CORE CONCEPT

Extruded and Dry Food Manufacturing Course: Pasta, Breakfast Cereals and Snacks

30 August – 3 September 2027
Barcelona - Eixample district four-star

Extruded and Dry Food Manufacturing Course: Pasta, Breakfast Cereals and Snacks

Ref: 2016_29693 **Date:** 30 August – 3 September 2027 **Location:** Barcelona - Eixample district four-star **Fees:** 23500 SAR

Introduction:

Extruded and dry food manufacturing for pasta, breakfast cereals and snacks is a 1-week course for production, process, quality and engineering staff in dry food plants, ending with an Extrusion and Drying Line Control Plan for a case plant. Plants lose throughput and shelf life when dough moisture, screw speed, die pressure, dryer humidity and fryer oil condition drift outside the window for target expansion and texture. Nominees already run, adjust or test pasta, cereal or snack equipment and learn through inspection walkthroughs of extruders, dryers and toasters. CoreConcept Training Center delivers this extruded and dry food manufacturing course.

Course Objectives:

- Specify semolina, corn grit, rice and oat inputs by granulation, protein and moisture and relate each to expansion, cooking quality and texture
- Configure single-screw or twin-screw cooker-extruders, preconditioners and dies using screw layout, specific mechanical energy and die pressure readings
- Run pasta presses and multi-zone dryers to hold dough hydration, drying temperature and humidity profiles that prevent checking and warping
- Control cereal flaking, toasting, snack frying and seasoning settings to reach target colour, crispness, oil content and coating adhesion
- Diagnose expansion, checking, bowl-life, rancidity and breakage defects and trace each one to a line variable or packaging weakness
- Build a line control plan that fixes critical windows, sampling checks and reaction rules for an extrusion or drying line

Target Audience:

- Production supervisors responsible for running pasta presses, extruders, dryers and packing lines across shifts
- Process technologists responsible for recipes, screw configurations and extrusion and drying set points
- Quality staff responsible for in-process moisture, density, colour and oil checks and finished product release
- Engineering staff responsible for the upkeep of screws, dies, dryer fans, fryers and seasoning equipment
- Product development staff responsible for scaling cereal and snack concepts from pilot trials to production

Course Outline:

Day 1: Dry Food Product Families, Raw Materials and Line Mapping

- Product Family Matrix of Pasta, Flaked, Puffed and Expanded Snacks
- Durum Semolina Granulation, Protein and Speck Count Specification
- Corn Grits, Rice Flour and Whole Oat Inputs for Cereals
- Water Activity and Glass Transition Map for Low-Moisture Foods
- Current-State Line Map From Bulk Silo to Case Packer

Day 2: Extruder Architecture, Screw Configuration and Die Design

- Single-Screw Versus Twin-Screw Cooker-Extruder Selection Criteria
- Screw Element Layout of Conveying, Kneading and Reverse Blocks
- Preconditioner Steam and Water Addition With Retention Time Checks
- Specific Mechanical Energy Calculation From Motor Torque Readings
- Bronze Versus Coated Pasta Die Inserts and Surface Texture

Day 3: Pasta Pressing, Pasta Drying and Cereal Flaking Operations

- Pasta Press Vacuum Mixer Hydration and Dough Moisture Targets
- Long-Cut Spreader and Short-Cut Knife Settings on Pasta Presses
- Multi-Zone Pasta Dryer Temperature and Relative Humidity Profile
- Grit Cooking, Lump Breaking and Flaking Roll Gap Adjustment
- Jet-Zone Toaster Bed Depth, Air Velocity and Colour Readings

Day 4: Expansion Control, Snack Frying, Seasoning and Shelf-Life Defects

- Expansion Ratio and Bulk Density Trends Against Barrel Moisture
- Continuous Fryer Oil Turnover and Free Fatty Acid Checks
- Seasoning Tumbler Oil Slurry and Powder Adhesion Rate Control
- Pasta Checking, Cereal Bowl-Life and Snack Staling Root Cause Tree
- Nitrogen-Flushed Packs, Oxygen Absorbers and Breakage Drop Testing

Day 5: Inspection Walkthrough and the Extrusion and Drying Line Control Plan

- Case Extruder Panel Readings Reviewed Against Recipe Set Points
- Case Pasta Dryer Log Review for Checking and Moisture Gradient
- Case Snack Line Seasoning Give-Away and Breakage Loss Ranking
- Critical Window Table for Moisture, Screw Speed and Temperature
- Extrusion and Drying Line Control Plan Completion

Skills You Will Gain:

- Extruder Screw Configuration
- Specific Mechanical Energy Analysis
- Pasta Dryer Profiling
- Flaking and Toasting Adjustment
- Fryer Oil Quality Management
- Seasoning Adhesion Control
- Water Activity Assessment
- Dry Food Defect Diagnosis

Why Attend This Course:

- Deliver an Extrusion and Drying Line Control Plan for a case plant to the plant manager and the technical manager for adoption
- Decide whether to adjust moisture, screw speed, die, dryer or toaster settings first when expansion, colour or checking drifts, using panel and laboratory data
- Avoid cracked pasta, soggy cereal, rancid snacks and over-seasoned packs that lead to complaints, rework and rejected batches
- Coach operators and shift leaders with the screw layouts, dryer profiles, fryer oil checks and defect trees developed during the course

Conclusion:

Back at the plant, the participant gives the plant manager, technical manager and engineering lead an Extrusion and Drying Line Control Plan for one pasta, cereal or snack line. Production uses its critical windows to set moisture, screw speed, dryer and toaster profiles for each product, quality uses its sampling checks for density, colour, oil and water activity, and engineering schedules screw, die and fryer inspections from it. After the first product run under the plan, the team should review expansion, checking, breakage and seasoning give-away results and tighten windows where results drift.

Frequently Asked Questions FAQ:

What should participants know before an extruded and dry food manufacturing course?

Participants should already run, adjust, test or maintain pasta, breakfast cereal or snack equipment. No engineering degree is needed. Bringing anonymised extruder panel readings, dryer logs or defect records helps them apply the walkthroughs to their own line.

How does extruded and dry food manufacturing training differ from a general food processing or bakery course?

It concentrates on low-moisture products formed by extrusion, pressing, flaking and frying: screw and die settings, pasta drying, toasting, seasoning and water activity. General food processing courses span heat treatment across many product types, and bakery courses cover dough, proofing and ovens.

Why does moisture matter so much in extruded and dry food manufacturing?

Moisture plasticises the mix inside the extruder, so it changes melt viscosity, die pressure, expansion and bulk density. After forming, final moisture and water activity decide crispness, breakage and shelf life, so plants measure moisture at the press, the dryer exit and the packer.

What do participants take back from the extruded and dry food manufacturing course?

Participants take back an Extrusion and Drying Line Control Plan for a case plant, with a raw material specification sheet, screw layout record, dryer and toaster profiles, a fryer oil check form and a defect tree they can adapt to their own lines.