
Filled Hard Candy

The topic of this paper is filled hard candy. The most commonly asked question from those outside the industry is: How in the world do they do that? The process is more complicated than most laymen would think and once the details are presented, most people lose interest very quickly. Nevertheless, being confectioners you have to perform the behind-the-scenes work involved with this manufacturing miracle.

Over the years, center filled hard candies have been a novelty more commonly found in European markets. Until recently, filled hard candy in the U.S. was a seasonal item, only enjoyed during the winter holidays. Today, however, there is a growing popularity with various filled products. They can be found in

the form of filled lollipops, fruit filled hard candy, medicated cough drops and now, even filled snack products. This presentation will cover:

- Production Methods
- Process Aspects
- Liquid Filling Types
- Dry Powder Fillings
- Forming Systems
- Honeycombed Center Filled Candy

PRODUCTION METHODS

A brief overview of the equipment used to produce traditional center filled hard candy (Figure 1) would include a filling pump, batch roller, rope sizer, die former and cooling tunnel.

There are two different types of forming systems available in the marketplace for the forming of filled candy pieces. These include chain and rotary die forming. Both can perform the task adequately; however, we feel that the chain system is better suited for the job, especially when it comes to high-percentage filled pieces. The reason for this is that with the chain system, the forming is done in a straight line (Figure 8). The rope is not bent as would be the case in a rotary system.

As noted in the diagram we have incorporated a filling pump. With the production of filled candy the filling pump is supplied with a flexible food grade rubber tube. This tube is connected to a stainless steel pipe, Teflon-coated on the outside

portion that comes in contact with the candy mass. The tube is situated inside the batch roller and runs almost the entire length of its body, finishing up near the first sizing group of the rope sizer. This tube is pivoted at the inlet side of the batch roller and is allowed to move up and down via a counter-pressure spring (part of the batch roller), thus corresponding to the changing size of the batch within the confines of the batch roller.

There are various pump systems which can be applied to the production of filled high boiled sweets. Some of these include piston pumps, mono pumps and gear pumps. Additionally, the use of an extruder pump can be considered for items such as chewing gum filled lollipops or high boiled chewy/toffee masses. Generally with the use of an extruder, the die head portion of the extruder is fitted to a stainless steel Teflon-coated tube.

Figure 2 shows a typical gear pump system. A good example of such a system is the pump placed on a base with wheels. The wheels enable the pump to be moved to and from the production area. This can be especially helpful when it comes time to wash the unit. Where space savings is always a consideration, the design of the pump illustrated here features the body of the pump drive situated above the base, with the double jacketed feed tank situated above it. The feed tank that holds the center filling has a homogenizing agitator including surface scrapers with Teflon blades. This feature is particularly useful with products such as chocolate or peanut paste. Utilizing the agitator system in conjunction with the jacketed tank, the operator can properly control product temperature and viscosity, which are so critical in the filled candy process. From the feed

Fred Hintlian
Varick Enterprises

Presented at the National American Association of Candy Technologists Technical Session