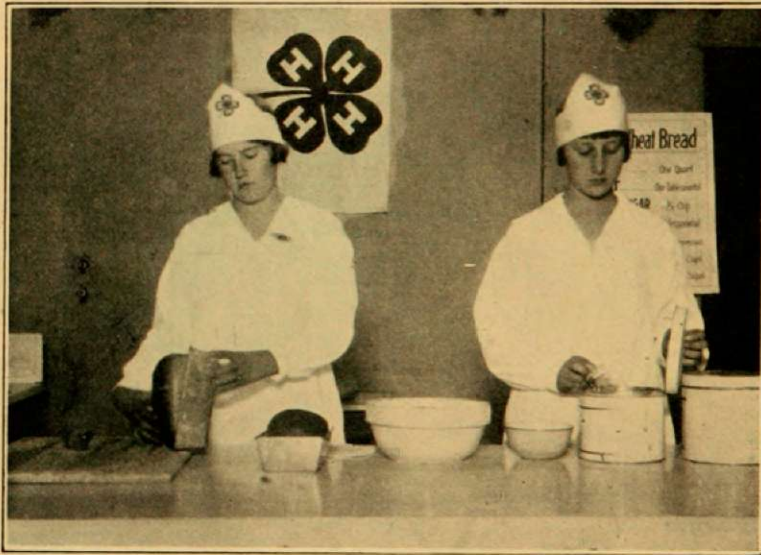


Bulletin 261-A

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BREAD-BAKING



Colorado Bread-baking Team—1926

COLORADO AGRICULTURAL COLLEGE
EXTENSION SERVICE CHAS. A. LORY, Acting Director
FORT COLLINS

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THE MAKERS OF THE BREAD

"I think God loves the people who bake bread—
Quiet wives in kitchens where upon the window sill
Come hungry robins, asking to be fed.
Slim, brown skinned women who with rhythmied ease,
Turn coarse black cakes before a smoky fire,
Tending the ancient rites on bended knees.
And men who work where hurried wheels are run
All day and night to make the wholesome loaves
Cream white and crusty when the rows are done,
And mothers everywhere who spend long days
Doing simple homely tasks to keep the love light
Bright and shining down dark ways.
'Take this and eat.' It was that Jesus said,
And whither hungry hearts may be fed
I know that God must love the makers of the bread."

This bulletin is written for Colorado baking-club girls and for Colorado women who are interested in baking and securing a high-standard bread. Appreciation is hereby expressed for and acknowledgment made of the cooperation given by the Home Economics Department of the Colorado Agricultural College and of the special assistance given in testing recipes and reviewing content by Mrs. Alvin A. Peterson, leader in Research, and Lucille Church, assistant, of the Home Economics Section of the Experiment Station.

BREAD-BAKING

MIRIAM J. WILLIAMS, Nutrition Specialist

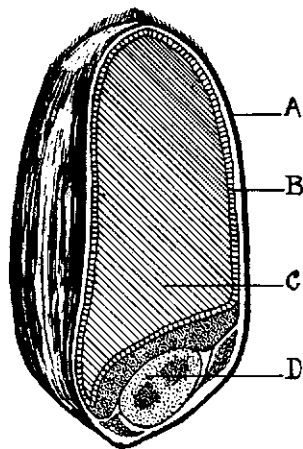
Bread has been called the staff of life because it is used as such a staple article of food. It is an inexpensive source of body heat and strength, and, properly supplemented with other foods, it deserves a place in our meals. Every nationality has its special kind of bread. Americans have developed a type of yeast bread which, properly made, has no equal. A recent survey showed that bread was baked in 94 percent of the 9,614 farm homes surveyed.

Whether bread is made at home or whether one buys it of the baker, standards for bread should be so high that one will willingly accept only the best. A knowledge of the principles underlying good bread-baking and an ability to make an excellent quality of bread, will enable women to demand and serve good bread. Girls and women who learn to make, recognize and demand good bread will be doing their communities a real service.

Essential Materials

Light bread requires these essential ingredients: Good flour, yeast and moisture. Salt, sugar and other ingredients are added to improve flavor and texture.

The Wheat Grain.—The accepted cereal used in making bread flour is the wheat grain, since wheat flour adapts itself to necessary requirements for bread-making. Rye is quite commonly employed for making yeast bread but because of its low gluten content, it is generally used in half or two-thirds proportion with wheat flour. Cereal grains are really the seeds of their plants and so are storehouses for the food which the young plant needs. The wheat kernel has several outside layers called "bran coats," the plant germ, a layer of cells called the aleurone layer, and a central part called endosperm.



A—Bran coats.
B—Aleurone layer.
C—Endosperm.
D—Plant germ.

White Flour.—The germ, or young plant, has a storage of fat which is rejected in making white flour because it lowers the keeping quality. The outer bran coats are also rejected, leaving the endosperm, which comprises about 80 percent of the total kernel, as the chief source of white flour. This endosperm is about three-fourths starch with the remainder protein and water. One essential for good bread flour is that it have a high

percentage and a high quality of gluten. Gluten is an elastic protein substance which expands when bread rises and which hardens with heat, thus making the framework of the bread. Wheat gum, the gummy substance left after chewing wheat, is this elastic gluten.

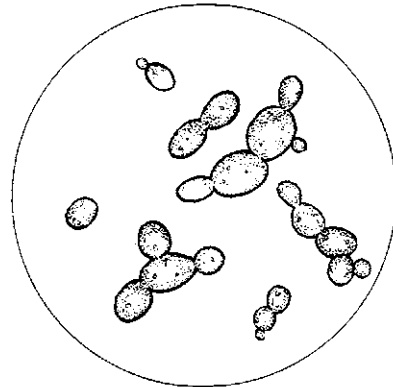
Bread and Pastry Flour.—A hard wheat is the most desirable for bread flour, since it contains a larger amount and a higher quality of gluten than soft wheat. Good bread flour should be slightly granular in feeling, and of a creamy color. A soft wheat flour, best for quick breads, cake and pastry, is whiter and softer than bread flour. Pastry flour will show the finger prints when it is squeezed in the hand, while a bread flour slips thru the fingers. Different grades of flour are made from the same kind of wheat. (The patent flour or highest-priced bread flour is made from central parts of the endosperm. Flours vary somewhat from one year to another since climatic conditions affect the development of gluten and ash in the wheat grain.) One should choose the bread flour which best suits her and try out proportions of flour and liquid for best results. A good bread cannot be made from a low-grade flour. Women who make both yeast bread and cakes frequently find a need for both a bread flour and a pastry or soft wheat flour. One may secure both put up in fairly large sacks. While the pastry flour purchased in boxes is very desirable, the cost is high. It is difficult to adapt a first-quality bread flour to use for cakes and pastry, so care should be taken, in selecting flour, that one understands its use and limitations.

Whole Wheat and Graham Flour.—The minerals and vitamins present in wheat are largely found in the germ and outer layers, parts which are discarded in making white flour. These outer layers also contain cellulose, which makes a whole-wheat flour valuable as a laxative. Since the keeping qualities of a genuine whole-wheat flour are less than that of a white flour, it is sometimes difficult to secure the whole-grain product. If the demand justifies, however, a local miller is often glad to cooperate with a request for a good whole-wheat flour. A finely ground whole-wheat flour makes a nicer bread than the coarse flour often found on the market.

Graham flour was named after an American doctor, Dr. Sylvester Graham, since he invented the process used in its manufacture. The terms, Graham and whole-wheat, are often confused, since the original Graham flour was made by grinding up the wheat with none of the outside layers removed while the "whole-wheat" flour had some parts removed. Some of the so-called whole-wheat flour is a low-grade white flour with some bran added and is not the most desirable flour to secure. The flour to demand, whether it is called Graham or whole wheat, is one containing all parts of the wheat grain—endosperm,

bran coats and germ, finely ground. It has a creamy rich color, slightly mealy in feeling.

The Yeast Plant.—Yeast is the means of leavening bread. It is a tiny one-celled plant which, when provided with proper food,



A Budding Yeast Plant.

warmth and moisture, multiplies very rapidly. In order to multiply, of course, food is needed, and this is supplied by the flour and sugar sometimes added to the sponge. When the yeast grows, gas and alcohol are produced. The gas pushes its way up thru the mass of dough, the whole mass expands because of the elastic property of the gluten, and thus the dough is made light. Since the yeast plant itself is killed during baking, it is beneficial rather than

harmful to use a generous amount of yeast. It is a rich source of vitamin B.

Conditions Necessary for Growth.—Yeast does not grow unless it has food, warmth and moisture. Since warmth is essential for its growth, one can readily see why we put our sponge and dough in a warm place to rise. A temperature of 80°-82° F. is the most advantageous for rapid growth of the yeast plant. A temperature of 110° or more kills the yeast plant, so precautions must be taken to have all liquids only lukewarm when making bread. Flour warmed slightly before adding to a sponge hastens the process of yeast growing. If a sponge or dough stands over night, a lower temperature—between 60° to 70°—should be maintained.

Compressed Yeast.—Moist yeast cakes called "compressed yeast" act very quickly, since they want only the addition of more food and warmth to make the plants start to grow. This type of yeast must be constantly fresh and cool, so it is sometimes difficult to secure good compressed yeast in small towns. It should never be used if it has a bad odor or is streaked, but should be of a creamy white color and rather brittle when it breaks. The amount of yeast to be used can be varied according to the length of time to be allowed for rising.

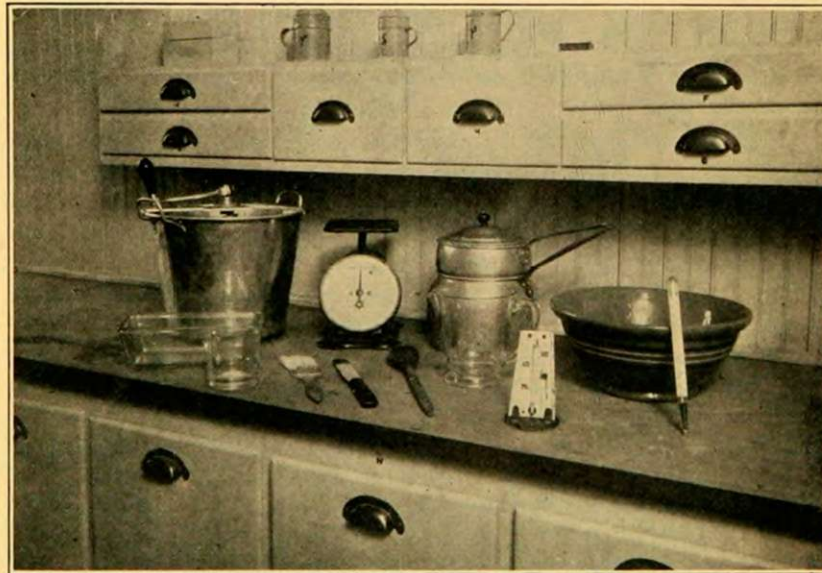
Dried Yeast.—Yeast is also sold in a dry form, made by pressing the yeast plants in cakes with corn meal. This type of yeast takes longer to start because moisture has been removed but it is easier to keep and sometimes more practical for farm homes.

Liquid Yeast.—Many people keep a starter or liquid yeast by reserving a portion of the sponge from a former baking until the next

time needed. Since in this form the yeast plant has both food and moisture, the starter must be kept in a cool place and not held for too long a period of time. Much of the sour heavy bread found in farm homes is due to the fact that a starter is used and has been allowed to become sour or fermented. It is much wiser to start out with fresh yeast unless precautions are taken to keep the yeast sweet.

Moisture.—The moisture supply for bread may be water, milk or potato water, or a combination of these. Potato water furnishes a ready form of food for the yeast plant and, if used at the proper temperature, is an advisable form of liquid. It should be made from good white potatoes and should not be too dark. Where there is a ready supply of milk, its use is recommended, since it increases the food value of bread. Any form of liquid added should be lukewarm.

Other Ingredients, such as salt, sugar and shortening, should be of good quality and used in limited amounts. Rancid fat can spoil



Good equipment: Bread mixer for large quantities, glass baking pan, measuring cup, pastry brush, spatula, wooden spoon, scales, double boiler, quart measure, baking thermometer, mixing bowl, dairy thermometer for dough.

the flavor of an otherwise good bread. The flavor of any of these ingredients should not predominate over the natural sweet flavor of good yeast bread unless sweet rolls or fancy bread is being made. Sometimes the so-called whole-wheat bread depends upon molasses for its color, and the natural flavor of the whole grain is obscured.

Equipment for Bread-making

Before starting bread-making, it is well to collect all necessary equipment. Accurate measurements can only be made with standard measuring equipment. A standard measuring cup, standard tablespoon and teaspoon, and a pint or quart measure are desirable. Have a clean moulding board or clean table surface, suitable bowls for mixing, flour sifter, spatula and wooden spoon for beating the sponge. Some form of cover should be provided for the bread during process of rising. A clean plate or clean towel is suitable, provided bowls used are large enough for rising. If bread is baked frequently, a bread mixer of suitable size for the amount of bread wanted is a nice thing to have.

Bread Pans about 8½ by 4 inches are a convenient size. Uniform, well-shaped loaves can only be made in single pans. Glass baking pans, or heavy tin, are practical. Household scales are a valuable part of bread-baking equipment, since thru their use one can weigh out the amount of dough that will best suit the bread pans and thus secure a uniform loaf. Some provisions should be made for a method of keeping the dough warm while rising. The bowl may be set in a dishpan of warm water if there is no satisfactory place near the stove or radiator to keep the dough at the desired temperature.

Thermometers.—Those who become accustomed to using thermometers in their bread-baking find that they are able to have a much better quality bread than without one. One may secure very inexpensive dairy thermometers which may be stuck down in the dough while it is rising. Thermometers should also be used to insure a proper temperature for baking. Baking thermometers come on standards which keep them upright in the oven.

Cleanliness

Personal cleanliness, as well as great care in cleanliness of all utensils and equipment, is absolutely essential to secure first-class bread. Since kneading is frequently done with the hands, it is necessary that nails and hands be very clean. While bread is rising, care should be taken that the dough is kept covered. Bread boards and bread pans should be thoroly washed after each baking. A scalded, well-aired bread box is an essential feature of cleanliness. If all of these precautions are observed, there will be no danger of the natural flavor of the bread being injured and no opportunity for unsanitary conditions to develop.

Steps in Bread-making

Methods of Mixing Bread.—There are two general methods of mixing bread, one called the sponge method and the other the straight-dough process. The sponge method allows the yeast plant to develop before the dough has been mixed entirely stiff. This method is

usually used with dry yeast since it takes some time for the yeast plant to become active. If the sponge method is used, the temperature of the mixture during rising should be lower than the temperature allowed for the straight-dough process, or sponge mixtures sometimes become sour. The straight-dough process is usually employed when a moist yeast, as compressed or liquid yeast, is used. It requires a shorter time but a somewhat larger amount of yeast than in the sponge method. The straight-dough process is the most modern method and is finding great favor among those giving it a fair trial.

Mixing the Sponge or Dough.—Compressed yeast needs softening with a small amount of water while a dry yeast needs to stand until thoroly softened before adding to other ingredients. Flour should be sifted once before being added. If flour is warmed slightly by placing in shallow pans in a warm oven for a few minutes, especially during cold weather, the process is hastened. Flour should be about 80°F. In any process of mixing the ingredients should be thoroly blended before the dough gets to the kneading stage. A wooden spoon is desirable for beating the batter.

Kneading.—As soon as sufficient flour has been added to allow the dough to be handled, turn onto a slightly floured board and knead thoroly. Kneading develops the gluten and helps make a more light and porous bread. It also insures thoro mixing of all ingredients. Ten or fifteen minutes should be allowed for kneading. An effort should be made to handle the dough lightly and quickly and yet get every part of the bread mixed. Care should be taken not to have a great deal of flour on the board during kneading process since it is very easy to make dough too stiff. Use just enough flour to keep the bread from sticking to the board. When the dough is being handled it should be light and springy and not so stiff that it is at all tough, hard or rubbery.

Making Into Loaves.—After a second rising the bread should be punched down slightly to expell large bubbles of gas, and made into loaves. Let the dough stand a few minutes after punching down before making it into loaves. Flour should not be added after the first kneading. If the dough is of the proper consistency and handled quickly, it will not be necessary to put more than the merest trace of flour on the board.

If dough for each loaf is weighed, a more uniform shape of loaf will be insured. One and three-fourths pounds of dough make an attractive size. Additional flour added after the first rising causes heavy streaks to appear in the finished loaf.

To make the dough into loaves, flatten out the piece of dough which has been weighed to suit the size of the pan to be used. Stretch

it slightly, fold over each of the sides and both ends. Punch these folds in enough to make the shape desired, and turn the loaf over with a smooth side on top. Put into well-greased pans and brush the top of the loaf with melted fat, using a pastry brush. Let rise at a temperature of 80° until the loaves are almost double. They rise slightly in the oven.

Baking.—The temperature during baking makes a great deal of difference in the finished result. A thermometer, or an oven regulator, is an invaluable aid in securing proper oven regulation. The risen loaf should be almost of the desired shape and size before it is put into the oven. If the oven is fairly hot, for the first 15 minutes from 400° to 420°F., for gas and electric ovens, then the loaf will rise slightly; and be the shape desired. Do not place pans too close together in the oven but allow the hot air to circulate around pan. If pans are turned occasionally, they will usually bake more evenly. Many of the loaves that have bulging sides and coarse texture at the top are due to the fact that the oven has been so slow at the beginning that the dough has risen more than it should.

Finish the baking with an additional 35 to 45 minutes at a slightly reduced temperature, about 380°F. Bread should brown during the first 15 minutes of baking and continue browning slightly during the rest of the time. If it browns too quickly a light tin lid or sheet of brown paper may be placed over the top to prevent burning.

A thoroly baked loaf should have a golden-brown crust on top, sides and bottom. If sides and bottom are white, the loaf is not so attractive nor so palatable. When the loaf has shrunk from the pan and responds to pressure of the finger by springing back, it can be removed from the oven and put aside to cool. A pan of water may be placed in the bottom of the oven to keep the air moist if bread is started in a very hot oven.

Care After Baking.—After baking, let loaves cool on a rack, which allows for free circulation of air. Do not cover until they are thoroly cold. When cold, place in a clean container which has been carefully scalded and aired. Much of the bad taste and odor that one finds in bread is due to improperly cared for bread boxes. At the slightest suspicion of mold or dampness, all bread should be removed and the box thoroly aired. Scraps of dry bread should not be allowed to accumulate in the box with fresh bread but should be put in a clean place where they can dry thoroly and be used for toast or crumbs.

All Measurements Are Level

ABBREVIATIONS
c.—cup
Tb.—tablespoon
tsp.—teaspoon

TABLE OF MEASURES
4 c.—1 qt.
2 c.—1 pt.
3 tsp.—1 Tb.
16 Tb.—1 c.

Temperatures given are for gas and electric ovens. Coal-range temperatures may register almost fifty degrees lower for the same intensity of heat.

White or Graham Bread
(Overnight sponge method)

1 cake dry yeast	1 pt. lukewarm water
1 qt. sifted bread flour	or
	$\frac{1}{2}$ c. lukewarm water and
	$\frac{3}{4}$ c. mashed potato and
	$1\frac{1}{4}$ c. hot potato water.

Soak the yeast 20 minutes in the lukewarm water. If the potato water is used, add the hot mashed potato and potato water to the flour, beat smooth, cool to lukewarm and add yeast. If water alone is used add flour after yeast is soaked, mix well, and let stand over night at temperature between 60° and 70° F.

(In the morning)

Sponge as above	2 Tb. sugar
1 pt. lukewarm water,	2 Tb. melted fat
or	About $2\frac{1}{2}$ qts. sifted white flour
Milk scalded and cooled	or
4 tsp. salt	A scant 2 qts. graham or whole-wheat flour.

Mix sponge with liquid, salt, sugar and cooled shortening. Add flour to make a dough, knead 10 to 15 minutes. Place in a greased bowl, cover and let rise at a temperature from 80° to 85° F. until doubled in bulk (about $2\frac{1}{2}$ hours). Knead down without adding flour and let rise again (about 1 hour). Mould into loaves (makes 4 or 5 loaves) and put in well-greased individual bread pans. Brush top of loaf with melted fat. Cover and let rise to double size and bake.

White Bread—Straight-Dough Process.

2 cakes compressed yeast	2 Tb. sugar
1 qt. lukewarm water	4 tsp. salt
or	About 3 qts. sifted flour
$\frac{1}{2}$ c. lukewarm water and $3\frac{1}{2}$ c.	
scalded, cooled milk	
2 Tb. melted shortening	

(Note: $\frac{1}{2}$ to 1 c. liquid yeast may be used if the amount of other liquid is decreased by nearly the amount of the liquid yeast added.)

Dissolve yeast in lukewarm water, add sugar, cooled shortening and enough flour to make a batter. Beat until smooth. Add salt and enough flour to make a dough that can be handled. Knead 10 to 15 minutes, place in a greased bowl, cover and let rise at a temperature of 80° until double in bulk (about $1\frac{1}{2}$ hours). The dough may rise over night if kept at a lower temperature. Knead down slightly without using more flour and let rise again. Make into 3 or 4 loaves, place in well-greased individual bread pans. Brush top of loaf with melted fat. Cover and let rise until double and bake.

Whole-Wheat Bread

2 cakes compressed yeast	6 Tb. butter
$\frac{1}{4}$ c. lukewarm water	3 c. white flour and about
1 qt. milk	$5\frac{1}{2}$ c. fine whole-wheat flour
$\frac{1}{2}$ c. brown sugar	or
2 Tb. salt	4 c. white flour and
	4-5 c. coarse whole-wheat flour

Scald milk in a double boiler with sugar, butter and salt. Cool to lukewarm. Soak yeast cakes in water and add to milk in a bowl. Add enough whole-wheat flour to make a batter. Beat thoroly; add rest of whole wheat and white flour to knead. The dough should be of a softer consistency than for white bread but not actually sticky. Knead for 10 to 15 minutes, put into

a greased bowl, cover, and let rise at a temperature of 80° to 85°F. until double in bulk. Knead down slightly without adding more flour, cover and let rise again until double. Make into loaves and put in well-greased individual bread pans. Brush top with melted fat. Cover and let rise until double in bulk. Bake until a golden brown.

Delicious rolls may be made by this recipe. These should be baked a shorter time than the bread, 20-30 minutes at 400°-420°F. for gas or electric stoves. This recipe makes 3 loaves of 1¾ pound each as weighed out before putting into bread pans.

Rolls and Fancy Breads

1 cake compressed yeast	2-6 Tb. sugar
¼ c. lukewarm water	4 Tb. shortening
1¾ c. milk	1 Tb. salt
	6 c. sifted flour
	Raisin bread—1 c. floured raisins
	Nut bread—1 c. chopped nuts.

Dissolve yeast cake in lukewarm water. Scald milk with shortening and sugar. Cool to lukewarm, add yeast and about 3 c. flour to make a batter. Beat until smooth. Cover and let rise about 50 minutes in a warm place until light. Add rest of flour or enough to handle, and nuts or raisins for fancy breads. Knead thoroly, place in well-greased bowl, cover, and let rise until double. Make into rolls or loaf. Let rise until double in bulk and bake in rather hot oven. Small rolls bake in about 20-30 minutes at 410°-425°F., while a loaf of raisin or nut bread needs about 45 minutes at 400°-385°F. Nut and raisin breads are especially nice made with part whole-wheat flour.

Parker House Rolls.—Roll out dough ¼-inch thick. Cut in rounds with biscuit cutter. Brush over lightly with melted butter, crease thru the center with a dull edge or handle of a knife and fold over. Place in shallow pans 1 inch apart.

Dinner Rolls.—Mould dough into rolls size of walnuts. Place closely together in well-greased pans. Glaze with egg white diluted with water before baking.

Lunch Rolls.—Mould dough into rolls the size of walnuts. Place 1 inch apart in shallow pans. Brush with egg and milk before baking.

Four-H Rolls.—Place 4 tiny rolls of dough together in shape of four-leaf clover. Keep four-leaf clovers 1 inch apart. Glaze before baking with egg white diluted with water.

Date Rolls.—Roll out dough in a narrow long sheet. Spread generously with butter, sprinkle with brown sugar and place stoned dates, whole, but spread out on the dough. Roll so that the whole roll has only 2 or 3 turnings. Cut and sprinkle the top of each roll with brown sugar.

BREAD FAILURES AND REMEDIES

No one makes perfect bread at the first trial. An intelligent study of the failure in the bread and an attempt to find its cause will make it easier to avoid the same difficulty the next time. The pictures of the two loaves of bread on page 13 will give some idea of the standards which one should try to reach in making good bread. The pictures on next page illustrate some very common failures in bread making.



This loaf shows the effect when two loaves are baked in the same pan. Altho the top and bottom crust are fair, the sides are very poor and the shape of the loaf is injured by having two loaves baked together. The loaf is light but the texture a little uneven. Sometimes unevenness of loaf is due to the method of baking. If the loaves are turned once or twice while in the oven, they will be more uniform in shape.

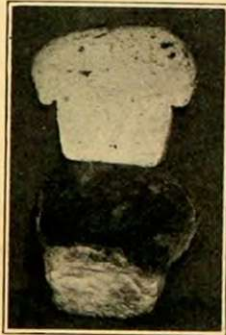
One glance convinces that the loaf in this illustration is heavy and very poorly baked. The crust is tough and not sufficiently browned. The texture shows the large holes and streaks of heaviness at the bottom. This may have been due to insufficient rising, or inaccurate measurements. Often heavy streaks

at the bottom of a loaf are due to the fact that extra flour is worked in at the last kneading, which is not leavened by the yeast. The crack in the side of the loaf leads one to believe that the whole dough was probably too stiff. Bread of this sort is real extravagance since it is neither palatable nor

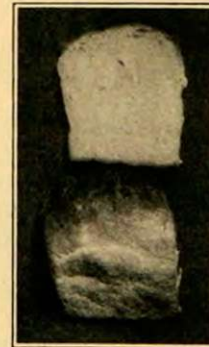


wholesome. With a selection of good yeast and bread flour, and the proper temperature during the rising and baking, this heaviness can be avoided.

This loaf shows bulging sides and porousness at the top. Sometimes the bulging at the sides is due to the fact that too much dough has been put into the pan, but the poor shape in this case is probably due to the fact that the loaf was put into too cool an oven. This allowed the bread to over-rise. Sometimes dough which is too soft makes a loaf of poor shape, but usually results of this sort are due to improper temperature. The bottom crust is too light-colored and the pan in which the loaf was baked is a little larger than advisable for a standard loaf.



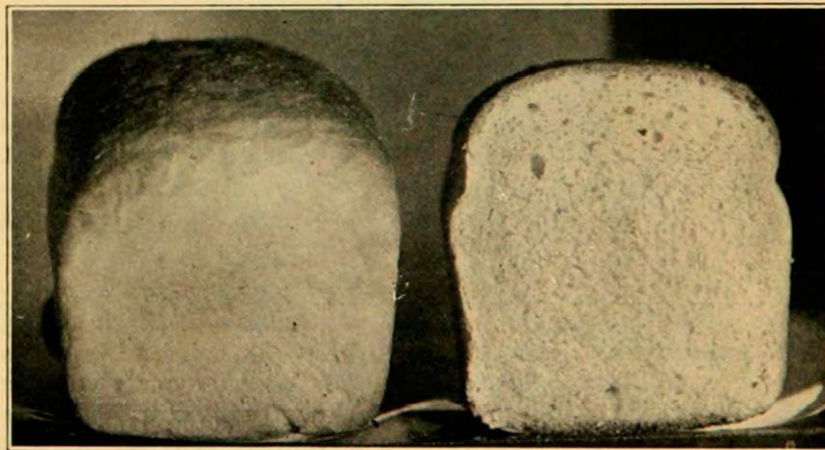
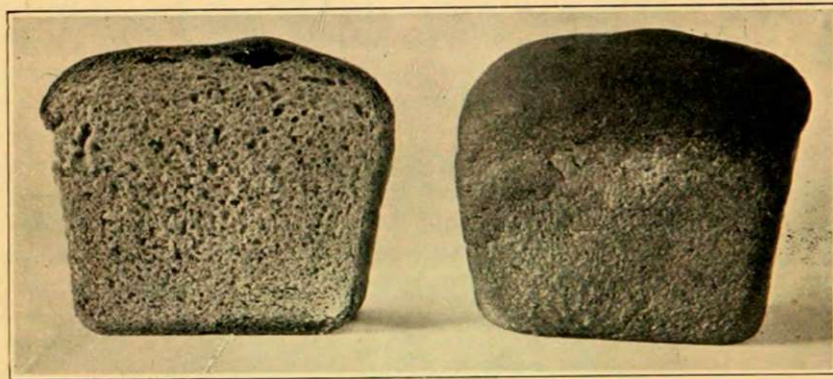
An excellent example of uneven texture due to the manner in which the kneading was done and the dough was made out into loaves is shown in this illustration. Evidently some flour was added during the last kneading since there are heavy streaks at the bottom. Dough being made out into loaves should be punched sufficiently to expell large bubbles of gas and loaves should be made by the method described under "Making Bread into Loaves." This loaf has a good brown crust on all sides and seems light.



Scorecard for Yeast Breads

	Perfect Score	Actual Score
General appearance	10
Shape—Round symmetrical dome, no bulges or cracks		
Size—practical, not too large.		
Crust	10
Color—Golden brown on top, sides and bottom nicely browned		
Quality—About 1/8-inch in thickness, crisp, pliable and smooth.		
Lightness	10
Comparatively light for weight.		
Whole-wheat bread will be less light than white for same weight.		

Crumb	30
Color—Free from streaks or unnatural darkness; white bread is a light cream color.		
Texture—Uniform cells, fine-grained, no heavy streaks or over-large cells.		
Elasticity—Springy and soft with no dryness or doughiness.		
Flavor	40
Odor—No sour or yeast odor.		
Flavor—Naturally sweet, nutty flavor of wheat, no outstanding taste of fat or seasoning, no sourness.		
Total	100



Loaves of whole wheat and white bread made by standard recipes. The dark loaf was made of genuine whole-wheat flour.

How to Use the Scorecard.—“Trifles make perfection and perfection is no trifle.” Perfection in bread-making is only reached if one has a high standard or ideal as the goal. The scorecard notes the comparative importance of some points to consider in striving

to make good bread. If a bread-maker scores her bread and points out the good and bad points in each baking, it will be easier to correct or remedy defects. This scoring can be done by an individual after each baking until she is satisfied that her bread brings a high score. Or a judging contest between several bread-makers is very helpful.

Try a Judging Contest.—Place a label on each loaf with a letter, A. B. C. etc., to indicate different loaves. Have a record kept of the owners of each loaf and the entry letter, but keep the identity of each bread-baker hidden during the contest. Explain the scorecard and let each member keep those points in mind. Each member should be provided with a card or paper marked off with

First	Second	Third	Fourth
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After examining each loaf carefully, each member puts the letter of the loaf scoring highest in her estimation under the word "First," the next best loaf under "Second" and so on. For example, Mrs. Smith may think that the loaf marked "G" is worthy of first place, "A" the second best, "F" third, and loaf "C" fourth best. So her card would read:

First	Second	Third	Fourth
G	A	F	C

After all cards are collected, see which loaf gets the highest score from all judges by giving each first, 5 points, each second, 3 points, each third placing 2 points and each fourth placing one point. For example, loaf G might have received six firsts, two seconds, one third, and one fourth by ten people judging the bread. Therefore loaf "G" would receive a total of 39 points while loaf F, let us say, came second highest in total scorings by having a total of 35 points.

Judging contests help develop critical judgment and raise standards. Never score white and whole-wheat bread in the same class since they cannot compare as to lightness and texture.

QUICK BREADS

Quick breads have an important place in our meals since they act as an emergency bread and are appreciated for their freshness and variety in flavor and texture. Their use for young children should be very limited since they are not as readily digested nor as wholesome as breads of a more open texture, as yeast bread. The success with quick breads depends largely upon the kind and amounts of leavening agent used and the method of baking. Accurate measurements and good material are necessary with close attention to baking temperatures. To be wholesome, quick breads must be thoroly baked and free from any heaviness.

Action of Baking Powder and Soda.—Quick breads are made light by the action of baking powder or an acid and soda. Baking

powder really contains both an acid and an alkaline substance combined with a starchy material. When baking powder is moistened, and especially in the presence of heat, a carbon dioxide gas is liberated which makes the batter light. Soda is an alkaline substance which reacts with the acid of sour milk, molasses, etc., to form this same CO₂ gas. Just enough soda should be used to neutralize the acid of the sour milk or molasses, for if too much is added there will be an alkaline residue left which will be unpleasantly bitter.

Amount to Use.—The usual rule for baking powder is to allow 1½ to 2 tsp. baking powder (different kinds of baking powders are required in slightly varying amounts) to each cup of white flour to be leavened, and 2½ tsp. baking powder to each cup of coarse flour. In substituting sour for sweet milk, allow ½ tsp. soda to each cup of moderately sour milk. Besides neutralizing the acid, a gas is formed in sufficient quantities to leaven 1 c. of flour. Therefore in a recipe calling for 2 c. of white flour and 1 c. of milk, if sour milk is used, allow ½ tsp. soda and 2 tsp. baking powder to neutralize the sour milk and lighten the whole mixture.

When to Add.—Sift baking powder or soda with the other dry ingredients in making quick breads or cakes. The reason for this is clear when one realizes that some gas is given off as soon as moist and dry ingredients come into contact with each other. Therefore if soda is added directly to the sour milk or to water, as a recipe sometimes calls for, some of the gas escapes immediately. When liquid and dry ingredients are once mixed, baking should follow as soon as possible so that the action of the gas will take place in the oven where the heat of baking hardens the mixture while it is in a light and porous condition.

Kinds of Baking Powders.—There are three general types of baking powders, classified according to their chemical composition. An examination of the can will indicate whether the powder is a tartrate powder, containing cream of tartar; an alum baking powder containing sodium aluminum sulphate; or a phosphate baking powder. These three substances are all acid in reaction. In addition to one of these acid-reacting materials, all baking powders usually contain sodium bicarbonate, (ordinary baking soda) and a starchy material to keep the mixture dry. Unless baking powder is used frequently, it is the best plan to buy it in small cans so that the action will not be impaired thru long standing. Different types of baking powders are required in varying amounts, so it is well to consult general directions printed on the can or in recipes in adapting a particular powder to your recipes.

Methods of Mixing Quick Breads.—Most quick breads and some plain cakes may be mixed according to these general directions: Mix and sift all

dry ingredients. Combine moist ingredients, (beat egg, add milk, etc.). Add liquids to bowl of dry ingredients; add melted fat which has been cooled; beat thoroly and bake.

Baking Quick Breads.—Muffins and biscuits require a hot oven, about 450°-475°F.—for 15 to 20 minutes. Muffins baked in pans with a small circumference or bottom and biscuits cut with a small cutter are easier to bake and more digestible than large muffins and biscuits. Grease muffin pans and flour lightly. Flour only is necessary for the baking sheets for biscuits.

Twin Mountain Muffins

2 c. bread flour	1 egg
$\frac{1}{2}$ -1 tsp. salt	1 c. milk
4 Tb. sugar	4 Tb. melted fat
4 tsp. baking powder	

Mix and bake according to general directions. This recipe makes 12 to 16 muffins.

Whole-Wheat Muffins

Substitute at least 1 c. whole-wheat flour for one of the cups of white flour in preceding recipe, and brown sugar for white. If a fine whole-wheat flour is used, the texture will be very similar to that of white muffins.

If an entire whole-wheat muffin is wanted, use slightly less than 2 cups of flour, with no white flour, and increase the amount of baking powder by $\frac{1}{2}$ tsp.

Quick Loaf Bread

2 c. whole-wheat flour	1 egg
2 c. white flour	$2\frac{1}{4}$ - $2\frac{1}{2}$ c. milk
6-8 tsp. baking powder	3 Tb. melted butter
1 tsp. salt	1 c. chopped nuts (if desired)
$\frac{1}{2}$ c. brown sugar	1 c. chopped fruit (if desired)

Mix according to general directions and put in a loaf pan. Let stand for 20 minutes. Bake in a rather slow oven (365°-375°F.) for about 50 minutes. Chopped raisins, dates or finely chopped prunes which have been soaked over night make a pleasing addition to a bread of this sort. Simply spread with butter to make an attractive sandwich.

Biscuits

2 cup sifted flour	2-3 level Tb. fat
4 tsp. baking powder	1 c. milk
1 tsp. salt	

Mix and sift dry ingredients thoroly. Rub in the fat lightly with fork which has sharp edges or tips of the fingers. Add milk to make a dough as soft as can be handled. Turn onto floured board. Knead dough lightly, pat into a sheet and cut into rounds. Brush tops of biscuits with milk and bake in a hot oven (400°-425°) from 15 to 20 minutes.

Cheese Biscuits

2 c. flour	2 Tb. fat
1 tsp. salt	1 c. finely grated cheese
4 tsp. baking powder	$\frac{3}{4}$ c. milk
$\frac{1}{2}$ tsp. paprika	

Sift dry ingredients, work in fat then cheese. Add milk, knead slightly; bake in a hot oven 15 minutes.

Orange Biscuit Rolls

Roll out biscuit dough into a narrow, long sheet about $\frac{1}{8}$ inch thick and 4 inches wide. Spread with a paste made by cooking the juice of an orange, 2 Tb. sugar mixed with $\frac{1}{2}$ tsp. cornstarch and 1 Tb. butter until thick, and then cooled. Roll as a cinnamon roll across the narrow width and cut into slices. Sprinkle the top with grated orange rind mixed with sugar. Bake in hot oven.