

New Efficiency In Chocolate Refining & Processing

Everyone is familiar with the taste of chocolate as found in consumer food products. The actual taste of cocoa in nature is not pleasing, it is bitter. As diagrammed in Figure #1, many processing steps are required to render chocolate to a desired taste and to a physical form usable in consumer products.

Since the processing of chocolate has been carried out for a long time, much of the original processing equipment has been firmly established in the industry. However, some of this equipment is no longer the most efficient equipment available. Littleford reactors and mixers have vastly improved the efficiencies of several chocolate processing steps, both in refining and consumer products areas.

It is evident from the flow diagram that cocoa must be sterilized to eliminate the bacteria which has been present from the start of the refining process. If "Dutch" process cocoa is to be made, then an additional step, alkalization, must be also carried out.

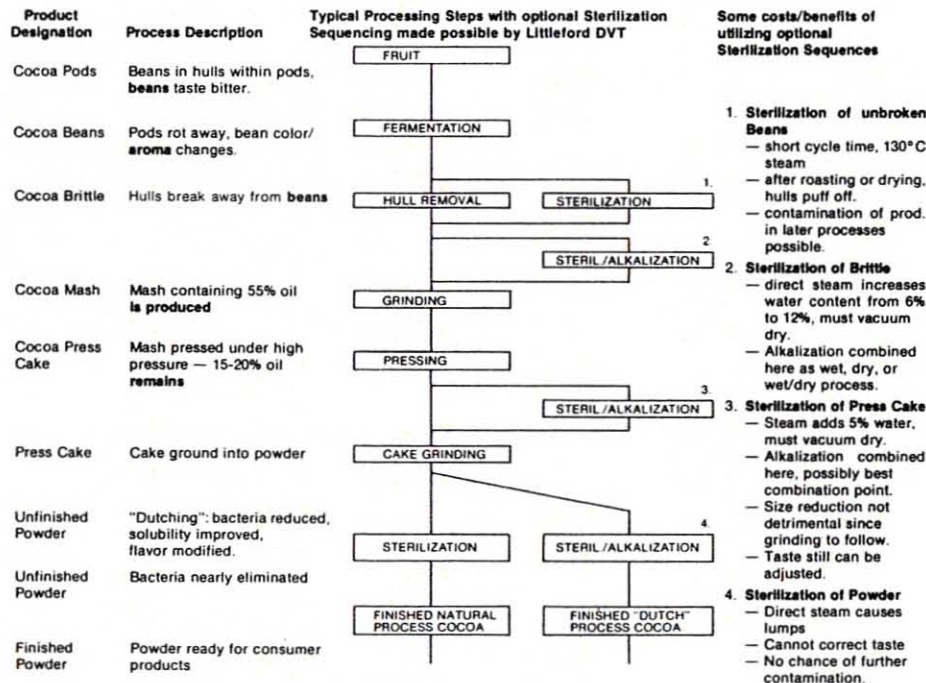
The Littleford DVT Polyphase® Reactor with its unique method of agitating and individualizing particles exposes maximum product surface area for heat transfer, reaction, or drying. This mix action is developed by plow-shaped mixing elements which rotate within a horizontal cylinder at a sufficient

peripheral speed to force the materials of mix into a rigorous 3-D motion. The effective action of the plows is further complemented by high shear choppers which disperse trace liquid or powder additives, and reduce the particle size of the product to expose new material for reaction or drying (conditions up to 250 PSIG or 30" Hg vacuum). Thus sterilization, alkalization, and possible subsequent drying can be effectively carried out in one vessel — and at one of several different points in the refining sequence.

In the consumer chocolate area Littleford intermediate intensity mixers have already firmly established themselves. Like the DVT, these mixers combine the rigorous 3-D motion imparted by the plows with the high shear action of choppers. This combined action enables these mixers to prepare a multitude of consumer products: dry cake mixes (including the incorporation of plastic shortening), chocolate compound coatings, icings, instant drink mixes (involving dispersion of lecithin, honey, etc. into powder), cocoa granulation, enhancement of cocoa powder with cocoa butter, etc.

Littleford reactors and mixers, available in a wide range of sizes, are designed and constructed to meet all safety and sanitary codes.

Figure 1



Littleford Day

Where Processing Ideas Become Reality