Probiotics in Blending & Packaging, Part 2

K-TRON

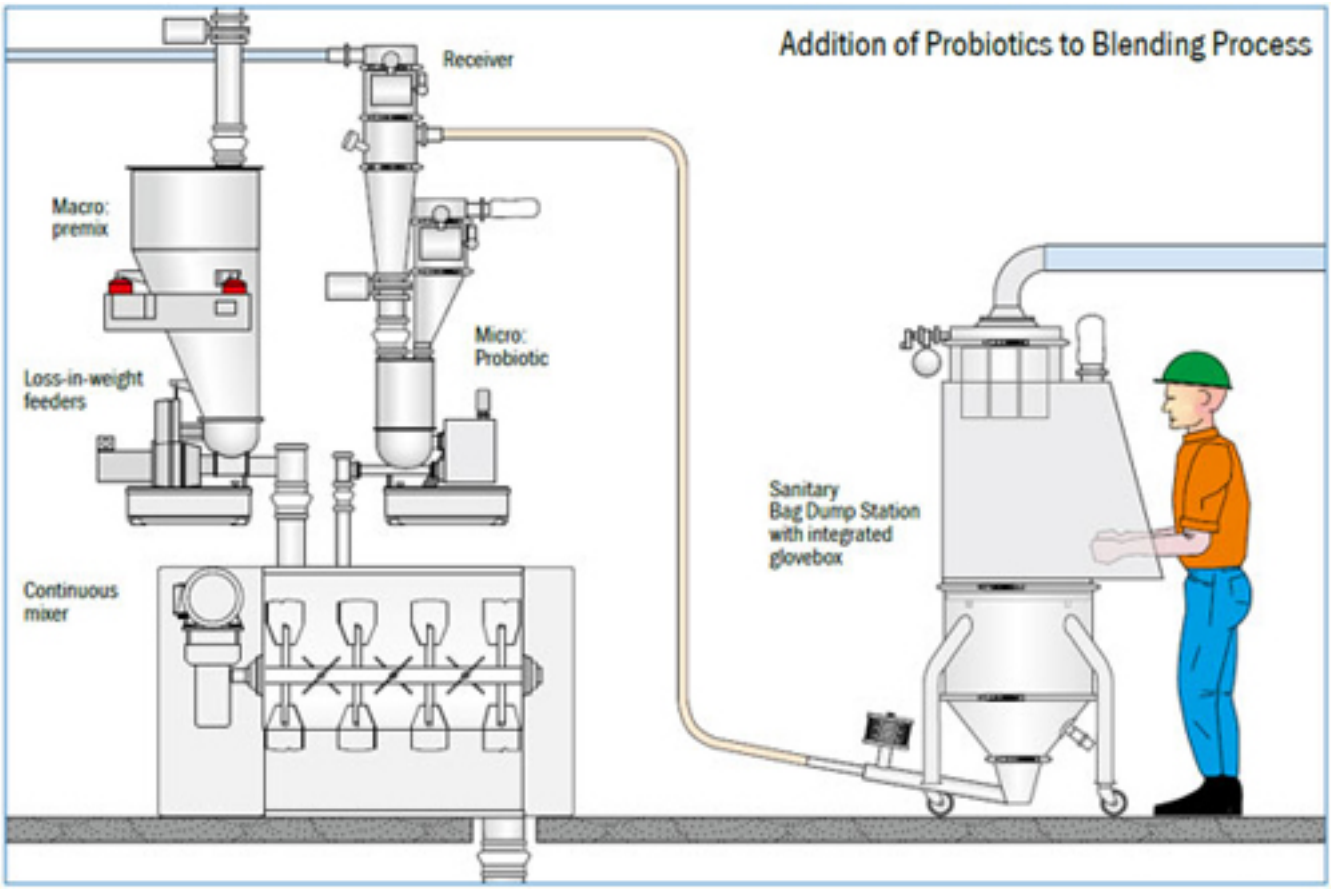
This is part two of a two-part piece. Part one can be found here. *[1]* **[1]**

Feeding in a Continuous Mixing Process

In some processes, the probiotics can be added during the mixing stage. Loss-in-weight (LIW) feeders are generally used here to accurately and gently deliver the probiotics into the mixer. In addition, K-Tron sanitary pneumatic receivers are used to refill these feeders, which is critical for maintaining the accurate and consistent delivery of the probiotic material to the process.

Continuous Loss-in-Weight Feeding

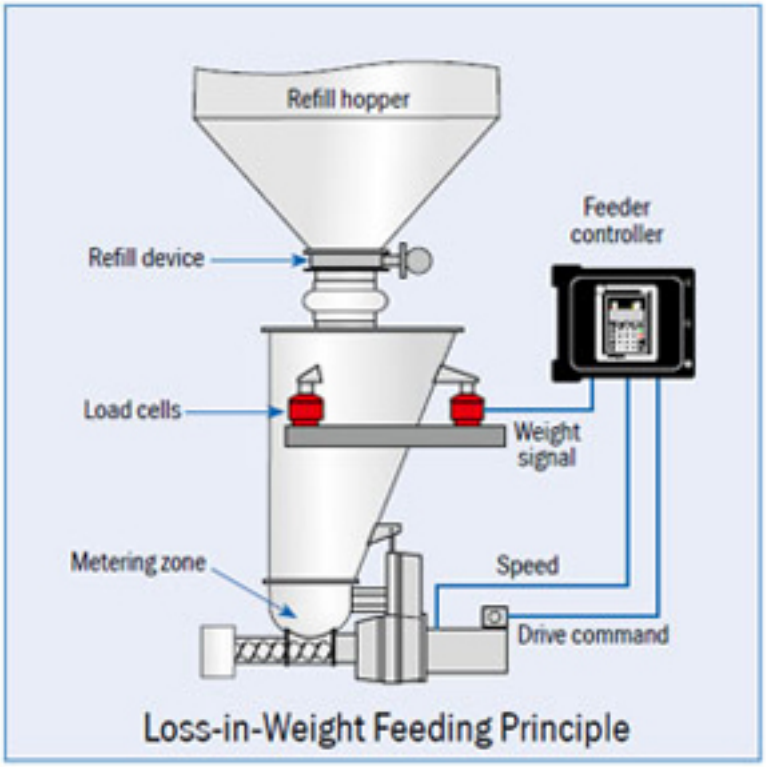
K-Tron's gravimetric feeders feature patented SFT digital load cells to constantly measure the weight of the ingredient being delivered to the process below. LIW feeding affords broad material-handling capability and thus excels in feeding a wide range of materials from low to high rates. In operation, the entire feeder, hopper and material are continuously weighed, and the feeder's discharge rate (the rate at which the feeding system is losing weight) is precisely controlled to match the desired feed rate.



Gravimetric feeders have low fluctuations in feed rates because variations in the filling degree of the screws and in the bulk density of the feed material are compensated by modulation of the screw speed. With this technology, a constant mass flow is ensured, thus providing consistent product output.

Designing for Probiotic Handling

Whether designing for batching or continuous-feeding processes, the probiotics system is carefully engineered to ensure that the efficacy of the probiotic be maintained at all times, that the probiotic is not subjected to outside contaminants, and that the complete system can be easily taken apart and cleaned after operation.



In the case of the feeder, a sanitary design is used, complete with a closed hopper with a specialized reverse pulse filter cleaning/venting in order to avoid any contaminants from entering the product.

The conveying and transfer system is also designed for ease of access and cleanability. Specialized filter media, high-polish material contact surfaces and tool-less design for dismantling are all available depending upon the specifics of the installation.

The K-Tron Advantage

1. K-Tron’s patented SFT digital weighing technology delivers the high accuracy needed for maintaining control of the addition of costly and delicate ingredients such as probiotics.

2. The SFT weighing technology features a resolution of 1:4,000,000 in 80 ms, as well as built-in immunity to fluctuations in plant vibration and temperatures.

3. The K-Tron Control Module (KCM) provides integrated control of motor, load cell and drive functions for both batch weighing and continuous feeding applications. Integration with the Series 4 controller for the automated refill by K-Tron sanitary pneumatic receivers optimizes the system operation.

4. All components in the system include a quick-clean design for easy disassembly, complete with fully welded and polished housings, and triclover clamps or ferrules.

5. All product contact parts are constructed to conform to strict cGMP and FDA standards.

6. The K-Tron line of pneumatic receivers is also designed for cleanability and ease of access with FDA-approved materials of construction.

7. K-Tron is able to provide a wide variety of screw and agitator designs in order to give best results for a wide range of ingredients, including the gentle handling required for probiotic ingredients.

8. Whether batching or continuous feeding, the K-Tron Systems Group can supply integrated systems, including ancillary products, with one source management.

This is part two of a two-part piece. Part one can be found here. *[1] For more information, please visit* www.ktron.com *[2].*

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