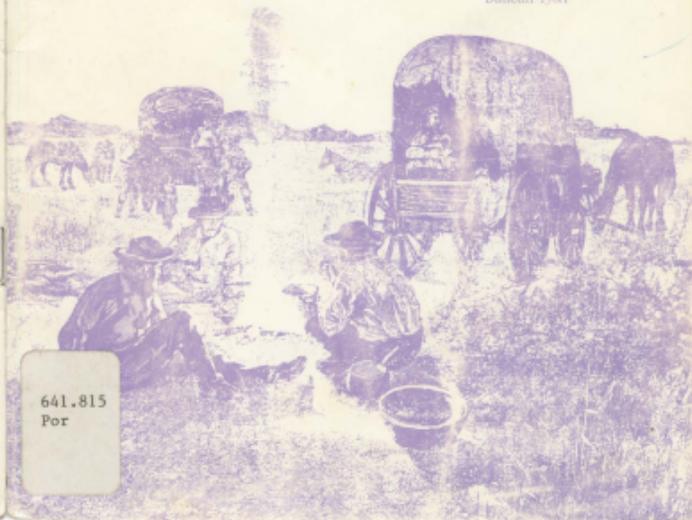


today's
SOURDOUGH
at high altitudes

Bulletin 496A



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Today's Sourdough at High Altitude 496A

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Introduction

Sourdough is a tradition that Americans associate with the West and Alaska. There are many varied stories and yarns pertaining to the name "sourdough." We know that it was the treasured possession that sustained and satisfied westward-bound American pioneers, prospectors, and settlers.

The history of sourdough dates back to the Egyptians, approximately 6,000 years ago. Probably by accident, they discovered that fermented wheat flour would make dough "rise," and if they saved some of the fermented mixture, a new batch could be "started." This was the only form of leavening for centuries.

This edition of *Today's Sourdough at High Altitudes* has been revised to reflect changes in the lifestyles of many Coloradans. Short cuts, yeast boosters, and convenient methods that might make traditionalists "cringe" have been used. Several of the recipes have been modified to reduce fat, salt, and sugar. A chart listing nutrients per serving of recipes has been added. Selected recipes designed for use with a food processor, dough hook, automatic breadmaker and microwave oven have been included. Also, some recipes have been deleted and others added to reflect changes in the popularity of some foods.

All recipes have been adjusted for one basic batter so that after cooks have used 3 cups of the batter for bread, they will probably have enough for cake or cookies or some other product using a smaller amount. Leftover basic batter may be stored in the refrigerator for use in another recipe within 4 to 5 weeks.

Sourdough starter is best at room temperature. If you use it daily, it can be left loosely covered on a counter in the kitchen. It also can be stored, tightly covered, in the refrigerator for several weeks or months between uses. If you don't bake often you may want to take the starter pot out once a month and refresh it by adding flour, sugar and water and letting it set out 12 hours. A clear tan or gray to yellow color liquid will come to the top when sourdough batter or starter is stored or allowed to stand. Discard any starter that turns color (orange or green) or develops unpleasant odors; then make a new starter.

Do not be disappointed if your first attempt at making the starter does not work. Try again! When you get a good one, treat it well. Of course the best way to get a good starter is from a friend who has a good one. Some starters claim to be 50 to 100 years old. If you are fortunate enough to have been given a treasured starter, use it well. It is a real gift.

The following methods and recipes were developed for use at 5,000 to 8,000 feet altitude. Consult Pamphlet 41, "High Altitude Food Preparation," Cooperative Extension, Colorado State University for tips on adjusting recipes for altitudes markedly higher or lower than this. "Making Yeast Breads at High Altitudes," Bulletin 513A, Colorado State University Cooperative Extension, also can be helpful.

Making the Basic Batter

Step 1: Make One of the Following Starter Recipes:

Yogurt - (use only one with live cultures. Product will state on side of container if contains live cultures)

½ cup low-fat or no-fat yogurt	1 cup flour
1 cup water	1 tablespoon sugar

Yeast

1 cup lukewarm water (75-85°F)	1 tablespoon sugar
1 cup flour	1 teaspoon yeast or 1 small cake yeast

Potato Water

Place 6 medium to large potatoes (peeled and cut in eighths) in 5 cups water in a large pan. Cover and bring to a boil. Simmer until potatoes are easily pierced with a fork. Drain potatoes with a colander over a large bowl. Measure potato water and add enough water to make 4 cups. Let cool to lukewarm (100°F) before making starter.

Potato Water Starter (Use gallon container)

5 cups flour	2 tablespoons sugar
2 teaspoons salt	4 cups lukewarm potato water

Commercial

Use directions on package — then proceed with permanent starter pot and/or basic batter directions.

Directions for Above Recipes

Mix ingredients for the starter you choose in a glass, crockery, or plastic container with a lid that can be tightened when you store the starter. If the lid is metal, put plastic film over the top of the container before you put on the lid. No metal should touch the starter. Use wooden or plastic spoons. Let mixture set at room temperature, with lid ajar, for 48 hours or until it has a pleasant, sour odor.

Note: The potato water starter recipe makes enough for your permanent starter pot and your first basic batter. The yogurt and yeast starter recipes make only enough starter for your permanent starter pot. For the yogurt and yeast starter recipes, make your basic batter from your permanent starter pot.

Note: It is advisable to make the starter pot with white flour. You may make the basic batter with whole wheat flour.

Step 2: Make a Permanent Starter Pot

1 cup starter	1 cup all-purpose flour
1 cup lukewarm water	1 teaspoon sugar

Mix well in a 2-quart glass, crockery or plastic container. Allow to set at room temperature 12 hours before using to make the basic batter.

When you take out 1 cup for basic batter, stir in another cup warm water, 1 cup flour and 1 teaspoon sugar and allow to set at room temperature 12 hours before you cover tightly and store in refrigerator. Do this each time you take out a cup—that way you don't have to remember to save a cup from the batter and you are always ready to make the basic batter.

Note: Step 2, Making a Permanent Starter Pot, is an optional, but recommended step. You can make or remake the basic batter used in all sourdough recipes from one cup of a pre-made basic batter, one cup of an initial starter or one cup of "permanent" starter. Since a good starter takes time, effort, and sometimes luck to produce and the last cup of a basic batter easily can be used without thinking, a permanent starter is recommended as an "insurance policy." Be sure to make or replenish the permanent starter pot at least 12 hours before making a basic batter recipe.

Tip: Write ingredients and directions for replenishing permanent starter pot on top of container.

Step 3: Make the Basic Batter

1 cup starter (initial, permanent, or pre-made basic batter)	2 ½ cups flour
2 cups water (lukewarm)	1 tablespoon sugar

Stir ingredients in large glass or plastic container and allow to set, loosely covered, at room temperature for at least 6 hours or overnight. If used in 6 hours, it's preferable to keep at 80-85°F. Gallon glass jars or large plastic containers are good to use. Be sure the container is large enough so that the batter (sponge) does not overflow as it produces carbon dioxide and expands. **Yield:** Approximately 4 cups.

Rising Yeast Breads in the Microwave Oven

Use the microwave oven to shorten the time needed to rise yeast bread. Bread which is to be baked in a conventional oven can be risen in a microwave oven if you use a container suitable to both.

To rise dough in a microwave oven, place the dough in a well oiled microwave-safe bowl large enough to hold dough when doubled. Turn dough to glass with oil. For final proofing in microwave before baking, place dough in glass baking dish or casserole. Let rise according to one of the methods below:

Hot water method: Set container with dough in a microwave-safe dish of moderately hot water (120°F); cover loosely with wax paper. Oil wax paper if dough will touch paper when doubled. OR cover with plastic wrap, folding one edge back to form a small vent. Select one of the following procedures to rise the dough.

1. Microwave at 50% (medium power) for 1 minute, let stand for 15 minutes.
2. Microwave at 30% power for 1 minute, let stand for 15 minutes.
3. Microwave at 10% power for 4 minutes, let stand for 15 minutes.
4. Microwave at 10% power for 6-8 minutes, rotate and check for hot spots. Let rest if too warm. Microwave at 10% power for 6-10 minutes more.

Towel method: Cover dough with oiled wax paper plus a layer of plastic wrap. Saturate a hand size terry towel approximately 18-x 27-inch with hot water. Wring out enough water so the towel isn't dripping. Lay towel in center of microwave cavity. Place bowl or glass pan of dough in middle of towel. Fold towel sides up and over covered bowl or pan.

Microwave at 10% power for 6-8 minutes. Fold back towel; close microwave door and allow bread to finish rising until dough is light and double in size. Test for lightness. May take 5-10 minutes.

Note: At higher altitudes a second rising before shaping will improve the flavor and texture of the bread dough. Be very careful to use the correct power; it only takes a minute or two at full power (High) to ruin your bread.

Yeast Breads

Sourdough White Bread

2 tablespoons melted butter margarine, or hydrogenated fat	1 tablespoon active dry yeast 1 teaspoon salt 4-5 cups all-purpose flour (unsifted)
$\frac{1}{4}$ cup milk	3 cups basic batter
2 tablespoons sugar or honey	

Prepare bread dough according to "Conventional" or Quick Step Methods as given below:

Conventional Method of Preparation

Melt fat in small pan. Add milk and sugar or honey; stir until dissolved. Mix dry yeast and salt well with 4 cups flour in large bowl. Add milk mixture and basic batter. Stir with a large spoon until well combined. Gradually add 1 more cup of flour; knead in as much as possible. Knead until dough is smooth and elastic, about 8-10 minutes. An easy test for elasticity is to hold your hand lightly on the surface of the dough for 30 seconds. If it does not stick to your hand or the board, it is ready. Put dough in a lightly greased, warm bowl. Cover and allow to rise in a warm place (80-85°F) until doubled in size (45 minutes-1 hour). Punch down and allow to rise in bowl a second time (30-45 minutes). Punch down and shape into loaves. Place in greased pans and allow bread to double in size (25-30 minutes). Bake in preheated oven at 375°F for 45-55 minutes. When done, the loaves should be well browned and sound hollow when tapped. Turn out onto racks. Brush tops with light coating of melted butter or margarine, if desired. For a softer crust, lightly cover bread loaves until cool. Yield: 2 loaves.

Quick Steps

1. Mixer or dough hook: Follow preceding recipe starting with 2 cups of flour. Beat bread with a mixer or dough hook for 2 minutes. Stir in remainder of flour by hand or with a dough hook to make a stiff kneaded dough.
2. Microwave Rising: Follow directions for rising dough in microwave.
3. One-Rise Bread: It's possible to skip the second rising period and to place the dough directly into pans for proofing after the first rising if altitude is lower. This allows an acceptable product in a shorter time and is standard practice at altitudes below 4000 feet.

Variations: Whole wheat or rye flour may be substituted for up to 3 cups of the 4 cups white flour in the original recipe. Increase sugar or honey to $\frac{1}{2}$ cup if a sweeter version is desired. Using $\frac{1}{3}$ cup honey and $1\frac{1}{2}$ cups darker flours makes a tasty bread.

Refrigerator Rolls

- 1/4 cup water
- 1/2 cup margarine or oil
- 4 1/2 to 5 cups flour; white, wheat or combination
- 2 1/2 teaspoons active dry yeast (1 package)

- 1/2 cup nonfat dry milk
- 1 teaspoon salt
- 1/2 cup sugar
- 2 1/2 cups basic batter

Place water and fat in small container and heat to 125°F on range or in microwave oven. Combine 1 cup flour, yeast, dry milk, salt and sugar in large bowl. Add basic batter and heated water-fat mixture and blend by hand. Beat with mixer at medium speed for 2 minutes. Gradually mix in remaining flour with a spoon until enough flour is added to make a stiff dough. Turn out on a floured board and knead until smooth and elastic. Rise once in a greased bowl until doubled in bulk (either microwave or conventional method). Punch down and cover with oiled or floured plastic wrap—put a plate on top so dough will not overproof. Store in refrigerator at least 2 hours or until ready to use (up to 2 to 3 days). If dough doubles in size in the refrigerator and is not going to be used, punch it down so gluten strands will not break. This may happen because dough is still warm from first rising. The plate may be weighted with a full soda can or similar item.

When ready to bake rolls, let dough rest on counter 15-20 minutes before punching down and shaping rolls. Shape rolls as desired (eg, dinner rolls, fan tans, cloverleaf, crescents, Parker House rolls). Allow to rise until doubled in bulk using either the microwave or conventional method. Bake at 375°F for 20-25 minutes, until brown. Brushing lightly with oil or margarine for the last five minutes will aid in browning. Makes 36 average size rolls or two loaves of bread.

Variation: Substitute 2 1/2 cups wheat flour for 2 1/2 cups of the white flour.

Food Processor Breads

Note about food processors: Check to be certain your processor has a motor with sufficient power to knead dough. Consult the instruction book and/or recipe book for instructions or caution notes.

Processor Honey Wheat Bread

- 2 1/2 cups whole wheat flour
- 1/2 teaspoon salt
- 1 package quick rising yeast or 1 tablespoon regular dry yeast
- 1/4 cup honey
- 3 tablespoons margarine or oil
- 1/2 cup water
- 1 cup basic batter

With metal blade in place, combine flour, salt and yeast in food processor for 5-10 seconds. Combine honey, margarine and water in medium sized container. Heat to 115°F in microwave oven or on top of range. Stir basic batter into honey-margarine mixture. Begin processing; pour basic batter mixture through feed tube in steady stream until ball forms, about 15 seconds. If dough is not stiff enough to form a ball, stop processor, open and scatter 2 to 3 tablespoons flour over top of dough. Replace cover, turn processor on and ball should form. Process one minute longer to knead dough—stop processor immediately if dough catches and/or blade labors or stops.

Carefully remove dough from processor; place on a floured surface. Remove blade from processor and place bowl over dough or use another bowl. Let dough rest ten minutes. Shape into a loaf and place in rectangular, greased, bread pan (use glass if using microwave oven to rise). Cover with oiled wax paper and let rise until doubled in bulk. Use microwave method with towel or conventional rising.

Bake for 35-40 minutes at 375°F or until done. Remove bread from pan to cool on wire rack. Brush lightly with 1 teaspoon margarine or oil; cover with paper towel if softer crust is desired.

- Variations:**
1. Substitute white flour for wheat flour.
 2. Shape into rolls instead of loaf.

Processor Herb Bread

2 1/2 cups all purpose flour
1 tablespoon dried crushed
parsley
1/2 teaspoon dried, minced garlic
1/4 teaspoon dried basil
1/4 teaspoon dried thyme
1 tablespoon dried, minced
chives
1/2 tablespoon sugar

1/2 teaspoon salt
1 package quick rising yeast,
or 1 tablespoon regular
dry yeast
3 tablespoons margarine or
oil
1/2 cup water
1 cup basic batter

Combine all dry ingredients in a food processor with metal blade in place. Process 5-10 seconds to mix. Combine margarine or oil and water in medium-sized container. Heat to 115°F in microwave oven or on top of range. Stir in basic batter. Begin processing; pour basic batter-water mixture through feed tube in a steady stream until a ball forms, about 15 seconds. If dough is not stiff enough to form ball, stop processor, open and scatter 2 to 3 tablespoons flour over dough. Replace cover, turn processor on and ball should form. Process one minute longer to knead dough. Stop processor immediately if dough catches and/or blade labors or stops.

Carefully remove dough from processor; place on floured surface. Remove blade from processor and place bowl over dough or use another bowl. Let dough rest 10 minutes. Shape into a tapered loaf which will fit diagonally into a rectangular greased glass pan 9x 13-inch if using microwave oven to rise, or on a greased baking sheet if using conventional rising. Cover with oiled wax paper. Let rise until doubled in bulk. Brush loaf with water. Make diagonal slashes across top of loaf with kitchen shears or knife.

Bake for 30-35 minutes at 400°F, or until done. Remove bread from pan to cool on a wire rack. Brush lightly with 1 teaspoon margarine or oil and cover with paper towel if softer crust is desired.

Breadmaker Recipes

Note: These recipes are designed for 1 1/2 pound loaves made using the sweet bread cycle at 7000 feet. Different adjustments may be needed for lower or higher altitudes or 1 pound loaf breadmakers.

Breadmaker Sourdough Bread

1 1/2 teaspoons yeast
1 1/2 teaspoons salt
1 1/2 teaspoons gluten
1/4 cup nonfat dry milk
1 tablespoon sugar

3 cups bread flour
1 tablespoon olive oil
1 1/2 cups basic batter
1/2 cup + 1 tablespoon water
(125°F)

Add ingredients to breadmaker in order listed and follow breadmaker instructions. Note: combine last 2 ingredients (basic batter and hot water) before adding to breadmaker.

Breadmaker Sourdough Oatmeal Bread

1 1/2 teaspoons yeast
1 1/2 teaspoons salt
1 1/2 teaspoons gluten
1/4 cup nonfat dry milk
1/4 cup potato buds or flakes
1/2 cup quick rolled oats

1 tablespoon sugar
3 cups bread flour
2 tablespoons olive oil
1 1/2 cups basic batter
7/8 cup water (125°F), 1 cup less
2 tablespoons

Add ingredients to breadmaker in order listed and follow breadmaker instructions. Note: Combine last 2 ingredients (basic batter and water) before adding to breadmaker.

Variations: Replace 2 cups bread flour with 2 cups whole wheat flour. Add 1 tablespoon gluten.

Note: It has been found that at high altitudes breadmaker recipes may need to be adjusted to avoid over-proofing of dough. Using less yeast, adding a bit more salt, adding gluten and using a longer kneading cycle may help. Contact your Colorado State University Cooperative Extension county office if you need further help with breadmaker adjustments for high altitude.

Quick Breads

Sourdough Banana Bread

1/2 cup shortening	2 cups all-purpose flour
1/4 cup sugar	1 teaspoon salt
2 eggs	3/4 teaspoon baking powder
1 cup mashed banana	1/2 teaspoon baking soda
1 cup basic batter	3/4 cup chopped walnuts

Cream shortening and sugar in large bowl. Add eggs and banana; mix until blended. Stir in basic batter. Sift flour, salt, baking powder, and baking soda together. Add flour mixture and walnuts to the first mixture, stirring just until blended. Pour into a greased 9-x 5-inch pan. Bake at 350°F for 1 hour and 5 minutes, or until toothpick comes out clean. Let loaf stand in pan for about 10 minutes. Remove from pan and cool thoroughly on rack before slicing.
Yield: One loaf.

Variation: 1 cup unsweetened applesauce could be substituted for banana.

Jalapeno Corn Bread

1 cup chopped onion	1 large can creamed corn #303 size
1/2 cup chopped jalapeno peppers (reduce if a less hot product is desired)	1 1/2 cups corn meal
1 cup grated cheese	2 tablespoons sugar
1 1/2 cups milk	1 1/2 teaspoon salt
2 eggs, slightly beaten or egg substitute	1 1/2 teaspoon cream of tartar
3 tablespoons vegetable oil	1 1/2 teaspoon baking soda
	1 1/2 cups basic batter

Chop onions and peppers. Grate cheese. Combine onion, pepper, cheese, milk, eggs, oil and corn together in large bowl. Stir or sift together corn meal, sugar, salt, cream of tartar and baking soda. Add to first mixture. Stir in basic batter. Mix well. Pour into a greased baking dish. Bake at 425°F for 30 minutes. Bread will be more like scalloped corn and best eaten with a fork. Yield: Two 9-inch square or one 9-x 15-inch pan.

Sourdough Pancakes or Crepes

1 egg or egg substitute	1 tablespoon sugar
1 tablespoon milk	1/4 teaspoon salt
1 tablespoon melted fat or oil	3/4 to 1/2 teaspoon baking soda (1/2 for fluffier pancakes)
1 cup basic batter	
1/4 cup flour (wheat or white)	

Whip egg, milk, and fat in medium sized bowl. Stir in basic batter. Sift or stir flour, sugar, salt, and soda together. Stir into batter. Ladle onto hot, 400°F griddle; turn when bubbles cover the top of pancake.

Crepes: Delete 1/4 cup flour and soda. Add 1 additional tablespoon of milk (total 2 tablespoons). Follow directions for making crepes in a skillet or crepe maker. Two tablespoons of batter will make a nice sized crepe. Yield: 10-12 pancakes or 12 crepes.

Sourdough Biscuits

1 1/2 cups basic batter	1 tablespoon sugar
1/4 cup melted margarine (salad oil may be substituted for 1/2 of the margarine)	1/2 teaspoon salt
1 1/4 cups flour	1 teaspoon baking powder
	3/4 teaspoon baking soda

Put basic batter in warm bowl; stir in melted margarine. Mix flour, sugar, salt, baking powder and baking soda together; add to butter-batter mixture. Stir with fork until soft dough is formed. Form dough into a ball and place on lightly floured board. Roll over and knead lightly 10 to 15 times. Roll or pat out to 1/2-inch thickness. Cut with biscuit cutter. Coat both sides with melted margarine; arrange in greased 9-inch square or 7-x 12-inch oblong pan, close together. Bake at 375°F for 15-20 minutes or until golden brown.
Yield: 10-12 biscuits.

Super Quick Biscuits

1 cup basic batter	1 cup prepared or commercial biscuit mix
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Mix ingredients in medium-sized bowl. Turn out on floured board and knead until soft dough is formed. Roll or pat out as for regular biscuits. Bake at 375°F for 15-20 minutes. Yield: 10-12 biscuits.

Note: This recipe can be easily increased or decreased as equal parts of the two ingredients are used.

Microwave preparation: Roll out using whole wheat flour instead of white flour. Coat both sides with melted margarine and place on microwave-safe baking dish; cover with wax paper. Microwave 3 minutes on 30% power or defrost. Turn 1/4 turn; microwave 2 1/2-3 minutes on full power.

Specialty Products

Oatmeal Muffins

1 cup oatmeal (rolled oats)	1 teaspoon baking soda
1 cup flour	1 egg or egg substitute
½ cup brown sugar	½ cup vegetable oil
½ teaspoon salt	1 ½ cups basic batter

Combine oatmeal, flour, sugar, salt and baking soda together in large bowl. Combine egg, oil and basic batter in separate bowl. Make a well in dry ingredients and add basic batter mixture. Stir only enough to moisten dry ingredients. Batter should still be lumpy. Fill greased muffin tins $\frac{2}{3}$ full. Bake at 375°F for 30-35 minutes. Yield: 12 muffins.

Microwave variation: Add 1 tablespoon vegetable oil to the $\frac{1}{3}$ cup oil in the recipe above. Line microwave safe muffin pan with 2 paper liners per cup. Fill to slightly less than one-half full. Bake 3 minutes on 30% power or defrost. Bake 1 $\frac{1}{2}$ -2 minutes on High. Muffins will be slightly moist on top when done.

English Muffins (Microwave and Range Top)

1 envelope active dry yeast (2 $\frac{1}{2}$ teaspoons)	1 teaspoon baking soda
¾ cup warm water (105°F)	1 teaspoon salt
2 $\frac{1}{4}$ cups all-purpose flour	1 cup basic batter
¾ cup yellow cornmeal	¾ cup buttermilk

Sprinkle yeast over water in medium bowl; set aside to soften 5 minutes. In a large bowl, stir together flour, cornmeal, baking soda, and salt; set aside. Add basic batter and buttermilk to softened yeast mixture; mix well. Stir into flour mixture until blended and soft ball forms. Turn out onto lightly floured surface; knead 5-8 minutes or until smooth and elastic. Add more flour if necessary.

Roll out dough $\frac{3}{8}$ to $\frac{1}{2}$ -inch thick. Cut muffins with a 3-inch biscuit cutter. Arrange 6 muffins on a microwave safe plate that has been lined with waxed paper and sprinkled with cornmeal. Sprinkle muffin tops with cornmeal. Cover with plastic wrap. Repeat with second plate of muffins.

To rise in microwave, place tray in microwave oven and heat on 10% power for 3 minutes. Remove from oven and let set, covered, on counter. Microwave other tray of 6 muffins for 3 minutes on 10% power. Repeat process, alternating trays until each tray has a total time of 15 minutes by proper rotating, including standing time.

To cook in microwave oven: microwave each tray of muffins for 5 minutes at 50% power, turn $\frac{1}{4}$ turn, and microwave 1 $\frac{1}{2}$ minutes on High.

To cook on range: preheat 10 or 12-inch skillet, greased lightly. Brown muffins on each side, cool on rack, and serve. Yield: 10-12 muffins.

Microwave Zucchini-Nut Loaf

A tasty way to use vegetables. This bread stays moist for a week when it is kept wrapped.

1 egg	2 cups all-purpose flour
½ cup vegetable oil	1 teaspoon baking powder
1 cup sugar	½ teaspoon baking soda
½ cup sourdough batter	½ teaspoon salt
1 cup shredded unpeeled zucchini	1 teaspoon ground cinnamon
½ teaspoon grated lemon peel	½ teaspoon ground nutmeg
½ cup milk (2% or less)	½ cup chopped walnuts or pecans

Mix thoroughly egg, oil, sugar, sourdough batter, zucchini, lemon peel and milk in large mixing bowl. Stir or whisk together flour, baking powder, soda, salt, cinnamon, nutmeg and walnuts. Stir into wet ingredients. Blend at low speed 15 seconds; beat at medium speed 2 minutes.

Spread batter in two 8- x 4-inch microwave-safe loaf dishes lined on bottom with wax paper; sprinkle with streusel topping. (If using pineapple topping, wait until second half of cooking time to put on the topping.) Shield ends of loaf with two (2-inch wide) strips of foil, covering 1-inch of batter and molding remainder around handles of dish.

Center loaf dish on inverted saucer in oven. Microwave at 50% (Medium) 9 minutes; rotate $\frac{1}{4}$ turn every 3 minutes. Increase power to High. (Spread on pineapple topping, if used.) Microwave 4-7 $\frac{1}{2}$ minutes; remove foil after 2 minutes and rotate every 2 minutes.

Check for doneness by looking through bottom of dish. Top should also spring back if touched lightly. Let stand on countertop 5 to 10 minutes before removing from dish. Yield: 2 loaves.

Note: Bread may be baked in a 6-cup or large ring dish. Line bottom with wax paper, or grease. Bread also may be baked in conventional oven. Bake at 350°F for 50-60 minutes.

Streusel Topping:

Mix together $\frac{1}{2}$ cup flour, 2 to 4 tablespoons white or brown sugar, cinnamon, and 2 tablespoons butter or margarine.

Pineapple Topping Variation:

¼ cup drained crushed pineapple
1 tablespoon brown sugar
½ teaspoon cinnamon

Mix together. Omit streusel topping. Spread mixture lightly over loaf during the High power cooking segment.

Bagels

2 1/2 to 3 cups all purpose flour
1 tablespoon active dry yeast
2 tablespoons sugar
1/2 teaspoon salt

1 egg, or egg substitute, slightly
beaten
1 1/2 cups basic batter
1/4 cup margarine or oil

For Cooking Bagels:

4 cups water
1 tablespoon sugar

1 egg white
1 tablespoon water

Stir 3/4 cup flour and yeast together in large mixing bowl. Stir in sugar, salt, egg and basic batter; add melted margarine or oil. Beat at high speed for 2 minutes with electric mixer. Watch that dough does not climb beaters and get into motor. Add remaining flour, stirring by hand until the dough becomes quite stiff. Knead on a well-floured surface until smooth and elastic (can be mixed in a mixer with a dough hook).

Place in a lightly greased bowl, cover and let rise until doubled in bulk. Use either microwave or conventional rising method.

Punch down. Grease baking sheet. Divide dough into 8 equal pieces; shape into balls and place on baking sheet, cover with wax paper. Let rest 15 minutes. Poke hole all the way through each ball with index finger, swirl around finger to enlarge hole (should look like donut). Set aside on baking sheet, cover with wax paper.

Start water before you put holes in balls. Combine 4 cups water and 1 tablespoon sugar in a 3-quart glass casserole. Cover with plastic wrap. Microwave on High until water boils, 8-10 minutes. Water and steam are very hot; open wrap away from face on far side of bowl.

Slide bagels into water, 3 or 4 at a time, don't crowd. Microwave, covered, on High 2 minutes. Uncover carefully. Use handle of wooden spoon to prevent closing of center holes of bagels. Use same spoon to turn bagels over. Microwave 1-2 minutes covered, or until firm to the touch. Meanwhile heat conventional oven to 400°F. Drain bagels on paper towels.

Handle quickly with extreme care. Pressure can cause hard spots where partly cooked dough compresses.

Combine 1 egg white and 1 tablespoon water; brush over bagels. Sprinkle with sesame seeds or poppy seeds if desired. Place on prepared baking sheet. Bake 15-20 minutes or until deep golden brown. Split and use for sandwiches or breakfast toast. Freeze well. Yield: 8 bagels.

Note: Bagels also may be pre-cooked in boiling water on top of range. Simmer 2 minutes per side or until firm to the touch.

Sourdough Pizza Crust

1 cup basic batter
1 tablespoon melted margarine
or 1 tablespoon oil

1 teaspoon salt
1 cup flour (approximately)

Preheat oven to 475-500°F. Mix together ingredients and work in enough flour to bring to a consistency where dough can be rolled out flat into a thin piece. Place thin layer of dough on sheet or pan that has been rubbed with oil. Put it in the oven for 5 minutes and remove. You are now ready to spread your own favorite pizza sauce on the pizza crust, then bake until dough is done and cheese is melted, about 15-20 minutes. Yield: 1 pizza crust.

Sourdough Pie Crust

1 1/2 cups flour
3/4 teaspoon salt
1/4 teaspoon baking soda

1/2 cup shortening
1/2 cup basic batter

Sift and measure flour. Sift or whisk flour together with salt and baking soda in bowl. Cut in shortening. Stir in basic batter with a fork until the dough clings together. Form 2 balls and chill in refrigerator or freezer 10 minutes. Roll each ball out as for usual crust. Yield: 2 crusts.

Sourdough Pie Crust (modified)

1 1/2 cups cake flour
3/4 teaspoon salt, optional
1/4 teaspoon baking soda
1/2 cup margarine, cut in pieces
and chilled

1 egg white
1/2 teaspoon vanilla
1/2 cup basic batter

Measure flour. Sift or whisk together with salt and baking soda in bowl. Cut in margarine to resemble coarse meal. Beat egg white until frothy and mix with vanilla and basic batter. Stir batter mixture into flour mixture with a fork until the dough clings together. Form two balls and chill in refrigerator or freezer 10 minutes. Roll each ball out between sheets of plastic wrap to 11-inch size for 9-inch pie. Use as any pie crust.

Note: This modified crust is more fragile than a regular pie crust. To transfer to pie tin, remove top layer of paper or wrap. Invert crust in pan or over fruit filling. Position crust, then peel off other layer of paper or wrap. A drop of yellow coloring may be added if the color is not satisfactory. Crust will not brown as much as conventional crust because of lowered fat content. Yield: Two crusts.

Sourdough Applesauce or Carrot Cake

1 1/2 cups basic batter	1/2 teaspoon salt
1/4 cup nonfat dry milk	2 teaspoons baking soda
1 cup applesauce or 1 cup grated carrots	1 teaspoon cinnamon
1/4 cup white sugar	1/2 teaspoon nutmeg
1/2 cup brown sugar	1/2 teaspoon allspice
2 eggs, beaten or egg substitute	1/4 teaspoon ground cloves
1/2 cup margarine	1/2 cup chopped nuts
1 cup all purpose flour	1 cup raisins

In large bowl combine basic batter, dry milk, and applesauce or carrots; set aside. In medium bowl, cream together white sugar, brown sugar, eggs and margarine. In a third bowl, stir or whisk together flour, salt, soda, spices, nuts and raisins. Combine the 3 mixtures and beat well by hand. Pour into a 9-x 13-inch, greased and floured baking pan. Bake at 350°F for 30-35 minutes. Yield: 1 cake.

Sourdough Chocolate Cake

1/2 cup water	2 egg yolks or 2 egg substitutes
3 ounces sweet cooking chocolate	1 teaspoon vanilla
1 teaspoon baking soda	1 cup flour
1/4 cup margarine	1/2 teaspoon salt
2 cups sugar	1 1/2 cups basic batter
	4 egg whites

Grease three 8- or 9-inch round pans or one 10-x 15-inch oblong pan and dust with flour or line with waxed paper. Bring water and chocolate to boil in small pan, stirring constantly. Pour mixture into glass or china bowl; stir in soda; mixture will foam. Cool to lukewarm. Cream margarine and sugar together in separate bowl. Mix in egg yolks or egg substitute one at a time. Add vanilla and chocolate mixture. Mix well. Combine flour and salt. Alternately beat in flour and basic batter. In separate mixing bowl beat egg whites until stiff. Gently fold into cake batter until no whites are visible. Pour into prepared pans. Drop each pan squarely from approximately 5 inches above table to expend large air spaces. Bake for 30-35 minutes at 350°F. Cool on wire racks. Yield: One 3-layer cake; one 2-layer cake and one small loaf; or one 10-x 15-inch sheet cake. Cake will make a 6-layer torte with whipped topping icing which follows.

Whipped Topping

1 tablespoon unflavored gelatin	2 tablespoons cocoa powder (if chocolate is desired)
1/2 cup skim milk	
16 oz. container frozen whipped topping	

Soften gelatin in milk. Heat to scalding on range or in microwave; stir to dissolve. Put in freezer to thicken slightly (takes about 20 minutes). Beat whipped topping until soft peaks form. Add cocoa, and thickened gelatin mixture. Beat until stiff. Frost cake. Makes enough to frost 3-layer cake split to form 6-layer torte. Keep in refrigerator, covered. Will keep several days.

Variations: Add 1/2 teaspoon rum or peppermint flavoring; omit chocolate, if desired.

Oatmeal Cookies

1/4 cup margarine	1/2 teaspoon baking soda
1/4 cup brown sugar	1/2 teaspoon salt
1/2 cup white sugar	1/2 teaspoon ground cinnamon
1 egg	1/4 teaspoon nutmeg
1/2 cup water	1/4 cup nonfat dry milk
1 1/2 cups basic batter	1 1/2 cups rolled oats
1 teaspoon vanilla	
2 cups flour, white, wheat or mixed	

In large bowl, cream margarine with brown and white sugar. Beat egg and stir in. Add water and beat until light and fluffy. Stir in the basic batter and vanilla and mix well. Stir or whisk together flour, baking soda, salt, cinnamon, nutmeg, and nonfat dry milk. Add this to the batter, 1/2 cup at a time, stirring after each addition. Add rolled oats, 1/2 cup at a time, and mix well. Drop by the spoonful onto a greased baking sheet. Bake at 350°F for 8-10 minutes. When done, cool on a wire rack. Yield: Five dozen 2 1/2-inch cookies.

Cookies will be cake-like. Test cookie; if it spreads out too much, add 1/8 to 1/4 cup more flour.

Variations: 1 cup of raisins, 1 cup of chocolate chips, or 1/2 cup of chopped nuts or any variation may be added to the rolled oats.

Micro-Quick Brownies

Select brownie mix. Use microwave directions on package (when available). Substitute 1/3 cup basic batter for water used in recipe. Add 2 eggs or egg substitute instead of 1 egg.

Pour into 8-inch ungreased microwave safe baking dish. Cover with wax paper. Microwave 7 minutes on 30% power or defrost. Microwave 5-6 minutes on High. Remove as soon as brownies begin to pull away from side. Set covered on flat surface 5 minutes to finish cooking.

SOURDOUGH PRODUCT	SERVING SIZE	CALORIES	PROTEIN %	CARBHY-DRATE %	TOTAL SUGAR %	FIBER %	FAT %	SATURATED FAT %	POLYUNSAT. FAT %	CHOLE-STEROL %	SODIUM mg
Basic Baiter	1 cup	368	11.0	77.0	6.0	3.0	0	0	0	0	0
White Bread	1 slice; 1/18	103	2.9	20.1	2.6	0.7	0.9	0.2	0.2	0	75
Refrigerator Rolls	1 roll; 1/36	113	2.8	20.1	3.0	0.7	2.2	0.2	1.4	0	68
Processer Honey Wheat Bread	1 slice; 1/18	118	2.6	21.6	4.4	0.7	2.2	0.4	0.6	0	88
Processer Herb Bread	1 slice; 1/18	98	2.3	16.6	0.7	0.6	2.2	0.4	0.6	0	73
Breadmaker Bread	1 slice; 1/18	121	3.6	23.6	2.2	0.8	1.1	0.1	0.1	0	199
Breadmaker Oatmeal Bread	1 slice; 1/18	138	3.9	25.6	2.2	1.2	2.0	0.2	0.2	0	200
Banana Bread	1 slice; 1/18	189	3.9	25.9	10.6	1.1	7.7	1.8	2.8	25	191
Jalapeno Corn Bread	1 square; 1/18	163	5.6	23.9	3.3	2.1	5.6	1.8	1.7	29	316
Pancakes or Crepes	1 pancake; 1/12	59	1.8	8.8	1.0	0.3	1.8	0.3	0.7	17	138
Super Quick Biscuits	1 biscuit; 1/12	103	2.1	17.8	0.8	0.8	2.4	0.5	0.5	0	263
Biscuits	1 biscuit; 1/12	136	2.8	20.7	2.1	0.7	4.3	0.8	1.3	0	160
English Muffins	1 muffin; 1/12	162	5.5	35.8	2.0	1.6	0.6	0.1	0	1	278
Bagels	1 bagel; 1/8	300	8.1	49.6	6.6	1.9	6.9	1.3	1.9	25	226
Oatmeal Muffins	1 muffin; 1/12	205	4.1	31.2	10.0	1.6	7.3	0.7	4.8	17	293
Pizza Crust	1 slice; 1/8	118	3.0	21.5	1.1	0.8	1.9	0.6	0.3	1	291
Pie Crust (single crust)	1 slice; 1/12	148	2.2	15.2	0.7	0.5	8.4	3.0	1.6	5	162
Modified Pie Crust (single crust)	1 slice; 1/12	115	1.8	14.1	0.6	0.4	5.4	1.0	1.6	0	82
Applesauce or Carrot Cake	1 slice; 1/18	205	3.3	30.4	18.0	1.7	8.0	1.4	3.0	23	239
Chocolate Cake with topping	1 slice; 1/18	322	2.9	42.4	25.2	0.3	16.6	8.0	2.8	23	215
Oatmeal Cookies	1 cookie; 1/60	147	2.5	22.0	9.5	0.9	5.3	1.0	1.6	7	136
Microwave Zucchini-Nut Loaf	1 slice; 1/24	166	2.3	22.5	10.9	0.7	7.7	1.0	3.4	9	96
Microw-Zucchini Brownies	1 brownie; 1/16	143	2.3	20.3	12.3	0.6	6.3	1.4	1.0	26	54