



New Atta Flour Process.

IAOM MEA, Sousse
7th November 2013

Marcel Ramseyer

Whole Wheat Flour – Atta.

- Whole wheat extraction is around 95 to 97 %
- Used to make Chapatti, Roti, Puri
- Produced traditionally by Disc Mills / Chakki Mills at low throughput
- After Rice, Wheat flour is the second staple food of India



Requirements of Atta Flour.

Quality Requirements of Whole Wheat Flour for Chapati.

Characteristics	Level
Ash, [%]	1.2 – 1.4
Protein [%]	9.5 – 10.5
Damaged starch AACC [%]	16 - 22
Water absorption [%]	75 - 82

Disadvantages of Traditional Chakki Mills.

- Traditional Chakki Mills consisting of 2 dressed stone discs (one stationary, other rotating)
- Stone shavings in flour and bran found
- High operation & maintenance cost (high abrasion)
- High energy / low throughput – 300 kg/h /Chakki
- Difficult to control quality
- Occupies high amount of space for a given capacity
- Shelf life of Atta is only 3 to 4 months

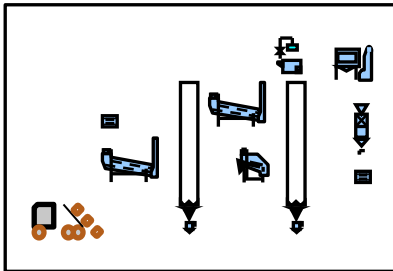


New Atta Flour Process. Overview.

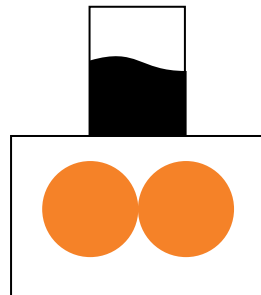
New Atta Mill Section

(Existing)

Intake and Cleaning Section



Wheat

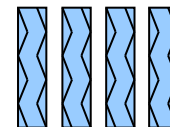


PESA Mill
MDGA

Sifter MPAP



AirEcoSifter
MTZA

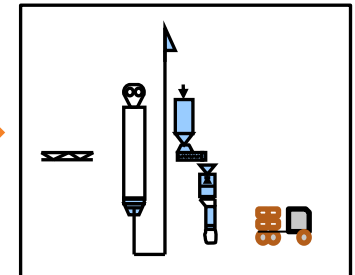


ATTA



(Existing)

Flour Silo / Packing



New Atta Flour Process.

New Atta Mill Section.

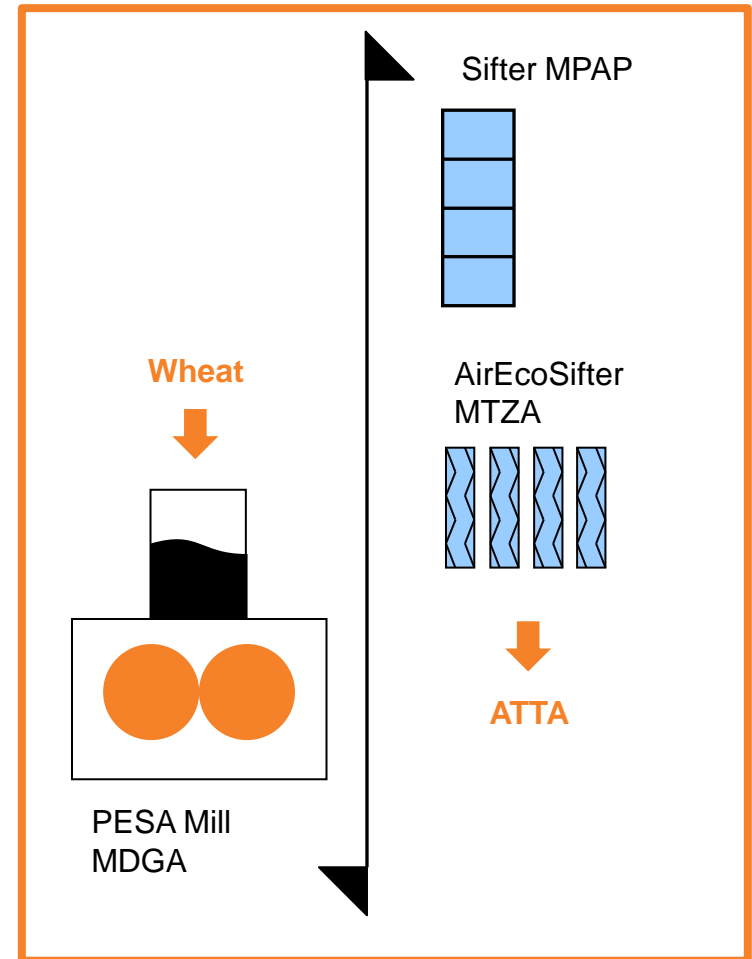
Concept:

- **130 tons per day**
- **65 tons per day**

Space:

- **7m x 7m**
 - **4 floors**
-
- **Compact, hygienic and economic**

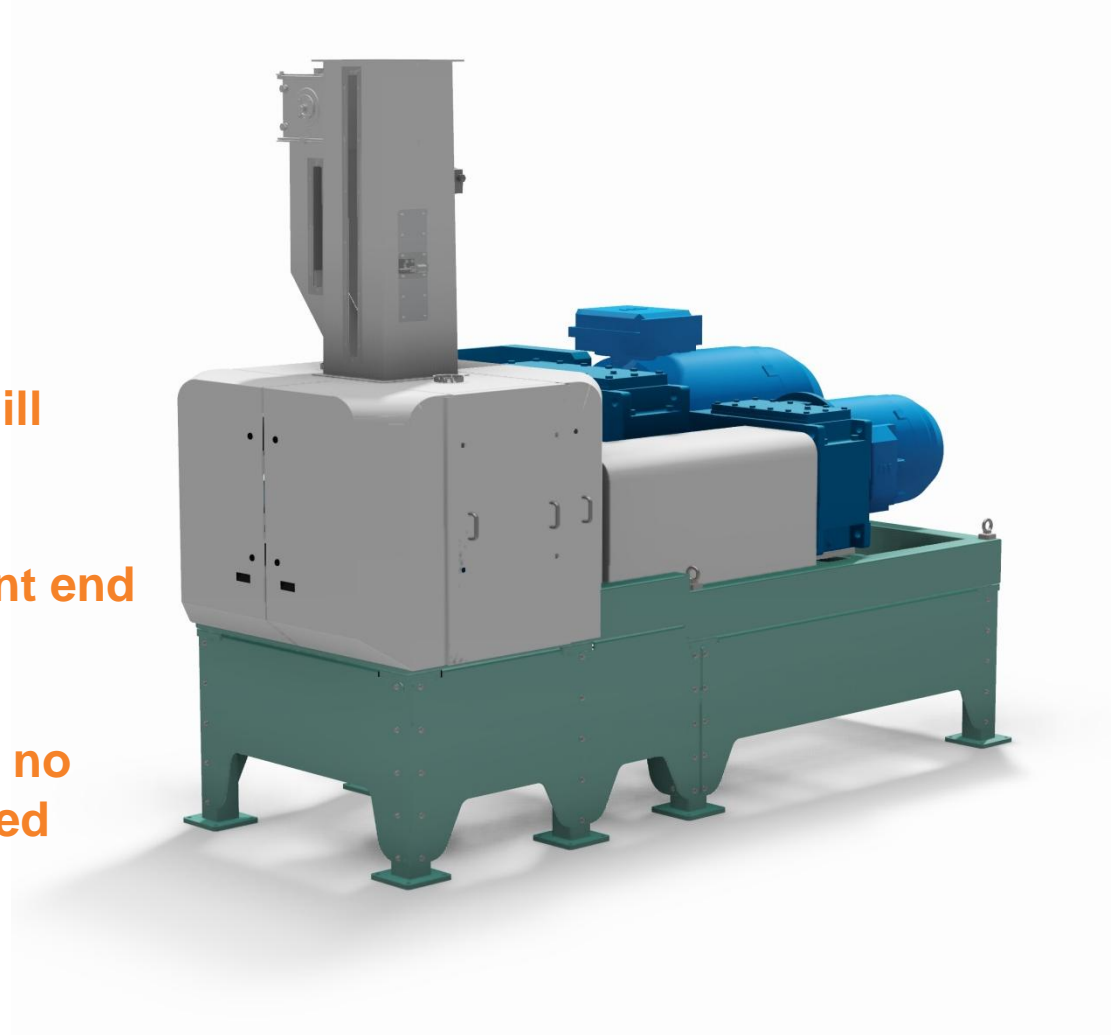
New Atta Mill Section



Advantages of Bühler Solution.

Pesa Mill™.

- Top sanitation – **stainless grinding system**
- Energy saving – **up to 10%**
- Space saving – **one Pesa Mill replace 20 ckakki mills**
- Reliable operation – **constant end product quality**
- Low maintenance demand – **no redressing of stones needed**



Evaluation of Trial Plant BBAN.

Results.

Characteristics	Level
Ash, [%]	1.2 – 1.4
Protein [%]	9.5 – 10.5
Damaged starch AACCC [%]	15 – 23
Water absorption [%]	72 – 82
Moisture content [%]	9 – 11
Extraction / Yield [%]	93 – 97

Evaluation Trial Plant BBAN.

Results Feedback Central Food Technological Research Institute.

Tested CFTRI on 9/12/11

Sample	Ash	Starch damage AACC	H2O	WAP	Texture (for 10)	Granulation (<129my)	Aroma (for 10)	Pliability (for 10)	Eating quality (for 20)	Overall quality (for 60)
Aashirwad ATTA	1.42%	20.7%	7.97 %	73.4 %	7.6	67.3%	7.0	7.6	16.2	45.5
Buhler Atta	1.50%	17.7%	7.99 %	70.9 %	7.6	63.1%	7.4	7.4	16.4	46.4
Buhler Atta	1.49%	18.3%	8.23 %	71.6 %	7.6	68.2%	7.2	7.7	16.4	46.2

Bühler Application Centre for Atta Process.

Trial Plant Bühler Bangalore / India.

- Test-grinding to verify optimal customer wheat blend.
- Analytical tie up with CFTRI to analysis the Atta samples
- Customer visits to reference Plant (130 tons per day)
- Training center for new Atta flour process



New Atta Flour Process.

Technical Contact & Support.

Product Manager Atta
E-mail
Phone

Marcel Ramseyer
marcel.ramseyer@buhlergroup.com
+41 71 955 3094

Project Manager Worldwide
E-mail
Phone

Stephen Weinmann
stephen.weinmann@buhlergroup.com
+41 71 955 1277


Project Manager India
E-mail
Phone

Jayasimha Reddy
jayasimha.reddy@buhlergroup.com
+91 802 289 0268

New Atta Flour Process.

Summary.

- Top sanitation – **stainless grinding system**
- Energy saving – **up to 10%**
- Space saving – **one Pesa Mill replace 20 ckakki mills**
- Reliable operation – **constant end product quality**
- Low maintenance demand – **no redressing of stones needed**



Creating
Customer Value.

 **BÜHLER**