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Wheat milling for operators



What you will learn

You will learn how to make a mill efficient - about basic milling processes, machine design and plant operation. But this isn't just theoretical training. You spend two days at our fully operational school mill to learn cleaning, conditioning and milling techniques. You also have access to some of the latest milling machines for a close-up look at how they work. You will also learn about lab analysis and cereal science – the science behind different grains, particularly wheat, everything from intake to the finished product.

Required skill level

Limited to moderate working experience in a flour mill. This course is well-suited for mill operators who are new to milling.

Price

CHF 4'450.00 per person / 2 weeks

What is included

- Invitation letter for visa application
- Hands-on access to some of the latest milling machines
- 2 days of practical experience at our fully operational school mill
- Printed training documents
- One social event with dinner each course week
- Unlimited access to Wi-Fi and Internet

Milling for operators

Detailed program week 1

Monday

Welcome at the Milling Academy

- Formalities and administrative matters
- Bühler factory visit, including research centers

Cereal science

- Cereal varieties and their application for human food
- Corn/maize, rice, wheat, barley, sorghum, durum, millet, oats, rye, triticale

Tuesday

Wheat intake/storage

- Quality control at the wheat intake, various flow sheets
- Machines of pre-cleaning section: drum sieve, various magnets, separator, aspiration channel etc.

Customer service

- Possibilities and solutions

Mechanical conveying equipment

- Design features and working principle of
- Elevator, chain conveyor, screw conveyor, belt conveyor

Safe storage of wheat

- Dust explosions
- Infestation control, pests in grain

Weighing and dosing

- Overview of process equipment

Social event in the evening

Wednesday

Milling machines I + II, design and function of:

- Roller mills
- Plansifter
- Purifier

Bran finisher and detacher laboratory analysis and their interpretation

Investment decision

- Aspects to consider when investing in a plant or machines

Thursday

Visit of a flour mill

In-depth mill flow sheet technology

- Flow sheet design for various types of wheat and flour qualities
- Flow sheets with and without purifiers
- Application of 8-roller mill in flow sheets
- Application examples of detachers, bran finishers, germ recovery systems

Process control and automation:

- Study of function and practical work on :
- Continuous NIR measuring units
- Various control system options, WinCos

Weighing and dosing

- Study of function and practical work on scale control unit, Scales and Transflowtron

Mill design

- Introduction to plant design in flour mills

Friday

Working hours

08.00 – 09.30 / 10.00 – 12.00
13.15 – 15.00 / 15.15 – 17.00

We reserve the right to adjust the schedule for organizational reasons.



Milling for operators

Detailed program week 2

Monday

Cleaning section practical

- Clean and condition wheat for school mill practical

Aspiration technique

- Explanation of systems and application
- Layout and design of an aspiration system
- Practical measurements of pressures, calculation of air velocities and volumes
- Working principles of filter and control unit
- Determination of required filter area

Mill pneumatics

- Principles, design criteria, adjustments, measurements

Tuesday

Practical work in school mill

- Break release
- Change mill to eight-roller-mill system
- Adjustment of the purification system
- Optimizing sifting efficiency, fighting bare dressing
- Check effects on flour and intermediate stocks with and without the impact Detachers
- Cleaning of the entire school mill
- Discussion of results obtained from practical milling

Wednesday

Value adding processes

- Hydrothermal and thermal treatment of flour
- Bran and germ stabilization
- Premix plants
- Material handling

Visit to Swissmill in Zurich

Thursday

Visit to Swissmill Zürich

Aspiration and pneumatic

- Basic knowledge about aspiration and pneumatic systems

Dinner

Friday

Finished product section

- Quality control/quality assurance equipment
- Control sifters, impact machine, sampling equipment, NIR on-line equipment, blow line air cooling system

Milling laboratory

- Explanations on various methods
- Visit to the milling laboratory

Ash curve analysis

- Study of an ash curve and discussion about the application
- Drawing of an ash curve

Working hours

08.00 – 09.30 / 10.00 – 12.00
13.15 – 15.00 / 15.15 – 17.00

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