

New Technologies Punch Up Mixing & Blending Performance

MIXING AND BLENDING ARE AN INTEGRAL PART OF ALMOST EVERY FOOD PROCESSING OPERATION. WHETHER THE MIXTURE IS A SAUCE, DRESSING, PASTE, DOUGH, SEASONING, OIL OR PARTICULATE, THE HOMOGENOUS BLENDING OF INGREDIENTS IS IMPORTANT TO THE FLAVOR, TEXTURE, DENSITY, COOKING PARAMETERS AND PACKAGABILITY OF A PRODUCT. • ANN JUTTELSTAD, CONTRIBUTING EDITOR

Basic blending equipment includes tank mixers, ribbon blenders, and dual ribbon blenders which can be equipped with heat exchanger systems, choppers and other blades to incorporate ingredients. New technologies are now unfolding that can improve the function of the blending system and save product, labor and utility costs.



Vacuum technology improves performance
New developments in mixing and blending

Because the VacuShear® system unloads bins, bags and totes by vacuum, excessive lifting of ingredient containers is eliminated. Dry ingredients can even be transferred from one room to another, eliminating spills and dusting in wet areas.
(Source: Admix)



The VacuShear mixer by Admix combines a vacuum delivery system with a high shear blender to produce products with less foaming, aeration and dusting. (Source: A&B Process Systems)

technology have realized improvements in the blending of hard-to-handle ingredients, such as the blending of powdered seasonings into liquid oils.

VacuShear mixers by Admix, Manchester, NH, combine vacuum technology with blending, providing a sanitary vacuum liqui-processor. In the process, liquid medium, such as oil, is filled into the A&B Process Systems vacuum mix tank to about 1/3 - 2/3 the level of the full batch height. The powdered component of the mixture is then drawn by vacuum, through a wand, into the bottom of the tank, under the surface of the liquid. The Rotosolver® high shear disperser blends the products, keeping the particulate in suspension.

The VacuShear vacuum dispersing system, says Admix President Lou Beaudette, “allows for less dust, less labor and less waste.” The wand delivery system can be used with bags, drums, bag dump or bulk packaging.

One processor of oil blends likes the system because it makes totes much easier to handle. Tote bags can be simply tipped on their side while on the pallet, opened, and the wand inserted. The powder evacuates from the bag without excessive dusting or labor-intensive lifting.

Once charging is completed, a vacuum is pulled on the mixture as it blends. This reduces the foaming, aeration

and dusting commonly generated by traditional blending processes. By reducing the level of air circulating through an oil/salt/spice mixture, says one customer, oxidation can be curtailed and shelf life of the mix may be increased.

Another advantage to the system is that the tank can be run almost dry, claims the oil processor. In a typical system, there is usually a “dead spot” where the impellers can not get to the product to mix it in. The bottom delivery and Rotosolver systems eliminate this, and the tank can be emptied almost to the bottom. Multiple tanks can be used on one line, allowing for greater flexibility in processing. Also, a slurry mixture can be held for extended periods of time without the mixture going out of solution, as the vacuum and mixing action combine to keep the product blended.

When ready to discharge, the Rotosolver can be shut off or slowed down, while the vacuum is maintained, further de-foaming the product. The tank can then be unloaded under atmospheric pressure.

Because of the vacuum feature of the VacuShear product, this blending system is presently suitable only for batch mix systems (a continuous system is in development). Nevertheless, it is a practical solution for many blending problems.