Food safety

Process Validation: Thermal, pH, aw

One day to demonstrate that a step in your process destroys the targeted hazards or prevents their growth: cooking, pasteurisation, sterilisation, acidification, drying, salting. Participants learn to tell validation, verification and monitoring apart, to use heat penetration, pH and water activity data, and to write a validation file the auditor can follow.

Duration : 1 day

Objectives

1. Distinguish validation, verification and monitoring of a control measure
2. Explain the concepts of D-value, z-value and pasteurisation or sterilisation value
3. Design a heat distribution and penetration study and interpret its results
4. Apply pH and water activity measurement and combine them in a hurdle approach
5. Write a validation file with its data, conclusions and revalidation conditions

Programme

Day 1 — morning

• Why validate: requirements of Codex, GFSI standards and buyers

• Validation, verification, monitoring: definitions and examples on a single step

• Thermal destruction kinetics: D-value, z-value, pasteurisation and sterilisation schedules

• Heat distribution and penetration studies: instrumentation, cold spot, number of trials

Day 1 — afternoon (workshop)

• pH: measurement, calibration, equilibrium pH, heterogeneous products

• Water activity: measurement, relationship with moisture content, effect of salt and sugar

• Hurdle approach: published data, predictive models, growth tests

• Workshop: validation plan for one step of your process and content of the file

Teaching methods

• Presentations based on real heat penetration curves

• Pasteurisation value calculation exercises on a spreadsheet

• Work on your cooking, acidification or drying records

• Use of your temperature loggers, pH meter or aw meter where available

• Final test with a validation case to comment on

Assessment and documents

Knowledge test in the form of a validation case to comment on, reaction survey at D+1. Numbered certificate verifiable online; training report and validation file template handed to the company.

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

Good to know

Canneries will find in “Canning Technology: Seaming and Sterilisation” a two-day deep dive on the retort. Microbiological basics are covered in “Applied Food Microbiology”.

Practical information

Duration	1 day
Audience	Quality, R&D, production, HACCP team
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

When must a process be revalidated?

At every change that may alter the effectiveness of the step: recipe, format, equipment, loading, supplier of a sensitive ingredient. The course teaches you to write these conditions into the file itself.

Are published data enough?

Sometimes, when they relate to a product and conditions comparable to yours. Otherwise, trials on your site are needed. The workshop helps you judge whether the chosen reference applies.

How does it differ from the HACCP course?

The HACCP course sets the CCPs and their critical limits. This day teaches you to prove that these limits are effective, with data and a file the auditor can read back.