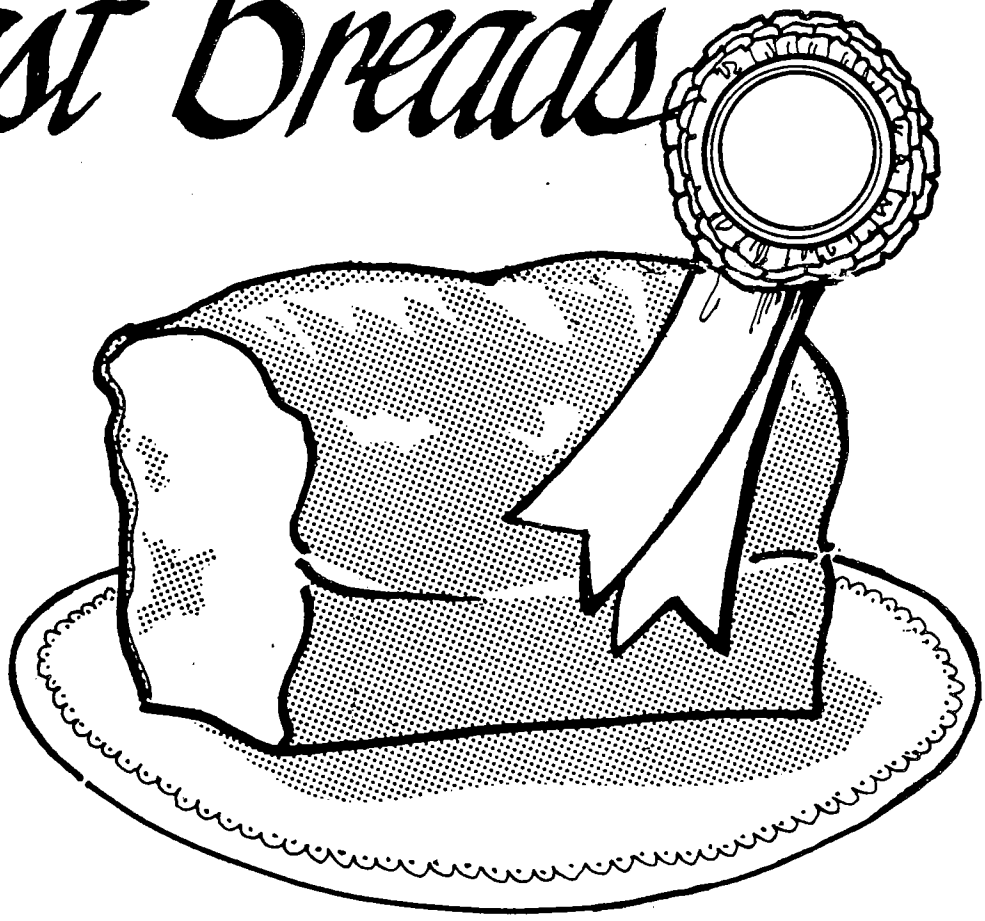
NAME_____
CLUB_____

4 - H 262

Winning Ways with Yeast Breads



Florida Cooperative Extension Service
Institute of Food and Agricultural Sciences
University of Florida, Gainesville

THE 4-H CLUB PLEDGE

I pledge:
my Head to clearer thinking,
my Heart to greater loyalty,
my Hands to larger service,
my Health to better living,
for my club, my community,
my country, and my world.

THE 4-H CLUB MOTTO

To Make the Best Better

THE 4-H CLUB EMBLEM

The 4-H Club emblem is a four-leaf clover with the letter "H" on each leaf. The four "H's" stand for Head, Heart, Hands, and Health.

THE 4-H CLUB COLORS

GREEN: Nature's most common color is emblematic of springtime, life, and youth.

WHITE: Symbolizes purity and high ideals.

WINNING WAYS WITH YEAST BREADS

NAME_____

CLUB_____

BIRTHDATE_____

YEARS IN PROJECT____ YEARS IN 4-H____

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Adapted for use in Florida by Mrs. Beth Walsh, Extension Food Specialist, Miss Lora Kiser, Extension Home Economist, and Miss Ruth Milton, Associate, Extension 4-H Youth Specialist.

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INTRODUCTION

You're a winner when you bake yeast breads and rolls. One of your rewards will be the wonderful aroma that fills the house. You will also win praise because bread tastes so good and goes so well with other foods. Few people will turn down a chance to eat a piece of good home baked bread or a hot buttered roll.

As a senior 4-H Club member you will study the fascinating science of bread leavened by yeast. You have already discovered that flour mixtures are classified as batters and doughs. Batters are beaten during their preparation and are of a consistency to be dropped or poured; whereas, doughs require handling and kneading because they are too thick to be beaten.

The understanding of the science of bread making, combined with art and skill, can help you prepare and serve tastier yeast products. Making yeast breads is an age-old art worth learning. You will be working with the science of living matter - Yeast. How well you control the growth will influence the quality of the bread you make.

Experienced cooks who usually bake good products, or just beginning cooks will get more enjoyment from baking if they know what they are doing and why they are doing it. Baking is fun when you are sure of a success.

This project will help you develop:

- A better understanding of the nutritive value of bread and cereals.
- An understanding of the hows and whys of making yeast breads.
- Skills in preparing yeast products by using good standards of workmanship.
- Ability to judge bread objectively and to recognize desirable standards for yeast bread and rolls.
- An interest in contributing to home and family living through the preparation and serving of food at home.
- Ability to use time and energy efficiently.

What you must do:

1. Study "Winning Ways with Yeast Breads."

2. Complete at least six of the suggested experiments and record your findings.

3. Prepare and score one or more varieties of bread.

4. Prepare and score two or more varieties of rolls.

5. Give two or more demonstrations. Record title, date, and place these were given.

6. Enter the county 4-H Baking Contest.

7. Prepare an exhibit or display for club or county event.

8. Participate in the county 4-H Event Day.

9. Complete the record on pages 32 and 33.

REFERENCES

These will help you carry out this project.

United States Department of Agriculture

Nutrition-Food At Work For You GS-1
Cereals and Pasta in Family Meals G-150
Breads, Cakes, and Pies in Family Meals G-186

National Dairy Council

Animal Feeding Demonstration Instructions
The Great Vitamin Mystery
Choose Your Calories By the Company They Keep
Food Science and How It Began
Search and Research

Other

From:

1. Martha White Kitchens
   P. O. Box 58
   Nashville, Tennessee 37203
   - Quick Bread, Hot Breads
   - The Bread Basket
   - 'Cotton Pickin' Cornbread

2. National 4-H Service Committee
   150 North Wacker Drive
   Chicago, Illinois 60606
   - Bread Making
   - Fleischman's Bake It Easy Yeast Book
   - Young Cook's Bake-A-Bread Book
   - Young Cook's Bake-A-Bun Book

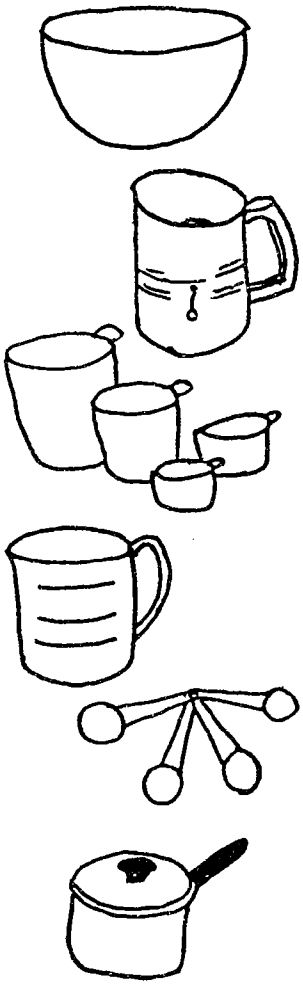
Contact your local leader or Extension Home Economics Agent for these publications.
Check your high school Home Economics Department for books which will help you.

GET READY TO BAKE

Take time to get ready to bake.

1. Be spotlessly clean - hair combed, dress or apron clean, hands and nails scrubbed clean.
2. Read all directions completely and carefully.
3. Assemble all the necessary ingredients.
4. Assemble all utensils needed. A good plan is to keep mixing spoons, measuring cups, scraper and all other small utensils on a tray, a cookie sheet or set them on a sheet of waxed paper. This makes cleaning up easy.
5. Learn to regulate the oven for best results.
6. Measure accurately. All measurements must be level.

UTENSILS FOR MAKING BREADS & ROLLS

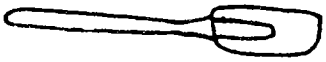


1. A large bowl that holds at least two quarts. A glass bowl or a crockery bowl is especially good. When warmed, it holds the dough at an even temperature. It protects the dough and keeps it cozy and warm like a heavy coat keeps you warm.
2. A flour sifter. One that holds 5 or 6 cups of flour is most useful. Sifting the flour before measuring assures accurate measurements.
3. A set of measuring cups to measure dry ingredients. A set has cups to measure 1 cup, 1/2 cup, 1/3 cup, 1/4 cup. A measuring cup that has these measures marked on the side may also be used.
4. A measuring cup to measure liquid ingredients. This may be 1-cup, 2-cup or 4-cup size.
5. A set of measuring spoons. A set has spoons to measure 1 tablespoon, 1 teaspoon, 1/2 teaspoon, 1/4 teaspoon.
6. A small saucepan, about 1-pint size. This is useful for scalding milk and for melting shortening.

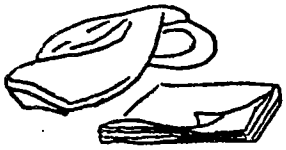
7. A large metal spoon, flour scoop or short broad spatula for scooping up flour.

8. A large wooden or other mixing spoon.

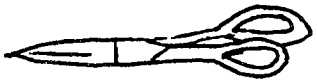
9. A bread board. A pastry cloth or a coarse clean cloth or towel stretched over the board makes handling dough easier.



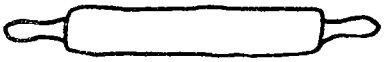
10. A bowl scraper. This may be rubber or plastic.



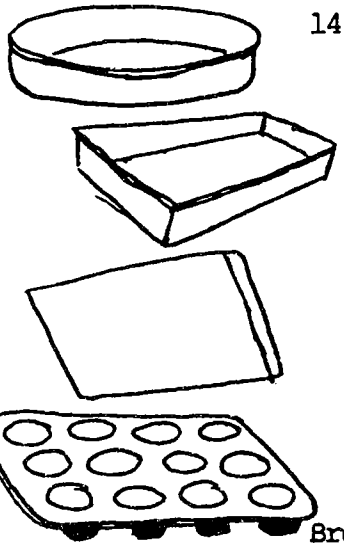
11. Clean dish towels and a clean hand towel.



12. A sharp knife or kitchen scissors to cut dough.



13. Rolling pin.

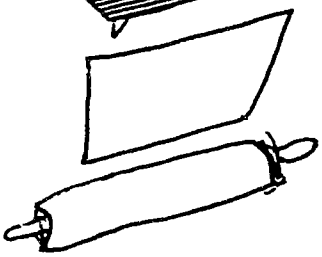


14. Correct baking pans. The correct size pan is important for high, well-shaped loaves. Measure inside dimensions at top of pans. You can make excellent bread with pans slightly larger than the size called for in the recipe; but for perfect loaves, use the suggested size. For Clover-leaf Rolls, you need muffin pans. Pans with cups 2 1/2 inches across the top are a good size. For Butter-horns and Bowknots, use cookie sheets or large shallow pans. For Cinnamon Rolls, use muffin pans or an 8x8x2-inch pan.

Bread bakers find these extra tools useful, but not required:

1. Pastry brush. Nylon brushes are easy to keep clean and are long wearing.

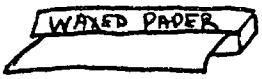
2. Wire, cooling racks.



3. Pastry cloth.

4. Stockinette cover for rolling pin.

5. Oven thermometer if the oven does not have a temperature control.



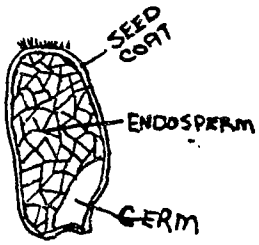
6. Waxed paper.

7. Electric mixer.

PART I

THE WHAT AND WHY OF INGREDIENTS

Baked products are made with four essential ingredients - flour, liquid, yeast, and salt. Other ingredients used frequently are sugar, milk, and shortening. A wide variety of other ingredients can be used for specialty breads. To know the secrets of good baking you must know about the different ingredients and the specific function each ingredient has in the baked product.



FLOUR is the main ingredient. Enriched white flour and whole wheat flour make the most nutritious rolls and breads. Most of our flour is milled from wheat. Wheat is classified as hard or soft, based on the texture of its endosperm (inner part of the grain) and as winter or spring wheat.

The clean wheat is milled by a complex process that separates the endosperm from the bran and grain that surround it. The steps of grinding, sifting, and regrinding are repeated until the endosperm reaches the desired fineness and no more flour can be removed from the bran coat.

Instant blending flour, or as sometimes called agglomerated flour, is a free-flowing flour that does not pack. It is prepared by a process in which regular flour is subjected to heat, moisture, and pressure. Flour processed in this manner will mix instantly without lumps in cold liquids, pours easily, and does not pack down or need to be sifted before measuring. An equal measure of such flour can be substituted for regular flour that must be sifted before measuring, however, research has shown that adjustments in volume of flour are needed to assure a good quality baked product. Yeast rolls were not satisfactory although adjustments in flour were made.

The baking quality of flour depends on the amount and quality of the gluten-forming proteins it contains. Flours of high protein content are best for yeast bread, those of medium protein content for general purpose uses and those of low protein content for cakes.

Bread flours milled from blends of hard wheat yield a large quantity of strong gluten. They are used chiefly by commercial bakers for making yeast breads and rolls.

Whole-wheat flours and rye flour can be used alone in making yeast breads, but they are more often combined with white flour. Flour or meal from other grains are good for quick breads which don't need as strong gluten as yeast breads.

Whole-wheat flours are a little less rich in gluten content than patent white flour because of the portion of the total that is bran. One hundred per cent whole-wheat breads are heavy. Lightweight wheat breads are made with about half white flour.

Whole grain breads are made from the entire crushed kernel. The food value is restored in white flour by a process called enrichment. Specified amounts of three of the B vitamins, thiamine, riboflavin and niacin are added along with iron in the enrichment process. Florida laws, beginning January 1, 1975, require that flour and bread must be enriched.

YEAST

Breads and rolls are leavened by the biological action of yeast, with the exception of salt-rising bread for which bacteria are used. Yeast is a tiny plant that grows and produces carbon dioxide under favorable conditions of temperature, food and moisture. It begins to work at about 50° and is at its best between 78° and 82°.

Yeast is marketed as active dry yeast and compressed yeast cakes. Active dry yeast is a mixture of yeast and filler that has been dried and packaged in granular form. It requires no refrigeration but will retain its activity for longer periods if stored in a refrigerator rather than at room temperature. Packages of active dry yeast are dated to insure best results in its use. Compressed yeast is a moist mixture of yeast and starch. The moisture makes it perishable; it must be refrigerated and used within 2 or 3 weeks. Compressed yeast that crumbles easily is still good, even though drying has turned the edges slightly brown.

Yeast can be grown at home in the form of a starter or liquid yeast. This is done for sourdough products.

LIQUIDS

Milk or water is the liquid most frequently used with yeast doughs. Yeast requires moisture before it can grow. Liquids are also needed to moisten the gluten-forming proteins and starch and dissolve certain ingredients such as salt and sugar.

All types of milk, sweet or sour cream, fruit juices, water, potato water, and coffee may be used as liquids in doughs. Milk adds food value. Rolls made with milk have a velvety crumb and creamy color. They keep well and toast well, too.

SALT

Salt brings out the flavor. It also controls the action of the yeast. Salt strengthens the gluten and helps control the rate of fermentation. With no salt, the dough rises rapidly and the bread will be coarse. Too much salt slows fermentation, and the bread will be too firm and compact. On hot summer days a little extra salt can be used to slow the fermentation and thus improve the quality and flavor of the yeast breads. Salt should not be added to the liquid in which the yeast is softened because it may retard the yeast action too much.

SUGAR

Sugar furnishes food for the yeast. Refrigerator doughs use more sugar and more fat to keep the yeast potent during the storage period. The amount of sugar may affect the texture, grain, tenderness, moistness and browning of the crust. Sugar helps the crust of rolls and bread to brown as they bake.

You may use white or brown sugar, corn syrup, honey, sorghum or molasses. These products add distinctive flavors and tend to stay moist longer than those made with granulated sugar.

FAT

The fat used in doughs is called shortening. The gluten strands that form when fat is used are usually short and tender. This is caused by the fats and oils forming an oily coating on the flour particles, or by forming layers which actually separate different parts of the mixture and keeps them from coming together.

The choice of shortening depends on what is available and your personal taste. You may use lard, hydrogenated shortening, vegetable oil, margarine or butter. If a recipe calls for melted fat, you can substitute an equal amount of oil, however, you will not have a quality product if you use oil in a recipe that calls for solid fat.

EGGS

Eggs often are used in yeast breads for more "richness." Eggs add food value, color and rich flavor. Some specialty bread recipes call for yolks or slightly beaten whites. Yolks give tender, flaky crusts, and whites help to give thick crisp crusts. They also help make a fine crumb.

OTHER INGREDIENTS

Many different flavoring extracts and spices can be added to doughs without any other change in the recipe. Small amounts of chopped nuts, raisins, poppy seeds, and other ingredients also can be added for flavor and increased nutritional value. These items are not added to the dough until it is ready to set for the last rising. Unless gluten flour is substituted for some of the regular flour, the added flavoring ingredients are never used in greater quantity - up to about 1/4 the weight of the flour called for in the recipe. If large amounts of materials are added a special recipe should be used.

WHY BREAD AND CEREALS IN THE DIET?

Food supplies your body with energy and materials needed for growth and body building. Food is made up of many substances necessary for life which are called nutrients. There is no one food that contains all the nutrients we need. To get a balanced diet, a variety of foods is necessary. Use the Basic Four Food Chart as your guide to good nutrition.

All cereal grains are important sources of energy because of their high starch content. The energy value of bread varies from about 240-390 calories per 100 grams (25 grams per slice). The protein in cereal grain is of the incomplete type. That means that certain essential amino acids are low or lacking. Generally, flour is deficient in lysine, threonine, methionine, and tryptophan. By using together products of the bread and cereal group with milk and/or egg proteins, essential amino acids are supplied in quantities large enough to meet the daily need. Thus the importance of serving milk with bread or adding dry milk and eggs. Even though the protein in bread is of the incomplete type, breads supply far more protein than is generally recognized (2-4 grams per slice).

A wide variation exists in the amount of minerals in cereal grains. The amounts are influenced by type of grain, where it is grown, storage conditions and processing methods.

Cereal grains are an important source of B vitamins, thiamine, riboflavin, and niacin. They are deficient in vitamins A, D and ascorbic acid.

The enrichment of flour and cereal products helps to make up for deficiencies in iron, thiamine and niacin.

Much of the flour and many commercial breads contain nutrition information on the labels. The samples below show the nutritive value of one brand of wheat flour and all purpose flour. Nutrition information from one kind of bread is also shown. Read the labels before you buy.