FLOUR EXTRACTION BOOSTER

The 13th IAOM Southeast Asia (SEA)
20-22 OCTOBER , 2024

Ömas
REINVENTING THE MILL.

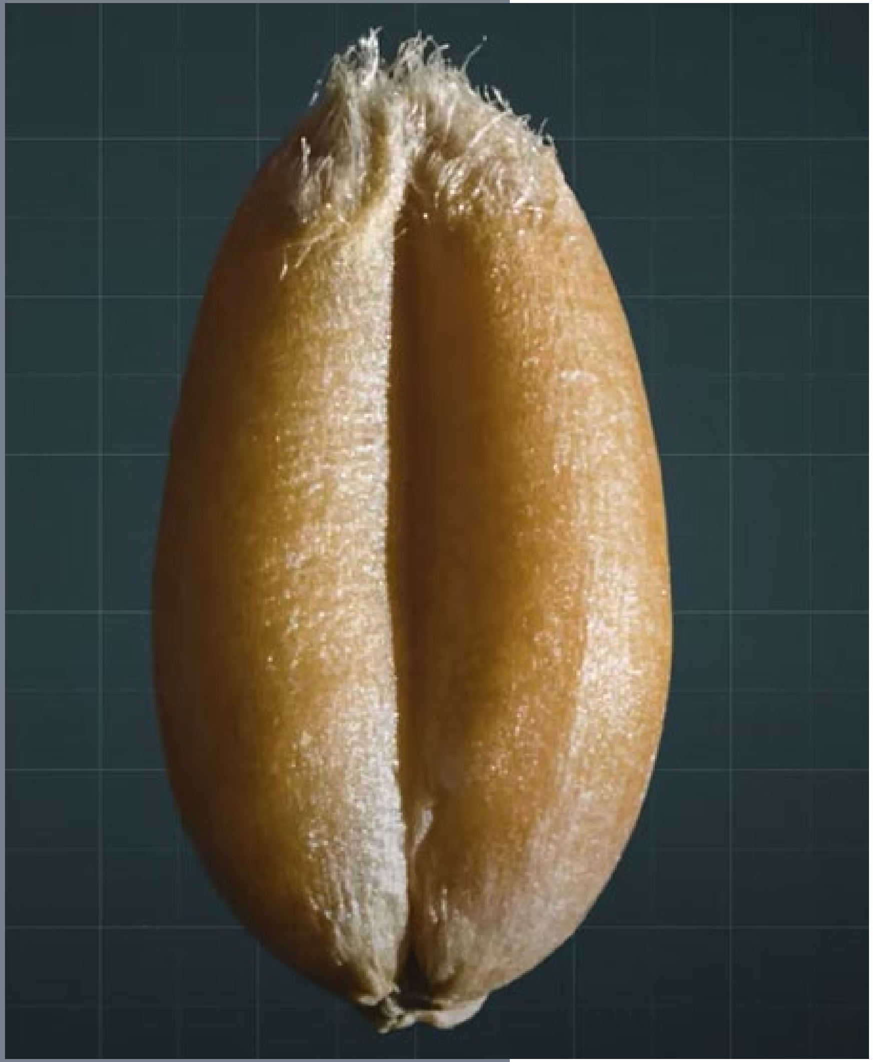
Omas

IAOM INTERNATIONAL ASSOCIATION OF OPERATIVE MILLERS

MISSION & VISION

Mill industry will play an important role in the future of world food.
For this reason Omas’ s choices and actions are inspired every single day by innovation. The innovation push us to change the rules, to experiment, to improve.

This is why Omas invests in Research and Development to offer increasingly advanced solutions, oriented to energy saving, automation, maintenance reduction and maximum production flexibility.



FLOUR EXTRACTION BOOSTER

On 2019 Omas developed a new process technology, the FLOUR EXTRACTION BOOSTER.

Today we present real results collected in a flour mill of 2000 TPD capacity, situated near Venice, which belongs to GMI after few years of operation and data collection.

GRANDI MOLINI ITALIANI 1886

FLOUR EXTRACTION BOOSTER

THE PROCESS TARGET IS TO GENTLY SCRUB THE DRY SOFT AND HARD WHEAT SURFACE AND THEN ADD THE CONDITIONING WATER .

THANK TO THIS INNOVATIVE IDEA WE ACHIVE :

FLOUR EXTRACTION BOOSTER

Foreign minerals aggregated to the wheat kernels during cultivation, harvest, handling and storage.

Minerals easily attached to the wheat surface with a high ash content.

Today in the market we can source wheat with ash content between 1,6% up to 1,9%.

FLOUR EXTRACTION BOOSTER

The FEB have an innovative solution to remove the foreign impurities before the addition of the conditioning water.

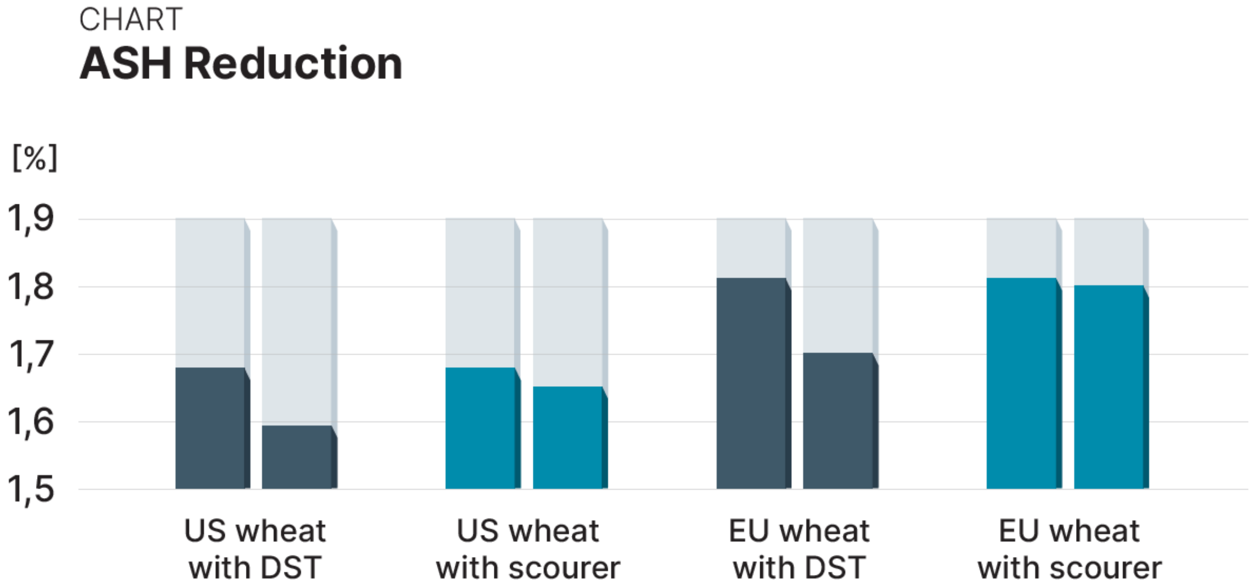
The conditioning water glue all the dirty to the wheat surface make it more difficult to clean it later .

Thanks to FEB we remove up to 1% of scrap and drop the ash contents form 3% to 5 % .

The ash content in wheat will move form 1,75% down to 1,68% before milling .

FLOUR EXTRACTION BOOSTER

-2% up to -4% of wheat ashes



FLOUR EXTRACTION BOOSTER

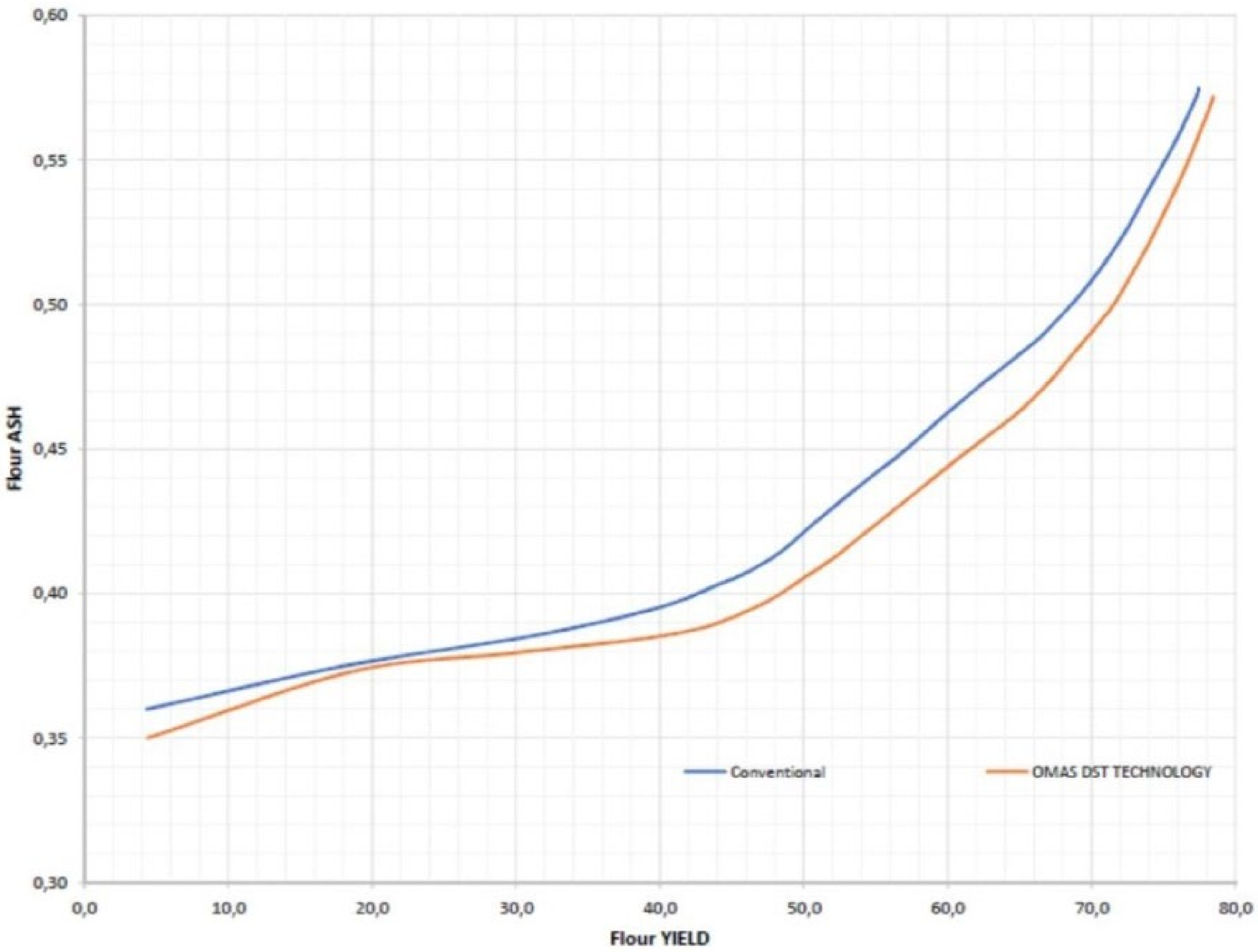
Having the same hectoliter weight, the wheat with lower ash contents will produce un higher amount of white flour.

The following table shows how we managed to decrease the content of ash indifferent flours, in order to increase by 1% the separation.

The additional flours are recovered from 1st and 2nd breaks flours, and form the dark flours at the end of the mill since they became better with lower ash contents

FLOUR EXTRACTION BOOSTER

With equal ash we get, +1% flour



FLOUR EXTRACTION BOOSTER

This is a door-to-door extraction :

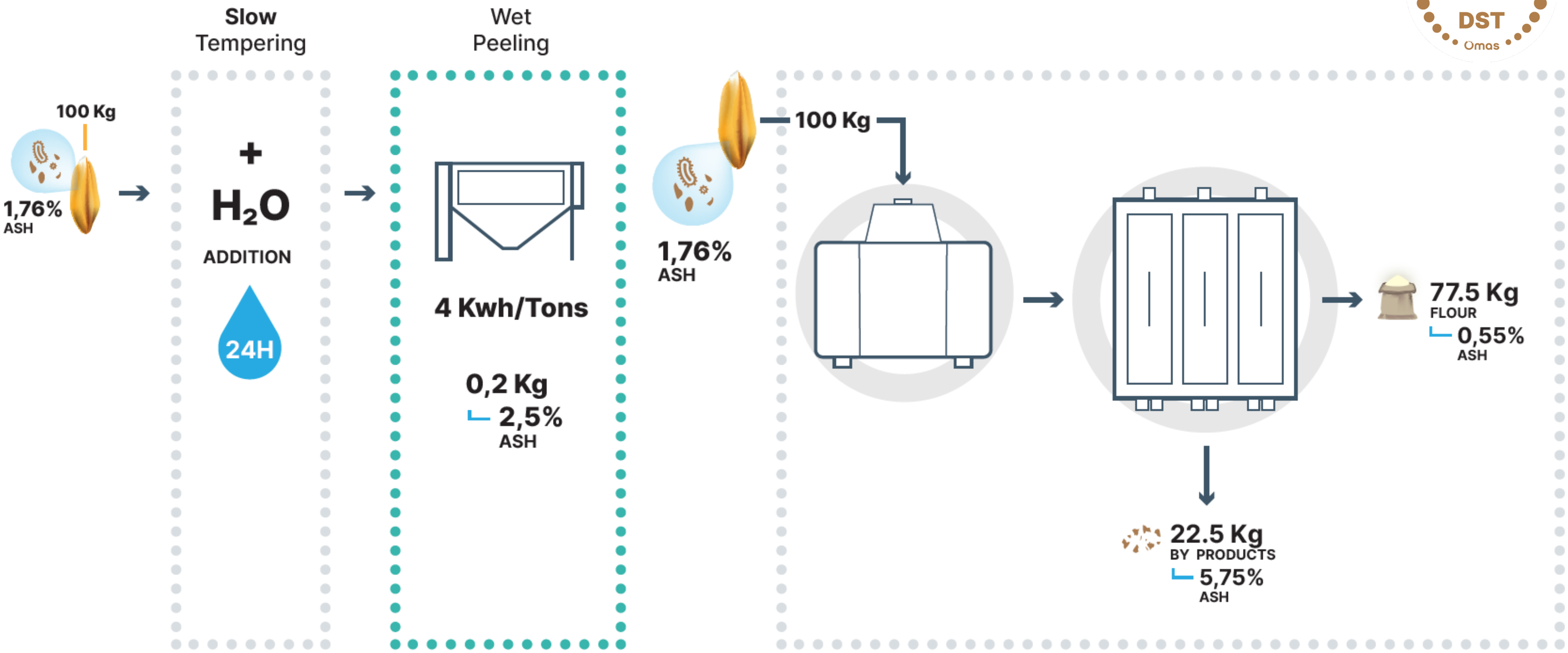
→ We **remove 0,5% -1 %** of wheat surface impurities (OUTER LAYER PRICARP)before milling and we add it to the by products after milling. Nothing will be lost.

→ From 100 Kg of wheat we will extract
78,5% of FLOUR instead of 77,5%

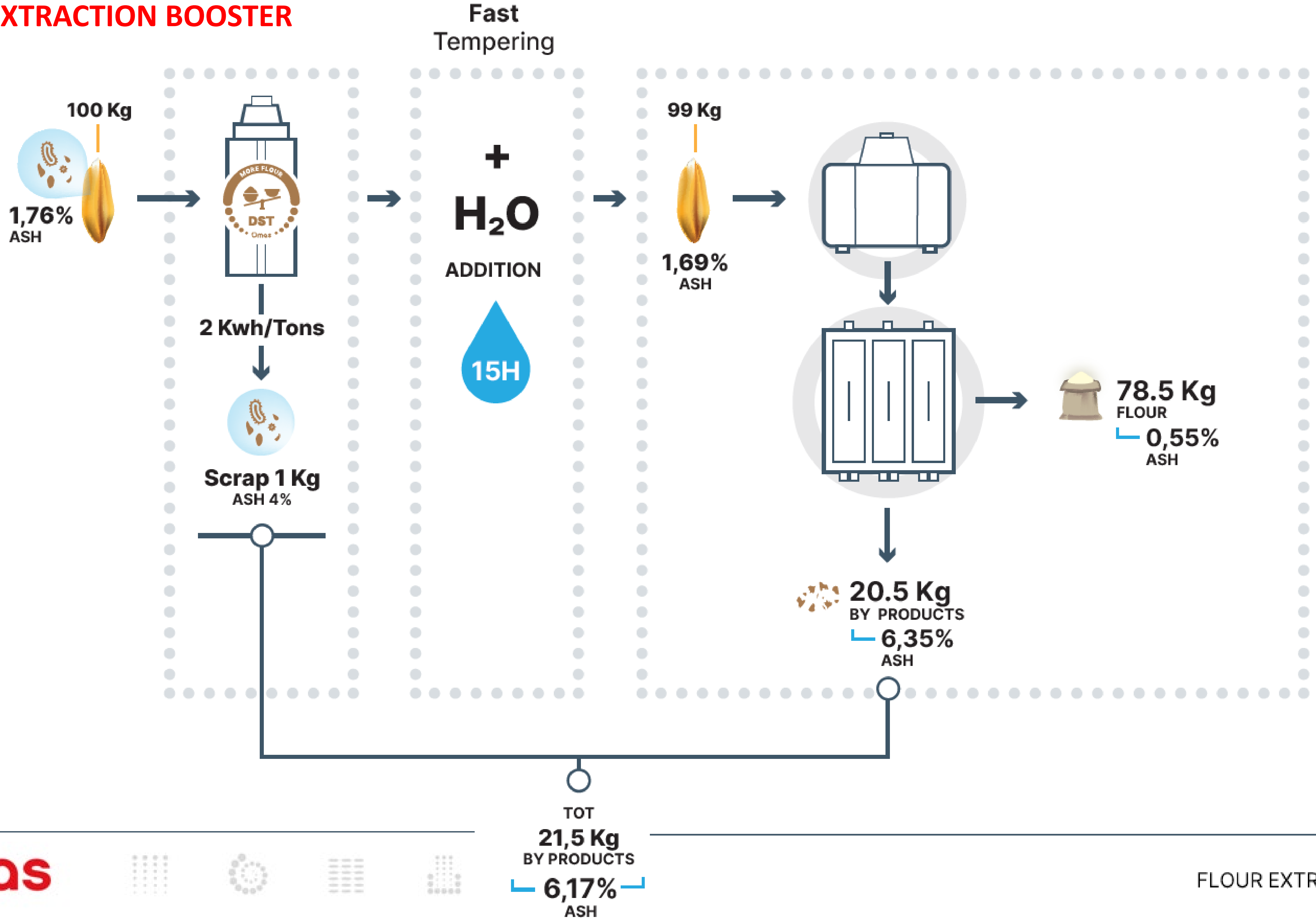
→ The BY PRODUCT will be **21,5%** instead of 22,5 %

Let's explain this a bit more the stages,,,

TRADITIONAL MILL



FLOUR EXTRACTION BOOSTER

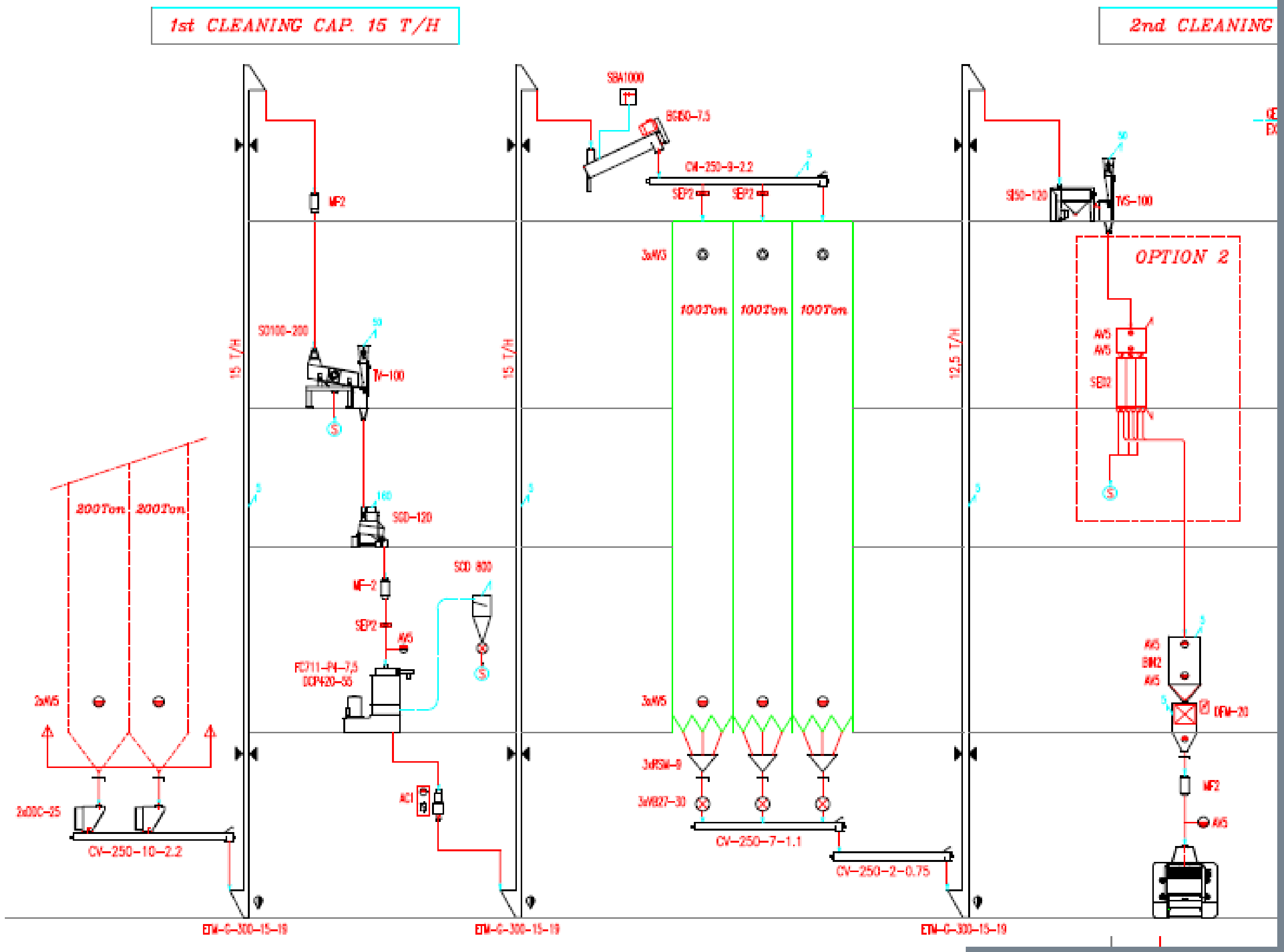


FLOUR EXTRACTION BOOSTER

The DST Technology consist in SCRUBBING the outer surface of the dry wheat. In this way the foreign mineral impurities will be removed before adding the water in tempering stage.

This is neither a PEELER process nor a DEBRANNER as
both of these processes are made on wet wheat after tempering.

FLOUR EXTRACTION BOOSTER: DIAGRAM/ LOCATION



EXTRACTION BOOSTER - DST DRY SCRUBBING TECHNOLOGY

THE ORGANIC IMPURITIES
ARE SITTING ON THE EXTHERNAL WHEAT SURFACE,

REMOVAL BEFORE TEMPERING STAGE ,
PROVIDE US GREAT HYGIENIC ADVANTAGES

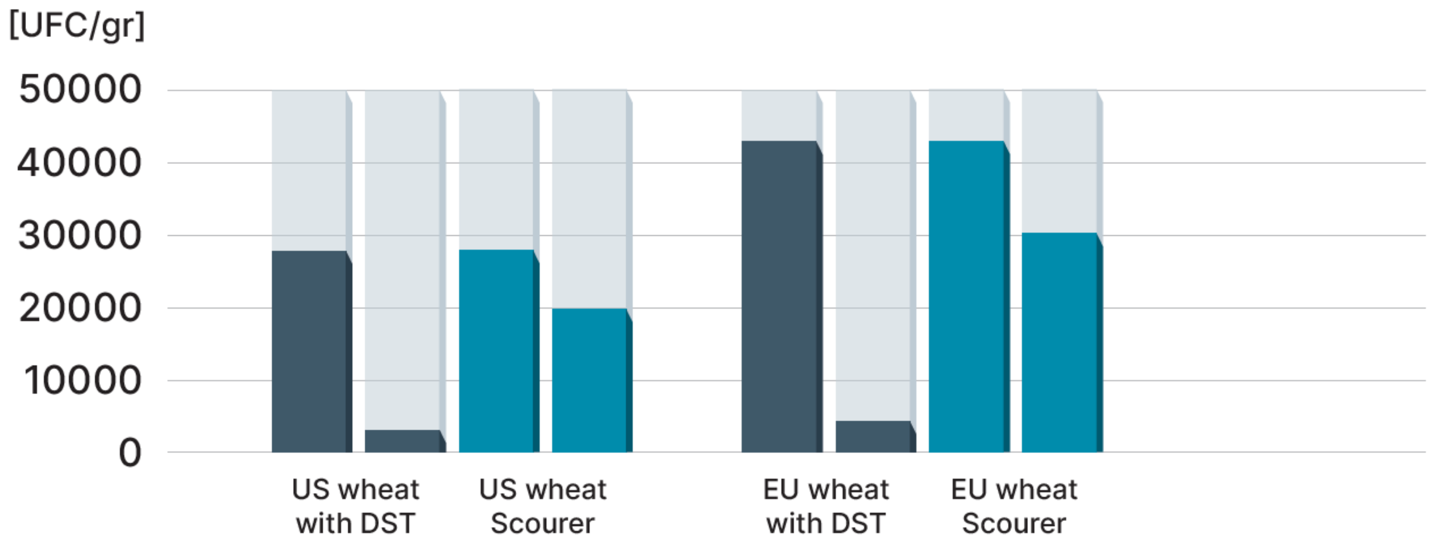
“The first wealth is health”

American philosopher; Ralph Waldo Emerson

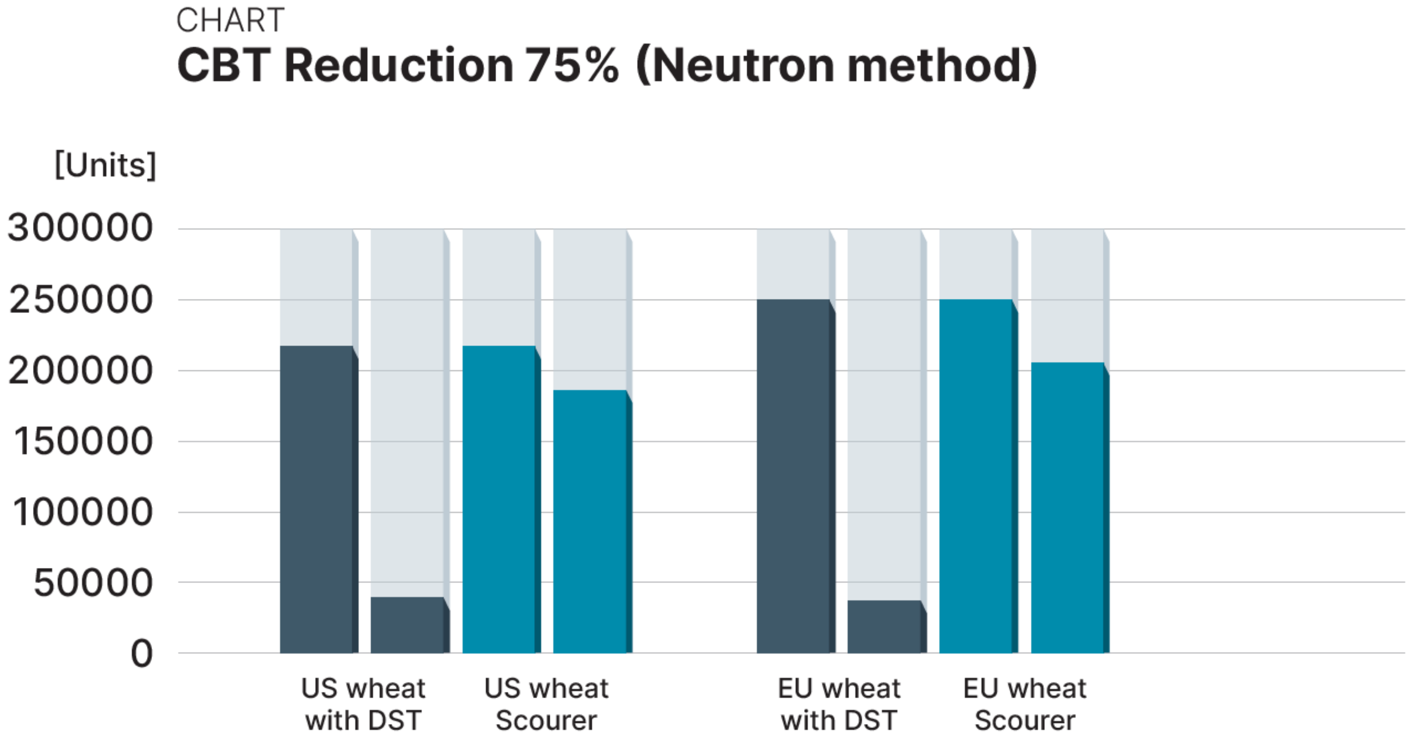
FLOUR EXTRACTION BOOSTER: -85% MOULD

CHART

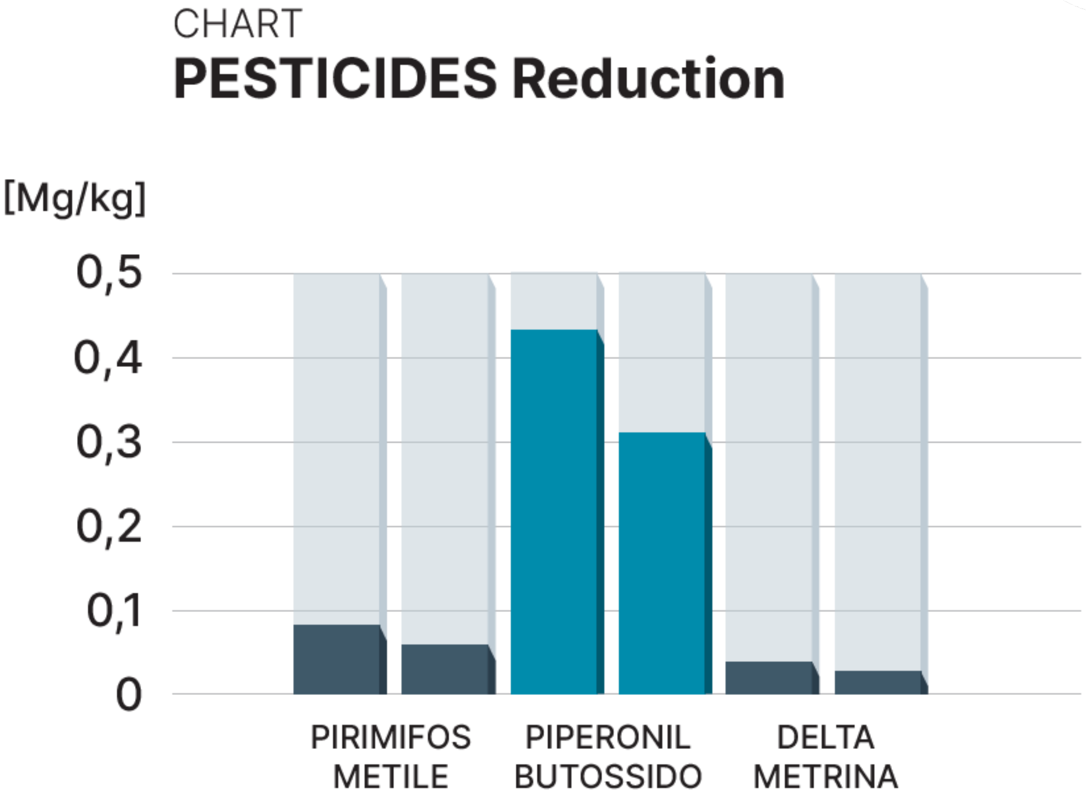
MOULD Reduction (ISO 21527-2:2008)



FLOUR EXTRACTION BOOSTER: -75% BACTERIA content

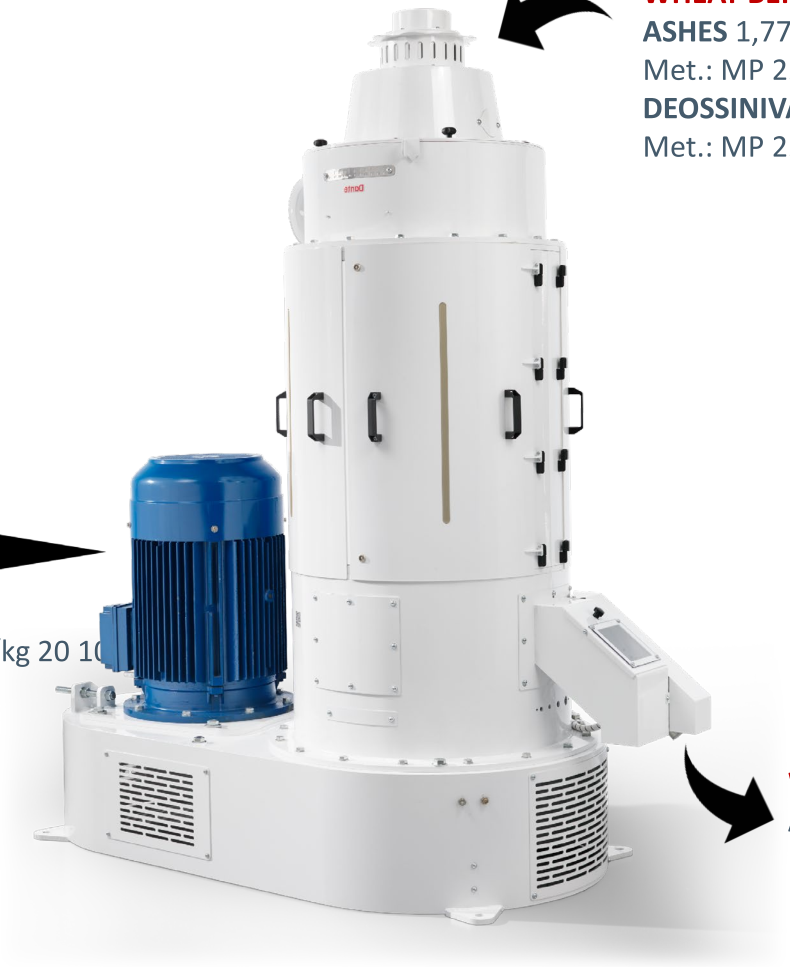


FLOUR EXTRACTION BOOSTER: -30% HERBICIDES AND PESTICIDES



FLOUR EXTRACTION BOOSTER: -50% DEOXYNOVALENOL

WHEAT BEFORE DST
ASHES 1,77 ± 0,02 g/100 g 0,050
Met.: MP 2271 rev 0 2018 -11/10/2019
DEOSSINIVALENOLO / DON 560±110 µg/kg 20 10 97.5
Met.: MP 2249 rev 1 2018 -15/10/2019



RESIDUE
ASHES 6,5±0,20 g/100 g 0,050
Met.: MP 2271 rev 0 2018 -11/10/2019
DEOSSINIVALENOLO / DON 13 200±2 600 µg/kg 20 10
97.5
Met.: MP 2249 rev 1 2018 -17/10/2019

WHEAT AFETR DST
ASHES 1,64±0,09 g/100 g 0,050
Met.: MP 2271 rev 0 2018 -11/10/2019
DEOSSINIVALENOLO / DON 290±57 µg/kg 20 10 97.5
Met.: MP 2249 rev 1 2018 -15/10/2019

Analysis carried out by

CHELAB
MERIEUX NutriSciences

FLOUR EXTRACTION BOOSTER: -50% DEOXYNOVALENOL

FLOUR

- ASH 0,61±0,02 g/100 g 0,050

Met.: MP 2271 rev 0 2018 -11/10/2019

- DEOSSINIVALENOLO / DON 177±35 µg/kg 20 10 97.5

Met.: MP 2249 rev 1 2018 -15/10/2019

BRAN

- ASH 5,02±0,30 g/100 g 0,050

Met.: MP 2271 rev 0 2018 -10/10/2019

- DEOSSINIVALENOLO / DON 1 090±210 µg/kg 40 20 97.5

Met.: MP 2249 rev 1 2018 -17/10/2019

Analysis carried out by

CHELAB

MERIEUX NutriSciences

EXTRACTION BOOSTER - DST DRY SCRUBBING TECHNOLOGY

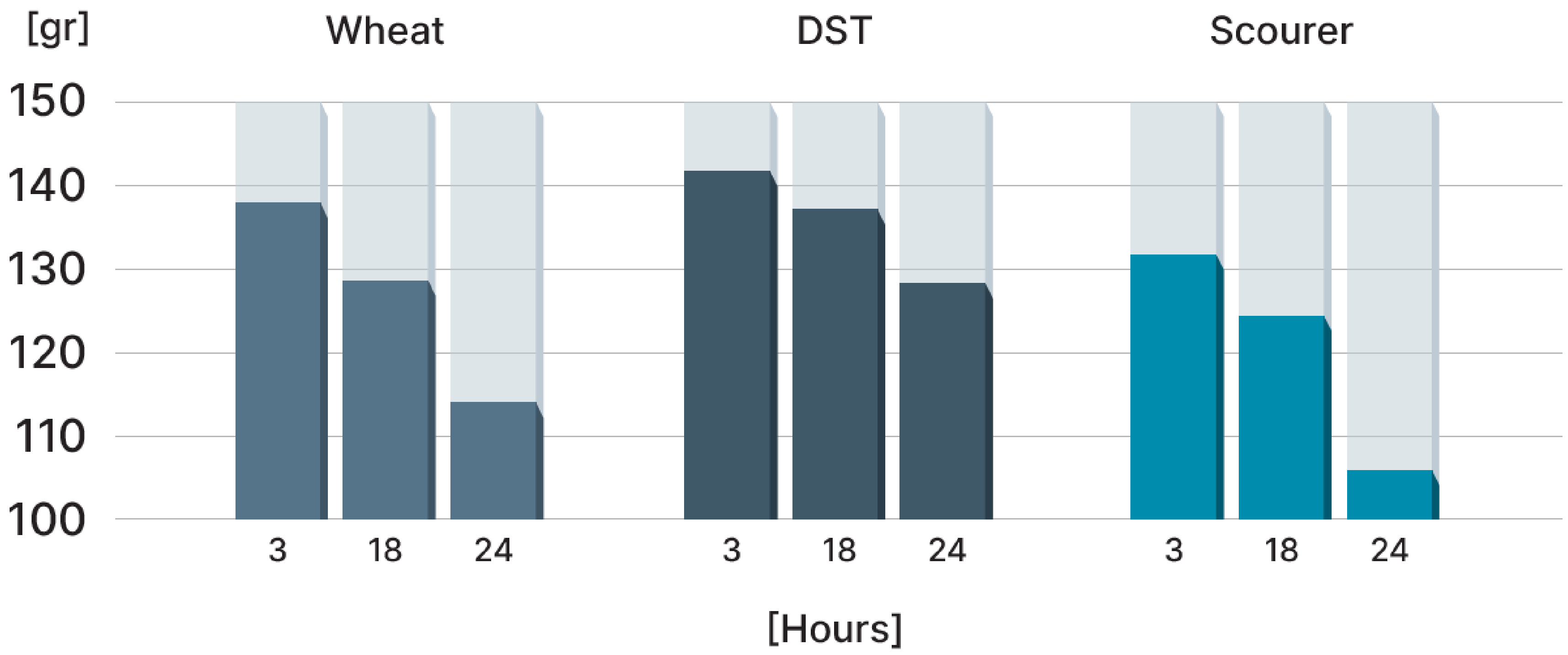
THANKS TO THE REMOVAL OF THE RAIN PROOF WHEAT ENVELOP WE CAN ACHIVE

- %25 FASTER WATER PENETRATION
- ABILITY 1^{ST} STAGE TEMPERING
- REDUCED CONDITIONING WATER AMOUNT
- DEEPER WATER ABSORBTION
- STABILIZED WATER MILLING LOSS
- HIGHER FLOUR MOISTURE RETENTION

ECONOMIC ADVANTAGES : HANDLING OF MILLING LOSS + 1%

Water retention on tempered wheat samples exposed at 50 C° (122°F) in oven

CHART
H_2O EVAPORATION EU Wheat



FLOUR EXTRACTION BOOSTER: POWER ABSORPTION & CAPACITY

- Wheat scourer 2,2 Kw/tons
- Wheat peeler 4 kw/tons
- Wheat scrubber 3 Kw/tons

Machine capacity: 8 & 15 ton/h

FLOUR EXTRACTION BOOSTER:

It consists of:

- Internal rotor with Light abrasive elements;
- Wheat Retention time controlled b motorized outlet gate;
- Special Stainless Steel perforated screen;
- Output gate controlled by PLC;
- Support and cooling fan for scraps removal;
- Machine body in steel painted with food epoxy paint;
- Control sensors for belts.

DST DRY SCRUBBING TECHNOLOGY :

- Inspection doors guarantee a wide range of maintenance options;
- Siemens Control panel for data visualization and settings process parameters;
- Electronic actuator controlled by PLC;
- Communication door to the MODBUS (TCP/IP) control system.

Thank you !

omasindustries.com
#reinventingthemill

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