

Why are my cookies flat?

The mysteries of kitchen chemistry by Beverly Noble.

If you bake much, you have seen these instructions: “Do not overbeat,” “Beat just until dry ingredients are moistened,” or “Batter will still be lumpy.” Did you ever wonder why? Or get distracted, beat too long, and have flat cookies or limp pancakes? As a friend said to me recently “I know before I bake them, the batter doesn’t look right.”

First, the “why?” Baking powder and baking soda are the primary leavening agents in cakes, cookies, and pancakes. Both create a chemical reaction when mixed with liquids. Try this at home, if you are curious: take a pie plate, add a tablespoon of baking soda. Then stir in a tablespoon of vinegar or lemon juice. See the fizz? Those little bubbles are what make your desserts light and airy. But they don’t last long. So when you overbeat, or if you delay before putting the batter in the oven, the reaction is ended before the heat of the oven has a chance to complete the chemical reaction.

Now, the “what”... What is the difference between baking soda and baking powder? Baking soda is the simplest, a single ingredient called sodium bicarbonate. When mixed with a liquid acid, it releases carbon dioxide, those little fizzy bubbles you saw earlier. If you’re really curious, try the earlier experiment with baking soda and water. It will form a paste, but no bubbles! Recipes that use baking soda ALWAYS include an acid: lemon juice, vinegar, and buttermilk are the most common. Strangely, honey and molasses both contain enough acid to create the desired reaction. Cream of tartar is a dry acid, and will do the trick once liquids are added.

Baking powder sold in the U.S. is generally “double action”. It consists of baking soda plus two dry acids. One releases the gas immediately on contact with liquids; the other is released by the heat of the oven or griddle. Thus the name “double action.”

Can you fix it? The phone rang, the baby cried, and you left the mixer on. Now the batter is totally smooth and flat... Sadly, there is little you can do at this point. Both baking powder and baking soda have a strong, salty, metallic flavor. That’s why recipes use just enough to create the chemical reaction, without flavoring the dish. So you can add another dose (plus more lemon juice if using baking soda); but you will probably be able to taste the difference in the finished product.

Prevention is key! It helps to use the 2-bowl strategy: mix all the dry ingredients thoroughly. In a second bowl, beat the egg(s), milk, vanilla, lemon juice... all the liquids. Then dump the dry ingredients in to the liquid, stir quickly, add any chunky stuff like chocolate chips, nuts, chopped fruits, stir a couple more times and bake.

Unless you have carpal tunnel syndrome, beat the batter by hand. Use a wooden spoon for heavy batters. (I have a great flat wooden blade, about 3 inches wide, that masters even the thickest dough.) For thin batters, a wire whisk, one of those slotted serving spoons, or even a fork will work well.

Remember, you just want to combine the liquids and dry ingredients. If you do use an electric mixer, put it on the lowest speed and watch the time! Some kitchen oopsies can be fixed, but not this one.

Happy baking!

Beverly Noble is an experienced cook, and has been creating recipes (and experimenting with kitchen chemistry) for many years. Her first book, "A Lifetime of Recipes: Fabulous Fresh Fruit" will be available March 1, 2012. You can contact her at www.Facebook.com/Lifetime.Recipes or at www.ALifetimeofRecipes.com