



Flour Milling and Feed Mill Operations

Course: Grain Silos, Roller Milling and Pelleting



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Introduction:

Flour milling and feed mill operations, covering grain silos, roller milling and pelleting, is a 5-day course for production, quality and maintenance staff in flour mills, grain silos and feed mills that ends with a Mill Yield and Quality Improvement Plan for a case mill. Mills lose extraction, pellet quality and stored grain when aeration, roll settings and conditioning are run by habit. Nominees already operate, test or maintain milling equipment, and the course is taught through inspection walkthroughs of silo records, roller floors and pellet lines. CoreConcept Training Center delivers this flour milling course.

Course Objectives:

- Grade incoming grain for moisture, test weight, protein and foreign matter and decide acceptance, blending and silo allocation
- Control silo storage by setting aeration runs, reading temperature cables and overseeing insect monitoring and fumigation plans
- Set cleaning and tempering steps and adjust break rolls, reduction rolls, purifiers and plansifters to the target flour specification
- Calculate extraction rate and relate flour ash, colour and protein results and millfeed output to mill settings
- Run feed formulation, grinding, mixing, steam conditioning and pelleting to pellet durability and fines targets
- Inspect roller mills and pellet mills for wear, control dust and sanitation risks and track energy and yield KPIs in an improvement plan

Target Audience:

- Production staff responsible for running intake, cleaning, milling and packing sections on shift
 - Quality staff responsible for grain grading, flour and feed testing and product release
 - Silo staff responsible for grain receipt, aeration, temperature records and stock rotation
 - Maintenance staff responsible for roller mills, hammer mills, pellet mills and elevators
 - Feed mill staff responsible for batching, mixing, conditioning and pelleting lines
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Course Outline:

Day 1: Grain Quality, Intake Grading and Mill Current-State Assessment

- Wheat Class, Protein and Hardness Effects on Milling Value
- Intake Sampling Probe Pattern and Grading Sheet Records
- Moisture, Test Weight and Foreign Matter Intake Checks
- Mill Flow Diagram From Intake Pit to Packing
- Current-State Assessment Using Extraction and Downtime Records

Day 2: Silo Storage, Aeration, Pest Control and Grain Cleaning

- Silo Aeration Airflow Rates and Fan Run Strategies
- Temperature Cable Monitoring and Hot Spot Response Rules
- Stored Grain Insect Monitoring and Fumigation Planning Oversight
- Cleaning House Separator, Aspirator and Destoner Sequence
- Tempering Water Addition and Conditioning Time Calculation

Day 3: Flour Milling Flow, Extraction Rate and Flour Quality

- Break Roll Corrugation, Gap and Release Settings
- Plansifter Sieve Stacks and Stock Separation Checks
- Purifier Air and Sieve Adjustment for Semolina Grading
- Reduction Roll Smooth Grinding and Starch Damage Control
- Extraction Rate Balance With Flour Ash and Colour Tests

Day 4: Feed Formulation, Pelleting, Sanitation and Dust Safety

- Least-Cost Feed Formulation Using Millfeed By-Products
- Hammer Mill Grinding and Batch Mixer Uniformity Checks
- Steam Conditioning and Ring Die Pellet Mill Settings
- Pellet Durability Index Testing and Fines Return Control
- Grain Dust Explosion Prevention and Mill Sanitation Routines

Day 5: Inspection Walkthrough and the Mill Yield and Quality Improvement Plan

- Case Mill Walkthrough Against Silo and Cleaning Checklist
 - Roller Mill and Pellet Die Wear Inspection Findings
 - Energy per Tonne and Extraction KPI Review
 - Yield and Pellet Quality Loss Ranking for Case Mill
 - Mill Yield and Quality Improvement Plan Completion
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Skills You Will Gain:

- Grain Intake Grading
- Silo Aeration Control
- Tempering Calculation
- Roll Gap and Sifter Adjustment
- Extraction Rate Analysis
- Pellet Quality Control
- Grain Dust Hazard Control
- Mill Wear Inspection

Why Attend This Course:

- Deliver a Mill Yield and Quality Improvement Plan for a case mill to the mill manager and the quality lead
- Decide when to aerate, turn or fumigate a silo and which roll or die setting to change first, using records rather than habit
- Avoid heating grain, lost extraction, crumbling pellets and dust ignition events that waste stock and stop the mill
- Share grading sheets, roll setting logs, pellet test forms and inspection checklists with shift and maintenance colleagues

Conclusion:

Back at the mill, the participant hands the mill manager, quality lead and maintenance planner a Mill Yield and Quality Improvement Plan covering intake grading, silo aeration rules, roll and sifter settings, conditioning and pellet targets and wear inspections. Management uses it to decide which losses to tackle first and where maintenance budget and shift attention go. After the first full month of use, the team should compare extraction rate, flour and pellet test results, energy per tonne and unplanned stoppages with the plan and adjust settings where results diverge.

Frequently Asked Questions FAQ:

What should participants know before a flour milling and feed mill operations course?

Participants should already work in a flour mill, grain silo or feed mill in production, quality or maintenance and read daily shift and test records. No engineering degree is needed. Bringing anonymised extraction figures, silo temperature logs or pellet test results helps apply the walkthroughs.

How does flour milling and feed mill operations training differ from a general food processing course?

It concentrates on grain: intake grading, silo storage, cleaning, tempering, roller milling, extraction and feed pelleting. General food processing courses cover heat treatment, drying and packing across many products, and bulk solids courses cover conveying design, both touched here only briefly.

Why does extraction rate matter so much in flour milling and feed mill operations?

Extraction rate shows how much flour a mill obtains from each tonne of cleaned grain. Small losses repeat across every tonne milled, while pushing extraction too high raises ash and darkens flour, so millers balance yield against flour specification using roll, sifter and purifier settings.

What do participants take back from the flour milling and feed mill operations course?

Participants take back a Mill Yield and Quality Improvement Plan for a case mill, with an intake grading sheet, silo aeration and temperature rules, roll and sifter setting logs, pellet test forms and a wear inspection checklist to adapt to their own mill.
