasis on advanced genetic selection methodologies that improve productivity and incorporate ecological and environmental considerations. Simultaneously, preserving the various insects' diversity is important, safeguarding biodiversity and strengthening breeding efforts. Exploring inter-relationships among insect species, including honeybees, focusing on applications like feed and food production, plays a part of the innovation strategies.

From the sector's perspective, comprehending available technologies and surmounting scaling challenges are significant. An appraisal of genetics from both environmental and economic points of view is imperative. This entails harnessing technology cautiously, surmounting scalability hurdles, and comprehending the potential ramifications of genetic interventions.

Essentially, the proposal for the future of insect breeding pivots upon an accurately planned genetic approach. Tailoring strategies to cater to a spectrum of breeders and species, extrapolating insights from parallel disciplines, unravelling the intricacies of genetics, and embracing an industrial perspective collectively chart a course toward a thriving insect breeding sector. This fusion of knowledge, technology, and collaborative endeavour stands poised to unlock the latent potential of insects, galvanising food security and ecological equilibrium in the process.

1.2 Contribution to the United Nations Sustainable Development Goals (UN SDGs)

Sustainable production is becoming a significant focus across the farmed animal sector in order to ensure that efficient and high-output systems are environmentally friendly. The United Nations have agreed on 17 sustainable development goals to be addressed by various industrial and production methods (https://sustainabledevelopment.un.org/) across all sectors. Insect production systems have the ability to address 5 of these goals, as summarised below directly:

1.3 The vision and role of _____ towards their journey to sustainable and balanced breeding

This section asks BC/O to describe their vision and how they implement it through breeding goals. It's important to mention the variety of livestock systems to which the companies provide genetics, and which are the differences between breeding programs and goals for those different systems, if any.

2 Responsible and balanced insect breeding

Responsible and balanced animal breeding in insect encompasses strategies to maintain the long-term well-being of terrestrial animals, the environment, and expectations from the food supply chain and society. It emphasises achieving a balance between genetic improvement and preserving **genetic diversity**. Additionally, it prioritises the **efficient utilisation of resources**, **improving animal health and welfare**, **safeguarding the environment, and ensuring public health and food safety**.

These principles, collectively known as the six pillars of Code EFABAR, form the foundation of responsible insect breeding practices.

Guidelines and Instructions for Breeders

This section will explore the breeding and management elements incorporated into your breeding company's (BC) breeding programme for each of the 6 pillars:

1. We will examine the implementation of specific breeding and management elements and request detailed information on how each element is incorporated. If any elements still need to be implemented, we encourage you to share the reasons behind this decision, fostering a transparent understanding of your breeding practices.
2. Additionally, we kindly request data showcasing the progress made; this can be confidential data or published papers. **EFFAB respects confidentiality**, and all information provided will be considered confidential unless explicitly stated otherwise.
3. Alternatively, describe the current progress and provide insights into the expected advancements for each breeding element.

Figure 3 The six pillars of Code EFABAR

These questions aim to facilitate a comprehensive understanding of your breeding programme and its achievements. By sharing your self-regulated practices, we can collectively promote the importance of balanced and sustainable breeding programmes to a wider audience, including stakeholders, policymakers, and the broader society.

2.1 Animal Health and Welfare

In the context of insect farming, promoting animal health and welfare involves selective breeding practices that emphasise traits such as disease resistance and optimal growth rates. For instance, in mealworms and buffalo worms, this could mean selecting strains less susceptible to common insect diseases, ensuring the well-being of these beneficial insects throughout their lifecycle. For honeybees, the pillar means prioritising colonies with genetic traits that enable them to withstand challenges like Varroa mites and other pests that can compromise hive health.

Have the following breeding elements been implemented in the BC breeding programme?		**Can you provide more details and how is the breeding element implemented? And if not, why not?**	**Can you provide data to show progress in the last 3 years and at which stage of life? Alternatively, describe the current and expected progress.**
Genetic, viral or other defects	☐Yes ☐No ☐NA		
Disease resistance and survival *(Please provide list of diseases/species)*	☐Yes ☐No ☐NA		
Improve ability to cope with farming practices (different environments and climate change)	☐Yes ☐No ☐NA		
Prevent malformation	☐Yes ☐No ☐NA		
Multi-trait and balanced breeding goal	☐Yes ☐No ☐NA		
Are there any other breeding elements that are important to your BC and should be considered?	☐Yes ☐No		
Have the following management elements been implemented in the BC breeding programme?		**If yes, give a short explanation and provide supporting documents if possible.**	**If no, can you explain why? Is there a possibility for these management elements to be implemented in the next 3 years?**
Has the BC a biosecurity policy on its own premises (to avoid diseases and the spreading of diseases to other premises) and is it implemented?	☐Yes ☐No ☐NA		
Has the BC a welfare policy on its premises?	☐Yes ☐No ☐NA		
Has the BC a welfare policy on its own premises making a reference to the Five Freedoms[1] or other welfare precautions[2]	☐Yes ☐No ☐NA		

[1] IPIFF factsheet on Welfare: https://ipiff.org/wp-content/uploads/2022/11/Insect-welfare-factsheet-final.pdf
[2] Welfare considerations in BSF : https://www.wageningenacademic.com/doi/epdf/10.3920/JIFF2022.0041?role=tab

Has the BC procedures for anaesthetising and euthanising insects that take the precautionary principle regarding insect sentience	☐Yes ☐No ☐NA		
Has the BC procedures to minimise stress when handling individuals, for example when collecting phenotypes, treatments or sorting?	☐Yes ☐No ☐NA		
Has the BC a policy on how to handle its animals prior to and during transport and is it implemented? (Eg. Prior to being shipped or packaged)	☐Yes ☐No ☐NA		
Has the BC a set of proxy measurements applied to regularly assess insect welfare (e.g. egg output per generation, honey production)?	☐Yes ☐No ☐NA		
Has the BC developed a training programme for staff to ensure understanding of the BC's welfare policy and related procedures?	☐Yes ☐No ☐NA		
Does the BC apply the 3 Rs principles (Replacement, Reduction and Refinement) when undertaking studies to improve breeding programme design?	☐Yes ☐No ☐NA		
Does the BC have protocols/SOPs on killing methods?	☐Yes ☐No ☐NA		
Does the BC have thresholds for maximum and minimum temperature to endure comfort in husbandry?	☐Yes ☐No ☐NA		
Does the BC monitor and controls for gas emissions such as NH3, CO2 etc regarding animal health and welfare in rearing and breeding rooms?	☐Yes ☐No ☐NA		

Does the BC have thresholds for maximum and minimum water provision to endure comfort in husbandry?			
Does the BC have standards for rearing and husbandry to allow expression of behaviours natural to the species? (Eg. min and max stocking densities, cannibalism, mobility)	☐Yes ☐No ☐NA		
Are there any other management elements that are important to your BC and should be considered?	☐Yes ☐No		

2.2 Environment

Insect species such as mealworms, buffalo worms, crickets, black soldier flies, and honeybees play vital roles in environmental sustainability due to their efficient resource utilisation. Breeding efforts directed toward these species can lead to strains with reduced environmental impacts, such as lower waste production and efficient nutrient conversion. This could involve selecting varieties that thrive on organic waste streams for mealworms and buffalo worms. Black soldier flies are known for converting waste into valuable biomass, and focusing on strains that excel in this capacity can enhance their role in waste management.

Have the following breeding elements been implemented in the BC breeding programme?		**Can you provide more details and how is the breeding element implemented? And if not, why not**	**Can you provide data to show progress in the last 3 years and at which stage of life? Alternatively, describe the current and expected progress.**
Effieciency: - Feed (reduce quantity of uneaten feed) - Water (Reduce amount of wasted water) - Energy	☐Yes ☐No ☐NA ☐Yes ☐No ☐NA ☐Yes ☐No ☐NA		
Increase enrichment of larvae intended as aquafeed	☐Yes ☐No ☐NA		
Are there any other breeding elements that are important to your BC and should be considered?	☐Yes ☐No		
Have the following management elements been implemented in the BC breeding programme?		**If yes, give a short explanation and provide supporting documents if possible.**	**If no, can you explain why? Is there a possibility for these management elements to be implemented in the next 3-5 years?**
Has the BC an environment policy on its own premises and is it implemented?	☐Yes ☐No ☐NA		
Has the BC procedures to feed only to satiation (to minimise waste of feed)	☐Yes ☐No ☐NA		
Has the BC procedures to monitor disease outbreaks or parasite/pest levels on site?	☐Yes ☐No ☐NA		
Has the BC has a policy to reduce its carbon footprint?	☐Yes ☐No ☐NA		

Does the BC source local feedstock when possible?	☐Yes ☐No ☐NA		
Does the BC source permitted agri-food waste as feedstock to support circular economy principles?	☐Yes ☐No ☐NA		
Has the BC implemented a waste management policy? (Eg. insect frass marketed as a soil fertiliser product, or air filters for odour management)	☐Yes ☐No ☐NA		
Has the BC procedures to optimise usage of: - Feed - Water - Energy	☐Yes ☐No ☐NA ☐Yes ☐No ☐NA ☐Yes ☐No ☐NA		
Are there any other management elements that are important to your BC and should be considered?	☐Yes ☐No		

2.3 Better Use of Resources

Breeding insects for improved resource efficiency is a key consideration in sustainable insect farming. The sector can reduce the feed required to produce a given amount of protein by selecting insects with efficient feed utilisation. For example, with their exceptional ability to convert organic waste into protein-rich biomass, black soldier flies can benefit from breeding efforts that enhance their conversion efficiency.

Have the following breeding elements been implemented in the BC breeding programme?		**Can you provide more details and how is the breeding element implemented? And if not, why not**	**Can you provide data to show progress in the last 3 years and at which stage of life? Alternatively, describe the current and expected progress.**
Improving growth rate, but not at the expense of species biology	☐Yes ☐No ☐NA		
Increased survival (%) of a particular life stage			
Feed efficiency / bioconversion efficiency residual	☐Yes ☐No ☐NA		

Ability to use feed based on currently permitted feedstock and ability to utilise waste agri-food resources	☐Yes ☐No ☐NA		
Improvement of survival to limit the waste of feed and energy	☐Yes ☐No ☐NA		
Improve yields at processing (meal, fat, chitin)	☐Yes ☐No ☐NA		
Reduced development time to utilise less feed to complete the life cycle.	☐Yes ☐No ☐NA		
Are there any other breeding elements that are important to your BC and should be considered?	☐Yes ☐No		
Have the following management elements been implemented in the BC breeding programme?		**If yes, give a short explanation and provide supporting documents if possible.**	**If no, can you explain why? Is there a possibility for these management elements to be implemented in the next 3 years?**
Has the BC investigated methods to measure feed efficiency in their program, based on best practice for their species?	☐Yes ☐No ☐NA		
Has BC undertaken an LCA to improve ecological footprint on facility, and undertaken energy saving measures as a result?	☐Yes ☐No ☐NA		
Has the BC undertaken R&D to determine minimum temperature, relative humidity and UV required in rearing environment to minimise energy use whilst ensuring optimum artificial environment?	☐Yes ☐No ☐NA		
Are there any other management elements that are important to your BC and should be considered?	☐Yes ☐No		

2.4 Genetic diversity

Preserving genetic diversity within insect populations is critical for their resilience and adaptability. Maintaining diverse genetic stocks ensures the availability of robust insects for various applications. For example, breeding crickets from diverse genetic backgrounds can safeguard against population vulnerabilities while in honeybee genetic diversity preservation is crucial to combat colony collapse disorder and adapt to changing environmental conditions.

Have the following breeding elements been implemented in the BC breeding programme?		**Can you provide more details and how is the breeding element implemented? And if not, why not**	**Can you provide data to show progress in the last 3 years and at which stage of life? Alternatively, describe the current and expected progress.**
Initiation of domestication or genetic selection of new species with an initial large genetic variation	☐Yes ☐No ☐NA		
Management of genetic variability in selected lines to limit increase in inbreeding rate	☐Yes ☐No ☐NA		
Long-term cryo-banking of genetic resources (eggs or larvae)	☐Yes ☐No ☐NA		
Amount of cryo conservation (% male nucleus frozen)	☐Yes ☐No ☐NA		
Plans to maintain genetic integrity at the population and/or subspecies levels	☐Yes ☐No ☐NA		
Are there any other breeding elements that are important to your BC and should be considered?	☐Yes ☐No		
Have the following management elements been implemented in the BC breeding programme?		**If yes, give a short explanation and provide supporting documents if possible.**	**If no, can you explain why? Is there a possibility for these management elements to be implemented in the next 3 years?**
Does the BC abide by the Nagoya[3] Protocol and ABS agreement guidelines[4] if moving genetics between companies or countries?	☐Yes ☐No ☐NA		

[3] Nagoya Protocol: Read more here
[4] ABS Agreement guidelines : Agreement on Access and Benefit Sharing for Non-Commercial Research

Are there any other management elements that are important to your BC and should be considered?	☐Yes ☐No		

2.5 Product Quality

Breeding for superior product quality applies to insects. Selecting strains with optimal nutritional profiles contributes to the quality of insect-based food and feed products. In the case of insects, genetic focus on desirable taste, texture, and nutritional attributes ensures consumer satisfaction. For example, optimising nutrient composition for animal feed and bioconversion processes for black soldier flies is central to producing high-quality biomass. Lastly, maintaining honeybee genetics that produce premium honey and other bee-derived products underscores the importance of this pillar in beekeeping.

Have the following breeding elements been implemented in the BC breeding programme?		**Can you provide more details and how is the breeding element implemented? And if not, why not**	**Can you provide data to show progress in the last 3 years and at which stage of life? Alternatively, describe the current and expected progress.**
Improvement of protein content or quality, lipid content or quality or other nutritional constituents of the larvae	☐Yes ☐No ☐NA		
Increased successful hatch from eggs	☐Yes ☐No ☐NA		
Proposal of new product by the domestication of new species	☐Yes ☐No ☐NA		
Prevention of external and/or internal malformation (appearance)	☐Yes ☐No ☐NA		
Increased egg clutch mass	☐Yes ☐No ☐NA		
Robustness: - Of Larvae when shipped	☐Yes ☐No ☐NA		
Are there any other breeding elements that are important to your BC and should be considered?	☐Yes ☐No		
Have the following management elements been implemented in the BC breeding programme?		**If yes, give a short explanation and provide supporting documents if possible.**	**If no, can you explain why? Is there a possibility for these management elements to be implemented in the next 3 years?**
Has the BC implemented a Quality Control system to monitor product standards, based on the specific traits currently selected for?	☐Yes ☐No ☐NA		

Are there any other management elements that are important to your BC and should be considered?	☐Yes ☐No		

2.6 Food-Feed Safety and Public Health

Ensuring public health and food safety is a goal of insect breeding. By selecting strains less prone to pathogens, insect-based food and feed products can maintain high safety standards. For intense (?), breeding crickets with reduced pathogen-carrying potential enhances the safety profile of cricket-based offerings. In the context of honeybees, prioritising genetic traits that enhance their immune response and resistance to diseases contributes to the overall health of both bees and the products they provide.

Have the following breeding elements been implemented in the BC breeding programme?		**Can you provide more details and how is the breeding element implemented? And if not, why not**	**Can you provide data to show progress in the last 3 years and at which stage of life? Alternatively, describe the current and expected progress.**
Egg quality (related to feed safety, and animal and public health, for instance by minimizing the spreading of zoonotic diseases)	☐Yes ☐No ☐NA		
Neonate quality (related to feed safety, animal and public health, for instance by minimizing the spreading of zoonotic diseases)	☐Yes ☐No ☐NA		
Suppression of antifungal treatments	☐Yes ☐No ☐NA		
Are there any other breeding elements that are important to your BC and should be considered?	☐Yes ☐No		
Have the following management elements been implemented in the BC breeding programme?		**If yes, give a short explanation and provide supporting documents if possible.**	**If no, can you explain why? Is there a possibility for these management elements to be implemented in the next 3 years?**
Has the BC a biosecurity policy on its own premises (to avoid spreading zoonoses) and is it implemented?	☐Yes ☐No ☐NA		

Has the BC a pest management plan on its own premises to avoid spreading pest species and is it implemented?	☐Yes ☐No ☐NA		
Has the BC implemented a method for screening insect products for **microbiological and chemical safety** (e.g., metals, mycotoxins, pesticides?) – both for food and feed sector	☐Yes ☐No ☐NA		
Does the BC have limits for gas emissions such as NH3, CO2 etc regarding animal/human safety?	☐Yes ☐No ☐NA		
Has the BC, as part of their biosecurity processes, procedures to reduce the potential risk of contamination from staff and equipment?	☐Yes ☐No ☐NA		
Has the BC, as part of their biosecurity processes, procedures to reduce the potential risk posed by chemical or microbiological hazards to the BC personnel in the management of the breeding populations?	☐Yes ☐No ☐NA		
Are there any other management elements that are important to your BC and should be considered?	☐Yes ☐No		

3 RESPONSIBLE USE OF TECHNOLOGIES

Modern animal breeding comes with advancements in tools and technologies used for breeding and reproduction. Therefore, prioritising the conscientious and ethical application of technologies in breeding, considering the welfare of the animals, their genetics, the environment in which they evolve, the resources available and their optimal use, the quality of the products, the one health concept[5], and broader ethical implications are crucial.

- What does responsibly mean in this context for the BC?

- Is the BC responsibly using established breeding and reproduction technologies (e.g., Genomic Selection, BLUP, Artificial Insemination, Performance and Progeny testing)?

- ☐Yes ☐No
-
- If yes, which ones and for which purpose

Technology used	Purpose (Benefits)

[5] One Health explained by WHO: https://www.google.com/search?client=safari&rls=en&q=one+health+concept&ie=UTF-8&oe=UTF-8

- Is the BC responsibly using new breeding or reproduction technologies (e.g., Novel Traits, Precision Livestock Farming for new traits in welfare or product quality, Marker Assisted Selection, Genomic Prediction, Gene Editing, Cloning)?

  ☐Yes ☐No

  If yes, which ones and for which purpose?

Technology used	Purpose (Benefits)

- Is BC excluding any technologies? Why?

4 RESEARCH, INNOVATION AND PUBLIC PERCEPTION

Research, innovation, and public perception are vital in modern insect breeding. The research contributes to advancements in genetics, health, nutrition, and breeding technologies, enabling the identification of desirable traits and the development of efficient breeding strategies. The innovation introduces new tools and practices that enhance productivity, sustainability, and insect welfare. Perhaps most crucially, public perception guides the sector towards transparent and ethical practices, aligning breeding systems with societal values and fostering trust between breeders and consumers. Integrating research, innovation, and public perception ensures modern insect breeding practices' continuous improvement and responsible development.

- Does the BC invest in research and development in new breeding and reproductive technologies and novel traits?
  ☐Yes ☐No

- Which ones and for what?

- Does the BC collaborate with research institutes? If yes, could you provide some examples?
  ☐Yes ☐No
  Examples: Please provide examples here

- In your opinion, what novel traits or breeding goals should be considered for insect breeding in the future?

- Is the BC aligned with the principle of the Three Rs principle[6] (3Rs)/Responsible research and innovation[7](RRI) when using animals for research and innovation (RI)?
  ☐Yes ☐No

[6] The three Rs (3Rs): https://ec.europa.eu/health/scientific_committees/opinions_layman/en/non-human-primates/glossary/tuv/three-rs-principle.htm
[7] Responsible Research and Innovation (RRI): https://op.europa.eu/en/publication-detail/-/publication/ee9bacdf-fdad-46eb-8cd8-32879e310191/language-en

- If not, what is the BC's current policy to ensure welfare and ethics are applied during

- Does the BC take action to engage with society and stakeholders other than insect producers? (e.g., regarding advocating animal health and welfare, balancing insect breeding, etc.)
  ☐Yes ☐No

- Could you give some examples on how? If No, why not?

5 BREEDING POLICY DECLARATION

Company Name:
Manager/CEO Name:

We are committed to ensuring that the rules of Code EFABAR are implemented and maintained throughout our operational and producing activities related to animal breeding and reproduction.
This is achieved by:

1. Compliance and implementation of the relevant and applicable legislation.
2. Implementation of Good Practices for Responsible and Balanced Breeding and Reproduction as indicated in the Code EFABAR, Version 2023.
3. Information and training of our staff in Code EFABAR requirements to ensure that it is continuously implemented.

Date:
Signature:

6 DECLARATION OF APPROVAL BY THE EFFAB DIRECTOR

Having evaluated the indications as provided by the applicant breeding/reproduction company,
I have come to a conclusion and propose that the certificate of compliance, according to
the regulations of Code EFABAR shall be issued to the applicant.

Date:

Place: Brussels
Period of validity:
EFFAB Director Signature

7 ANNEXE

7.1 Animal Health and Welfare: Transport of breeding animals

Has the following transportation policy element been implemented in the BC?		If yes, give a short explanation and provide supporting documents if possible.	If no, can you explain why? Is there a possibility for these management elements to be implemented in the next 3-5 years?
Are all persons involved with the transport of breeding stock **aware of and comply** with any current EU/National/international Legislation and Codes of Practice that apply to the movement of breeding animals? In particular to **1/2005 EC**[8]	☐Yes ☐No ☐NA		
Does the Breeding Company (BC) have an appointed Animal Welfare Officer who puts in place and supervises the transport procedures and contingency plans?	☐Yes ☐No ☐NA		
Is the BC checking all the certificates and authorizations of the operator transporting livestock on behalf of the BC?	☐Yes ☐No ☐NA		
Does the BC check that transport and resting times are respected?	☐Yes ☐No ☐NA		
Are all relevant legislation in relation to stocking density during transport of any species applied?	☐Yes ☐No ☐NA		
Has the BC a robust policy to check that breeding animals are fit for transport before leaving?	☐Yes ☐No ☐NA		
Has the BC put in place ways to ensure that the temperature in the means of transport is in the range foreseen in the legislation?	☐Yes ☐No ☐NA		
Does the BC have thresholds for maximum and minimum temperature to endure comfort during transportation?	☐Yes ☐No ☐NA		

[8]Council Regulation on the protection of animals during transport: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=OJ:L:2005:003:FULL