Food safety

Canning Technology: Seaming and Sterilisation

Two days to master the two operations that make a can safe: a hermetic seam and a sufficient thermal process. For fish, vegetable and ready-meal canneries, the course covers metal packaging, seam inspection by teardown, retorts, the sterilisation schedule, sterilisation value, cooling and stability tests, with exercises on your seamers and your records.

Duration : 2 days

Objectives

1. Explain the hazards specific to canned foods, including Clostridium botulinum, and the principle of canning
2. Inspect a double seam by teardown and measurement, and interpret the results against the can maker's specifications
3. Describe how the main types of retort work and their critical points
4. Use a sterilisation schedule, the sterilisation value and cycle records
5. Handle a sterilisation or seam deviation and the stability tests of batches

Programme

Day 1 — morning

• Canning: principle, hazards, Clostridium botulinum, commercial sterility

• Metal packaging: tinplate, aluminium, lacquers, two-piece and three-piece cans, easy-open ends

• Receiving and storing cans and ends: checks, defects, handling

• Filling: headspace, weight, filling temperature

Day 1 — afternoon

• The double seam: first and second operation, seamer settings

• Seam dimensions: hooks, overlap, tightness, thickness, height

• In-line visual checks and teardown: frequencies, method, record

• Exercise: teardown and measurement of seams taken from your line

Day 2 — morning

• Retorts: steam, superheated water, water spray, rotary; heat distribution

• Sterilisation schedule: F0 sterilisation value, critical factors, establishment by a person competent in thermal processing

• Running the cycle: come-up, hold, cooling, chlorinated cooling water, records

• Post-process recontamination: handling wet cans, conveyors, drying

Day 2 — afternoon (workshop)

• Stability tests: incubation, sampling, reading results

• Can defects: swelling, leaks, corrosion, deformation, and their causes

• Sterilisation or seam deviation: hold, evaluation, decision on the batch

• Workshop: review of your seam and sterilisation records, knowledge test

Teaching methods

• Presentations based on cut-open seams and defective cans
• Teardown and measurement of seams on your line, with your inspection tools
• Reading sterilisation curves and your retort records
• Case study of a sterilisation deviation, from detection to decision
• Quiz at the end of the first day and final test on the second day

Assessment and documents

Mid-course quiz, knowledge test and a practical check of a seam teardown, reaction survey at D+1. Numbered certificate verifiable online for each participant; training report and observations on your records handed to the company.

Bilingual materials for every participant; each classroom course comes with its digital twin on OmniLearn.

Good to know

For exporting canned goods to the United States, the day “Acidified and Canned Foods (21 CFR 114/113)” presents the FDA requirements. The basics of thermal validation are covered in “Process Validation: Thermal, pH, aw”.

Practical information

Duration	2 days
Audience	Seamer setters, retort operators, quality, production, maintenance
Prerequisites	Knowledge of the site’s HACCP plan
Group size	Groups of 6 to 12 participants, in-company
Format	In-company, face to face on your site
Language	French, Darija or English; bilingual materials
Funding	OFPPT special training contracts (TFP), GIAC, Maroc PME: we prepare the applications with you, at no extra cost.
Programme customisation	Programme adapted to your procedures, your equipment and your audience

Frequently asked questions

For which types of canned food?
Fish, vegetable, meat and ready-meal products in metal cans. The sterilisation principles also apply to jars and sterilised flexible packaging; seaming, however, is specific to metal cans.

Who should attend?
Seamer setters, retort operators, quality inspectors and their supervisors. The first day also interests maintenance and packaging purchasing.

Do we need to provide equipment?
We use your seam inspection tools and your records. If your site does not yet have teardown equipment, we tell you before the session what is needed.

What does it bring to an already certified cannery?
At a GFSI audit, seaming and sterilisation are examined closely, as they are often CCPs. The course strengthens the competence of the people who monitor them and the quality of the evidence presented to the auditor.