

Good Manufacturing Practices in Edible Insect Processing

FROM FARM TO MARKET

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Africa's edible insect sector is expanding, but safety, consistency and trust determine whether products can scale into formal food, feed, and fertilizer markets.

Food safety

Control contamination, handling hygiene, time-temperature steps and moisture so the product stays safe and suitable.

Consistent quality

Standardized work reduces batch-to-batch variation in flavour, colour, particle size, dryness and shelf stability.

Market trust

GMP is the base for HACCP, certification, buyer confidence, audits and repeat business.

What GMP gives the sector

Clear procedures | trained staff | clean facilities | traceable batches | better compliance with standards

What GMP means in practice

Operational discipline that turns a promising insect business into a safe, repeatable and auditable process.

Core building blocks of GMP

- Documented SOPs for each critical activity
- Approved inputs and controlled raw material handling
- Cleaning, sanitation and preventive maintenance
- Training, supervision and personal hygiene
- Records that prove what was done, when and by whom



Practical test

If a processor cannot explain the step, control the step, clean the step and document the step, the operation is not yet GMP-ready.

For edible insects, hazards usually come from four directions: biology, chemistry, physical contamination and allergens.

Biological

- Bacteria
- Viruses
- fungi and parasites can enter through poor handling, dirty water, contaminated equipment or inadequate kill steps.

Chemical

- Unsafe substrates,
- pesticides
- heavy metals
- veterinary chemicals
- detergents or lubricants can contaminate the product.

Physical

Foreign matter such as:

- plastic
- metal
- wood splinters
- stones
- packaging fragments must be prevented and removed.

Allergens

- Crustacean-like cross-reactivity is a real concern
- labels and consumer advice matter.

GMP response: approved substrates • hygienic design • validated heat treatment • rapid drying • lot coding • allergen-aware labeling

African and international standards landscape

GMP as the Foundation for Standards, Certification and Market Trust





Safe insects begin with a safe substrate, a safe environment, and clean harvesting practices.

At the farm

Approve the substrate source; keep feed/storage dry; control pests and access; segregate waste; monitor water; keep batch and mortality records.

At harvest

Harvest at the correct life stage; use clean tools and trays; avoid contact with dirty substrate; move quickly to washing or inactivation.

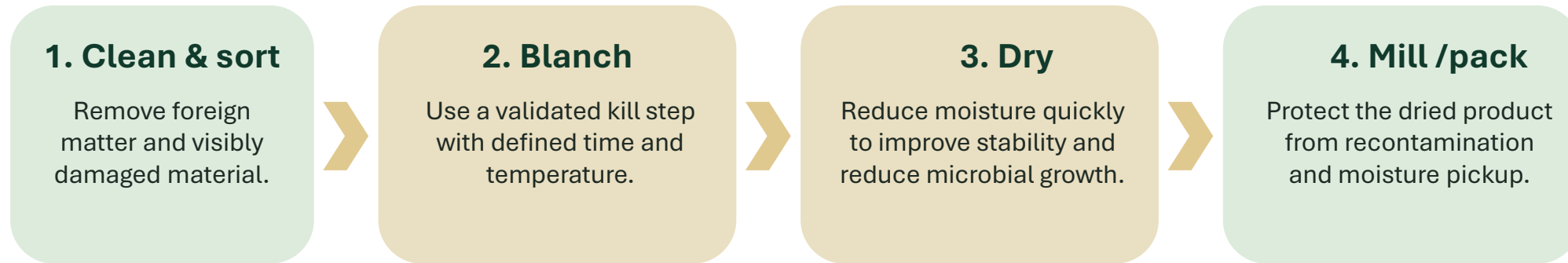
Do not allow

Unverified substrates, chemical exposure, dirty containers, mixed batches, or harvest procedures that re-contaminate your insects.

Records to keep

Substrate source, batch ID, rearing dates, harvest date, harvest quantity, operator, corrective actions, and destination lot.

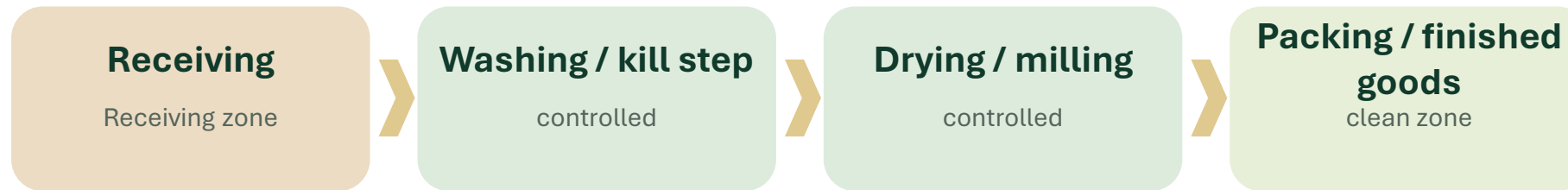
This is where most safety, stability and quality failures either get removed or get locked into the finished product.



What operators must monitor every batch

Time and temperature of the kill step | drying temperature and duration | final moisture target | sieve/metal control | packaging seal integrity

A small processor can still be GMP-compliant if the layout is simple and easy to clean.



Facility essentials

Smooth cleanable surfaces; handwashing point; water control; drainage; waste removal; pest exclusion; clear separation of raw vs clean activities.

Personnel essentials

Protective clothing; hand hygiene; no jewelry in production; health screening where needed; clear visitor rules; routine refresher training.

Management essentials

Cleaning schedules; maintenance logs; chemical control; calibration; verification checks; corrective-action records and supervision.



<https://ecoeat.com/product/ecoeat-100-cricket-powder-flour/>

Storage controls

Keep product dry, cool and protected from pests. Monitor humidity exposure, stock rotation and package integrity. Rework rules must be clear.

Label essentials

Product name, lot/batch, processor identity, net weight, date coding, storage instructions and allergen information as applicable.

Farm lot

substrate + batch

Harvest lot

date + operator

Process lot

kill step + dry

Packed lot

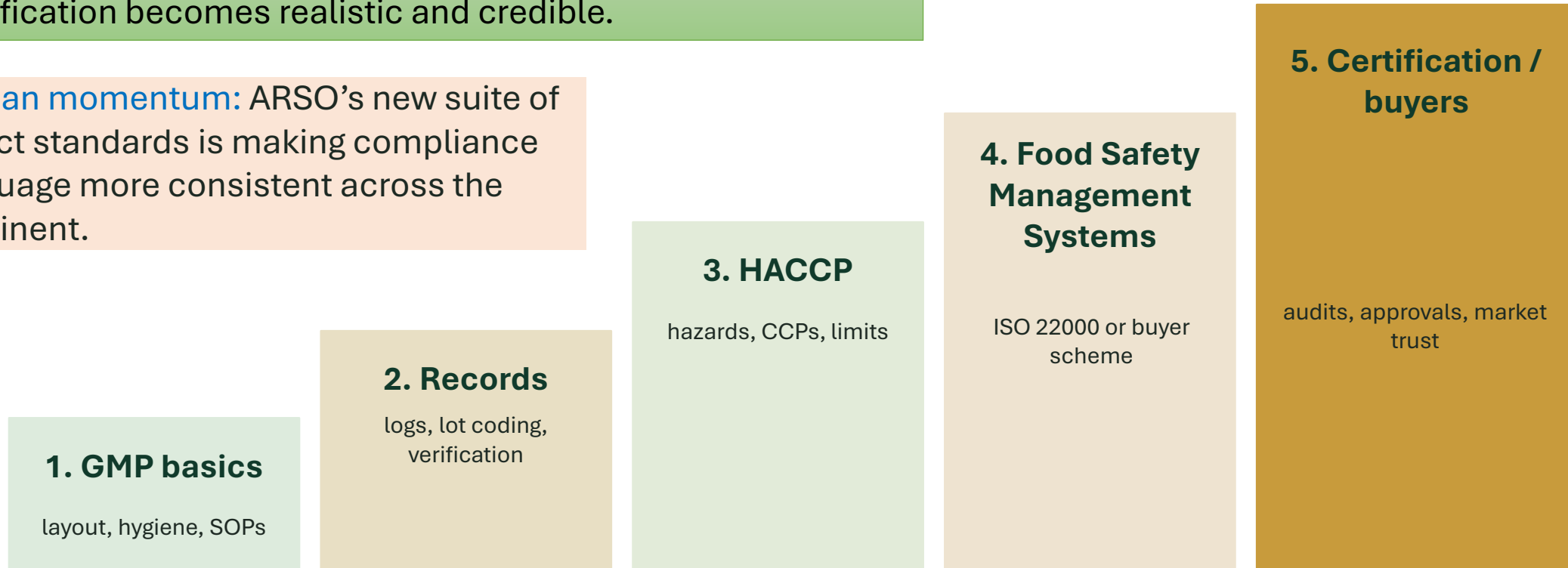
label + release

Traceability is what allows recall, investigation and buyer confidence.

Certification works best when it follows operational maturity. Usually, the journey follows the order:

For the processors: do the basics well every day, then formal certification becomes realistic and credible.

African momentum: ARSO's new suite of insect standards is making compliance language more consistent across the continent.



If you remember only four messages, remember these:

- GMP is the foundation of edible insect safety, quality and consistency.
- The critical controls are safe inputs, hygienic handling, validated processing, dry storage and traceable lots.
- Certification becomes meaningful only after daily GMP routines are working.
- Africa's emerging standards create a strong opportunity for processors who build compliant systems early.



Safe insects = trusted products = stronger markets

Thank you