Training
Catalogue

Training and Innovation Centre for Agroindustry.

Innovations for a **better world.**

BÜHLER

Course **calendar.**

Basic principles of machine operations: Cleaning, Breaking, Winnowing	FR	20.04. – 24.04.2020
	EN	11.05. – 15.05.2020
Basic principles of machine operations: Alkalizing, Roasting, Grinding	FR	06.07. – 11.07.2020
	EN	10.08. – 15.08.2020
Use of machine interface	FR	28.05. – 29.05.2020
	EN	10.12. – 11.12.2020
Maintenance operations: Cleaning, Breaking, Winnowing	FR	20.07. – 24.07.2020
	EN	17.08. – 21.08.2020
Maintenance operations: Alkalizing, Roasting, Grinding	FR	21.09. – 25.09.2020
	EN	14.12. – 18.12.2020

Training **content.**

A comprehensive program that covers technological, operational and maintenance aspects. Our aim is to provide professionals at all levels with necessary tools to use their complete production systems optimally. Bühler training and Innovation center is here to accompany you throughout your personnel development journey.

Basic course

1. Basics of factory work
2. Basic principles of machine operations
3. Use of machine interface
4. Maintenance operations

Advanced course

5. Maintenance management
6. Production management

Expert course

7. Specific themes

1 Basics of **factory work.**

Raw materials: cocoa and its by-products

Cocoa is a fine commodity that can offer its full potential in terms of flavour and taste with special care before, during and after processing.

The module “Basics of factory work” will provide you with an introduction and overview spanning from the origins of cocoa to the absolute prerequesites to harness the beans’ full potential and a step by step description of the cocoa processing steps into liquor, butter and cake within a healthly and safe environment.

Course Content

- The various origins of cocoa and their respective biological features
- Physical and chemical processes occuring during the beans preparation before delivery to factory
- Merchant cocoa and beans quality control
- Beans quality impact on the transformation process
- The semi-finished and finished products derived from cocoa

Training Objectives

- Cite the various type of beans and explain the differences among them
- Cite the key factors impacting the beans’ quality
- Analyze the beans with the existing method to test their quality
- Explain the impact of bean quality on the transformation process
- Cite semi-finished and finished products of cocoa

Training gains: Overall view on the bean lifecycle and understanding the impact of bean quality on the process and finished products.

Duration: 1 day

Introduction to the transformation process and quality requirements

Course Content

Process description

1. Cleaning
2. Breaking and Winnowing
3. Bean roasting and its variants
4. Alkalizing
5. Nibs roasting and its variants
6. Grinding
7. Pressing
8. Tempering
9. Chocolate production

Training Objectives

- Understand and cite each step of the cocoa bean processing and to describe the whole process
- Recognize and differentiate the bean roasting process from the nibs roasting process
- Identify, in the factory, the various processing steps and navigate within the factory

Training gains: Succesfully enter the cocoa beans processing ecosytem and process.

Duration: 1 day

Health and safety at work

Course Content

- Health and safety regulations before, during, and after use of equipment for each machine
- Safety requirements in an industrial environment and in the factory
- Environmental and personnel health and safety principles

Training Objectives

- Cite safety norms and rules of operation for each machine
- Cite basic safety principles in a factory
- Cite and apply health and safety principles of the working environment along with those of the machines and tools in the factory
- Practice and apply food safety principles

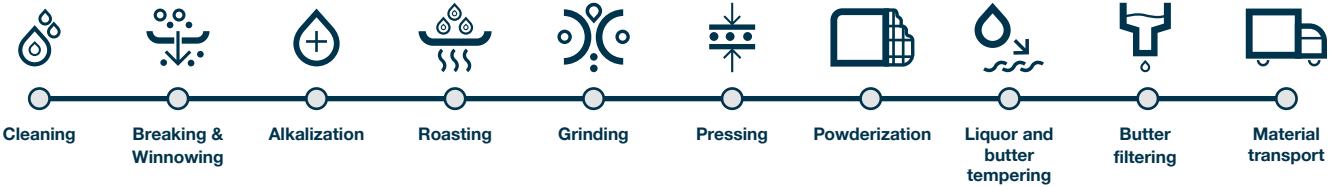
Training gains: Provide and instigate a HSE culture in the cocoa beans.

Duration: 1 day

2 Basic principles of **machine operation.**

This module will provide you with the necessary knowledge on basic principles of running equipment at optimal conditions for highest productivity, and defines the criteria for smooth operation for the entire team. These modules also covers 1st level maintenance activities required from the operators for a well maintained plant and a reduced downtime.

Process steps: Cleaning, Breaking and Winnowing, Alkalization, Roasting, Grinding, Press, Powder Production, Cocoa Mass and Butter Tempering, Butter Filtering, Material Transport.



Course Content

- Machine operations principles
- Adjustment of machine parameters
- 1st level maintenance
- Quality control

Training Objectives

- Explain operating principles for each machine
- Execute 1st level maintenance according to the health and safety rules within the prescribed timeframe
- Set up the equiment

Training gains: Increase machines availability and optimize their operation. Guarantee production quality.

Duration: 1 or 2 days per section

3 Using of machine **interface.**

Interpreting signals and data on machine control

Operating a cocoa processing plant requires the ability to read and interpret signals from the machines during the process. These signals, if well understood and tightly monitored provide great indication on the process efficiency and the expected output quality. The module “Use of machine interface” brings this knowledge to your operations and maintenance teams.

Course Content

- List of data and signals (electricity, pressure, temperature and default message) for each machine and their interpretation
- Diagnosis starting from the data

Training Objectives

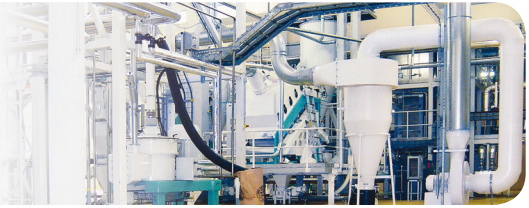
- Interpret messages and signals on the control panel
- Use data and signals to monitor the process and for machine maintenance

Training gains: Increase diagnostic capabilities of the team and improve production quality.

Duration: 1 day

4 Maintenance **operations**.

Raw materials: cocoa and its by-products



A well maintained equipment ensures reliable operations with reduced downtime. This module covers in depth preventive and curative maintenance operations for each of your equipment. Knowledge is transferred through theoritical and practical cases.

Course Content

- Preventive maintenance activities
- Curative maintenance activities

Training Objectives

- Execute the required and prescribed preventive maintenance
- Execute repairs appropriately

Training gains: Increase machine availability and optimise operations and yield.

Duration: 1 or 2 days per section

5 Maintenance **Management.**

Stock management
(Computer Assisted Maintenance Management)

Having the required knowledge in maintenance operations, the maintenance management module makes a deep-dive into the organisation of a well functioning maintenance team by transfering knowledge in stock management, maintenance planning and appropriate KPI definition and monitoring.

Course Content

- Understanding of stock management principles and stock traceability with support software
- Establishing critical stock level
- Relation between Order - Stock - Availability
- Decision data and value optimization

Training Objectives

- Apply best practices in preventive and curative maintenance to perform a good planification
- Manage supply and stock replenishment
- Analyze data from all sources adequately for decision making

Training gains: Control maintenance costs.

Duration: 2 days

Maintenance planification

A well put and monitored maintenance plan is one of the key success factor to improve efficiency thanks to the reduction of unplanned stop directly impacting the production and equipement wear. This course will provide tools and methodologies to work effectively and independently while optimzing your uptime hours.

Course Content

- Introduction to Total Productive Maintenance (TPM)
- Establish checklist
- Establish maintenance planning
- Establish KPI analysis file and their usage
- Preparation of periodic and systematic stop
- Preparation of maintenance budget

Training Objectives

- Prepare and execute a machine repair according to best practices
- For each machine, establish key maintenance operations, including wear parts replacement

Training gains: Increase factory uptime.

Duration: 2 days

6 Production **Management.**

The production management module aims at providing you with tools and knowlegder to manage your production efficiently with respect to various trade-offs and control elements at your disposal — maximizing yield and optimizing energy consumption to produce a high quality product.

Course Content

For each section of the production, the goal is to understand and master:

- Main goals and issues
- Key principles to operate
- Methods to establish production optimisation solutions
- Monitoring of KPI and continuous improvement

Training Objectives

Identify with a systematic approach productivity, quality and cost levers to optimize the production process

Training gains: Increase productivity and yield. Ensure first pass quality and control production costs.

Duration: 1 or 2 days per section

7 Specific **themes.**

Food safety (HACCP implementation)

The food safety risk management module provides you with a structured approach and method to apprehend food safety risk in your plant. This course covers topics related to risk assessment, gap analysis, action and safety measures definitions, action plans, and monitoring.

Course Content

- Food safety principle and requirement in a competitive consumer food environment
- Quality control vs HACCP
- Prerequesite programs
- HACCP: principles, milestones, study, planning and monitoring of Critical Control Points (CCPs)

Training Objectives

Establish a food safety risk manangement system by:

- Implementing the adequate programs
- Building a HACCP plan
- Controlling and monitoring the system

Training gains: Avoid product default and recall or lawsuits. Disseminate a food safety risk management culture in the factory.

Duration: 2 days

Burners

Burners are a critical and high energy consumption components having a direct impact on the yield and the energy cost. The module makes a deep dive respect to operation and the critical factor for an optimal use. With this module you will learn and understand the impact of the settings on your equipment and the product.

Course Content

- Blowing burner: Mode of operation and optimization
- Radiant burner: Mode of operation and optimization

Training Objectives

- Explain how the burners function and safety circuits
- Perform adequate setting and cite the impact on process and product

Training gains: Control and reduce energy costs.

Duration: 1 day

Bühler Côte d'Ivoire

Lot 443-445, Rue Paul Langevin
Opposite of „Au Petit Bouddha“
Marcory, Zone 4C Abidjan, Ivory Coast

T +225 21 24 37 87

Contacts
Kevin Katy
Head of Cocoa Technology - WAF

T CI: +225 59 99 38 99

kevin.katy@buhlergroup.com
cfia@buhlergroup.com
www.buhlergroup.com

DC 60045 en 0820 Z&B 201663