



Consortium for Educational Communication

Module on **Cookies**

By

DR. SUSHMA APPAIAH

M.Sc, Ph.D

Founder & CEO, Giggles of Livez (Golz)

Nutrition Councillor

Roopnagar, Mysuru-570026

Karnataka, India



TEXT

Introduction

The word cookie means “small cake”. Few cookies are made from cake batter. Most cookie formulas have less liquid than cake formulas. Cookie dough range from soft to very stiff, unlike the thinner batters for cakes. The difference in moisture content makes the mixing methods also different though the basic procedure remains similar to cakes. The major difference between cakes and cookies lies in their makeup. Cookies are one of the best known quick snack products. In the United States of America (USA), cookie means any flat, crisp, baked food. They are characterized by a formula high in sugar and shortening and low in water.

Ingredients for cookies

Flour, sugar, shortening, eggs, milk solids and leavening agents are the ingredients required for preparing cookies. Let us learn about these ingredients in-depth.

1. Flour: For cookies premium quality, soft wheat flour containing 8 to 10 percent protein and less than 0.4 percent ash content is most suitable. The darker colour flour is preferred, as this flour allows the better spread cookies. It is essential to shift the flour with other ingredients.
2. Sugar: A cookie with a higher percentage of the correct type of sugar will spread more than the one with a comparatively low amount of sugar. Powdered sugar does not provide appreciable spread. Even large sugar crystals will not appreciably melt during baking and consequently will not give the required spread to a cookie. Granulated sugar gives the cookie maximum spread during baking and retains its original granulation to a greater extent. Apart from causing the spreading action, the granulated sugar promotes the cracked surface on the cookie. Sugar alone cannot produce the desired crispness, but when combined with the shortening gives the desired crispness and shortness to cookies.
3. Shortening: Regular hydrogenated fat with a bland flavor is best. Straight mixture of butter and vegetable shortening imparts better taste to the cookies. Fat due to its shortening or mellowing action on gluten promotes the spread.
4. Eggs: Egg adds structure, flavor and taste. Eggs in large amounts, provides cookies a rise rather than spread. Egg yolks produce a tender cookie than whole eggs, but little extra



moisture is required from either water or milk or both.

5. Milk Solids: Milk solids have a binding action on the flour proteins. When milk solids are used in large amount, they reduce the spread of the cookies.
6. Chemical Leavening Agents: Baking powder is widely used for leavening of the cookie mixture. It controls the spread and imparts lightness to the product. If sodium bicarbonate (baking soda) is used as a leavening agent, the quantity should be limited to avoid alkaline flavor.

Characteristics of cookies and their contribution to quality

Cookies are available in variety of shapes, sizes, flavours, and textures. Characteristics that are desirable in some types are not desirable in others. For example, few cookies have to be crisp, while others soft. Some of them hold their shape, others spread during baking. In order to produce the good quality cookies, it is important to understand the desired characteristics and factors responsible to achieve them. Crispness, softness, chewiness and good spread are the desired quality of cookies. Let us learn about these characteristics and how to get them.

a) Crispness:

Cookies are crisp when they have low moisture. Factors which contribute to crispness are mentioned herewith.

1. Low proportions of liquid in the mix---- Crisp cookies are made from stiff dough.
2. High sugar and fat content---- A large quantity of fat and sugar ingredients makes the dough crisp with low moisture content.
3. Baking for long time----This evaporates most of the moisture. Baking in a convection oven also dries cookies more quickly, thus contributing to crispness.
4. Small size or thin shape----This results in cookies which dry faster during baking.
5. Proper storage is essential---- Crisp cookies can become soft if they absorb moisture due to improper storage.

b) Softness:

Softness is the opposite of crispness, so are the requirements to get soft cookies. They are as follows:



1. High proportion of liquid in the mix.
2. Low sugar and fat.
3. Honey, molasses or corn syrup included in the formulas. These sugars are hygroscopic, which means they readily absorb moisture from the air or from their surroundings.
4. Under baking.
5. Large size or thick shape, so they retain more moisture.
6. Proper storage. Soft cookies can become stale and dry if not tightly covered or wrapped.

c) Chewiness:

Moisture is essential for chewiness, but other factors are also important. The following factors contribute to chewiness:

1. High sugar and liquid content, but low fat content.
2. High proportion of eggs.
3. Strong flour or gluten developed during mixing.

d) Spread:

Spread is desirable in some cookies, while others must hold their shape. Several factors contribute to spread or the lack of it. These are as follows:

1. High sugar content increases spread. Coarse granulated sugar increases spread, while fine sugar or confectioners' sugar reduces spread.
2. High baking soda or baking ammonia content encourages spread.
3. The creaming together of fat and sugar contributes to leavening by incorporation of air. Blending fat and sugar just to a paste (without creaming in a lot of air) reduces spread.
4. Low oven temperature increases spread. High temperature decreases the spread.
5. A slack batter – This is due to high liquid content.
6. Strong flour or activation of gluten decreases spread.
7. Cookies spread more if baked on heavily greased pans.



Mixing methods for the making of Cookies

Cookie mixing methods are similar to cake mixing methods. The major difference is that less liquid is incorporated, so mixing is easier. Less liquid means gluten is less developed by the mixing. It is also, easier to get a smooth, uniform mix.

There are three basic cookie mixing methods:

1. One-stage.
2. Creaming.
3. Sponge.

These mixing methods may vary based on the formulas. The general procedures are as follows:

A. One-Stage Method:

In this method there is more liquid in cake batters, so it must be added in two or more stages in order to blend uniformly. Low moisture cookies, on the other hand, can be mixed all in one stage. As all the ingredients are mixed at once, the baker has less control with this method than with other methods. Therefore, the one-stage method is not frequently used. When over mixing is not a great problem, as with some chewy cookies, this method is preferred.

Procedure for One-Stage Method:

1. Weigh the ingredients accurately kept at room temperature.
2. All the ingredients are added in the mixer and mixed at low speed with uniform blending. Scraping can be done if required.

B. Creaming Method:

Creaming method is similar as for cakes. As, cookies require less liquid, it is not essential to add the liquid alternately with the flour. It is be added together at once.

Creaming is very important as it affects the texture, leavening and the spread of the cookies. Only a small amount of creaming is desired when the cookie must retain its shape and not spread too much. If the cookie is very short i.e high in fat and low in gluten development, or if it is thin and delicate, too much creaming will make the cookie too



crumbly.

Procedure for Creaming Methods:

1. Weigh the ingredients accurately kept at room temperature.
2. The fat, sugar, salt, and spices are added to the mixing bowl. These ingredients are mixed at low speed.
3. For light cookies, creaming is done till light and fluffy, to help add more air for leavening. For denser cookies, blend to a smooth paste avoiding the creaming until light.
4. Then the eggs and liquid, if any, are blended at low speed. In the end flour is sifted and leavening is combined. Care is must to avoid overmixing to discourage gluten development.

C. Sponge Method:

This method is similar to the egg-foam methods for cakes. The procedure varies considerably, depending on the ingredients. Each batch should be kept small because the batter is delicate.

Procedure for Sponge Method:

1. Weigh all the ingredients accurately which should be kept at room temperature, or warm the eggs slightly for greater volume, as done for sponge cakes.
2. Follow the procedure as per the formula. Whip the eggs (whole, yolks or whites) and the sugar to the proper stage: soft peaks for whites, thick and light for whole eggs or yolks.
3. Then fold in the remaining ingredients as specified in the recipe, avoiding over or under mixing.

Type of Cookies and makeup methods

Cookies can be classified by their makeup methods as well as by their mixing methods. Grouping them by makeup method is perhaps more useful, as their makeup procedures vary considerably. In this section, you will learn the basic procedures for producing eight cookie types which are: 1) Bagged 2) Dropped 3) Rolled 4) Molding 5) Icebox 6) Bar 7) Sheet and 8) Stencil



1. Bagged: Bagged or Pressed cookies are made from soft doughs. The dough must be soft enough to be forced through a pastry bag but stiff enough to hold its shape.

2. Dropped: Like bagged cookies, dropped cookies are made from a soft dough. This method is considered the same as the bagged method and many bakers use the term drop for both bagging out cookies and for depositing dough with a spoon or scoop. This method is opted for cookies, when the dough contains pieces of fruit, nuts, or chocolate that would clog the pastry tube.

3. Rolled: Cookies are rolled and cut from a stiff dough. Dough is chilled thoroughly.

Cookies are cut with cookies cutters. The freshly cut cookies are placed on prepared baking sheets. Decorations can be applied before baking, like brushing the tops with egg wash and sprinkle with colored sugars. After baking, cutout cookies are often decorated with colored icing (royal icing, flat icing, or fondant). Cookies has to be completely cooled before applying the icing.

4. Molding: Each piece is then molded into the desired shape. Special molds are used to flatten the dough and at the same time, stamping a design is done on the cookie. The pieces can be shaped by hand into crescents, fingers or other shapes.

5. Icebox: The icebox or refrigerator method is ideal to have freshly baked cookies. The rolls of dough can be prepared in advance and stored. Cookies are prepared and baked as needed. This method is used to make multicolored cookies in various designs, such as checkerboard and pinwheel cookies.

6. Bar: This procedure is called the bar method because the dough is baked in long, narrow strips and later cut crosswise into bars. Baking is done as per the recipe.

After baking, while the cookies are still warm, each strip is cut into bars about 1 $\frac{3}{4}$ inches (4.5 cm) wide.

7. Sheet: Sheet cookies vary widely. Some of them are almost like sheet cakes, only



denser and richer; they may even be iced like sheet cakes. In this method cookie mixture is spread into prepared sheet pans, topped or brush with an egg wash. Then baked, cooled and applied with icing or topping.

8. Stencil: The stencil method is a special technique used with a particular type of soft dough or batter. This batter is often called stencil paste. It is used for making this type of cookie and also for making ribbon sponge cake for decorative work. The stencil are placed on the silicone mat or parchment. With an offset palette knife, batter is spread across the stencil to make a thin layer and then completely filled.

Preparation of Panning, Baking, Cooling and Storage

- a) Preparing the Pans: Pans are prepared by lining the sheets with parchment or silicone paper as it eliminates the necessity of greasing. A heavily greased pan increases the spread of the cookie. A greased and floured pan decreases spread.
High-fat cookies can be baked on ungreased pans.
- b) Baking of Cookies: Cookies are baked at a relatively high temperature for a short time. Too low a temperature increases spreading and may produce hard, dry, pale cookies. Too high temperature decreases spreading and may burn the edges or bottoms. Excessive browning is undesirable if the dough has been colored.
- c) Cooling of cookies: Cookies baked without silicone paper must be removed from the pans while they are still warm, or they may stick. If the cookies are very soft, they should not be removed from the pans until they are cool enough and firm enough to handle. Some cookies are soft when hot but become crisp when cool.
- d) Storage of Cookies: Soft cookies, such as bar cookies, are stored in a container with a tight lid. If they tend to dry out, add a slice of apple to the container. Crisp cookies should be stored in a container with a loose lid, like a cookie jar. If there is a lot of humidity a piece of bread should be added to the container. The bread helps to absorb



the moisture.

Conclusion

Cookies as a snack are quite popular and favorite throughout the world. The combination and blending of ingredients result in different types of cookies. The characteristic flavor, texture and both crispness and softness poses many challenges to the final product. Their low moisture content ensures the shelf life of the cookies. There are different methods commercially used in production of cookies. Gluten is less developed in the cookies, thus easier to get a smooth, uniform mix. Each cookie mixing methods has its advantages and limitations.

Classification of cookies is based on their makeup methods as well as by their mixing methods. Their makeup procedures vary considerably. Preparation of panning, baking, cooling and storage plays extremely significant role in the final quality of the cookies.