



Advanced Mixing Technologies

Admix Processing Report

Industry: Food Processing
Application: Mustard MFG
Report #: APR-MM-102

OBJECTIVE:

- ✓ Increase the throughput /production rate of standard mustard manufacturing lines which utilize Jayhawk-type mills.
- ✓ Reduce the need for "softening" tanks.

HISTORY

Many mustard manufacturers, in an effort to increase the throughput of in-line mills, have resorted to soaking mustard seed. They have done this in water and vinegar for up to 48 hours in vessels to soften the seed so that the throughput (usually 1–2 GPM) could be increased. The thought is that softened seed would require less work (i.e. residence time in the shear zone) for the in line Jayhawk or Charlotte mill.

GUIDELINES

- ✓ Tip speeds above 54 FPS
- ✓ Intensity in water of at least 10
- ✓ Mix time 30 minutes depending on fineness desired

METHODS / EXPECTED RESULTS

- ✓ Add all of the liquids from the recipe to the vessel
- ✓ Turn on Rotosolver® high shear emulsifier
- ✓ Allow flow pattern to form (typically 20-30 seconds)
- ✓ Dump in seeds and any other dry formula ingredients
- ✓ In 15-minutes, approximately 95% of the seeds are cracked and viscosity starts to build (this viscosity increase is a result of the starches within the seeds being freed and starting to hydrate and dissolve). The viscosity build allows the particles to remain uniformly in suspension.
- ✓ In 30-minutes, 99% + of the seeds are cracked and viscosity is building rapidly. For example with a yellow seed at 19% by weight in the batch, viscosity will be approx 2000 CPS.
- ✓ Depending on the finished grind specification, some customers have seen line speed increases by up to 55% by utilizing the Rotosolver in the above-described method.



ADMIX ADVANTAGE

A properly sized **Rotosolver®** high shear emulsifier when installed in a vessel can be employed to produce 99+% cracked, softened seed in under 30 minutes