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Wheat milling for head millers



What you will learn

You will learn the whole process, from grain to bread. Learn how to make a mill efficient - about advanced milling processes, machine design and plant operation. Learn about lab analysis and cereal science – the science behind different grains, particularly wheat. But this isn't just theoretical training. Spend a day at our fully operational school mill to learn cleaning, conditioning and milling techniques. Then experience the art of breadmaking, spending one and a half days at our Bakery Innovation Center. You will also get to know some of our latest milling machines, with close-up access to see how they work.

Required skill level

Good working experience of grain milling and solid theoretical background. This course is well-suited for shift millers, head millers and production managers with several years of experience.

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
- Practical experience includes one day at our fully operational school mill and 1.5 days at our in-house Bakery Innovation Center
- Printed training documents
- One social event with dinner each course week
- Unlimited access to Wi-Fi and Internet

Wheat milling for head millers

Detailed program week 1

Monday

Welcome at the Milling Academy

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

Common thread in milling

- Profound explanation of requirements from the perspective of the baker.

Wheat

- Details about wheat, varieties, kernel structure and properties

Cleaning section flow sheet technology

- New developments, flow sheets and equipment
- Application of Sortex in flow sheets

Tuesday

Cleaning section flow sheet technology (continued)

- Comparison of various surface treatments: peeling, pearling, scouring
- Special cleaning solutions to reduce contaminants posing a health hazard like ergot, mycotoxins etc.

Customer service

- Possibilities and solutions

Conditioning

- Tempering equipment, tempering philosophies, construction of conditioning bins to achieve first-in, first-out flow

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-rollermill in flow sheets
- Application examples of detachers, bran finishers, germ recovery systems

Friday

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

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.

Wheat milling for head millers

Detailed program week 2

Monday

Cleaning section practical

- Clean and condition wheat for school mill practical

Aspiration technique

- Explanation of systems and application
- Lay-out 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

Bakery Innovation Center – Bakery basics

- Overview of bread production processes
- Quality criteria of main ingredients and additives and their impact on baked goods
- Flour, water, salt, yeast, malt, soy flour, baking agents
- Dough preparation and baking processes
- Hands on exercise in the bakery

Dinner

Friday

Bakery Innovation Center - Bakery basics (cont.)

Starch damage

- Explanation of starch structure, influence of starch damage on water absorption, comparison of methods to achieve starch damage

Contamination in food

- Dangers and counter measures to avoid customer complaints

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