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QUICK BREADS (Leavening Agents)

by

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QUICK BREADS.

Leavening Agents.

A leavening agent is a substance which lightens or causes a flour mixture to become light. The common leavening agents are: baking soda, plus some acid, baking powder, air and yeast.

Baking Soda

You may no doubt have noticed that all breads and cakes seem to be made up of a large number of tiny balloons crowded together. The walls of these tiny balloons or bubbles are the hardened or baked flour mixture stretched out in this form.

If you will do the following experiment it will help you to understand how a flour mixture can be made light by using soda and sour milk or baking powder.

Place one-fourth cup of sour milk in small pan, add about one-eighth of a teaspoon of baking soda, stir a little. What takes place? Put on the stove and heat. What kind of material, solid, liquid, or gas, is indicated by the bubbling? What would happen if the bubbles were mixed up with a starchy substance from which they could not readily escape? What does this show in regard to using sour milk and baking soda for lightening mixture?

Take one-eighth c. molasses and add to it a little water. Add one-eighth ts. of soda and heat as before. What does the bubbling indicate?

Both the sour milk and the molasses contain an acid. So we see that when an acid is added to baking soda and heated a gas is formed. The gas formed when the baking soda breaks up is called carbon dioxide gas.

To make the ginger bread light there must be something in the mixture that will hold the gas as it forms and stretch out over the gas bubbles. This makes a porous mass when the whole is baked, or in other words, the stretched out material around the gas bubbles becomes hardened sufficiently so it will not go together again when the gas escapes.

The substance that stretches out as the carbon dioxide is formed is found in the flour and is called gluten. It is a very starchy and gummy product. Most boys and girls in the country have made gum by chewing wheat. This wheat gum is the gluten which makes it possible to make a light, porous bread.

Take half a cup of flour and add a little water to it. Work well. Keep adding water until you have a stiff dough and then take in your hands and work it well. Wash out all the starch by working it in your hands under a faucet. If you do not have running water, you can wash it in a pan. Wash until no more starch comes out. What you have left is a light grayish mass, and very elastic. Work this into a round ball, and place on a tin in a hot oven. What happens? This is what happens. The air and water within the elastic

gluten expands when heated and of course stretches the gluten with it. Air is a mixture of gases, and all gases expand when heated. Exactly the same thing happens in the gingerbread as in the experiment, only on a smaller scale. The baking soda breaks up into the carbon dioxide gas.

This is caused by the acid in the sour milk, and when heated the carbon dioxide gas expands and stretches out the gluten which happens to be around the carbon dioxide gas bubble.

If more baking soda is used than there is acid in the sour milk or molasses to break it up into carbon dioxide gas, the soda will remain in the mixture as soda. This is undesirable, because soda has a bitter, unpleasant taste. Also an excessive quantity of soda which has not been broken up into carbon dioxide gas by the acid will discolor the mixture. It is important, therefore, to use the right amount of baking soda in proportion to the acid materials, which is $1/2$ ts. of baking soda to one cupful of sour milk.

Baking Powder

To find out just what baking powder is made of, do the following experiments:

Put $1/8$ ts. baking soda and $1/4$ ts. cream of tartar in a cup. Add 1 ts. hot water. What happens? What kind of a substance is cream of tartar?

Put $1/4$ ts. baking powder in a cup. Add 1 ts. hot water. What happens? From these experiments can you tell what baking powder is made of?

Composition of Baking Powder

Baking powder consists of:

1. Baking soda.
2. An acid substance.
3. A starchy material.

There are different kinds of acid substances used in various baking powders. The most common acid materials are cream of tartar, acid phosphate, or alum. What acid substance is used in the baking powder you use? (Found on can).

The starch is added to keep the other materials dry and thus prevent the formation and loss of the carbon dioxide gas. By measurement, the proportion of baking soda and cream of tartar is $2\frac{1}{2}$ parts of cream of tartar to one part of baking soda.

Since baking powder contains both the baking soda and the acid material the quantity of baking powder used in quick breads is dependent upon the quantity of flour and eggs used.

When no eggs are used, 2 teaspoonfuls of baking powder should be used with 1 cupful of flour. When eggs are used in the quick breads, the quantity of baking powder should be less.

In making a preparation light, one egg serves the same purpose as 1/2 ts. baking powder. This is because the egg will hold or retain air beaten into it. The air being a mixture of gases, expands like the carbon dioxide gas when heated and thus helps to lighten the mixture.

Look over the muffin recipes and explain how they are made light. Give reasons for the amount of baking powder used.

BREAD

quick Breads, (Batters)

Whole Wheat Muffins.

1 C. whole wheat flour.	3/2 3 1/2 ts. baking powder
1 C. flour	1 egg.
1/8-1/4 C. Sugar	1/2 C. milk.
1/2 ts. salt	2 tb. fat.

Mix and bake as plain muffins.

Graham Muffins.

1 1/2 C. graham flour	1 ts. salt
1/2 C. flour	1 egg
1/4 C. sugar	1 C. liquid
4 ts. baking powder	2 tb. fat

Mix according to directions.

Cornmeal Muffins.

1 C. cornmeal	2 tb. butter
2 tb. sugar	1 C. wheat flour
1 ts. salt	4 ts. baking powder
1 1/4 C. milk	1 egg.

Cook together the first five ingredients in a double boiler. When cool add the flour, sifted with the baking powder and add the beaten egg. Beat thoroughly and bake in muffin tins.

Oatmeal Muffins.

2/3 C. rolled oats	2 tb fat
1 C. scalded milk	1 1/2 C. flour
3 tb. sugar	4 ts. baking powder
1/2 ts. salt	1 egg

Add scalded milk to rolled oats. Let stand 5 minutes. Measure and sift dry ingredients together. Add melted fat and then dry ingredients to milk and rolled oats, add well beaten egg. Drop in greased muffin tins. Bake.

Date Muffins.

1. Use plain muffin recipe doubling amount of sugar.
2. Add chopped dates and the dry ingredients before adding liquid.

Bran Muffins.

- | | |
|---------------------|---------------------------|
| 1 C. flour | 1 C. sweetening |
| 1 ts. salt | 1 egg |
| 3 ts. baking powder | 1 tb. shortening (melted) |
| 2 C. clean bran | About 1½ C. sweet milk. |

1. Sift together flour, salt and baking powder.
2. Mix bran well with other dry ingredients.
3. Mix milk, beaten egg, sweetening and shortening.
4. Add liquid mixture to dry ingredients.
5. Bake in greased muffin pans in a moderate oven for about one-half hour.

Oatmeal cookies.

- | | |
|---------------------|---------------------|
| 1½ C. flour | ¼ ts. soda |
| ½ C. cooked oatmeal | ½ ts. baking powder |
| ¼ C. sugar | ½ ts. cinnamon |
| ¼ C. raisins | 3 tb. fat |
- ¼ C. molasses.

Heat the molasses and fat. Mix with all the other materials. Bake in muffin pans 30 minutes. This makes 12 cakes.

Drop Cookies.

- | | |
|--------------------|--------------------------|
| 1 C. sugar | 2 C. flour |
| ½ C. melted butter | 3 ts. baking powder |
| 2 eggs | 1 C. chopped raisins and |
| ½ C. milk | 1 ts. vanilla nuts. |

Mix same as for plain muffins and drop from spoon on greased pans. For spiced cookies, omit vanilla and sift with the flour 1 ts. cinnamon, ½ ts. all spice, ¼ ts. cloves, or ½ ts. ginger and 1½ ts. cinnamon. For chocolate cookies add 3 squares of melted chocolate. Chopped peanuts may be used in place of raisins and nuts.

QUICK BREADS (Doughs)

A dough mixture differs from a batter in that it is stiffer; or in other words, a dough is a flour mixture too stiff to be beaten. There are two classes of doughs, the soft dough and the stiff dough, the difference being in the amount of flour used. Quick breads are soft doughs.

What method was used in mixing the fat in the batter quick breads? When a quick bread mixture is a batter the fat is most easily and thoroughly mixed by melting it and stirring it into the other ingredients.

In a dough or stiff mixture this method of mixing the fat is not considered as satisfactory as adding it in a solid form. This is done by working the fat into the dry ingredients by using a knife or the finger tip. In which case will the mixture remain cooler mixing the fat with a knife or finger tips? Which is the cleaner?

Doughs are easily mixed by using a knife instead of a spoon. The proportion of flour and liquid in a soft dough is about three parts of flour to one part of liquid. Baking powder biscuit is a typical soft dough mixture.

Avoid handling the soft doughs any more than is necessary for good mixing.

Baking Powder Biscuits.

I. Drop biscuits.

2 C. flour	1 ts. salt
4 ts. baking powder	2 tb. fat
$\frac{1}{2}$ to $\frac{5}{8}$ C. liquid (milk or water)	

1. Sift and measure the flour.
2. Mix the dry ingredients through sifter.
3. Work the fat into the mixture by cutting it in well with a knife.
4. Mix liquid with dry ingredients using a knife.
5. The mixture is of proper consistency when it drops from the spoon without spreading.
6. Drop by spoonfuls on greased pan, or into greased muffin tins.
7. Bake in a hot oven from 12 to 15 minutes.

The baking can be divided into three periods:

1. End of first period of 4 to 5 minutes--rising.
2. End of second period 4 to 5 minutes--risen fully and started to brown.
3. End of third period of 4 to 5 minutes--fully browned and answer test.

Test when Done.

1. Even brown color, easily removed from pan.
2. Double in size.
3. Light.
4. Break open largest, should be dry inside. Serve hot.

Score your baking, using score card for muffins.

Standard to work for
(Same for all soft dough preparations)

1. Light.
2. Evenly browned.
3. Nicely shaped.
4. Uniform in size.
5. Good flavor.

II. Cut Biscuits.

For the cut biscuits use the same recipe as for drop biscuit, only it can be rolled out and cut. This stiffer dough is obtained by adding less liquid.

To shape:

1. Flour molding or bread board and rolling pin.
2. Place the dough on board and flour so that it will not stick to rolling pin.
3. Roll gently to 1/2 inch thick. Do not press dough down by a rolling motion but rather "pat" it down with rolling pin.
4. If tops of biscuits seem to be covered with dry flour, moisten with little milk or water. Milk makes a richer looking crust.

Sugar Cookies.

- | | |
|----------------|---------------------|
| 3 tb. butter | 2 1/2 C. flour |
| 1 C. sugar | 2 ts. baking powder |
| 1 egg | 1/4 c. milk |
| 1 ts. vanilla. | |

Cream butter and sugar together, add egg, beat thoroughly. Add milk, then flour and baking powder sifted together. Roll out lightly to 1/4 inch thickness. Bake in quick oven. Makes 3 dozen medium sized cookies. This recipe may be varied in all kinds of ways by addition of nuts, coconut, chocolate, lemon juice, etc.

Baking Powder Biscuits (varied)

The baking powder biscuit can be varied by increasing the amount of shortening, adding more sugar, adding fruits to flavor, etc. These variations give us the preparation as a shortcake, fruit rolls, and others.

Fruit Rolls.

- | | |
|---------------------|-------------------------------|
| 2 C. flour | 3 ts. fat, butter, or butter- |
| 4 ts. baking powder | 1/2 C. brown sugar |
| 1 ts. salt | 1/2 C. raisins or currants |
| 2 tb. fat | 1/2 ts. cinnamon. |
| 1/2 to 2/3 C. milk | |

You will notice that the ingredients in the left column are the regular baking powder biscuit recipe. The ingredients in the right column are the flavoring and fruit for the rolls.

1. Mix first five ingredients as for baking powder biscuit dough.
2. Roll dough to a sheet about 1/4 inch in thickness forming a rectangle.
3. Melt butterine or butter and spread over dough.
4. Mix cinnamon and sugar and sprinkle this over dough to within 3/4 inch of the edge. Why? Because if too close to the edge the filling will fall out. Add currants and raisins.

a. Preparation of currants:

Look them over removing foreign particles. Place them in a strainer and pour water over them to rinse.

b. Preparation of raisins:

Separate raisins, wash thoroughly, removing seeds if any are present. Cut into small pieces.

5. Begin at end nearest you and roll toward the opposite end, and when within 1 or $1\frac{1}{2}$ inches of the end, lift the end and fold over and pinch along its length.
6. Cut roll in $\frac{3}{4}$ inch slices.
7. Place on greased tins with cut end up.

BAKING.

We cannot have as hot an oven for fruit rolls as we did for baking powder biscuits because sugar and fruit will burn quickly.

1. Oven test--white paper golden brown at end off five minutes.
2. Place in oven of coal stove, floor oil stove, or gas stove, oven center.
3. Time 12 to 15 minutes.

Pocket Book Rolls.

Melt a tb. of butter in a flat dish. Roll the dough to a thickness of $\frac{1}{2}$ inch, and with a sharp knife cut pieces three inches wide by four inches long. Dip the tops into the melted butter and fold over lengthwise. Put the rolls in a pan allowing them to just touch each other. Let rise 10 minutes and bake as ordinary biscuits.

Nut Bread.

4 C. flour	1 C. milk
1 C. sugar	1 C. chopped nut meats.
6 ts. baking powder	Salt
1 egg.	

1. Mix and sift dry ingredients.
2. Add beaten egg and milk. (This makes a soft dough as for baking powder biscuits).
3. Add nuts and turn into loaf pan which has been well greased.
4. Let stand 20 minutes.
5. Bake in a moderately hot oven 30 to 45 minutes.
This makes two loaves.

Shortcake.

2 C. flour	2 tb. sugar
4 ts. baking powder	$\frac{3}{4}$ C. milk
$\frac{1}{2}$ ts. salt	$3\frac{1}{2}$ tb. butter or other shortening fat.

Mix as you would baking powder biscuit dough. Toss on floured board, divide into parts. Pat, roll out, and bake 12 to 15 minutes in hot oven (five-minute paper test, golden brown). Use greased buttered Washington pie or round layer cake tins. When baked split and spread with butter. Any canned fruit may be used between or on top of short cake. Cover top with cream sauce or whipped cream.

Apple Cake.

Pare tart apples, quarter and slice lengthwise into 1/4 inch sections. Make biscuit dough using 6 tb. of butter. Roll dough 1/4 inch thick, and line shallow pan. Place apple slices in even rows with sharp edge pressed lightly into dough. Sprinkle with sugar and cinnamon and add bits of butter. Bake 30 minutes or until the apples are cooked.

Swee Sauce to be served with Apple Cake.

1 tb. butter	1 C. sugar
1 tb. cornstarch or flour	1 C. boiling water Flavoring.

Rub butter, sugar and cornstarch together until smooth. Pour in the boiling water all at once and cook five minutes, stirring constantly. Use lemon or nutmeg for flavoring.