Improve grain value through high-speed individual grain sorting

Solver Mrs.

Introduction to BoMill

February 2024 – Mexico City

The rising challenges of the grain industry

INCREASING DEMAND

Population growth requires increasing food supply

- By 2050 10 billion people
- +60% food supply

LIMITED ARABLE LAND

Arable land availability decreases due to urbanization and climate change

• 12 million hectares of productive land lost every year

VOLATILE GRAIN QUALITY

Climate change and regulatory policies affect quality and availability

- With EU Farm to Fork strategy, yield will decline by 15%
- Protein in wheat to drop by ~9% due to climate change



Quality variations within a field are known



Variation in a single spike often unknown

11%

12.5%

Example with protein content



9.5%

12%



Average sampling does not show the reality of a batch



9.5% - 12.5% TYPICAL PROTEIN SPREAD

BoMil

Traditional technologies are unable to tap into the variation





SORTING PRINCIPLE

BoMill technology shows the actual variation in your batch

AVERAGE



1%



Divide your batch into two homogeneous fractions



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BoMil

Target higher protein



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highly contaminated with fusarium



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BoMil

Focus on wheat and barley



EXAMPLE OF APPLICATION WHEAT AND FLOUR MILLING







European Flour Mill

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BoMi

Upgrading standard quality wheat

CHALLENGES FOR THE FLOUR MILLS

- Grain quality more volatile between harvests
- Regulations put more pressure on fertilizer uptake
- Declining availaibility of locally produced premium wheat
- Increasing cost for premium quality wheat with high protein



B-wheat Standard quality

Replacing premium A-wheat with upgraded B-wheat



Payback time 12 months



6'000	Runtime (h/y):
15	Sorting capcity (t/h):
90'000	Sorted B-wheat (t/y):
22'500	Upgraded wheat* (t/y):
	*25% yield

Sorting cost of upgraded wheat (/t): € 2.5 Premium value A vs. B grade (/t): € 30

€

Financials

InSight™ (8 units):	€ 500'000
Installation cost:	€ 100'000
Total investment:	€ 600'000
Sorting cost (per year): Added value (per year)	€ 55'000 € 675'000

ROI: 12 MONTHS

Bomill InSight[™]

Revolutionizing grain sorting through high-speed single kernel sorting





Unique sorting performance

- Accurate analysis of grain inner properties using NIR transmittance (NIR-T)
- Precise segregation into two fractions, without limitation on ejection rate



Capacity that suits your needs

- From 1 to 8 sorting units fitted on a frame
- Capacity from 2T/h up to 15MT/h per equipment
- Designed for cluster installation with several BoMill InSight



Simplicity at every level

- Simple and efficient installation
- No calibration required
- Easy to operate through user-friendly interface / customer SCADA
- Support through remote access





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Compact footprint

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1m / 40"

Required service area: 1m / 39" around the equipment Weight: 750kg/1650lb equipped with 8 sorting units

BoMill InSight™ vs. Optical sorter



OPTICAL SORTER

OBJECTIVE

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SORTING PARAMETERS

INSPECTION

(x) REJECT RATE

Remove contaminants

Visual, size and shape differences

Reflected visible lights (on occasion IR, NIR) and optical image processing

Only suitable for low contamination rate due to false reject

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BOMILL INSIGHT

Extract premium grade and produce homogenous batch

Inner characteristics

NIR light and transmittance value analysis (NIT-Near Infrared transmission sorting)

No limitation



ABOUT US

Head office in Malmö, Sweden

- Local presence in close partnership with our regional distributors
- In-house expertise, backed up by an active patent strategy

TOGETHER, LET'S SORT THINGS OUT

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www.bomill.com

Adds more value to your grain