



# ProTerra Insecta Standard

Social Responsibility and Environmental Sustainability

for Producers of Insects as Food and Feed

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ProTerra Foundation is a non-for-profit organisation that envisages a world where all businesses contribute to the protection of biodiversity by switching to sustainable production, conserve natural resources and ensure that workers and local communities are treated with dignity and respect. The ProTerra Foundation owns the ProTerra Insecta Certification Standard and related audit methodology.

More information [www.proterrafoundation.org](http://www.proterrafoundation.org)

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## The ProTerra Foundation Vision and Mission Statement

The ProTerra Foundation's mission is to be a global network of businesses supporting more sustainable practices in the food and feed supply chains.

We envisage a world where all businesses contribute to the protection of biodiversity by switching to sustainable production, conserve natural resources and ensure that local communities are treated with dignity and respect.

Businesses enterprises that support the ProTerra Foundation mission and vision must sign a membership declaration to commit to:

- Support the credibility of the ProTerra Certification Standards and their adaptability to the reality they operate in.
- Raising awareness about impact on biodiversity and climate change.
- Empowering farms and businesses throughout the food supply chain, to become vectors of environmentally and socially responsible business practices.

ProTerra Foundation understands that there is an urgent need to find alternatives to conventional meat products as cattle raising is a relevant cause of anthropogenic induced climate change. Sustainable diets are needed based on the use of alternative protein sources. In this respect, insects are an alternative and have traditionally been used as food and feed in several parts of the world. They are a much more sustainable source of protein as, among other aspects, their production requires a significant smaller area of land (reducing the impact of land conversion and deforestation), and there is a reduced emission of greenhouse gases (associated with the enteric fermentation from cattle).

However, insect processing on an industrial scale should, to be fully sustainable, include an additional series of requirements related to human rights, worker's health and safety, relation with community, control of the release of pollutants to the air and water among others. ProTerra has therefore created the **ProTerra Insecta Standard** to cover these sustainable topics within the insect food/feed supply chain and in this way contribute to empowering farms and businesses to become vectors of environmentally and socially responsible business practices.

## The ProTerra Insecta Standard

The ProTerra Standard for Social Responsibility and Environmental Sustainability for Producers of Insects as Food and Feed, **ProTerra Insecta**, has four core aims:

- Foster good production practices associated with the insect industry.
- Secure the supply of sustainably produced that are fully traceable;
- Protect the environment, and
- Promote that workers and communities be treated with dignity and respect.

**ProTerra Insecta** should be used together with the valid version of the Certification Protocol available at the ProTerra Foundation website. Exceptions to the Protocol can be found in **ANNEX A**.

For any comment or question regarding the ProTerra Insecta Standard, please contact [info@proterrafoundation.org](mailto:info@proterrafoundation.org)

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## The ProTerra Insecta Standard Principles

**ProTerra Insecta** is organized in principles, criteria, and indicators. These are the ProTerra Insecta Standard ten principles:

PRINCIPLE 1: Compliance with law and the ProTerra Insecta Standard and Improvement

PRINCIPLE 2: Human rights and responsible labour policies and practices

PRINCIPLE 3: Responsible relations with workers and community

PRINCIPLE 4: Effective environmental management

PRINCIPLE 5: No use of Genetically Modified Organisms (GMOs)

PRINCIPLE 6: Pollution and waste management

PRINCIPLE 7: Water Management

PRINCIPLE 8: Greenhouse gases and energy management

PRINCIPLE 9: Adoption of good production practices

PRINCIPLE 10: Traceability and Chain of Custody

Organisations become certified by demonstrating adherence to each principle, criteria and indicators of the ProTerra Insecta Standard that are relevant to their business.

## The ProTerra Labelling

The ProTerra product packaging label is the way by which brands can communicate the sustainability commitment directly to consumers and stakeholders. Final consumers can be assured that all products featuring the ProTerra label were produced in a sustainable and traceable manner and meet our non-GMO requirements.

The same rules defined in the Guidelines and Requirements for the Use of the ProTerra Logos and Seals apply to **ProTerra Insecta**.

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## Section I: The Scope of Certification

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### 1.1 Levels of Certification

**ProTerra Insecta** covers the production of insects destined for human consumption or animal and encompasses all production steps, from insect breeding, their feeding, killing and other processing steps, storage, transport or retail activities, to the final delivery of the product to consumers, feed manufacturers or farmers. As such ProTerra Insecta is organized in different levels that may be certified independently or as part of a supply chain. The certification levels are:

- Level I: Insect Production
- Level II: Transport, Storage, Traders and Dealers
- Level III: Industrial Processing

In the context of this Standard, the following definitions apply.

- Insect Production (or insect farming) involves breeding, incubation, insect growth management, insect feed preparation and separation, and any other step necessary for insect production. The unit of certification includes the entire production site, including ancillary and any activities ongoing on-site at the time of certification.
- Industrial processing refers to any operation that transforms the insect production output into a feed or food product or intermediary product.

### 1.2 Raw materials, ingredients or multi-ingredient products

The ProTerra Insecta Certification can apply to raw materials, ingredients or multi-ingredient products. This may be accomplished using two basic approaches:

- Each actor in the food and feed supply chain can be certified in its own right against the relevant ProTerra Insecta Standard set of indicators or
- Certified organisations that use inputs from actors that are not ProTerra certified in their own right shall implement systems to control and monitor its supply chain(s) to ensure that the relevant ProTerra Insecta Standard indicators are met. In this case, the verification of this system will be considered as part off the user's own ProTerra certification responsibilities and verified by the Certification Body.

### 1.3 Principles, criteria and indicators

The ProTerra Insecta Certification Standard is organized in Principles, criteria and indicators. Because of its broad scope and distinct levels of operations, not all of the indicators are applicable to all types of operations.

The standard indicates the applicability of each indicator regarding each of the three levels of operation within the food and feed production chain.

The ProTerra Insecta Standard distinguishes between core indicators and non-core indicators. To be ProTerra Insecta certified, organisations have to meet 80% of all indicators, in which all core indicators are included.



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## Section II: Principles, Criteria, Indicators and Guidance

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### PRINCIPLE 1: Compliance with law and the ProTerra Insecta Standard and Improvement

International, national and local laws are in place to help protect human rights, ecosystems and promote sustainable business practices. This principle carries across all other principles in asking that organisations follow whichever offers the highest level of protection, **ProTerra Insecta** or local laws and regulations. Emphasis is given to the fact that **ProTerra Insecta** shall cover the applicable food and feed safety legislation.

#### 1.1 Comply with all applicable national and local laws and regulations

##### 1.1.1

Levels I, II and III

**CORE** - Certified organisations shall implement procedures to assure consistent compliance with the applicable legal requirements related to the topics covered by this ProTerra Insecta Standard and to food and feed safety legislation.

**Guidance:** Requirement for legal compliance applies to all Principles and their respective Criteria and Indicators. The most stringent rule shall always apply and if the ProTerra Insecta Standard exceeds national or local regulatory requirements, certified organisations shall adhere to the Standard. Organisations should be prepared to provide objective evidence of compliance with applicable regulations.

##### 1.1.2

Levels I, II and III

**CORE** - Certified organisations shall document and retain records of compliance for at least 5 years or longer if required by local law.

##### 1.1.3

Levels I, II and III

**CORE** - Certified organisations shall ensure that suppliers of core inputs and services are compliant with the ProTerra Insecta Standard.

**1.1.4** Certified organisations must obtain from non-core suppliers a formal and signed commitment that they comply with legal requirements, including those regulations associated with human rights, labour laws, environmental protection, and if applicable, food safety regulations.

Levels I, II and III

## 1.2 Continuous improvement

**1.2.1** Certified organisations shall demonstrate continuous improvement regarding the ProTerra Insecta Standard requirements and/or the topics covered by it.

Levels I, II and III

**Guidance:** Improvement Indicator(s) shall be freely selected by the organisation to demonstrate compliance with this requirement. A baseline is established at the first certification under ProTerra Insecta Standard. Organisations once fully in compliance with ProTerra Insecta, are expected to define improvement plans that exceed and go beyond the Standard.

## 1.3 Use of ProTerra logo, seal, trademark and certificates

**1.3.1** ProTerra certified materials and products shall be identified using correct claims, the ProTerra logo, seal and certificates, according to the Guidelines and Requirements for the Use of the ProTerra Logo and Seal.

Levels I, II and III

## PRINCIPLE 2: Human rights and responsible labour policies and practices

All workers should be treated with dignity and respect. Responsible business practices help ensure the rights and general well-being of workers. This principle is strongly based on International Labour Organisation (ILO) Conventions and international standards to ensure that companies provide safe working environments and do not engage in the likes of forced labour, child labour, or harassment.

## 2.1 Absence of slave and forced labour, child labour, and coercive disciplinary or control methods

**2.1.1** **CORE** - Certified organisations shall not use slave labour, forced labour, indentured servants, and their equivalents.  
Levels I and III

**Guidance:** This applies also to workers supplied by third parties and contracted labour, including migrant and seasonal workers.

**2.1.2** **CORE** - No worker will be required to lodge their identity papers with their employer, or any third party and workers' pay, benefits or other property shall, likewise, not be retained.  
Levels I and III

**2.1.3** **CORE** - Child and young workers labour, except in contexts permitted within national law and the International Labour Organisation (ILO), whatever is more stringent, shall not be used in certified organisations.  
Levels I and III

**2.1.4** **CORE** - Coercive disciplinary or control methods shall not be permitted. This includes corporal or mental coercion, confinement, threats of violence or other forms of physical, sexual, psychological, or verbal abuse/harassment.  
Levels I and III

## 2.2 Weekly working hours and overtime

**2.2.1** **CORE** - The workweek shall be set according to local and national laws, shall be consistent with local industry standards, and shall, at maximum, not routinely exceed 48 hours per week (not including overtime). Where agreement with trade unions exists related to weekly working hours and overtime, these will be respected.  
Levels I and III

**2.2.2**  
Levels I and III

**CORE** - Overtime shall be limited as specified in local and national law and shall not routinely exceed 12 hours per week.

**Guidance:** Overtime in excess of 12 hours is only allowable if it happens in extraordinary, limited periods where there are time constraints or risk of economic loss and where conditions regarding overtime in excess of 12 hours have been agreed upon between workers and management. Where agreement with trade unions exists related to excess overtime, these will be respected.

**2.2.3**  
Levels I and III

**CORE** - Overtime shall be compensated as required by law or according to collective agreement or agreement with the trade union or, in the lack of those, at a premium rate.

**Guidance:** Legal dispositions which allow the exchange of overtime hours for extra days off shall be taken into consideration.

**2.2.4**  
Levels I and III

**CORE** - All overtime work shall be voluntary.

**2.2.5**  
Levels I and III

In all cases, workers are entitled to at least one day off following 6 (six) consecutive days of work. Where agreement with trade unions exists related to days off/rest days, these will be respected.

## 2.3 Personnel Management Programme

**2.3.1**  
Levels I and III

The certified organisation shall structure, implement, and document a personnel management programme consistent with and proportional to the needs of the organisation.

**Guidance:** This indicator is not applicable to smallholders.

## 2.4 Equal opportunities and treatment for workers

### 2.4.1

Levels I and III

**CORE -** All workers and applicants shall have equal employment opportunities, equal opportunities, and equal treatment on the job. No discrimination shall be tolerated including: “any distinction, exclusion or preference made on the basis of race, colour, age, gender, sexual orientation, religion, political opinion, national extraction or social origin, which has the effect of nullifying or impairing equality of opportunity or treatment in employment or occupation. Any distinction, exclusion or preference in respect of a particular job based on the inherent requirements thereof shall not be deemed to be discrimination.” (Ref: ILO Convention 111, Articles 1 and 2).

**Guidance:** There shall be no differences in the working conditions of any workers due to employment status (e.g., permanent, temporary, or subcontracted workers). However, “equal opportunities” and/or “equal treatment” shall not necessarily prevent certain workers from receiving rewards based on merit or performance, such as paid bonuses, paid vacation time, or other enhancements that are above and beyond the basic compensation due to all workers in the operation.

## 2.5 Workers’ working conditions

### 2.5.1

Levels I and III

**CORE -** All workers, regardless of age, gender, or other personal characteristics, shall enjoy appropriate, legally compliant working conditions.

**2.5.2**  
Levels I and III

**CORE** - Sanitary facilities must be available to all workers. The sanitary area is equipped with sinks and toilets, has soap or cleaning solution and is supplied with running water.

## 2.6 Clear and comprehensive labour contracts and legal rights

**2.6.1**  
Levels I and III

**CORE** - All workers shall have an employment contract or an equivalent document, understandable by the worker and signed by the employer and employee or the employees' labour representatives. Contracts typically include pay rate, working hours, deductions, overtime conditions, vacation time, conditions for sickness and maternity leave, grounds for dismissal, period of notice for work termination. Should the cultural context, in a relevant and unquestionable manner, not consider a written contract mandatory, this should be taken into consideration and is only applicable to smallholders.

**2.6.2**  
Levels I and III

**CORE** - There shall be a signed work agreement between the certified organisation and subcontracted companies that include clauses requiring compliance with labour and legal rights of employees.

**2.6.3**  
Levels I and III

Certified organisations shall communicate legal rights, contracts and agreements to their personnel in simple language and style that workers can easily understand and comply with.

**Guidance:** The operation shall assign a person or persons to be responsible for maintaining and updating such information and shall identify that person to the Certification Body. This indicator is not applicable to smallholders.

**2.6.4**  
Levels I and III

The certified organisation shall maintain personnel records for each employee for at least 5 years, or longer if required by local law.

**Guidance:** Personnel records will include for each employee their contract, their current status and history, job title, salary, training, hours worked, and vacation time accrued. This indicator is not applicable to smallholders.

## 2.7 Qualification, working experience and training of workers

**2.7.1** **CORE** - Worker job descriptions, including necessary skills and legal status, and salary range shall be set in written form.  
Levels I and III

**Guidance:** All workers shall have the necessary qualifications, experience, meet legal requirements to fulfil their job. Written description of jobs, skills, legal status and salary range will serve as the basis for the operation's demonstration that this indicator is being met. This indicator is not applicable to smallholders.

**2.7.2** An ongoing programme of job-related training, including regular refresher training, shall be provided to all workers to ensure that they are competent to conduct their work efficiently, effectively and safely.  
Levels I and III

**Guidance:** Certified organisation shall provide all employees with training regarding, for example: Sustainability; GMOs where applicable and their specific rights, tasks, roles and responsibilities. This indicator is not applicable to smallholders.

**2.7.3** Certified organisations shall maintain records for all training for a minimum of 5 years, or longer if specified by local regulations.  
Levels I and III

**Guidance:** The following information shall be included in these records: date, time, attendees, trainer, and content material used during training. This indicator is not applicable to smallholders. Records are to be considered proportional to the time the facility holds its ProTerra Insecta certification up to its fifth year certified.

## 2.8 Salaries, payments and benefits

**2.8.1**  
Levels I and III

**CORE** - All workers, regardless of age or gender, shall be paid a fair, locally representative wage or salary, which shall meet or exceed the Legal Minimum Wage established for the region. If no Legal Minimum Wage exists, compensation shall at least meet the typical salaries usually paid in that region for the equivalent function or job.

**Guidance:** The operation must demonstrate to the Certification Body and its auditors how it achieved its determination that it has met this indicator.

**2.8.2**  
Levels I and III

**CORE** - Piece work shall be paid at a rate that assures workers will be capable of earning at least a legal minimum wage.

**2.8.3**  
Levels I and III

**CORE** - Wages or salaries and hours worked shall be regularly and legally paid in the national currency, documented and recorded.

**Guidance:** Payment shall be at least monthly unless workers or their representatives expressly agree that it can be less frequent, the terms of which are specified in writing and signed by said parties.

**2.8.4**  
Levels I and III

**CORE** - Employer shall not deduct from wages for disciplinary or similar purposes.

**Guidance:** Deductions for social security or other legally mandated programs are acceptable.

**2.8.5**  
Levels I and III

A social security plan shall be established for the workers in regions where such a plan is not required by law or regulation.



**Guidance:** The plan shall include timelines for implementation, as well as age requirements for receiving benefits and other related conditions/situations where benefits would be available. The impact of such a social security plan on regular worker pay amounts shall be specified in the plan description. This indicator is not applicable to smallholders.

## 2.9 Safety and health of workers

**2.9.1**  
Levels I and III

**CORE -** The certified organisation shall conduct a risk assessment of their operation and use the results of that study to guide mitigation of risks and the development of a health and safety programme. Additionally, it should support the implementation of accident and emergency systems and procedures.

**Guidance:** The scope and complexity of the programme shall be proportional to the scope and complexity of the certified organisation. The risk assessment shall be documented and clearly linked to the health and safety programme. In the case of smallholders, this responsibility lies with the first processors, where applicable.

**2.9.2**  
Levels I and III

**CORE -** First aid shall be readily and quickly available if and when accidents or other emergencies occur on the worksite.

**2.9.3**  
Levels I and III

The certified organisation shall monitor and ensure compliance with its worker safety and health programme and keep records of health and safety performance, including accident statistics for the operation.

**Guidance:** Accident statistics: accidents per number of hours worked and accidents per employee. This indicator is not applicable to smallholders.

**2.9.4**  
Levels I and III

**CORE** - Hazardous tasks shall be conducted only by qualified and properly trained workers.

**Guidance:** This indicator applies to organisations with workers or subcontracted workers. The operation shall maintain documentation identifying workers authorized for hazardous tasks and require subcontractors to do the same.

**2.9.5**  
Levels I and III

**CORE** - Certified organisations shall provide all required personal protective equipment (PPE) and clothing to workers.

**Guidance:** Training on the importance and usage of PPE is to be considered as part of this indicator.

**2.9.6**  
Levels I and III

Wearing of appropriate personal protective equipment (PPE) and adequate clothing is mandatory in conducting the activities that, based on the risk assessment (2.9.1), have been deemed PPEs as necessary.

## 2.10 Training in health and safety

**2.10.1**  
Levels I and III

**CORE** - Workers shall be trained in health and safety on the job, and particularly those engaged in hazardous tasks. All workers shall be aware of hygiene and basic food safety requirements.

**2.10.2**  
Levels I and III

**CORE** - Certified organisations shall maintain records for all health and safety training for a minimum of 5 years, or longer if specified by local regulations.

**Guidance:** The following information shall be included in these records: date, time, attendees, trainer, and content material used during training.

**2.10.3** Certified organisations shall employ qualified personnel to instruct workers in safety and health on the job.  
Levels I and III

**Guidance:** Certified organisations shall ensure that instructors have the necessary technical knowledge and legal qualifications. In the case of smallholders, the instruction should be ensured by groups, cooperatives or first processors.

## 2.11 Parental leave

**2.11.1** Certified organisations shall comply at least with national and state regulations regarding maternity and paternity leave.  
Levels I and III

**2.11.2** Workers taking maternity/paternity leave have the right to resume their work under the same conditions existing before taking leave, without discrimination, deduction of wages or loss of seniority.  
Levels I and III

**2.11.3** **CORE** - In locations where specific regulations do not cover maternity leave, certified organisations shall establish a reasonable leave period.  
Levels I and III

**Guidance:** This indicator is not applicable to smallholders.

## 2.12 Freedom for workers to organise, join and form associations

### 2.12.1

Levels I and III

**CORE** - All workers shall be allowed to form and join trade unions or other collective bargaining organisations of their choice.

**Guidance:** Certified organisations must provide evidence demonstrating that they respect the rights of all personnel to form and join trade unions or other collective bargaining organisations in accordance with the law. This indicator is not applicable to smallholders.

### 2.12.2

Levels I and III

**CORE** - Certified organisations shall not impede functions of collective bargaining organisations and representatives of collective bargaining organisations shall have access to their members at the workplace.

### 2.12.3

Levels I and III

**CORE** - There shall be no discrimination by management or workers between unrepresented workers and members of labour or trade unions.

## PRINCIPLE 3: Responsible relations with workers and community

Respecting workers and local communities means listening and, as applicable, considering what they have to say. Workers can often feel that speaking on an issue might cost them their job or jeopardise their well-being. Certified organisations should provide means of communicating grievances that respect and protect the grievant and ensure their complaints are fairly assessed. This principle also aims at extending such a mechanism to the local community and economy.

### 3.1 Systems of communication and grievance mechanism

#### 3.1.1

Levels I and III

**CORE** - Certified organisations shall establish and document an effective and timely system of communication with all workers and with the local communities, and an effective and timely system to receive, investigate and respond to all complaints from these parties.

**Guidance:** This system shall function at the worksites and in the communities linked to certified organisations. This indicator is not applicable to smallholders.

**3.1.2**  
Levels I and III

**CORE** - Complaints, responsive actions, and outcomes shall be documented, and records maintained for 5 years, or more if required by local law.

**Guidance:** This indicator is not applicable to smallholders.

**3.1.3**  
Levels I and III

The system of communication shall include a mechanism that allows workers and community members to lodge complaints in an anonymous manner to the management of the certified organisation (if they desire anonymity), yet also allows verification of the validity of the complaints.

## 3.2 Economic development and support to local economy<sup>1</sup>

**3.2.1**  
Levels I, II and III

Certified organisations shall demonstrate support for local community development projects.

**Guidance:** This indicator is not applicable to smallholders.

**3.2.2**  
Levels I, II and III

Certified organisations shall contribute to the local economy by preferentially offering local businesses the opportunity to supply goods and services that meet the organisation's specifications.

**Guidance:** This indicator is not applicable to smallholders.

**3.2.3**  
Levels I, II and III

Job opportunities shall be made available first to qualified members of the local community.

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<sup>1</sup> For definition of local refer to Section III: Terms and Definitions.

**Guidance:** This indicator is not applicable to smallholders.

**3.2.4**  
Levels I, II and III

Certified organisations shall have a financial plan of their business to ensure long-term viability over time.

**Guidance:** Smallholders are expected to at least be able to verbally explain the way the farms' finances are organised and issues that are relevant for the economic viability of the family business and actions are eventually taken to ensure sustainability over time.

## PRINCIPLE 4: Effective environmental management

One of the major environmental concerns related to insect breeding is the introduction of alien insect species as soon as there is a chance that live insects are inadvertently released into the environment. As these alien species potentially have no predators (they are not natives of that country or region), an intense proliferation can occur representing a menace to the environment and to the local community. By implementing this principle, businesses will protect natural ecosystems and local communities while adhering to governmental and international regulations. This Principle also addresses requirements related to social and environmental impact assessment and management plans for the insect rearing business.

### 4.1 Maintenance and enrichment of biodiversity

**4.1.1**  
Levels I and III

**CORE** - Certified organisations shall identify and maintain valuable biodiversity within their areas and shall, with the support of an external expert, implement projects in these areas too, as applicable, restore areas of natural vegetation around bodies of water and on steep slopes and hills, and other sensitive parts of the ecosystem.

**Guidance:** This indicator is only applicable to sites located in rural areas.

**4.1.2**

Level I

**CORE** - The introduction of alien insect species or the use of protected species in insect production must be authorized by the competent authorities.

**4.1.3**

Level I

Producers must have an emergency plan to ensure that they are prepared to act in case of non-intended release (or escapes) of living insects to the environment. All unintended releases of non-native species should be reported to the authorities. All non-intended releases must be documented.

**4.1.4**

Level I

**CORE** - For the production of insects the facility must have a plan and financial provisions for the eventual future decommissioning of its activities in order to ensure that insects are not transformed into a menace to the environment and to the local community.

## 4.2 Social and environmental impact assessment and management plan

**4.2.1**

Levels I and III

**CORE** - Certified organisations shall perform a comprehensive Environmental and Social Impact Assessment (ESIA) for any large expansion projects, including the construction of new production or processing sites, to identify and to define a Management Plan to address these where necessary. External experts are to be involved.

**Guidance:** The ESIA must be commensurate to the scale of the operation and infrastructure. Guidance from government, academia or other recognized experts should be obtained, as applicable, to complete the ESIA. Where existing, national regulations related to such assessment must be complied with. A definition of ESIA is provided under Terms and Definitions. This indicator is not applicable to agricultural operations of smallholders.

**4.2.2**  
Levels I and III

Certified organisations that fall within the requirements of 4.2.1 shall carry out the Management Plan specified in that indicator and review it prior to the ProTerra Insecta audit, assessing progress, revising, and setting new objectives, as appropriate. This Management Plan shall be monitored regularly and updated as necessary.

## PRINCIPLE 5: No use of Genetically Modified Organisms (GMOs)

There is still a scientific debate about whether genetic engineering is harmless for animal and human health. Many consumers and producers are concerned about GMO ingredients and wish to make informed decisions about where their food comes from. This includes understanding the health and safety, social and environmental impact of their choices. This principle aims to ensure that GMO insects are not present in the certified organisations and in this way minimise GMO risk.

### 5.1 GMOs and Genetically Engineered Organisms

**5.1.1**  
Levels I, II and III

**CORE** - Genetically modified organisms (GMOs) and their by-products **must not be used** in the production of ProTerra Insecta certified products. This includes technology that can be used to edit genes within organisms such as CRISPR/Cas9. This indicator applies to insects.

**Guidance:** ProTerra strongly recommends that insect feed, processing aids, additives, and other inputs used in processing insects or creating insect-based food or feed products also be non-GMO. Level III organisations must demonstrate the non-GMO status of insects reared or used as part of a multi-ingredient product.



### 5.1.2

Levels I, II and III

**CORE** - All certified organisations shall avoid the intentional or unintentional contamination of certified products by GMOs from external sources and shall demonstrate that the non-GMO control system is set to assure compliance with non-GMO requirements of their target market(s). This includes defining:

- The Targeted Threshold Tolerance Level — i.e., the level of acceptable GM contamination found in a specified product for a specified region (country), and
- The approved/non-approved GMOs.

**Guidance:** Where the Targeted Threshold is not defined, it will be considered, 0.1% with an adventitious GM presence level of up to 0.9% of approved GMOs. For claims on products, certified organisations shall refer to the document entitled Guidelines and Requirements for the Use of the ProTerra Logos and Seals.

### 5.1.3

Levels I, II and III

**CORE** - Certified organisations may use certain substances, which are produced by GMOs, or which are from unknown genetic origin, if:

- The substances are not available on a continuous basis in non-GMO quality as defined in this standard (based on origin, production process, quantity and analysis);
- The substances cannot be replaced with alternative products or methods;
- The substances are necessary for insect health and protection reasons;
- The substances are necessary for the production of food or feed products, and
- The substances' used in food or animal feed are required by law or by regulation in the country or region where they are produced and/or consumed.

**Guidance:** Substances that are exempted according to this guideline include, but are not limited to, food additives, processing aids, flavours, amino acids, other micronutrients, vitamins, animal feed additives. Certification Body explicitly approves on a case-by-case basis, and all such use is documented by the operation. Exemptions are only possible, according to the Recommendations of the Expert Group to the Austrian “platform GMO-free” or to the recommendations of the EU Commission, based on the labelling of organic food.

## 5.2 System of Identity Preservation and Segregation

### 5.2.1

Levels I, II and III

Certified organisations shall have in place an adequate system of segregation for GMO insects, should they also be used. This is achieved by one of the following methods (note that GMO insects are not eligible for certification under ProTerra Insecta Standard):

- Use of dedicated sites, facilities, equipment, conveyances, handling equipment and/or related infrastructure;
- By inspecting, cleaning and/or flushing facilities, equipment and conveyances between use in contact with genetically modified material and non-GMO material;
- A combination of the above methods.

### 5.2.2

Levels I, II and III

Certified organisations shall have procedures and records in place to ensure segregation is maintained and documented. At least the following procedures and records to provide evidence that segregation shall be maintained:

- Sampling plan for immunologically based screening using strip tests;
- Sampling plan for PCR analyses;
- Strip test procedure;
- Strip test records;
- PCR analysis reports;
- Records of flushing or cleaning for product change in non-dedicated sites, and
- Inspection checklist of trucks and other conveyances.

**Guidance:** Applicability of the above evidence (related to Criterion 5.2) apply to organisations that produce or handle both Non-GMOs and GMOs and should be proportionate to the type and size of the operation, particularly in the case of smallholders.

## PRINCIPLE 6: Pollution and waste management

All human activity generates waste material that potentially creates pollution. Minimising pollution and waste generation should be a focal point of sustainable business practices. This principle aims to support certified organisations in the use of waste storage, handling and disposal methods that do not harm the natural environment and local communities, while promoting waste minimisation.

### 6.1 Appropriate management of hazardous wastes and pollutant materials

**6.1.1**  
Levels I and III

**CORE** - Certified organisations shall segregate, handle, store and dispose of hazardous wastes in a way not to cause environmental pollution.

**Guidance:** Hazardous wastes include but are not limited to batteries, fluorescent lamps, tires, used lubricant oil, sanitizing agents among others. Management of hazardous wastes shall at least comply with national laws relevant to the location of the certified operation, as stated in Principle 1 of this Standard.

**6.1.2**  
Levels I and III

**CORE** - Certified organisations shall handle, store and dispose of pollutant materials properly, having appropriate facilities to soil and groundwater contamination.

**Guidance:** Pollutant materials include but are not limited to oil derivatives, fuels, sanitizing and disinfecting products. Appropriate facilities include, for example, drum spill containment basins with oil-water separation systems, machinery/equipment washing stations built in a way to prevent untreated effluent to reach water bodies. Management of pollutant materials shall at least comply with national laws relevant to the location of the certified operation, as stated in Principle 1 of this Standard.

### 6.1.3

Levels I and III

**CORE** - Certified organisations shall discharge sewage and or industrial effluents to water bodies avoiding pollution and shall at least comply with national laws relevant to the location of the certified operation, as stated in Principle 1 of this Standard.

**Guidance:** In the absence of local regulation, organisations should consider that effluent generated by pen washing activity and boiling water from insect postharvest, must meet the discharge limits to water bodies as follows<sup>2</sup>:

- pH: 6 – 9
- BOD: 30 mg/l
- COD: 125 mg/l
- Total nitrogen: 10mg/l
- Total phosphorus: 2 mg/l
- Oil and grease: 10 mg/l
- Total suspended solids: 50 mg/l
- Total coliform bacteria: 400 MPN/100 ml

Treated wastewater can be used to irrigate areas should they have adequate quality emonstrated by monitoring results.

## 6.2 Management and appropriate disposal of non-hazardous wastes

### 6.2.1

Levels I and III

**CORE** - Non-hazardous wastes shall be segregated and, where appropriate, recycled or reused. If recycling or reuse is not possible, a legal means of treatment and final disposal shall be employed.

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<sup>2</sup> Based on IFC (International Finance Corporation) Environmental, Health, and Safety (EHS) Guidelines: GENERAL EHS GUIDELINES: ENVIRONMENTAL WASTEWATER AND AMBIENT WATER QUALITY

### 6.2.2

Levels I and III

**CORE** - Certified organisations shall manage biological wastes such as dead insects (before harvest), insect feed scraps, insect faeces (frass) and off-specification food/feed products, among others, appropriately. These must be stored in a way to avoid pollution and/or to prevent these from becoming a source of pathogenic contamination or pest harbourage.

**Guidance:** Dead insects shall be stored in dedicated areas and collected periodically by an authorized company. It is recommended that dead insects are incinerated, when possible, to avoid the risk of potentially spreading disease to other pens. Food scraps should not be reused with another pen or batch of insects as there is a risk of disease transfer. Frass separated from live insects and feed residue can be collected and processed or packaged for other applications (such as fertilizer or feed for other animals) in a separate area from the rearing or cleaning room. Management of non-hazardous wastes shall at least comply with national laws relevant to the location of the certified operation, as stated in Principle 1 of this Standard.

### 6.2.3

Levels I and III

**CORE** - Wastes shall not be incinerated or burned, except when required for sanitary purposes or in line with 6.2.2, or in cases when it is burned for energy or heating or used for biogas/oil production.

**Guidance:** Burning for the generation of biofuels, for energy production must comply with local and/or national regulations.

## 6.3 Control of atmospheric pollution

### 6.3.1

Levels I and III

**CORE** - Certified organisations shall implement systems and procedures to ensure that air emissions from stationary sources (emissions from pipes or chimneys and associated for example to boilers, ovens, incinerators, and electricity generators), do not exceed regulatory limits.

**Guidance:** Certified organisations shall monitor air emissions. Monitoring is not applicable to smallholders.

**6.3.2**  
Levels I and III

Insect exuviate are allergens and must be removed from the facility environment to prevent or reduce allergic reactions to personnel or to the population living near the production facility. Filters (or alternative solutions do reduce impact of air circulation) must have a routine inspection and maintenance programme.

## PRINCIPLE 7: Water Management

Water is a scarce resource in many parts of the world. It is also a resource constantly under threat of contamination and misuse. This principle aims to ensure responsible use of water. **ProTerra Insecta** requirements associated with water management involve conservation of natural water resources (conserving quantity and quality) and implementing best practices for water management aiming at avoiding contamination of surface and groundwater.

### 7.1 Conservation of natural water resources

**7.1.1**  
Levels I and III

**CORE** - Certified organisations shall conserve quantity and quality of existing natural water resources, such as lakes, rivers, artificial lakes, dams, water tables and aquifers around their facilities.

**7.1.2**  
Levels I and III

**CORE** - Certified organisations shall implement best practices for water conservation and avoidance of contamination of surface and groundwater.

**7.1.3**  
Levels I and III

**CORE** - Any contamination of ground or surface water shall be reported to the local environmental authority and mitigated based on a plan agreed with such authority if necessary.

#### 7.1.4

Water supplied to insects must meet potability guidelines.

Level I

## PRINCIPLE 8: Greenhouse gases and energy management

Global warming has a significant impact on human activity and is certainly one of the greatest challenges our society will be facing in the next decades. This principle encourages organisations to minimise non-renewable energy usage in favour of renewable sources, to use energy-efficient equipment and to measure and reduce greenhouse gas emissions.

### 8.1 Management of greenhouse gas emissions

#### 8.1.1

Levels I, II and III

**CORE** - Certified organisations should develop an inventory of its greenhouse gas emissions and develop a programme to reduce or compensate for greenhouse gases emission.

**Guidance:** Examples of applicable materials for emission reduction associated to the use of alternative fuels are: reforestation wood, biofuels, wood chips in hot water supply boilers. The use of solar or wind-generated electricity should also be considered. Plans should identify timelines, methods, and proposed budget. Progress shall be documented or otherwise demonstrable. In the case of smallholders, the responsibility lays with cooperatives or first processors.

#### 8.1.2

Levels I and III

**CORE** - The certified organisation must ensure that energy-efficient equipment is used and that these are free of CFC gases. This is especially relevant when room climatization is needed/used.

**Guidance:** For CFCs, please consult the Montreal Protocol on Substances that Deplete the Ozone Layer.

### 8.1.3

Level III

Large industrial operations should develop a Heat Management Programme.

## PRINCIPLE 9: Adoption of good production practices

Good production practices are fundamental to minimise the impact of rearing and insect processing activity on the environment and on the health of workers and neighbouring communities. This principle aims to support organisations in reducing their impact (e.g., by reducing and adequately managing toxic and polluting material) and to ensure the consistent quality of their products. Several requirements under this principle are directly associated with food safety aspects such as the need to implement Hazard Analysis and Critical Control Points (HACCP) principles when applicable and to develop and maintain Good Hygiene Practices (GHP) within the company.

### 9.1 Systems of good practices

#### 9.1.1

Levels I, II and III

**CORE** - Hazard Analysis and Critical Control Points (HACCP) principles, must be implemented whenever applicable.

**Guidance:** Implementation should be proportional to the scale and complexity of the operations. Large industrial facilities should have inspection and certification of HACCP practices issued by independent and qualified third parties.

#### 9.1.2

Levels I, II and III

**CORE** - Organisations must develop and maintain Good Hygiene Practices (GHP) within the company, proportional to the scale and complexity of its operations.

#### 9.1.3

Levels I, II and III

**CORE** - Workers shall be trained in developing and maintaining the HACCP system and implementing GHP.



**9.1.4** A system shall be in place to deal with products that are rejected by customers.  
Levels I, II and III

**9.1.5** **CORE** - Production equipment and instruments must be maintained clean and in hygienic condition in order to avoid pest and microbiological contamination.  
Levels I, II and III

## 9.2 Insect Feed Management

**9.2.1** **CORE** - Materials that carry the risk of containing heavy metals or hazardous chemicals, such as newspaper or chemical containers, shall never be used as feed containers for insect rearing.  
Level I

**9.2.2** **CORE** - The insect feed used on the farm needs to be stored in a clean, dry and pest-secure location.  
Level I

**9.2.3** **CORE** - Cross-contamination to feed sources must be avoided. Producers must have controls to ensure this requirement is met.  
Level I

**Guidance:** For smallholders - Vegetables from markets or other sources might be contaminated by pesticides so they should be washed thoroughly before being fed to insects. Organic vegetables should be preferred if possible. Harvesting vegetables in areas accessed by animals is not recommended for hygiene reasons. Pesticides should not be used in vegetables for insect feed that are planted by the producer.

**9.2.4** Uneaten feed should be removed from the rearing pens completely and replaced daily with fresh material, except if larvae live/grow in its feed. To avoid pathogenesis, fresh feed should not be placed over old feed.  
Level I

### 9.2.5

Level I

**CORE** - Traceability of the substrates given to the insects must be ensured.

## 9.3 Biosecurity

### 9.3.1

Level I

**CORE** - Precautions should be made to keep insects inside; for instance, all openings to the rearing should be sealed or filtered to avoid nuisance to neighbours and the general public.

**Guidance:** Also refer to requirements associated with 4.1.2 and 4.1.3 in relation to respectively emergency plan and eventual future decommissioning needs.

### 9.3.2

Level I

Farmers introducing breeding stock from other farms should assess the health status of the farm from which new stock is being procured to ensure that insect stock is healthy and that pathogens will not be transferred to the receiving site.

**Guidance:** Prior to purchase, farmers should visit the potential source farm, paying particular attention to the quality of farm operations and the health of the insects.

### 9.3.3

Levels I and III

Processing and packaging should be separated from rearing facilities.

### 9.3.4

Levels I and III

A control of outside visitors must be implemented to minimize the risks that human visitors can bring to the production of insects or food and feed products.

**Guidance:** One method is, for example, to install a footbath tray at the doorway leading into the breeding or rearing house. The footbath should be filled with a disinfection agent compatible with insect breeding activities.

### 9.3.5

Level I

Insect farmers must develop a health management programme for their farms. Such programme entails at a minimum: monitoring insects for signs of disease, quickly removing sick insects from pens, and destroying them and disinfecting the pen before reuse.

**Guidance:** Special attention should be given to fungal and mite growth in the insect population. The pen and rearing environment where the disease or suspected disease occurred must be cleaned with approved chemical agents approved, by local authorities, for food and feed application. Chemicals must be used according to directions. Any medicine used must be approved by a professional veterinary.

## 9.4 Documentation of production

### 9.4.1

Levels I and III

**CORE** - All essential records, as applicable to the different levels, should be kept for 5 years or longer if required by local regulations. Essential records are related to production cycle; feed and water provided to insects; insect growth and diseases; yields, postharvest practices and sales.

**Guidance:** In the first years of certification these records are expected to be available proportionally to the time of certification. Examples of records are indicated below.

**Production cycle:** Origin of insect eggs (i.e., where the eggs came from, where they were purchased or collected from on-farm production); how many egg bowls used per pen; date hatching began; dates of maturity and breeding; dates of egg collection; and dates of harvesting.

**Feed:** Type of commercial feed used; percentage protein content; bags or kilograms of commercial feed used; and types of vegetables used; dates vegetables were introduced.

**Water:** Water source used, amounts and tests results of water quality.

**Insect growth:** Growth records should note weekly issues relating to the production cycle such as problems encountered and the health and vitality of the insects.

Disease: Associated with any disease issues or outbreaks on the farm. Where this has occurred, the management processes followed to control the disease should be registered. Special notes should be made of the date and type of disease, how the pens were cleaned and what chemicals were used.

Yields: Record of the dates when pens were harvested, and the volume of insects collected; the weight of harvested insect per pen and the total production figures for the farm.

Postharvest: Postharvest records should show what type of processing was used on the farm at harvest (if insects were washed in water or not, whether they were boiled or frozen for example).

Sales records: When, where how much and to whom products were sold.

## 9.5 Reduction of toxic and polluting materials

### 9.5.1

Levels I and III

**CORE -** Certified organisations shall avoid or reduce the use of toxic or polluting materials and shall select chemical products having the least possible toxicity and environmental impact for the required application.

**Guidance:** Typically, at the farm level, there will be a need to use some chemicals to maintain hygiene and to prevent disease outbreaks in the colonies (e.g., for cleaning and disinfecting agents). Where chemicals are used, farmers should only use chemicals that are approved for use in insect farming by the appropriate government agencies. Chemicals used in sterilizing pens and equipment should only be used in accordance with the manufacturer's directions and should be stored securely and responsibly when not being used. At the industry level, other chemicals are typically used in ancillary activities, such as equipment maintenance fluids and lubrication.

## 9.6 Management of chemical and chemical residues

### 9.6.1

Levels I and III

**CORE -** Chemical products shall be handled, stored, transported, and disposed of as per regulations or according to procedures documented to be superior.

**Guidance:** Chemicals shall be stored and transported in original containers or in other appropriate containers clearly labelled to identify contents. Certified organisations shall follow the manufacturer’s recommendations and legal requirements for disposing of chemical wastes and empty containers. Certified organisations shall, when possible, return empty containers to the supplier.

**9.6.2**  
Levels I and III

Certified organisations shall test products bound for commercialization maintaining testing records.

**Guidance:** Insect producers are responsible for demonstrating the safety of the products leaving their production facilities. Sampling procedures should be implemented. Such sampling obligations are associated typically to microbiological criteria/ targets (e.g., for processed insect proteins intended for animal feed use) and maximum limits for contaminants (food contaminants and undesirable substances and products for feed), as defined by regulations or by the importing country.

## 9.7 Insect welfare

**9.7.1**  
Levels I and III

Producer should implement standards and practices of insect welfare in its operations, despite uncertainty about whether insects can suffer.

**Guidance:** The animal production industry should aspire to freedom from hunger, thirst, discomfort, pain, injury, disease, fear and distress, and the expression of normal behaviour. Insect-killing methods that would reduce suffering include freezing or instantaneous techniques such as shredding should be preferred.

## PRINCIPLE 10: Traceability and Chain of Custody

Chain of custody refers to a trail that records the sequence of custody, control, and transfer of materials. It is evidence of ownership of the materials and permits tracing back their physical movement, ensuring therefore traceability. **ProTerra Insecta** requires certified organisations to keep a track of the product journey, which is verified during a certification audit. Fulfilment of the indicators outlined in this principle qualifies an economic operator to make a sustainability claim on final products offered to consumers and on an intermediate product as well.

## 10.1 Chain of Custody System

### 10.1.1

Levels I, II and III

All records related to the Chain of Custody System shall be kept for 5 years or longer if required by local regulations.

**Guidance:** In the first years of certification these records are expected to be available proportionally to the time of certification.

### 10.1.2

Levels I, II and III

The certified organisation shall have sufficient documentation and records to demonstrate traceability.

**Guidance:** Documentation on traceability includes at least: date and time of the start of the batch, lots of raw material used, parental precedence, stage of life, density, separation and cleaning date, and feed components. Other records must, if applicable, include:

- Reception records: weight, date, driver name, number of vehicle license plates, farm name, as well as analytical results.
- Storage records: volume, number of silo or warehouse.
- Processing records: date of process, production line or facilities used, volume and identification of raw material, volume of product made, product lot number, as well as analytical results.
- Shipment records.

For chain of custody operators (trader, dealer, distributor, copacker and handler of certified sustainable material), ProTerra Traceability Certificate of Compliance (TCC) is necessary.

### 10.1.3

Levels I, II and III

The certified organisation shall assign lot numbers to each received or shipped raw material or product consignments, as well as processing lots and final product lots, where applicable, linked to the traceability information pertaining to the same.

**Guidance:** Each new production batch of insects harvested must be properly catalogued in a way that can be traced to the raw material used to feed and water that batch. This information should follow the insects through each of the subsequent steps taken during the production process, including the results of the quality controls to be implemented at each critical point of the system.

### 10.1.4

Levels I, II and III

Certified organisations shall maintain chain of custody. ProTerra Insecta certified product by means of a Traceability Certificate of Compliance (TCC), specific for that transaction. The information contained in the TCC shall include the following:

- volume of the consignment changing ownership;
- lot numbers and volumes of each lot of material contained in the consignment, identification of seller and buyer;
- date of the transaction and, where applicable;
- information verifying that the specific lot of material referenced in the TCC complies with the relevant threshold for GMO, and
- the TCC shall be retained by both economic operators.

### 10.1.5

Levels I, II and III

For sealed products that are packaged and labelled for the end user, for example, retail packages, use of TCCs is not required. However, the certified organisation shall maintain records that allow them to trace back from the lot number on the package to the lots of ProTerra Insecta certified ingredients contained in the product.

## 10.2 Mass Balance

### **10.2.1**

Levels I, II and III

A total mass balance shall be maintained for inputs and outputs correlating the amounts of certified inputs with amounts of certified outputs, taking into consideration conversion factors.

### **10.2.2**

Levels I, II and III

In cases where a ProTerra Insecta certified material can be mixed with other non-GMO material, or with material that does not have commercial GMO varieties, a mass balance shall be maintained to demonstrate that volumes of ProTerra Insecta certified material received are equivalent to ProTerra Insecta certified material dispatched.

## **10.3 Segregated chain of custody**

### **10.3.1**

Levels I, II and III

The economic operator shall have, and shall consistently employ, standard operating procedures for maintaining full segregation for each lot of ProTerra Insecta certified product from GMO materials from the point of receipt to the point of transfer to the next economic operator in the supply chain. Procedures and records may include, depending on the operation:

- Sampling plan for immunologically based screening using strip tests;
- Sampling plan for PCR analyses;
- Strip test procedure;
- Strip test records;
- PCR analysis reports;
- Procedures of flushing or cleaning for product change in non- dedicated sites.

### **10.3.2**

Levels I, II and III

Precautions, including physical labelling of facilities and conveyances, must be in place to prevent co-mingling of ProTerra Insecta certified material and other material during transport and during loading and unloading of conveyances.



### 10.3.3

Levels I, II and III

Conveyances used to transport ProTerra Insecta certified material shall be inspected before loading to verify freedom from residues of materials that are not ProTerra Insecta compliant, and if residues are observed, the conveyance shall be cleaned before loading ProTerra Insecta certified materials. Inspection and cleaning of conveyances shall be documented.

### 10.3.4

Levels I, II and III

When ProTerra Insecta certified material is transported as a part-load together with other material, GMO or non-specified material as to genetic engineering modification, systems and procedures must be in place to prevent mixing during loading, transport and unloading. Correct ProTerra Insecta certified products must be clearly identified and delivered to the customer.

### 10.3.5

Levels I, II and III

Certified organisation shall comply with Principle 5 to demonstrate that genetically modified organisms are not used.

### 10.3.6

Levels I, II and III

A ProTerra Insecta chain of custody certified organisation will be able to merge or split received consignments of ProTerra Insecta certified products. To each new merged or split consignment, a unique identification number must be assigned.

**Guidance:** It should be noted that consignments of products certified under ProTerra Insecta Standard received by chain of custody certified organisations may consist of one production lot, or parts of one or more production lot(s).

### 10.3.7

Levels I, II and III

Customer service, inventory management, and order fulfilment procedures must be in operation, verifying that the correct ProTerra Insecta certified product consignments have been shipped to customers ordering ProTerra Insecta certified products.

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## Section III: Terms and Definitions

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### **Abuse**

Mistreat: treat badly; maltreatment: cruel or inhumane treatment either verbal or physical in nature.

### **Certification Body**

An external and independent body, identified by the Standard owner, to conduct audits against its Standard.

### **Chain of Custody**

The paper and/or digital trail that records the sequence of custody, control, transfer, analysis, and disposition of physical or electronic evidence.

### **Consignment**

Volume of a shipment of product changing custody or ownership in the supply chain, composed of one or more production lots, or split from a given lot. A consignment can be comprised of merged consignments and can be split into various consignments. Each consignment is assigned a unique identification number for traceability purposes and inventory control.

### **Core Indicator**

Core indicators are those that are considered by the ProTerra Foundation as essential to mitigate sustainability negative impacts. All core indicators must be met by applicants to be granted the ProTerra Insecta certification. Furthermore, they shall be maintained throughout the entire certification period.

### **Core Service provider**

Core service provider is a provider of essential services to the production system, such as outsourcing of cleaning activities.

### **Core Supplier**

A supplier of a core input that is added as part of the formulation of the final product to be ProTerra Insecta certified.

**Dedicated**

Facilities, equipment or vehicles used only for the storage, handling, transport, distribution, production or processing of certified product.

**Economic Operator**

Organisation or individual with legal ownership or physical control of insect farming activities, derived products, or products made with them. Economic operators may be in any node of the supply chain. In the context of this Standard, a certified organisation means the same as a certified economic operator.

**Environmental and Social Impact Assessment (ESIA)**

A structured and technically based process for predicting and assessing the potential environmental and social impacts of a proposed project, and the designating of appropriate compensation, mitigation, management and monitoring measures to deal with negative impacts.

**GM (Genetically Modified or Genetic Modification)**

Products or processes employing gene splicing, gene modification, DNA editing, recombinant DNA technology, or transgenic technology. Also refers to products produced using one or more GM inputs or process elements. Cloned animals and their progeny are also considered GMOs under this Standard.

**GMO (Genetically Modified Organism)**

A plant, animal, or other organism whose genetic makeup has been modified using recombinant DNA (gene splicing) or DNA editing methods or food/feed products derived from such an organism. Refers to products derived from a species of which GM varieties have been commercialized somewhere in the global production system.

**Greenhouse Gases or Emissions**

Gases, such as carbon dioxide, nitrous oxide, and methane, transparent to solar radiation but opaque to longwave radiation.

**Guidance**

Each indicator that is accompanied by guidance expands on the specific topic and offers practical information about how to meet the indicator's requirements.

### **Identity Preservation/Identity Preserved (IP)**

Use of segregation and traceability procedures to maintain the identity of specific lots of products or processed products throughout all stages of production, maintenance, transportation, storage and processing. IP is primarily used to preserve the authenticity of defined traits or characteristics of products, one of which is the non-GMO status of the product.

### **Indentured Servant**

A labourer under contract to work for an employer for a specific amount of time to pay off a debt. Typically, in cases of indentured servitude, the employers provide little if any monetary remuneration; however, they are responsible for accommodation, food, other essentials, and training.

### **Inputs**

Any material or substance that becomes a part of the final product, or a component of which becomes a part of the product.

These include, but are not limited, the following:

- Unprocessed agricultural products, such as vegetables, grains, fruit, greens, herbs, forage plants, vitamins, enzymes, minerals and other fresh insect feed etc.
- Manufacturing and processing inputs, including ingredients, flavourings, seasonings colourings, additives, and all other substances present in final, manufactured products, such as residues of processing aids.

### **Legal Minimum Wage**

The lowest wage, determined by law or collective agreement that an employer has to pay to a worker for a specified job. This excludes overtime premium.

### **Local Community**

A group of interacting people living in and sharing a specific environment and place, and sharing common concerns around local facilities, services, and environment and which may at times depart from traditional or State definitions. Such communities may attach a particular meaning to land and natural resources as sources of culture, customs, history,

and identity, and/or depend on them to sustain their livelihoods, social organisation, culture, traditions, and beliefs. Local communities may be legally or customarily known or designated using various terms, such as “traditional communities.” As indigenous peoples, they may use and manage land in accordance with customary tenure systems and associated rights and may depend on their land for cultural and physical survival.

### **Lot**

The volume of product originated in agriculture or industrial processing assigned a unique identification number linking that production volume to a given period.

### **Non-GMO or Non-GM**

A plant, animal, or other organism or derivative of such an organism whose genetic structure has not been altered by gene splicing, gene modification, recombinant DNA technology, transgenic technology, DNA editing, or by a process or product whose production utilises GM processes or inputs.

### **PCR analyses**

Biochemistry and molecular biology techniques for isolating and exponentially amplifying a fragment or sequence of interest of DNA, via polymerase replication, without using a living organism.

### **Product**

Materials or goods that are assessed as part of the ProTerra Insecta Standard certification process, which the certified organisation offers to the market, at whatever stage of the production chain (i.e., as a final consumer product, an ingredient for further manufacturing, a raw agricultural crop or commodity, etc.).

### **Segregation**

The system of facilities, equipment, and procedures through which an Economic Operator keeps material bound to ProTerra Insecta certification physically separated from GMO material; and ProTerra Insecta certified product physically separated from non-ProTerra Insecta certified material from the point of receipt to the point of transfer to the next Economic Operator in the chain of custody.

**Smallholder**

A farm where most labour is provided by family members and the property and its operations are not owned by a company.

**Stakeholder**

A party with an interest or concern in a given programme, event, supply chain or system.

**Strip test**

Immunologically based screen-testing strip devices, that analyse the protein expressed by the DNA, and are used as a rapid and on-site method for identification of GM seeds or crops.

**Supplier**

Any party from whom an input or service is obtained.

**Traceability**

The system of documentation that enables any economic operator in the supply chain to trace the product or raw material or a derivative thereof back through the supply chain.

**Trade Unions**

An organisation of individuals associated through type of employment, or labour. These organisations may be comprised of individual workers, professionals, past workers, or the unemployed. The most common, but by no means only, purpose of these organisations is “maintaining or improving the conditions of their employment.”

**Worker**

This term refers to direct employees of an organisation, subcontractors working at or for the organization at the organisation’s premises. It also includes all permanent and temporary members of the organisation’s labour force.

## **ANNEX A - Certification Protocol exceptions**

The valid version of ProTerra Certification Protocol (available at ProTerra website) is fully applicable to ProTerra INSECTA with exception to:

- a) Qualifications of Scheme Manager, Auditors and Lead Auditor item 4.4 that should read:

### **4.4 Qualifications of Scheme Manager, Auditors and Lead Auditor**

In this section are described the minimum qualification requirements in terms of training and experience to ensure that auditors and scheme managers working for Certification Bodies recognized by ProTerra consistently possess the knowledge, skills and experience to consistently, comprehensively, and transparently implement the ProTerra Certification System and carry out evaluations against the ProTerra Insecta Standard.

#### **4.4.1 Scheme Manager**

The Scheme Manager is the person within the Certification Body that is responsible for:

- a) Implementation of the ProTerra requirements specified in the ProTerra Certification Protocol;
- b) Ensuring and supervising that all auditors meet the qualification requirements of ProTerra and conduct the audits as specified in the ProTerra Certification Protocol;
- c) Making the final certification decision and ensuring that the final certification decision, certificate and audit report are handled according to the requirements as specified in the Protocol;
- d) Attending ProTerra training when necessary and remaining up to date with ProTerra Certification System procedures, requirements, and documentation.

The Scheme Manager has to be competent in the auditing process of the ProTerra Standard. This includes the following minimum qualification requirements:

- a) Advanced post-high school education degree in the area of agriculture, chemical technology, or food-related disciplines;
- b) Successful completion of an ISO 9001/14001 lead auditor course or other training/experience deemed equivalent and acceptable by the ProTerra Foundation;
- c) Demonstrable knowledge and experience of food/feed production and processing systems including food/feed safety requirements: Hazard Analysis and Critical Control Points (HACCP) and good hygiene practices;

d) Completion of the ProTerra training on the practical application of the ProTerra Standard, ProTerra Insecta and ProTerra Certification Protocol;

e) Working language skills in English for verbal and written communication to ProTerra, and working language skills suitable for verbal and written communication with the auditee and the auditee's relevant stakeholder groups;

f) The technical manager shall have audit skills and audit experience with certification in the food and feed industrial areas covering the following issues:

- Labour Conditions and social aspects
- Health and Safety;
- Environmental protection and management;
- Non-GMO production, if applicable;
- Legal Framework for production of the commodity being certified;
- Traceability / Chain of Custody systems, and
- Food/feed safety requirements: Hazard Analysis and Critical Control Points (HACCP) and good hygiene practices;

The proof of the qualification requirements for scheme managers needs to be handled as part of the Certification Body approval process. Exceptions to any of these requirements must be approved and registered in advance by the ProTerra Certification and Standard Committee.

#### **4.4.2 Auditor**

The Auditor is the person within the Certification Body that performs the on-site audit. As such the Auditor is responsible for:

a) Performing audits of producers and/or producer groups in compliance with the ProTerra Standard;

b) Performing audits of organisations in compliance with the ProTerra Insecta;

c) Producing accurate and timely audit reports as specified in the ProTerra Protocol;

d) Staying up to date with the ProTerra Certification System procedures, requirements, and documentation.

The auditor has to be competent in the audit of the ProTerra Standard and ProTerra Insecta. This includes the following minimum qualification requirements:



- a) Post high school education degree in the area agriculture, chemical technology, or food/feed-related disciplines;
- b) Proof of participation and completion of the ProTerra auditor training, including training on ProTerra Insecta, on the practical application of the ProTerra Standard and Certification Protocol;
- c) Working language skills in English for verbal and written communication to ProTerra, and working language skills suitable for verbal and written communication with the auditee and the auditee's relevant stakeholder groups;
- d) Demonstrable knowledge and experience of food/feed production and processing systems including aspects related to food safety and to the legal framework for production of the commodity being certified;
- e) Supervised period of training in practical auditing by a qualified lead auditor with at least 15 days' audit experience achieving a minimum of 2 (two) audits at different organisations;
- f) Have work experience and solid knowledge on the reality of the country where the audit is to take place;
- g) Contract with a ProTerra approved Certification Body.

#### **4.4.3 Lead Auditor**

The Lead Auditor is the person within the Certification Body that is the leader of the audit team. The Lead Auditor has to be competent in the audit of the ProTerra Standard, ProTerra Insecta and ProTerra Certification Protocol. In addition to the required qualification of an auditor (see Auditor section), the lead auditor fulfils the following extra requirements and qualifications:

- a) Demonstrable experience in the auditing processes operating with Mass Balance Tracking and Tracing;
- b) Successful completion of an ISO 9000/9001 lead auditor course;
- c) Food/feed safety requirements: Hazard Analysis and Critical Control Points (HACCP) and good hygiene practices;
- d) Non-GMO production, if applicable; and
- e) The lead auditor should have performed a minimum of 5 (five) audits as a team member and is witnessed in his position as a team leader by the Scheme Manager or another Lead Auditor of the Certification Body during a ProTerra audit before qualification as lead auditor in the ProTerra scheme.

In addition to the above and in the understanding that not all of the above qualifications maybe with one auditor, the audit team shall be a multi-disciplinary team composed under the responsibility of the lead auditor and approved by the Scheme Manager. The team as a whole needs to be qualified in each of the individual fields of experience as specified below. The audit team shall have audit skills and audit experience with certification in food and feed and/or industrial areas covering the following issues:

- Labour Conditions and social aspects;
- Health and Safety;
- Environmental protection and management;
- Non-GMO production, if applicable;
- Legal Frame for production of the commodity being certified;
- Traceability / Chain of Custody systems, and
- Food/feed safety requirements including Hazard Analysis and Critical Control Points (HACCP) and good hygiene practices;

Exceptions to any of these requirements must be approved and registered in advance by the ProTerra Certification and Standard Committee.

Document Revision History			
Title	Date	Pages	Type of Document
ProTerra Standard on Social Responsibility and Environmental Sustainability for Producers of Insects as Food and Feed - PROTERRA INSECTA – DRAFT	10 August 2021	1-32	"Normative document and code of practice for the certification of responsible production of insects for food and feed - Initial version for public consultation CONTROLLED COPY."
ProTerra Standard on Social Responsibility and Environmental Sustainability for Producers of Insects as Food and Feed - PROTERRA INSECTA Version 1.0	11 March 2022	1-51	"Normative document and code of practice for the certification of responsible production of insects for food and feed - CONTROLLED COPY."