



Maize Fortification Strategy Workshop for Africa





Maize Fortification Technologies – Methodologies; Feeders

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Direct Addition

- This type of addition is the most basic of all and involves the lowest level of technology transfer. In this system the fortification mix is added using some form of basic measuring device e.g. teaspoon or cups per basic measure of grain or samp e.g. bucket. The mill itself mixes the fortification mix into the product

Batch Mixer

- The advantage of the batch mixer is that identity preserved product can be maintained. This is critical in the case of service milling, regardless of scale of production, as most service mill clients want their grain milled and their product afterwards. This attitude is particularly prevalent amongst the small scale service mill clients.





Collection Conveyor

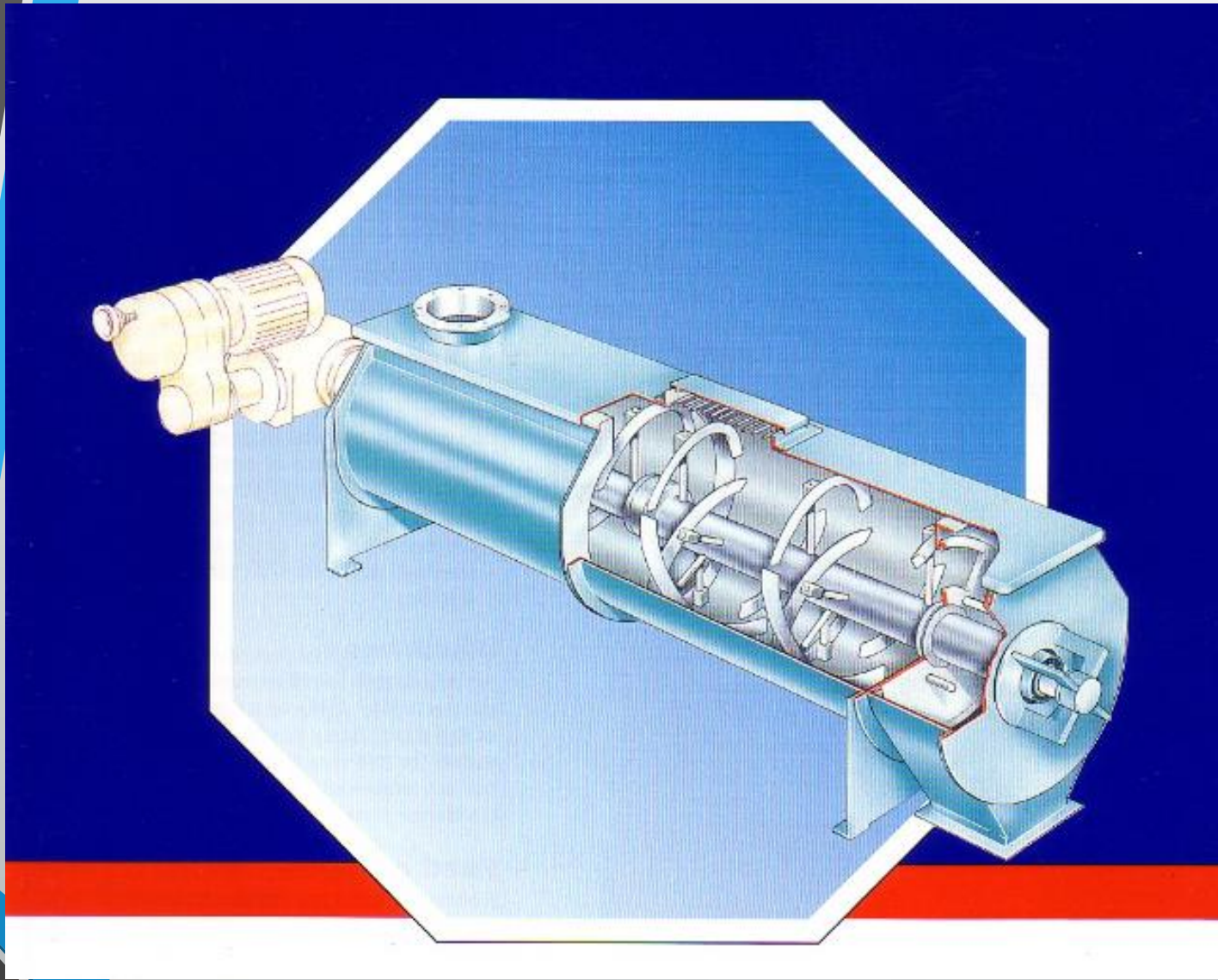
- For a micro feeder to be viable the maize meal must be moving in a stream that is virtually complete and will not undergo any further processing other than passing over a redresser prior to packing.





Continuous Mixer

- A continuous mixer is essentially, if procured as a complete package, a method of measuring both the fortification mix and the bread flour or maize meal and proportionately dosing them into the mixer area. Such mixers range from relatively complex systems to the more relatively simplistic Snell 3-in-1.





Micro-feeder questions

How accurate is the micro feeder?

- Feeder accuracy, in itself, is not a single determinant.
- It is a function of repeatability, linearity and stability.
 - **Repeatability** is consistency of feed at a given setting;
 - **Linearity** is how accurately the feeder discharges across the operating range and
 - **Stability** is performance drift over time.

Repeatability

- Commonly termed precision this factor is the most familiar to users and is a measure of the short term consistency of the discharge rate.
- It is important to QA because it measures the variability of the discharge feed and hence of the final product.
- Note this does not include the variation in the flow rate of the mill product i.e. the flour.

Linearity

- To perform linearity several groups of samples need to be taken across the stated operating range, and these values then averaged to produce a single value at each point

Stability

- This is perhaps the most important criteria, and the one most overlooked. Many factors contribute to drift – some are the characteristics of the fortification mix the rest are feeder related.
- Drift is checked by calibration checks – the more often and severe the drift the more checks, and adjustments, are required.
- This is a hidden on-going cost to the miller and out of specification product (which carries its own economic consequences)



