

Acids and Bases: Chemical Leaveners

Session 1: March 26, 2014

In our Spring 2014 JW Iron Chef Club we're studying the science of cooking!

In our first session, we'll explore what happens when an acid and a base mix. And we'll see—and taste—the effect that varying the amount of chemical leaveners has on the texture and flavor of pancakes.

Questions to Discuss and Contemplate:

Which ingredients do you think are acidic?

Which ingredients are alkaline/basic?

What will happen to the batter when the acidic ingredient mixes with the alkaline ingredient?

What will this do to the pancake batter and the pancakes?

Predict which recipe will yield the best pancakes.

Pancakes: Recipe A

INGREDIENTS:

2 tablespoons butter	½ teaspoon baking powder
1 egg	¼ teaspoon salt
1 cup buttermilk	1 teaspoon sugar
1 cup flour	

Melt the butter over medium heat. Allow the butter to cool slightly while you measure and mix your other ingredients.

Combine and mix all of the “wet” ingredients in one bowl.

In a separate bowl, combine and whisk together your “dry” ingredients.

Pour your wet ingredients over your dry ingredients and mix just until combined, about 10 seconds. DO NOT OVERMIX!

Heat a lightly oiled (or melted-buttered) griddle on medium-high heat. Scoop the batter onto the griddle, about ¼ cup per



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pancake. Flip once (gently) when bubbles on the top of the pancake are set.

Allow the 2nd side to finish cooking. Serve immediately.

Pancakes: Recipe B

INGREDIENTS:

2 tablespoons butter	½ teaspoon baking powder
1 egg	¼ teaspoon baking soda
1 cup buttermilk	¼ teaspoon salt
1 cup flour	1 teaspoon sugar

Melt the butter over medium heat. Allow the butter to cool slightly while you measure and mix your other ingredients.

Combine and mix all of the “wet” ingredients in one bowl.

In a separate bowl, combine and whisk together your “dry” ingredients.

Pour your wet ingredients over your dry ingredients and mix just until combined, about 10 seconds. DO NOT OVERMIX!

Heat a lightly oiled (or melted-buttered) griddle on medium high heat. Scoop the batter onto the griddle, about ¼ cup per pancake.

Flip once (gently) when bubbles on the top of the pancake are set. Allow the 2nd side to finish cooking. Serve immediately.

Pancakes: Recipe C

INGREDIENTS:

2 tablespoons butter	½ teaspoon baking powder
1 egg	2 teaspoons baking soda
1 cup buttermilk	¼ teaspoon salt
1 cup flour	1 teaspoon sugar

Melt the butter over medium heat. Allow the butter to cool slightly while you measure and mix your other ingredients.

Combine and mix all of the “wet” ingredients in one bowl.

In a separate bowl, combine and whisk together your “dry” ingredients.

Pour your wet ingredients over your dry ingredients and mix just until combined, about 10 seconds. DO NOT OVERMIX!

Heat a lightly oiled (or melted-buttered) griddle on medium high heat. Scoop the batter onto the griddle, about $\frac{1}{4}$ cup per pancake. Flip once (gently) when bubbles on the top of the pancake are set.

Allow the 2nd side to finish cooking. Serve immediately.

Pancakes: Recipe D

INGREDIENTS:

2 tablespoons butter	1 cup flour
1 egg	$\frac{1}{4}$ teaspoon salt
1 cup buttermilk	1 teaspoon sugar

Melt the butter over medium heat. Allow the butter to cool slightly while you measure and mix your other ingredients.

Combine and mix all of the “wet” ingredients in one bowl.

In a separate bowl, combine and whisk together your “dry” ingredients.

Pour your wet ingredients over your dry ingredients and mix just until combined, about 10 seconds. DO NOT OVERMIX!

Heat a lightly oiled (or melted-buttered) griddle on medium high heat. Scoop the batter onto the griddle, about $\frac{1}{4}$ cup per pancake. Flip once (gently) when bubbles on the top of the pancake are set.

Allow the 2nd side to finish cooking. Serve immediately.