



An Inside Look at Hard Candy Manufacturing

From mints to candy canes, the wide variety of hard candy enjoyed by billions requires precise control of ingredients and cooking for consistent quality.

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Hard candy, or high-boiled sweets, is a confection enjoyed by billions. This type of candy is comprised of sugar and corn syrup. It is amorphous or “glassy” due to the absence of a crystalline structure. Examples of hard candy include lollipops (both filled and unfilled), candy canes, candy sticks, lozenges, starlight mints, jawbreakers, pillows and rock candy.

Herein, we investigate the process of hard candy manufacturing and will cover ingredients, processing, formulas, using rework, cooking and pulling. We also look at specific aspects of equipment, including cookers, mixers and kneaders, wrapping and packaging, and metal detection with safety and traceability in warehousing and shipping in mind. Lastly, we review the process of making hard candy in a lab.

HARD CANDY INGREDIENTS

As we know, water is very important in the manufacture of confectionery products. Water is not only used to liquidize sugar but is also used in equipment cleaning. It is important to work with local water utilities on water quality, including testing for total

coliform, pH, iron and chlorine residuals. Testing is also performed for heavy metals and standard plate count.

When ingredients are received at the facility, it is important to assign a license number on all ingredients so that in case of a recall, they can be traced from the supplier through production, warehousing and shipping to the retailer. This is called lot tracking and also includes tracking of any packaging materials that are in contact with the candy product.

Sugar Parameters

We now look specifically at the ingredients used in the manufacture of hard candy beginning with sugar, as seen in Figure 1.

Sugar Parameters
Liquid sugar: 67.5%Brix Can be made by solubilizing dry sugar into 170°F water
Sugar solution: 1 gallon equals 7.495 lbs. sugar plus 3.6 lbs. water, totaling 11.105 lbs.
Tested for:
• Brix (67.5%)
• pH
• Invert level (0.0%–0.9%), not to exceed 1%
• Color
• Holding temperature (120°F)
Figure 1



Judy Cooley, the presenter of this paper, has more than 43 years of experience in the confectionery industry. Formerly of Beich Candies, Schrafft Candies, Leaf and Hershey, she is now owner of Global Confection Connections LLC, a consulting company.

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