



Virtual Awareness Programme on African Standards and certification schemes for Edible Insects for food and feeds, 14TH April 2026.

Technical Requirements for Edible Insect Products: Product Specifications, Packaging and Labelling

**Dr. Zainab Umar
Secretary ARSO PC 03**





Introduction

- ❖ Africa's population is projected to reach 2.5 billion by 2050. Traditional protein sources (beef, soy, fishmeal) are becoming ecologically and economically unsustainable.
- ❖ The edible insect sector is no longer a niche market; it is a high-growth industrial sector intersecting food, feed, and fertilizer.
- ❖ Moving from unregulated wild harvesting to standardized mass rearing to formalize the insect value chain.
- ❖ lack of "Technical Requirements" (Specifications, Packaging, Labelling) has limited market access and investor confidence.
- ❖ The launch of 15 Harmonized ARSO Standards in 2025 is set to create a unified regulatory "passport" for insect products, facilitating seamless cross-border trade under AfCFTA.
- ❖ Establishing a framework for safety, quality, and global competitiveness that empowers African SMEs and protects African consumers. De-risk the value chain, ensuring African insect products meet global safety standards.
- ❖ Providing a scalable, export-ready enterprises that contribute to GDP and regional trade.





Edible Insects in the African Value Chain

- ▶ Insect-Economy in Africa, moving beyond technical standards to demonstrate how edible insects function as a high-impact catalyst for human development and economic self-reliance.
- ▶ Insect farming is a cornerstone of a circular bioeconomy in Africa, converting biowaste into high-value outputs.
- ▶ Utilization of agricultural and organic waste (e.g., fruit peels, grain husks) as rearing substrate.
- ▶ farming and mass-rearing techniques, which increase output by up to 40%.
- ▶ Transformation into diverse products such as high-protein flours, oils, snacks, and fortifying ingredients.





Edible Insects in the African Value Chain

- ▶ Human food- Providing Nutrient-dense supplements for undernourished populations.
- Animal Feed- Sustainable replacement for expensive imported fishmeal and soy.
 - ▶ Frass" (insect manure) as a potent organic fertilizer to improve soil health.
 - ▶ Insect protein is highly digestible (67–98%) and contains all essential amino acids, rich Iron, Zinc and High Chitin content.
 - ▶ The Middle East and Africa insect protein market is valued at \$12 billion (2025/2026 data), driven by sustainable food demand.
 - ▶ Large-scale adoption of Black Soldier Fly (BSF) farming could generate \$211 billion annually, equivalent to ~2.21% of Africa's total GDP.





Technical Requirements for Edible Insect Products:

- ❖ Provide a comprehensive roadmap for compliance with the new African regulatory landscape for edible insects.
- ❖ These standards bridge the gap between traditional wild harvesting and modern commercial mass rearing.
- ❖ ARS GL 2052 serves as the primary regulatory framework guideline for safeguarding quality, safety, and environmental requirements across .
- ❖ Strict adherence to these 15 standards is the only way to ensure consumer safety, prevent allergen-related legal risks, and achieve "Standardization Mark" certification.





List of Specific ARSO Standards

These standards focus on safety, environment, and specialized products:

1. AR PAS 1291-1:2025, Edible insects — Part 1 Edible insects' products — Specification
2. AR PAS 1291-2:2025, Edible insects — Part 2 Products containing edible insects — Specification
3. AR PAS 1261:2025, Edible insects — Edible crickets — Specification
4. AR PAS 1292:2025, Edible insects — Good farming and wild harvesting practices
5. AR PAS 1293:2025, Insect products for animal feeds - Code of good practice in production, processing and use in animal feeding
6. AR PAS 1294:2025, Edible insects — Good agricultural practice on cricket farming
7. AR PAS 1295:2025, Edible insects — Good hygiene practices for insect farming and processing - Code of practice
8. AR PAS 1297:2025, Dried insect products for compounding animal feeds —





List of Specific ARSO Standards

9. AR PAS 2050:2025, Edible insects - Edible dried caterpillars — Specification
- 10 ARS 1296:2025, Edible insects — Safety of foods based on edible insects
11. ARS 2051:2025, Rearing structures and equipment for insects for food and feed — Code of practice
- 12.ARS GL 2052:2025, Regulatory framework guideline for edible insects and insects for feed in Africa
13. ARS TR 1290:2025, Glossary of edible insects and products - Identification, preparation and processing
14. ARS TR 2053:2025, Compiled inventory of edible insects for human consumption and insects for animal feeds in Africa
- 15.ARS TR 2054:2025, Insect value-added products — Procedures, hygiene, quality, safety, environmental concerns and standards for trade

Note: PC-03-01-2026, Insect-Based Products in Food and Feed Fortification - Guidelines





Product Specifications & Quality Requirements

Products must meet strict physical and chemical parameters defined in PAS 1291.

- Physical Forms- Allowed as whole insects (dried/fried), granulated, or powder/milled forms.
- Moisture Content- Maximum limit of 12% m/m to prevent spoilage.
- Protein Content- Minimum of 15% m/m for processed insect products.
- Purity- Must be free from adulterants, extraneous materials (like sand), pests, and objectionable odours.
- Additive Compliance- Only food additives permitted under Codex Alimentarius (STAN 192) or local equivalents are allowed.





Technical Specifications & Safety Limits

Adherence to ARS 1291 and ARS 1296 ensures continental market access:

- Heavy Metals- Strict limits under ARS 1291 include Lead (0.5 mg/kg) and Arsenic (0.1 mg/kg) and Cadmium (0.4 mg/kg).
- Mycotoxins- Total aflatoxin must not exceed 10 µg/kg.
- Moisture Control- Maximum 12% moisture to ensure shelf stability.
- Hygienic Rearing- ARS 53 and PAS 1295 mandates controlled environments to prevent contamination.
- Microbiological Standards- Salmonella Must be absent in 25g, E. coli: Less than 10 CFU/g, Listeria monocytogenes: Must be absent in 25g.





Packaging & Labelling Compliance

Under PAS 1291 part 1 and 2 packaging and labels must include-

- Packaging must safeguard the product's integrity throughout its shelf life.
- Material- Must use food-grade packaging materials that are durable and non-reactive.
- packages must be screened for seal failures to prevent contamination.
- Packaging must protect against moisture, air, and light to maintain the required < 12% moisture content.
- Fill of the container shall be in accordance with legal metrology requirements.





Labelling and Consumer Information

- Labels must be clear, accurate, and in a language understood by the local market (e.g., English).
- Dual Naming- The common name and biological (Latin) name in brackets.
- Product Name- Must explicitly state the form, e.g., "Dried Whole Crickets" or "Milled Grasshopper Powder".
- Allergen Warning-Mandatory statement regarding chitin and cross-reactivity with shellfish/crustacean and dust mite allergens.
- Traceability- Labels must include the batch number, date of manufacture, and expiry/best-before date.
- Usage & Storage-Directions for use (e.g., "rehydrate before frying") and specific storage instructions (e.g., "store in a cool, dry place").





Economic & Value Chain Integration

- Intra-African Trade- Harmonized standards remove technical barriers, allowing a producer from Uganda to easily export to Nigeria. Etc.
- Circular Economy- Using organic waste as substrate reduces costs and environmental impact.
- Investment Readiness- Standardized products attract higher-tier retailers and international investors.



Conclusion

"The future of food in Africa is sustainable, safe, and scientifically grounded. By adopting these 15 standards, we are not just following a regulation—we are unlocking 15 million jobs and a \$2.6 billion protein market. Let us lead the global insect-economy from Africa, for Africa."



Thank you!

CONSTITUTION
OF THE AFRICAN REGIONAL ORGANIZATION
FOR STANDARDIZATION