

Extend the shelf-
life of your flour

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Extend the shelf life of your flour

Factors which can influence the shelf-life of flour

- High amount of bacteria and molds
- Infested flour
- High content of moisture levels

Micro-organisms

- Micro-organisms includes bacteria, yeasts and molds
- High amount of bacteria in lighter particles for grain impurities
- Conditions for bacteria to grow

How can millers extend the shelf life of flour

In order to reduce contamination, one must know in which stage of the process it can be done most efficiently.

During the milling process, millers can achieve a substantial reduction of impurities

- Well designed cleaning flow diagram
- Pre selection of equipment
- Optimized process from an engineering approach
- Sound knowledge of sanitation

How can millers change the shelf life

How can the miller extend the shelf-life of flour

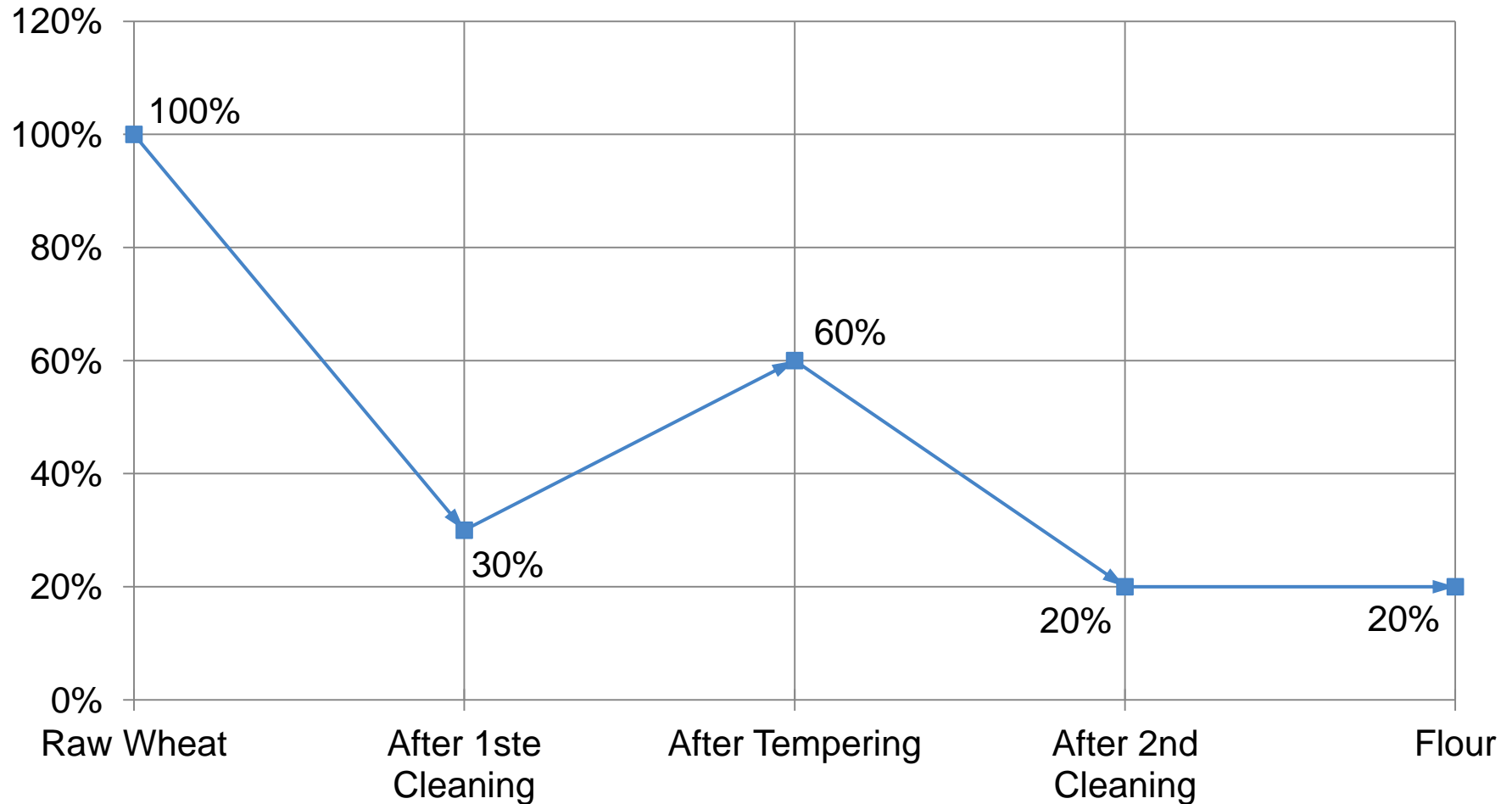
- Reduce the bacteria and molds
- Control the moisture level of grain
- Remove live infestation

Reduction of bacteria count during the milling process

- First cleaning reduce : 70%
- Dampening increase : 20-30%
- Second cleaning reduce : 30-50%
- Finish product : 2-20%

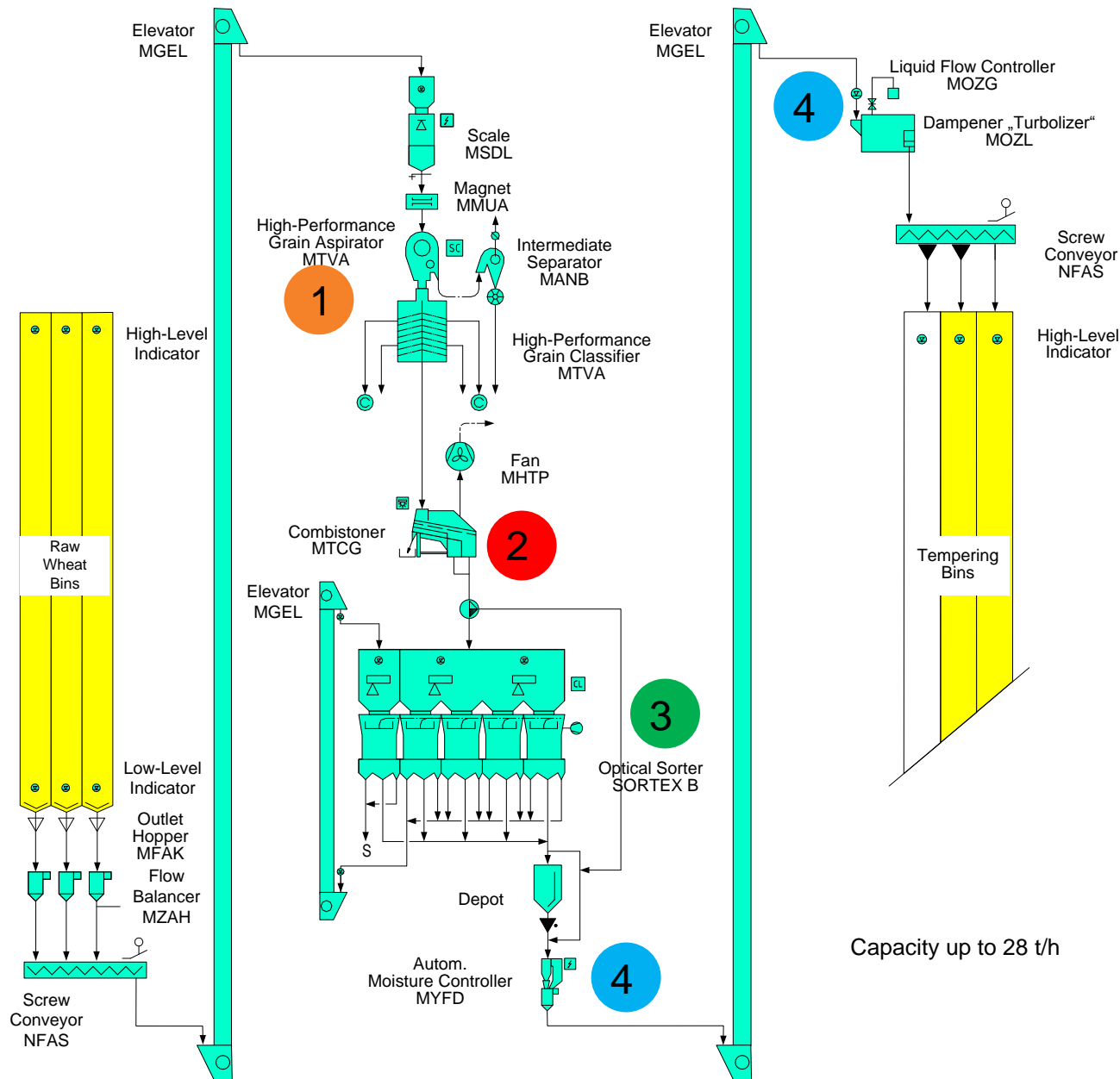
Extend the shelf life of your flour

Reduction of bacteria count during milling process.



Modern Wheat Cleaning Concepts





1 Removal of impurities

2 Separate light from heavy grain

3 Removal of impurities

4 Continuously measure moisture and dosing water

Capacity up to 28 t/h

High-Performance Grain Classifier

Vega MTVA



High-Performance Grain Classifier Vega MTVA

Precise classification of grains. Removal of impurities

Raw Grain



Light impurities
Dust
Chaff
Shriveled grain



Coarse impurities
Cob
Straws
Maize

Option: Grain classification



Large grain



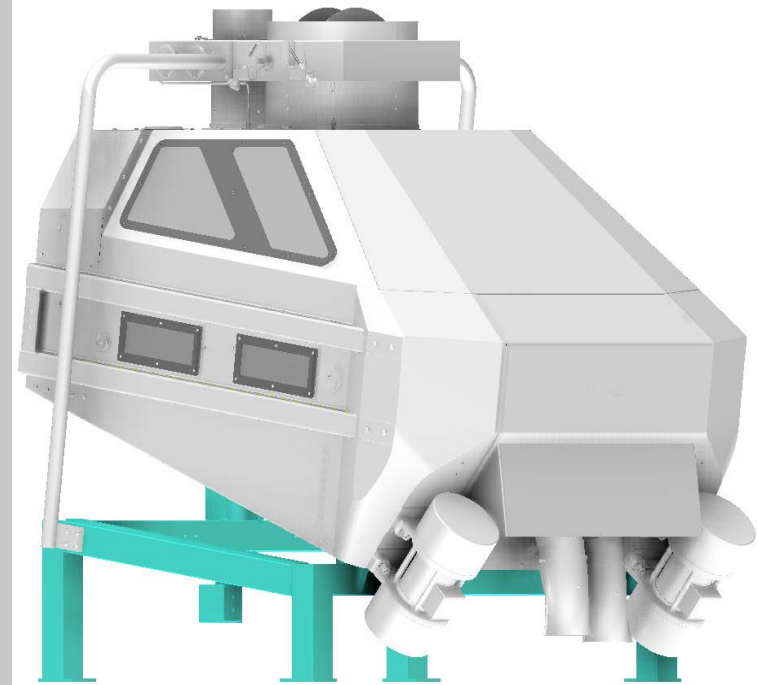
Small grain



Fine impurities
Sand
Weed seeds
Broken kernels

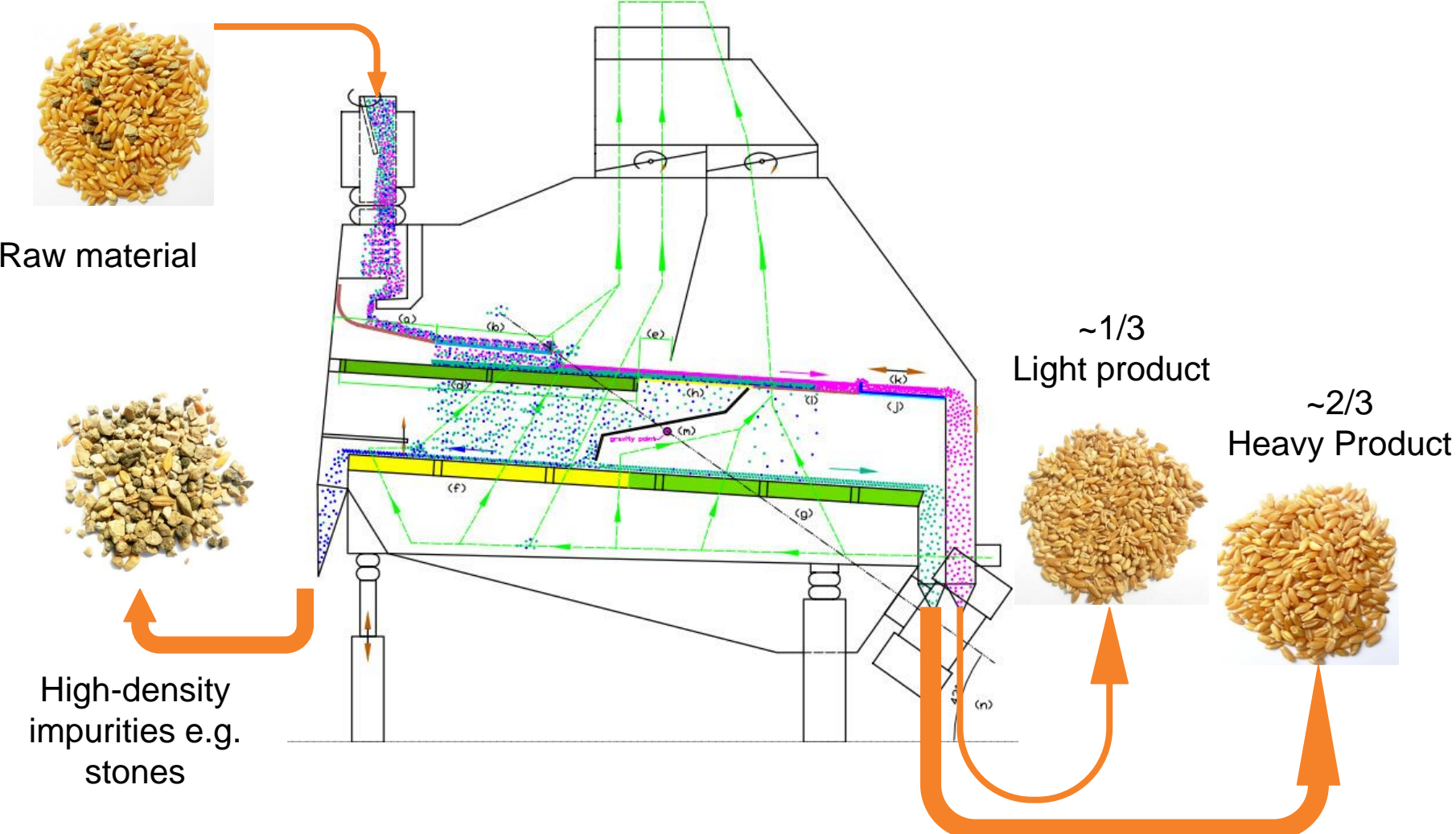
Combistoner

MTCG-150/150
MTCG- 85/150



Destoner/Grader Combistoner MTCG

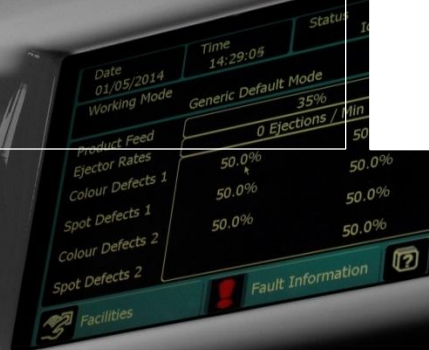
Layout & Functional Principle





BUHLER

New SORTEX Technology



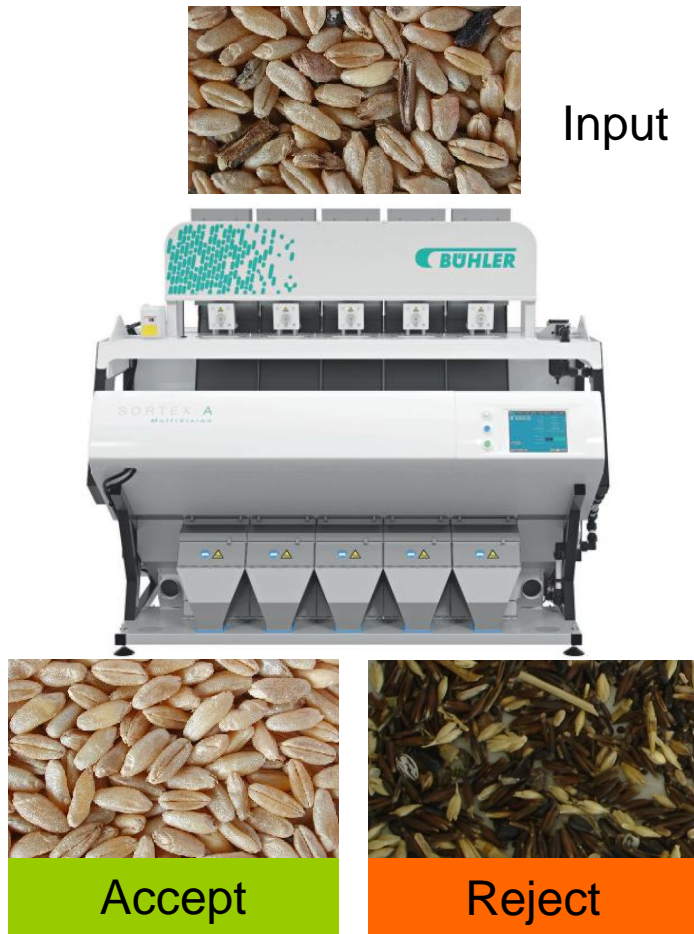
The control panel features a digital display with the following data:

| Date | Time | Status |
|------------------|----------------------|--------|
| 01/05/2014 | 14:29:09 | |
| Working Mode | Generic Default Mode | |
| Product Feed | 35% | |
| Ejector Rates | 0 Ejections / Min | 50 |
| Colour Defects 1 | 50.0% | 50.0% |
| Spot Defects 1 | 50.0% | 50.0% |
| Colour Defects 2 | 50.0% | 50.0% |
| Spot Defects 2 | 50.0% | 50.0% |

Buttons: Facilities, Fault Information

Optical Sorter **SORTEX**

Monochromatic inspection



Dark defects



Foreign grain + seeds



Ergot



Discoloured grains

Light defects



Spelt, Straw

Foreign material, unhealthy wheat



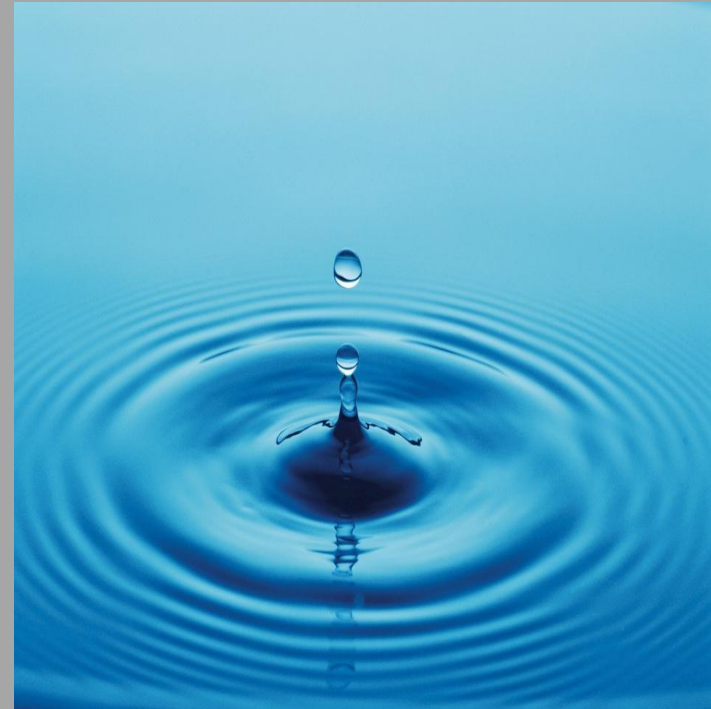
Semi-transparent
Stones, Glas, Plastics



Mycotoxin damaged
Diseased kernels

Automatic Moisture Control for Grain

MYFD / MOZG



Automatic Moisture Control for Grain

What is expected from a moisture control system

- Reliable system
- Consistency important
- High accuracy important
- Hygiene / Food safety



Automatic Moisture Control for Grain Moisture Controller MYFD / MOZG Summary

- Higher sanitation
- Reliable and accurate operation
- No compressed air required
- Easy replace of MYFA/C



Modern 2nd Cleaning Concepts

Scouring / Light Peeling /
Peeling



Modern 2nd Cleaning Concepts

Surface cleaning with Scourer MHXS

Scouring : Minimum reduction of bacteria counts

- Removing 0.05 up to 0.1% of the outer layer



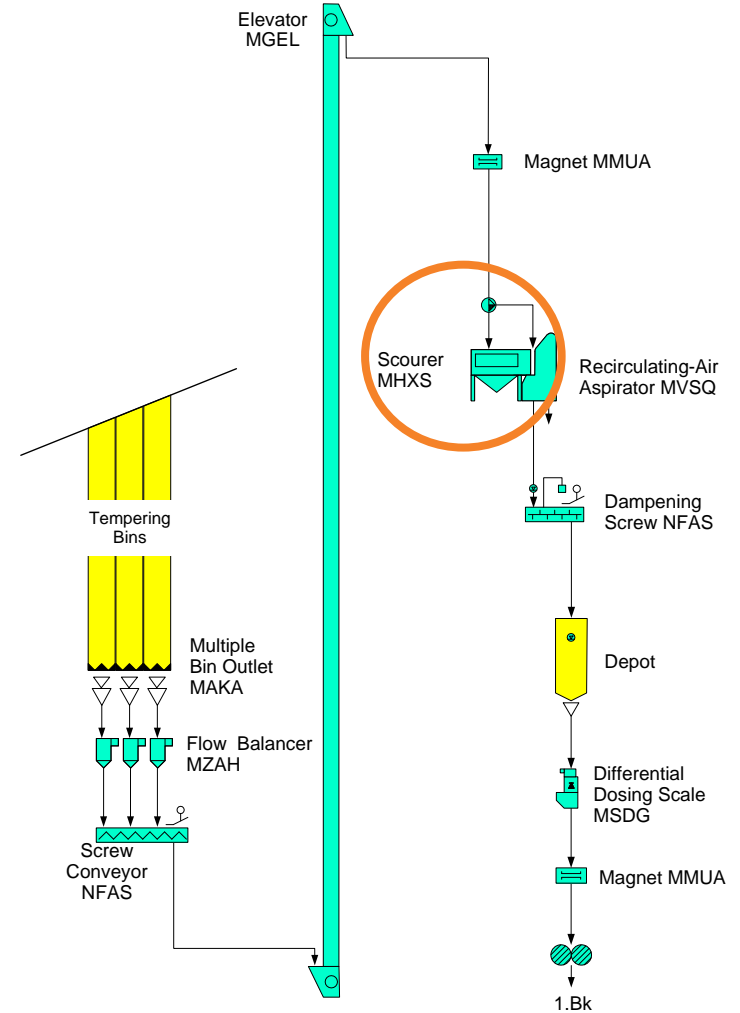
1



2



3



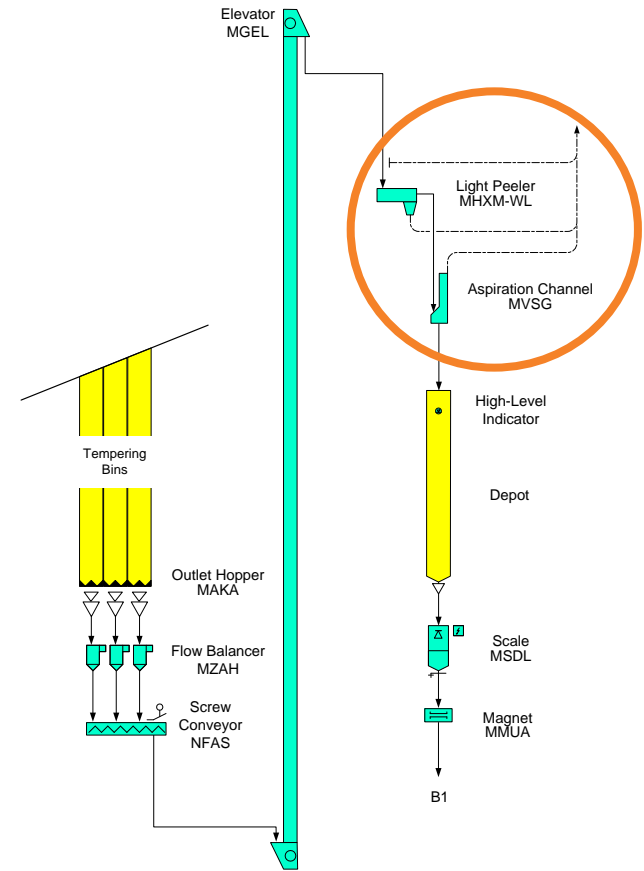
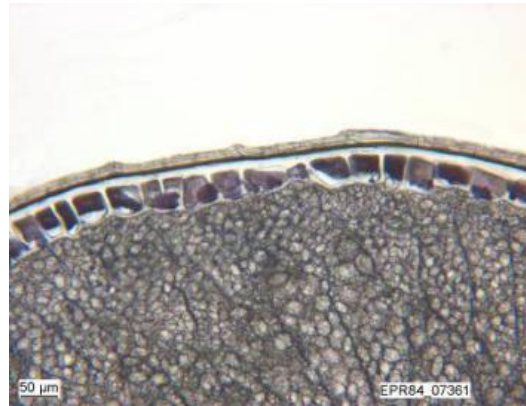
Modern 2nd Cleaning Concepts

Surface cleaning with Light Peeling Process MHXM-WL

Light Peeling : Reduction of bacteria counts

- Removing 0.2 up to 0.5% of the outer layer

After light peeling



Modern 2nd Cleaning Concepts

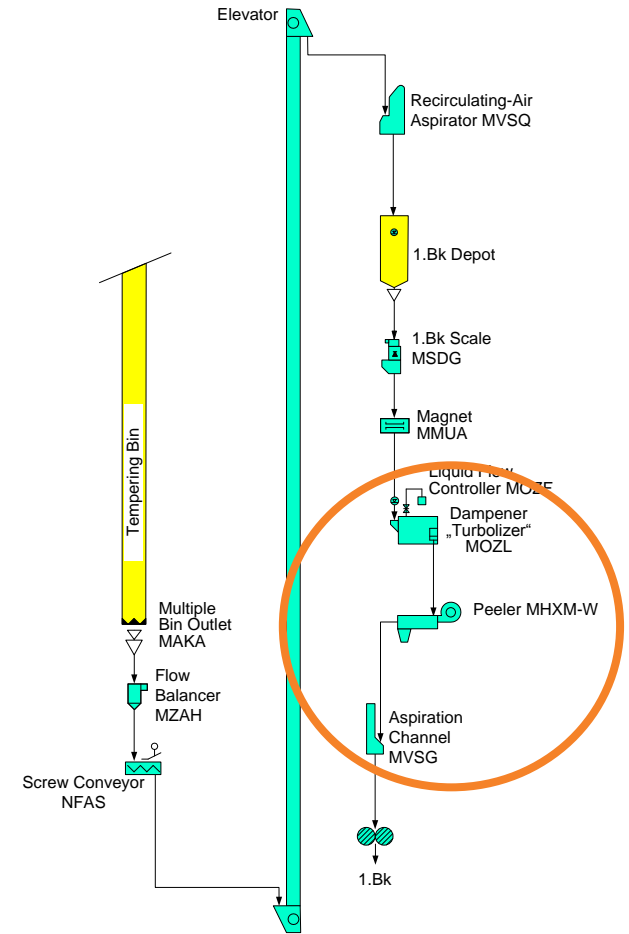
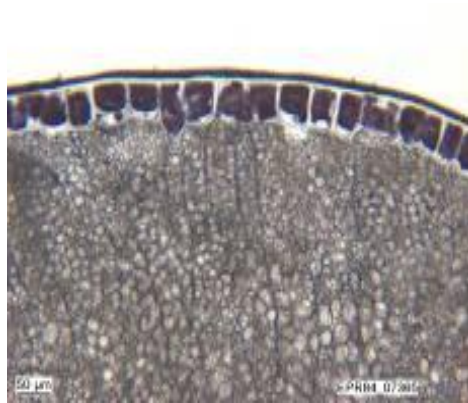
Surface Cleaning with Peeling Process MHXM-W

Peeling : Maximum reduction of bacteria counts

- Removing 0.5 up to 1.5% of the outer layer



After peeling



Impact Machine MATADOR

MJZH



MJZH Impact Machine MATADOR

Market demand

- Improve product quality → increase shelf-life



Eggs of the flour moth



Larvae of the flour moth

MJZH Impact Machine MATADOR

Customer benefit / Key features

- Mortality rate $\geq 99\%$ (confirmed by biological institute)
- Energy savings compared with MJZG: up to 30%
- Throughput 1 to ...45 t/h
- Inline conveying up to 1bar
- Temperature and vibration monitoring

New operation
principle: Cross flow



How to extend the shelf-life of your flour

Summary

Micro-organisms

- Bacteria comes naturally in grain
- It is a challenge to remove bacteria 100% but it lays in the milling companies interest to control these amounts.



New modern cleaning concepts

- When designing a new cleaning concept, hygiene need to be a focus point.



Generating
value.