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Process Bulletin

Cocktail Beverages

Description

In recent years, pre-mixed and ready-to-serve cocktails containing blended alcohol, flavors, dairy or non-dairy bases and other ingredients have increased in popularity. These drinks usually have a creamy base, blended whiskies or rum, and distinctive flavors. Some of the more common types include pina colada, sombrero, eggnog (seasonal) and fruit flavors such as strawberry and banana.

Many of the drinks, such as the colada type, are prepared with a non-dairy base. These bases can be obtained from various suppliers in powdered form with instructions for the amounts to be used in formulations and temperatures and conditions for rehydration.

The dairy base used in drinks such as eggnog may be obtained from local dairies. The alcohol blends and other ingredients are then added to the base.

Gaulin and Rannie homogenizers are well suited for the preparation of these products. These drinks require high-pressure homogenization and equipment suitable for processing a dairy-base product. APV Homogenizers is recognized as the leader in both of these areas of homogenization.

Objective

The objective is to prepare a cocktail beverage with a flavored dairy or non-dairy base for long-term shelf life. Homogenization is required to reduce the droplet size of the butterfat in the dairy base or to reduce the size of the oil droplets in the non-dairy base. Also, many of these products contain oil-based flavorings or colorings, and the droplet size of these oils must be reduced. The small average droplet size is necessary for long-term shelf life (one year minimum) and stability in handling.

Equipment and Procedures

The homogenizer used is equipped with a two-stage homogenizing valve, capable of operating up to 5000 psi. The non-dairy base premix is usually prepared in the following manner. The non-dairy powder is dissolved in water that has been heated to 130° to 160°F. The time required for complete solution depends on the temperature of the water. The supplier of the base can make recommendations as to time and temperature. After the powder is dissolved, the base is homogenized at 3000-5000 psi total pressure with 10 to 15% of the total pressure on the second stage. The alcohol phase, containing the flavors and coloring, is then added. The batch is heated again to 130-160°F and homogenized at the same pressure as the first pass. The batch is

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quickly cooled to less than 90°F. with a plate heat exchanger and bottled. The alcohol, of course, preserves the product and eliminates spoilage.

The supplier homogenizes the dairy base product; but the base is often re-homogenized, because a typical dairy product does not have a small enough particle size for this application. The distiller adds the alcoholic blends, heats the product up to 130-160°F. and then homogenizes it at 3000-5000 psi with 10 to 15% of the total pressure on the second stage.

The homogenized product should have all droplets under two micrometers in size; and, preferably, all droplets should be under one micrometer for extended shelf life.

Testing

The maximum droplet size can be evaluated using a phase-contrast microscope. The Gaulin Emulsion Quality Analyzer can be used to check the quality of the emulsion from one batch to the next. A particle-sizing instrument, such as one using dynamic light scattering, can determine average droplet size.

The long-term shelf life of the product is also evaluated in order to monitor any formation of a cream line, cream plug or fat separation.

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