Culinary Institute of America

Meringue & Genoise

Learning Objectives

- Define meringue and describe its common culinary uses.
- Explain the difference between volume and stability in meringue production.
- Identify proper techniques and tips for preparing successful meringue.
- Compare the characteristics of French, Swiss, and Italian meringues.
- Describe the preparation methods for each type of meringue.
- Describe the warm foaming method used in genoise preparation.
- Explain the ribbon stage and its role in sponge cake structure.
- Identify common applications of genoise sponge in pastry products.

What is Meringue?

A foam made by whipping egg whites with sugar (and sometimes an acid) until glossy peaks form

Uses:

- Toppings (pies)
- Shells (pavlova)
- Fillings (dacquoise)
- Folded into batters

Volume vs. Stability

Volume

- Achieved by trapping air bubbles in whipped egg white proteins
- Peak height and glossy sheen indicate maximum volume

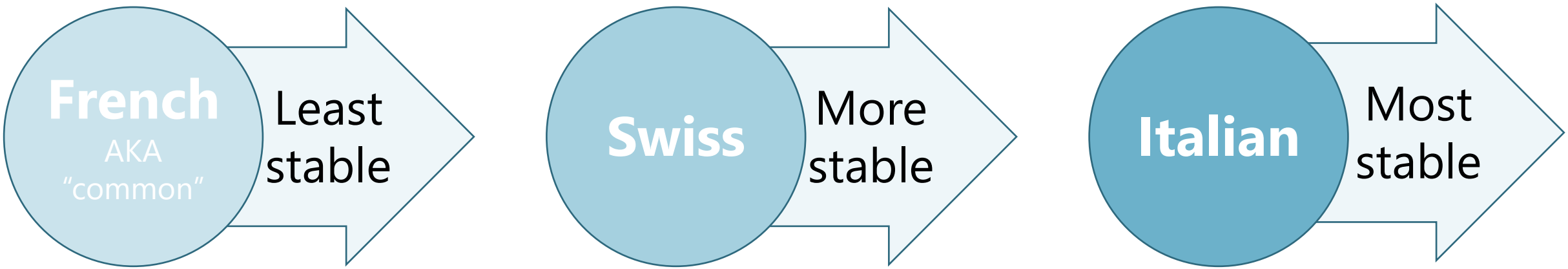
Stability

- Sugar and acid (cream of tartar, lemon juice) strengthen the foam
- Too little sugar: weepy collapsed meringue
- Too much sugar: dense, slow-to-whip

Meringue: **Tips**

- All utensils must be clean, no grease
- Uncontaminated egg whites (no yolks)
- Whip the whites, do not add sugar until they have tripled in volume (no more viscous egg white, all foam)
- If you add the sugar too fast, or too soon, it will not gain volume

Types of Meringues



French Meringue

- Whites are whipped up, and raw sugar is added in a steady stream
- **Not** very stable

Important!

Can only be used in items that are going to be cooked further!

French Meringue

1. **Prep:** use a perfectly clean, dry bowl and whisk
2. **Whip:** beat room temperature egg whites to soft peaks
3. **Sugar:** add sugar a little at a time, whip to stiff, glossy peaks
4. **Use:** Pipe or fold immediately

Swiss Meringue

- Egg whites and sugar are heated together over a double boiler to 140˚F (60° C) while stirring constantly
- Meringue is then whipped to the desired peak
- Heating makes the whites more elastic and allows the sugar to dissolve
- This meringue is “egg safe”

Swiss Meringue

1. **Combine:** whisk egg whites and all the sugar in a heatproof bowl
2. **Heat:** place over simmering water and whisk until warm (140°F) and sugar dissolves
3. **Whip:** transfer to mixer and whip to cool, glossy peaks
4. **Use:** great for buttercreams, cookies, or folding into batters

Italian Meringue

- As the egg whites are whipped, a sugar syrup is cooked to soft ball stage (115°C /240°F)
- The hot syrup is poured over the whipping whites
- Egg safe, and the most stable of the three meringues

Italian Meringue

1. **Whip whites:** beat egg whites to soft peaks
2. **Syrup:** heat sugar and water to (238°-242°F) **“softball stage”**
3. **Stream:** with mixer running, pour in a thin stream into whites
4. **Finish:** whip to cool, thick, glossy peaks
5. **Use:** ideal for stable icings, mousses, and toppings

Genoise Sponge

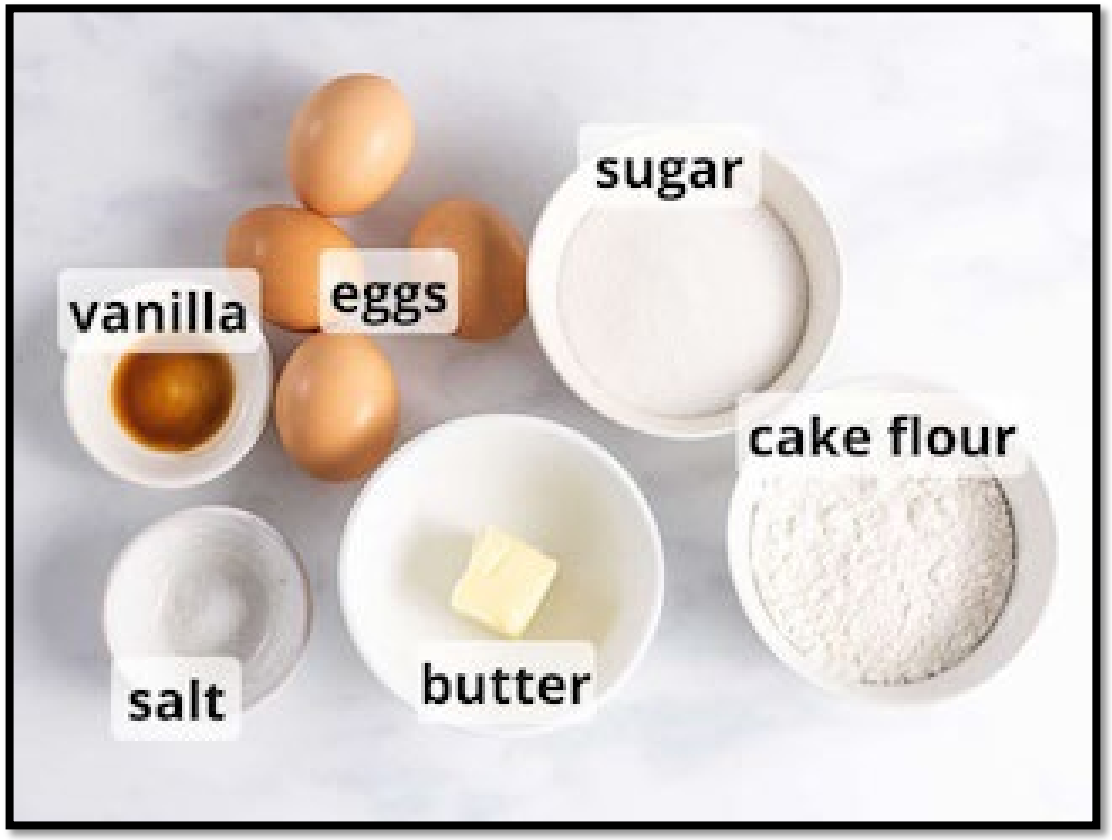
- A soft, fluffy sponge cake originating from French baking techniques
- Utilizes the warm foaming method as a leavener
- An ideal base for creams, fruits, syrups, and frostings

Warm Foaming Method

Whole eggs are gently warmed and whipped to incorporate volume, resulting in a flexible and spongy cake ideal for rolling or layering

Key ingredients:

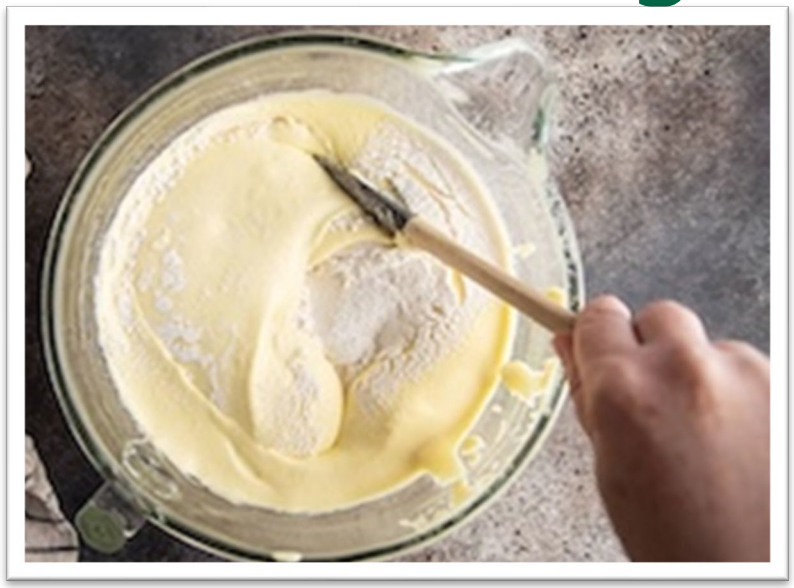
- Whole eggs
- Sugar
- Cake flour
- Butter (optional) melted for richness
- Vanilla or other flavoring



Warm Foaming Method

1. **Preheat the oven:** set to 375˚ F and grease and flour cake pans
2. **Warm the eggs + sugar:** combine whole eggs and sugar in a bowl and place over a double boiler. Gently heat to 110°-120°F, whisking constantly
3. **Whip to ribbon stage:** transfer to a stand mixer and whip on high speed until the mixture is pale, thick, and tripled in volume

Warm Foaming Method



4. **Fold in flour:** sift dry ingredients and gently fold into the egg mixture in batches to avoid deflating the foam
5. **Add melted butter:** temper the butter with a small amount of batter first, then gently folding it in
6. **Bake immediately:** pour into prepared pans and bake right away to retain volume

What is the Ribbon Stage?

Reached when eggs and sugar are whipped together until the mixture becomes:

- Pale and thick
- Tripled in volume
- Falls from the whisk in thick ribbons that slowly dissolve back into batter

Purpose of Ribbon Stage

- **Incorporates air** into the batter, providing natural leavening
- Helps create a **light, airy texture** without chemical leaveners
- Ensures the **structure and volume** of sponge cakes like genoise or warm foamed sponge.

Genoise Sponge Uses

Fraisier Cake:

- Traditional French cake
- Layers of genoise, strawberries, and creamy filling

Yule Logs:

- A traditional Christmas dessert
- A light, flexible genoise sponge rolled into a cylinder
- Utilizes icing to resemble wood

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Any Questions?