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*Honey*

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**improves Baked Products**

## PREFACE

### *Honey Improves Baked Products*

As representatives of the Honey Industry Council of America, we are pleased to offer this bulletin on the use of honey in commercial and institutional baking. We urge you to try these formulations and to discover that honey is the most delectable and nutritious sweetening agent. By putting honey to work for you and coupling the improved eating quality of the baked goods with active promotional efforts, you can expect substantial increases in demand for your products. We present this booklet as a culmination of years of study and original research on the use of honey in this field, carried out in the laboratories of Kansas State University, Manhattan, Kans., an outstanding center of research in baking.

Honeybees are becoming more and more important to the well-being of this country because they represent the only crop-pollinating insects under man's control. In using honey and applying the results of this research, you will reap the tangible sales and profit benefits from higher quality goods. You can also feel a sense of participation in the maintenance of the agricultural well-being of the country.

HONEY INDUSTRY COUNCIL OF AMERICA

A circular with home recipes using honey in baking is available. Ask for "Honey in Your Baking," Circular 281, from Umberger Hall 16, Kansas State University, Manhattan, Kans.

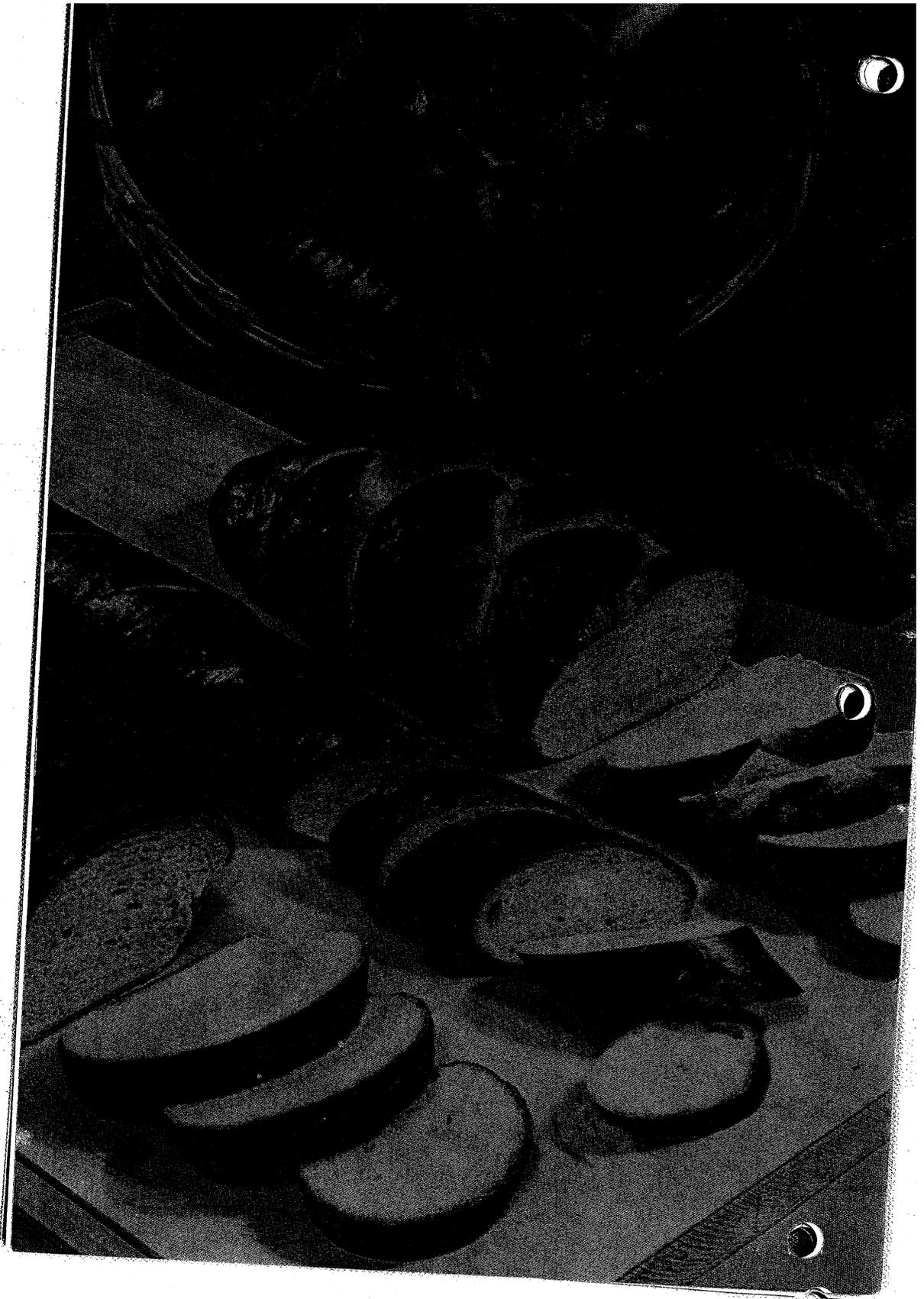
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# HONEY IMPROVES BAKED PRODUCTS<sup>1</sup>

Donald Miller<sup>2</sup>, Jonathan W. White, Jr.<sup>3</sup>, and John A. Johnson<sup>4</sup>

Honey was the first sweetening agent known to man. Long before man developed ways to extract sugars from plants, bees collected nectar from flowers and supplied a stable and necessary dietary item. Although man developed and refined dietary sources of sugar, honey has maintained a respected place among food items. Because of its unique properties and delectable flavors, honey has filled a useful place in man's bill of fare for over five thousand years.

As well as producing honey and wax, the bees play an important role in our agricultural economy. They are responsible for helping pollinate many of our agricultural crops. Particularly, bees are adapted to "triping" of blossoms of alfalfa and clover so that pollination may be accomplished and fertile seed developed.

Honey may be used in almost any food product that requires sweetening. It is, primarily, a sugar solution or syrup consisting, on the average, of about

80 to 85% sugar and 15 to 18.6% moisture. Its sugars are readily digested and provide a good source of quick energy. In addition to sweetening, it can contribute delectable flavors to foods.

**Availability of Honey.** Honey is produced in every State and is easily available over the whole country. An average annual harvest of 250 million pounds provides honey for home use on the table and in cooking, for commercial users, and for export. For the commercial users such as the baking industry, honey is sold in 60-pound (5-gallon) containers, in 600-pound drums, and in bulk in tank trucks. For home consumption table grades of honey may be purchased in the comb, in the liquid form ("extracted honey," "strained honey"), and in the increasingly popular fine-textured spread form.

**Honey Composition and Use in Baked Products.** Honey is a natural product and may be expected to vary slightly in composition, depending primarily on the floral source from which it is derived. From the baker's viewpoint, the major variation appears to be in flavor and color. Color, and more particu-

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larly honey flavor attributes, seem to dictate how successfully a honey will be accepted. Because the average moisture content of honey is 17%, the total moisture in any formula must take into account that added by the honey.

Although there are many different types of honey, each with its characteristic flavor, 20 or 30 main floral types account for most of the honey sold in the United States. Honey tastes vary over the country, with different sections having their favorite kinds. The clover types, however, probably come closest to the concept of a basic honey, and local minor types are often blended in to give locally-preferred flavors.

Honey contains a high percentage of dextrose which may cause excessive browning during baking in certain baked products such as cake and cookies. With cookies, the browning may be desirable, as it lends a distinct flavor. In white cakes, the brown color and associated flavors are undesirable, so the browning reaction must be controlled by the amount of honey used or by the leavening agent or special agents that control acidity of the batter and cake crumb. These special cases are noted in formulas presented in this bulletin.

**Treatment of Raw Honey Before Use.** Honey for commercial use must be heat treated by the producer or packer and need not again be heated unless it has granulated. It should be

stored at room temperature, avoiding excessive (over 95°F.) heat. If possible, prolonged storage at temperatures below 60° F. should also be avoided. By keeping the container closed and in a dry place, uptake of moisture from the air and subsequent possible spoilage will be avoided.

Reasons for heat treatment of honey for baking are threefold, (1) to delay granulation of honey, (2) to destroy the yeast cells that are always present, and (3) to inhibit enzymes that are present. For example, amylase (starch-digesting) enzymes which may cause starch jells in certain types of baked products to liquefy are inhibited by this treatment.

Honey that has granulated wholly or in part may be restored to the liquid state by indirect heating, by placing the closed container in a water bath (never over an open flame) with occasional mixing until liquefied. Exposure to 160° F. temperature should not exceed 30 minutes, though longer times may be used at lower temperatures.

**Honey Specifications.** Investigations on the use of honey in baked products resulted in the following recommendations as a guide for buyers and sellers of honey for use in commercial baking:

(a) All honey containers should be clearly labeled showing grade, predominant floral source, moisture content, color in mm Pfund, and U.S. Depart-

ment of Agriculture color standards.

(b) Honey for use in baking should be Grade "A" or "B" for U.S.D.A. Grades of Extracted Honey, effective April 16, 1951.

(c) The Pfund colorimeter reading should not exceed 70 mm.

(d) Predominant floral sources of buckwheat, fall flowers, heartsease, and horsemint should be used only in blends of not more than 10% with other mild-flavored honeys.

(e) Honey should conform

to the Pure Food and Drug Laws.

(f) Honey should be heated at 160° F. for 30 minutes to retard granulation and enzyme activity.

### Abbreviations

The following abbreviations have been used in this brochure:

F = Fahrenheit temperature scale  
Hrs. = Hours                      lbs. = pounds  
Min. = Minutes                    ozs. = ounces

This bulletin presents new uses for honey in baked products. The formulas have been laboratory tested.

## Breads

Honey provides an excellent sweetening agent for bread, improving both its flavor and keeping quality. Commercial formulas for white, whole wheat, and rye bread types are presented. The basic formulas are shown so that the baker may adapt them to their needs or desires. White bread dough may be varied in shape or size

or may be used to make, for example, cinnamon or raisin bread.

The temperature of the dough from the time it is mixed until it is baked is highly important. Compressed yeast should be dispersed in water at 75-85° F., while active dry yeast should be soaked 10 minutes in water at 100-110° F.

### HONEY WHITE BREAD

#### Sponge Process

	Sponge		Dough	
	lbs.	ozs.	lbs.	ozs.
Flour .....	70		30	
Yeast (compressed) ..	2			
Yeast food ..		4		
Malt .....		4		
Shortening ..			3	
Milk solids ..			4	
Salt .....			2	
Honey .....			7	5
Water			variable	(60-65)

Sponge time—4 hrs. (78° F.)  
Dough temperature—80° F.  
Flour time—30 min.  
Dry proof—15 min.

#### Straight Dough Process

	Dough	
	lbs.	ozs.
	100	
	2	4
	3	4
	4	
	2	
	7	5
	variable	(60-65)

Dough temperature—80° F.  
1st punch—110 min.  
2nd punch and scale—50 min.  
Molder—20 min.

### HONEY WHOLE WHEAT BREAD

#### Straight Dough Process

	lbs.	ozs.
Whole wheat flour .....	100	
Shortening .....	4	
Salt .....	2	4
Dry skim milk .....	4	
Malted wheat flour .....		8
Honey .....	7	5
Yeast (compressed) .....	2	
Water (variable) .....	(60-65)	
Yeast food .....		4

Dough temperature—78° F.

1st punch—2 hrs.  
2nd punch and scale—45 min.  
Molder—15 min.  
Pan proof—50 min.  
Bake for 30 min. at 425° F.

### HONEY RYE BREAD (Swedish Type)

#### Straight Dough Process

	lbs.	ozs.
Rye flour .....	20	
1st clear flour .....	80	
Shortening .....	2	8
Dry skim milk .....	3	
Salt .....	2	8
Malt .....		8
Honey .....	7	5
Molasses .....	7	5
Caraway seed .....		10
Yeast (compressed) .....	2	
Water (variable) .....		60

Dough temperature—78° F.  
First punch—1½ hrs.

Scale—30 min.  
Molder—15 min.  
Proof—45 min.  
Bake 40 min. at 420° F.  
Bake in pan, basket, or hearth.



### Plain Rolls and Sweet Rolls

Rolls lend themselves well to the use of honey. Two basic formulas from which a large variety of plain and sweet rolls may be made are given. An excellent formula for roll and coffee cake icing is included.

In rolls, as in loaf breads, the temperature of the dough must be carefully controlled. Humidity is also an important factor.

The following basic sweet-dough formula may be used to make plain rolls, filled rolls, and coffee cake. The refrigerated-dough formula makes a richer dough than the basic sweet dough and can be used for iced breakfast rolls and coffee cakes. It may be mixed and refrigerated one or two days before needed.

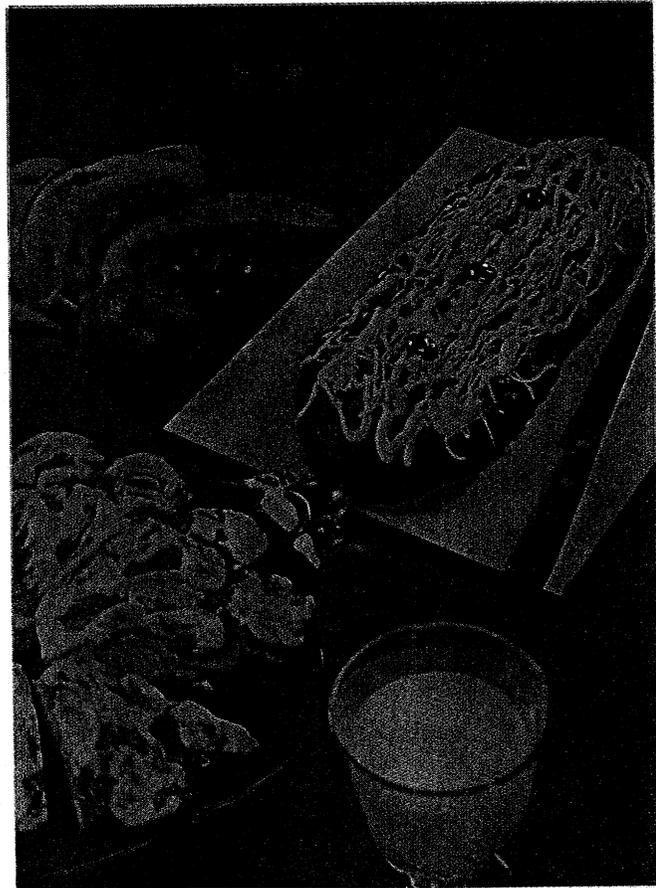
### BASIC SWEET DOUGH

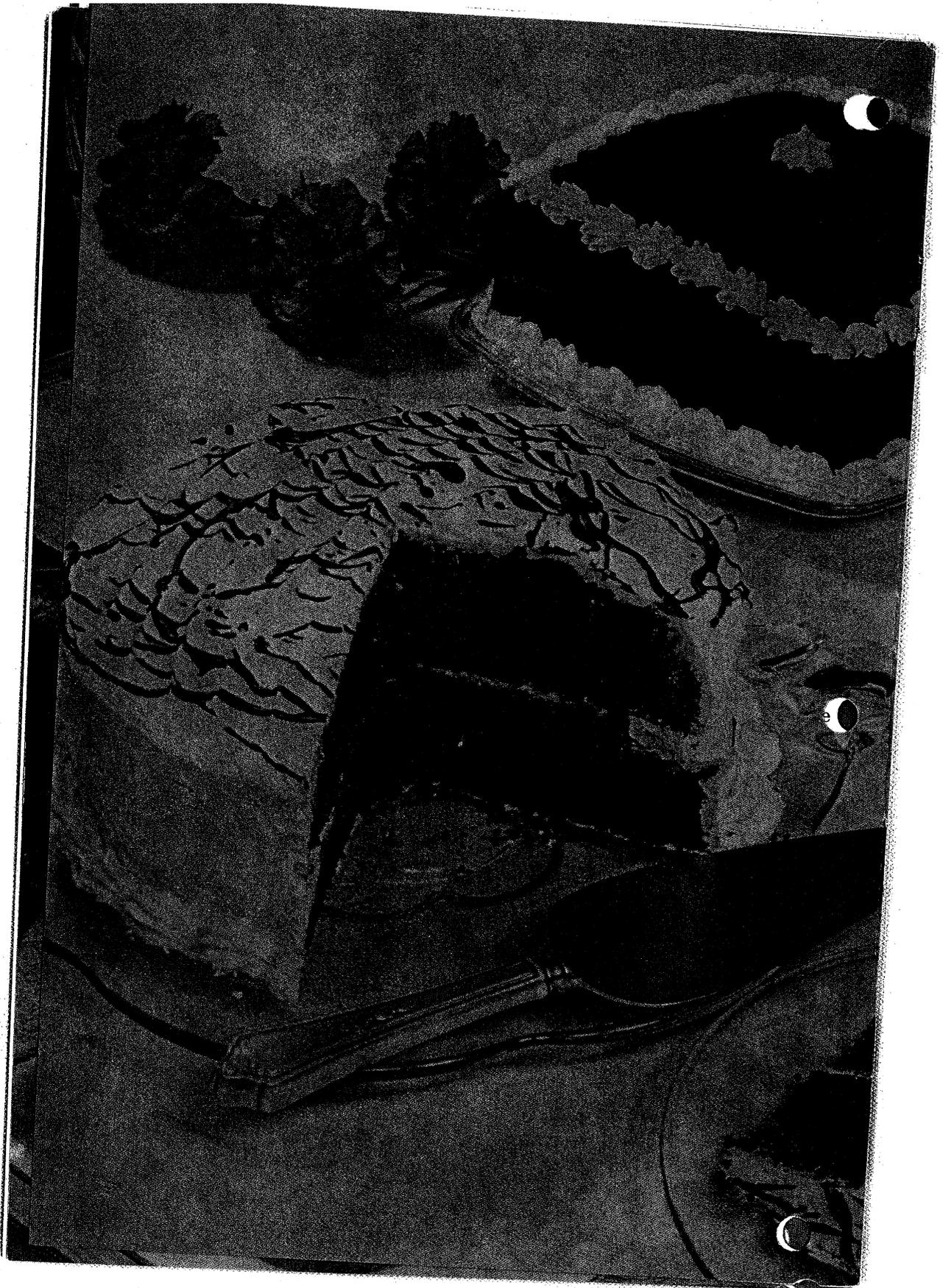
(For plain luncheon rolls, sweet rolls, and coffee cakes)

	lbs.	ozs.	
Flour, bread .....	80		Mix until dough clears bowl. Dough temperature—80° F. 1st punch—1½ hrs. Scale—30 min. Makeup—15 min.
Flour, cake .....	20		
Water .....	48		
Yeast .....	5		
Sugar .....	5		
Honey .....	12	8	
Dry skim milk .....	6		
Salt .....	1	8	
Shortening .....	15		
Eggs .....	10		

### REFRIGERATED SWEET DOUGH

	lbs.	
Flour, bread .....	75	Mix until all ingredients are uniformly incorporated and the dough is smooth. (Full dough development is not desired.) Refrigerate dough about 24 hrs. at 40° F. and then shape rolls or coffee cake.
Flour, cake .....	25	
Sugar .....	10	
Salt .....	2	
Dry skim milk .....	6	
Honey .....	10	
Eggs (whole) .....	16	
Shortening .....	20	
Yeast .....	10	
Cold water (variable) ..	50	





**CINNAMON FILLING FOR SWEET ROLLS AND COFFEE CAKE**

Sugar .....	lbs.	100
Shortening .....		100
Cinnamon .....		5

Mix well together.  
Soften with milk or egg whites.

**ICING FOR SWEET ROLLS AND COFFEE CAKE**

4 X sugar .....	lbs.	100	ozs.
Honey .....		7	
Boiling water (variable) .....		15	
Flavoring .....			8

Mix all ingredients together until smooth. Use while warm (120° F.).

**Cakes**

Honey greatly enhances the quality of cakes not only as a sweetening and flavoring agent but also in retaining the cake's softness. Also, a small portion of honey adds greatly to the keeping properties of icings.

Formulas for four types of layer cakes, four kinds of icings, and an excellent fruit cake are included in the following section.

The baking powder or other leavening agent is usually sifted with the flour before being added to the mix.<sup>5</sup>

In cake mixing, lumps in the batter must be avoided. This is accomplished by withholding part of the liquid and maintaining a stiff mixture during the first stages of mixing. Sides of the mixer bowl should be scraped frequently during the process. It may be necessary

5. The leavening agent should be reduced for high altitudes. For example, at 5,000 feet elevation the leavening agent should be reduced by one third.

to adjust the consistency of the cake batters by varying the amount of liquid.

While the formulas given in the following section do not replace all the sugar with honey, this may be done. However, if all the sugar is replaced with honey, the acid in the batter must be partially neutralized by adding 0.5 to 0.7% of the weight of the honey with baking soda. The batter may be slightly acid but, to avoid excessive crumb browning, it must not be neutral or alkaline. The addition of a shortening-coated tartaric acid or a glucono delta lactone<sup>6</sup> may also assist in control of browning.

Layer cake pans are prepared by first placing circular pieces of paper in them.

It is best to let cakes cool about a half an hour before removing from pans.

6. Chas. Pfizer Co., New York.

**FRUIT CAKE**

	lbs.	ozs.
Shortening .....	60	
Sucrose .....	50	
Salt .....	2	
Honey .....	60	8
Flour (½ bread, ½ cake) .....	100	
Whole eggs .....	100	
Raisins (soak and drain) Wash and drain well:	200	
Glazed lemon peel .....	50	
Glazed orange peel .....	50	
Glazed cherries .....	50	
Glazed pineapple .....	50	
Pecan pieces .....	100	

Mix smooth.

Sift and add.

Add gradually, cream until light at slow speed (5 min.).

Gently incorporate raisins and fruit.

Gently incorporate.

Deposit batter in loaf cake pans lined with paper. Level the batter in the pan with a spatula. Wet the top slightly with milk, using brush or cloth. Designs may be made on top with pecan halves or blanched almonds before placing in oven.

Bake at 335° F., using some steam in oven.

**SPICE LAYER CAKE**  
40% honey solids

	lbs.	ozs.
Sugar .....	40	
Shortening, cake .....	30	
Ginger .....		8
Cloves .....		4
Cinnamon .....		8
Soda .....		8
Dry skim milk .....	10	
Baking powder .....	4	8
Flour, cake .....	100	
Whole eggs .....	35	
Molasses .....	40	
Honey .....	40	
Salt .....		12
Water .....	50	

Cream until smooth at slow speed.

Sift together and add.

Blend and add gradually. Continue mixing 5 min. at slow speed.

Add over 2-min. period. Continue mixing 2 min. at slow speed.

Bake at 360° F. for 30 min.

### CHOCOLATE LAYER CAKE

40% honey solids

	lbs.	ozs.		
Sugar .....	80		Sift flour, milk, cocoa together. Incorporate with sugar, honey, shortening, salt and whole eggs by mixing 5 min. at slow speed.	
Honey .....	48			
Shortening (cake type) .....	45			
Salt .....	3			
Dry skim milk .....	15			
Flour, cake .....	20			
Cocoa .....	20			
Whole eggs .....	55			
Flour .....	80			Sift together and add.
Soda .....	3	8		
Water .....	87		Add slowly over 3-min. period. Continue mixing 2 min.	
Vanilla .....		5		

Bake at 360-375° F. about 30 min.

### YELLOW LAYER CAKE

40% honey solids

	lbs.		
Sugar .....	80		Mix 5 min. at slow speed.
Honey .....	48		
Shortening (cake type) ..	40		
Salt .....	3		
Dry skim milk .....	10		
Whole eggs .....	40		
Flour, cake .....	100		
Baking powder .....		5	
Water .....	80		Add slowly over 3-min. period, then continue mixing 2 min. at slow speed.
Vanilla .....		3	

Bake at 360-375° F. for 30 min.

### WHITE LAYER CAKE

40% honey solids

	lbs.	ozs.	
Sugar .....	80		Mix 5 min. at slow speed.
Honey (water white clover) .....	48		
Shortening, cake type ....	45		
Salt .....	3		
Dry skim milk .....	10		
Egg whites .....	52		
Cake flour .....	100		
Baking powder .....		6	
Cream of tartar .....		8	
Water .....	69		Add over 3-min. period. Continue mixing 2 min. at slow speed.
Vanilla .....		3	

Bake at 360-375° F. for 30 min.

## HONEY ICINGS

### MARSHMALLOW

	lbs.	ozs.
Honey .....	100	
Agar .....	1	8
Water .....	30	
Gelatin .....		12
Sugar .....	1	8
Egg whites .....	15	
4 X sugar (sift) .....	25	

Heat to 125° F. and place in mixing bowl.

Bring to boil, dissolve well and remove from heat.

Sift together and dissolve in hot agar solution.

Place in mixing bowl, together with all of above ingredients, and whip.

Add to mix when thickening begins and continue to whip to soft peaks.

Note: 1/10 part citric acid added to the formula contributes a more distinct flavor. For less tender marshmallow, reduce agar and increase gelatin.

### CHOCOLATE BUTTERCREAM

	lbs.	ozs.
6 X sugar .....	53	
Cocoa .....	14	
Dry skim milk .....	1	
Butter .....	7	
Shortening .....	7	
Salt .....		4
Honey .....	6	
Egg whites .....	5	
Water (variable) .....	6	12

Sift dry ingredients together and place in mixing bowl with balance of ingredients except water. Mix until free from lumps.

Add water and cream until light.

### VANILLA BUTTERCREAM

	lbs.	ozs.
6 X sugar .....	67	
Butter .....	7	
Shortening (cake type) ..	10	
Salt .....		4
Dry skim milk .....	1	
Honey .....	5	
Egg whites .....	5	
Water (variable) .....	4	4
Flavoring .....		8

Sift dry ingredients together and place in mixing bowl with remainder of ingredients except water. Mix until free from lumps, add water and flavoring, cream until light.

### CHOCOLATE FUDGE

	lbs.	ozs.
6 X sugar .....	53	
Cocoa .....	14	
Dry skim milk .....	1	
Butter .....	6	
Shortening (cake type) ..	6	
Salt .....		4
Honey .....	6	
Egg whites .....	5	
Boiling water (variable) .....	8	12

Sift dry ingredients together, placing in warm bowl with balance of ingredients except water. Mix until free of lumps.

Add boiling water and mix until smooth. Place in water bath at 115° F., stirring occasionally until used.

## Cookies

Substituting honey for a portion of the sugar in cookie recipes greatly enhances the flavor, color, and general eating quality of cookies. Honey tends to add a chewy quality to cookies. The degree of chewiness desired may be controlled by the quantity of honey added.

Representative types of popular cookies, including crisp and chewy varieties, are given below. Honey may be adapted to many bakers' personal recipes.

Most cookies generally should be mixed just until ingredients are uniformly incorporated.

Overmixing makes them tough. Consistency of cookie dough may be adjusted by varying slightly the amount of liquid. Cookies usually require more heat on the top than on the bottom. If bottoms come out excessively dark, double pans may be used. Since cookies continue to bake for about a minute after coming from the oven, it is well to remove them before too much color develops.

Brush the flour from the tops of cookies before placing in the oven. Dampening the brush slightly with water helps.

### SUGAR COOKIES

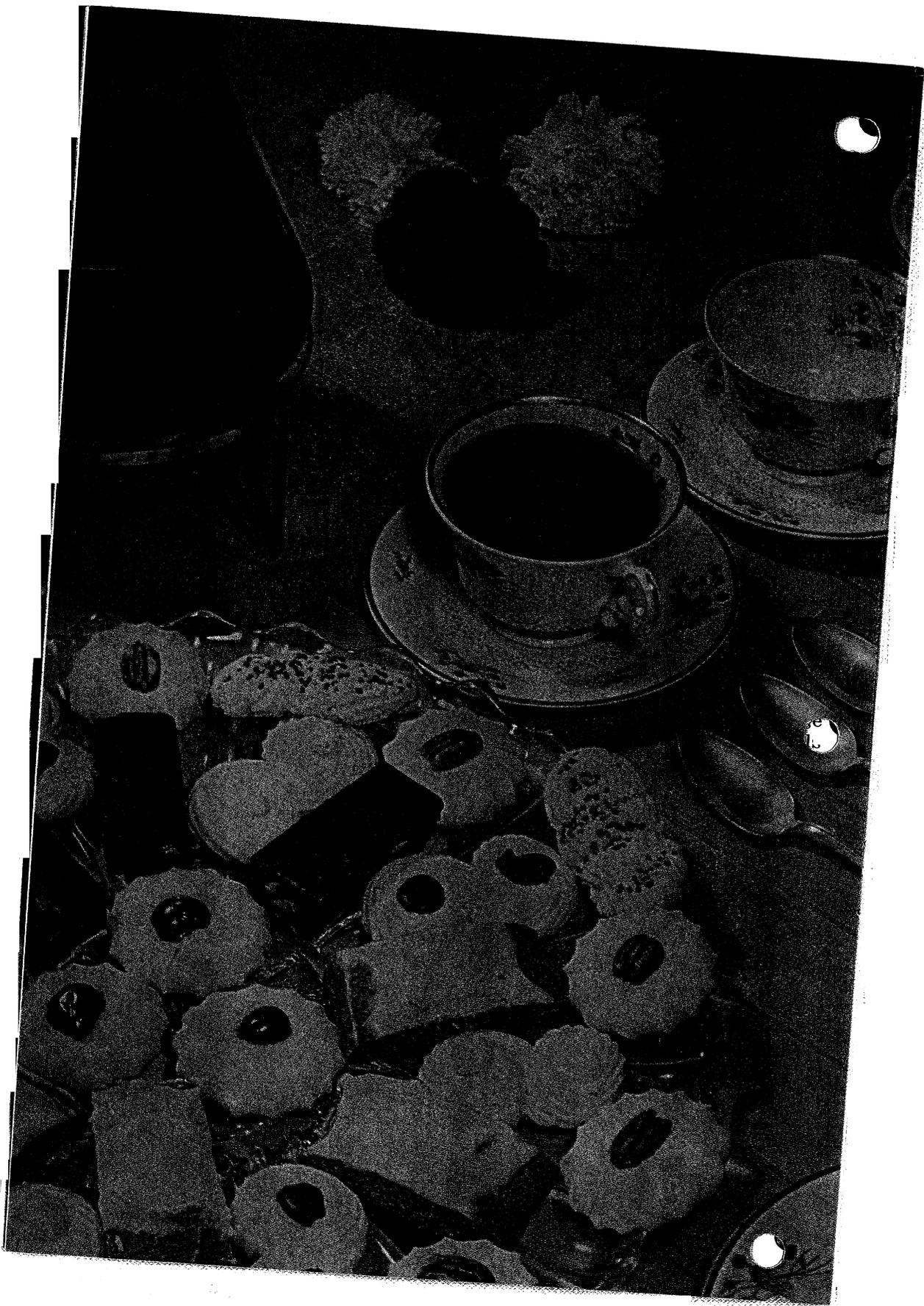
#### For Wire Cut

	lbs.	ozs.	
Sugar .....	54	8	Mix sugar, honey, and shortening until smooth. Add remainder of dry ingredients. Then add eggs, ammonia solution, and water.
Honey .....	3	8	
Shortening .....	27		Mix slowly until smooth.
Salt .....	1	8	
Dry skim milk .....	2	8	Bake at 390° F. approximately 10 min.
Whole eggs .....	8		
Flour, cookie .....	100		
Ammonia (dissolve in part of water) .....	1	8	
Water (variable) .....	18	8	
Vanilla .....		8	

### GINGER COOKIES

#### For Wire Cut

	lbs.	ozs.	
Sugar .....	40		Mix sugar, honey, and shortening at slow speed until smooth.
Honey .....	15		
Shortening .....	20		Add all dry ingredients.
Dry skim milk .....	5		
Salt .....	1		Add and mix until smooth.
Ginger .....	1	8	
Flour, cookie .....	100		Dissolve ammonia in part of water and add, follow with remainder of water and mix until smooth.
Molasses .....	35		
Ammonia .....	1	8	Bake at 390° F. for 10 min.
Water (variable) .....	8		



### COCONUT MACARON CHIPS

#### For Wire Cut

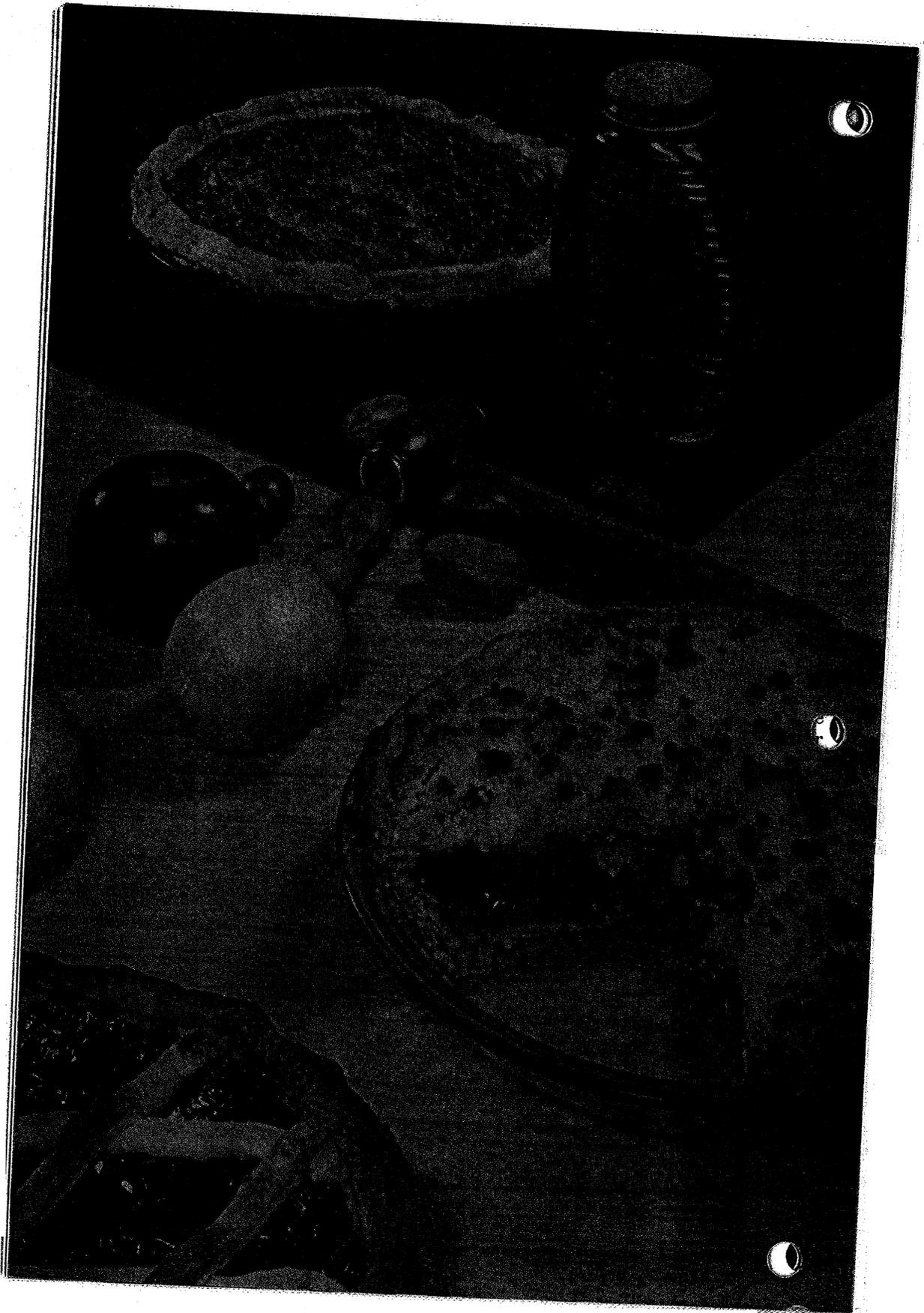
	lbs.	ozs.	
Brown sugar .....	86		Mix at slow speed until smooth.
Shortening .....	53		
Salt .....	1	8	Blend and mix with above ingredi-
Dry skim milk .....	2	8	ents.
Baking powder .....	1	8	
Flour .....	100		
Honey .....	14		Add and mix at slow speed.
Macaroon coconut .....	26		
Water .....	20		Add and mix until all ingredients
Almond flavoring .....		8	are uniformly incorporated.
			Bake 13 min. at 390° F.

#### FRUIT BARS

	lbs.	
Brown sugar .....	33	Mix at slow speed until free of
Shortening .....	33	lumps.
Flour (cookie) .....	100	Blend and add.
Soda .....	1	
Honey .....	66	Add and mix at slow speed until
Whole eggs .....	33	smooth.
Cinnamon .....	1	
Salt .....	1	
Raisins .....	116	Soak, drain and incorporate uni-
		formly.
		Divide dough in small units, which
		may be rolled out to form bars
		about 2 inches wide and $\frac{3}{8}$ inch
		thick. Place on lightly-greased
		cookie pan.
		Bake 14 min. at 390° F.

#### BROWNIES

	lbs.	
Sugar .....	166	Mix at slow speed until smooth.
Shortening .....	83	
Honey .....	50	Add and mix.
Salt .....	4	
Flour, cookie .....	100	Blend and add.
Cocoa .....	33	
Whole eggs .....	50	Add gradually and mix 5 min. at
Water .....	16	slow speed.
Vanilla .....	2	
Pecans .....	66	Add and mix until uniformly incor-
		porated.
		Spread evenly, about $\frac{1}{2}$ inch thick,
		over bottom of greased layer pan.
		Bake at 350° F. for 45 min. Cool
		well before cutting squares.



### BROWN SUGAR ICEBOX COOKIES

	lbs.	ozs.
Brown sugar .....	50	
Sugar .....	50	
Salt .....	2	
Soda .....		12
Shortening .....	50	
Eggs .....	20	
Honey .....	10	
Vanilla .....	1	
Flour (pastry) .....	100	
Water (variable) .....	2	

Mix at slow speed until smooth.

Add and mix until uniformly incorporated.

Dough should be stiff. Scale and mold into cylinders  $1\frac{1}{4}$  inches in diameter and about 12 inches long. Wrap in wax paper sheets and refrigerate over night. Slice to  $\frac{1}{4}$ -inch pieces and pan.

Bake at 390° F. for 10 min.

### Pies

Of all bakery products, fruit pies probably bring out the most natural honey flavor. Fruit pie fillings with honey are easy to make and add variety to the flavor of this popular dessert.

Only the very common fruit pies are presented here, but many other fruit and berry fillings may use honey.

Pie dough should be made several hours, or even a day before needed. Do not store close to heat.

If pie filling is too thick, it may be thinned with a syrup made from equal parts of honey and water boiled 1 minute. Fruit pie filling should be cooled to room temperature and finally chilled in a refrigerator before use.

After the top has been placed on the pie, brush the center

gently with milk and sprinkle lightly with sugar. This improves the crust color and appearance.

Baking temperature for fruit pies with precooked fillings ranges from 425-435° F. With the filling already edible, the main purpose is to bake the crust. When it reaches a rich brown, remove the pie from the oven before the filling boils. High oven temperatures are necessary to color the crust. Baking time for 8- or 9-inch fruit pies is 25 to 30 minutes. Baking temperature for pecan pie is in the 340-350° F. range for approximately 35 minutes. Late in the baking stage, the pie will rise around the edges and eventually "crown" in the center. The pie should be removed just before the crown is reached.

**PIE DOUGH**

	lbs.
Milk .....	30
Salt .....	2
Honey .....	3
Flour (pastry) .....	100
Shortening .....	70

Mix until salt dissolves

Cut shortening into flour, then add liquid. Mix until mass is uniform. Do not overmix.

**CHERRY PIE FILLING**

	lbs.
Cherries (drained) (canned or frozen) ....	100
Juice and/or water .....	20
Honey .....	40
Starch .....	4

Mix starch with small amount of juice or water. Place remainder of juice and water in bowl with honey and bring to boil. Boil 1 min. to inhibit most of the starch-destroying enzymes. Add the starch and cook until stiff and clear. Remove from heat and stir in cherries. Chill the filling before use in pies.

**PINEAPPLE PIE FILLING**

	lbs.	ozs.
Crushed pineapple (drained) .....	100	
Honey .....	40	
Juice and/or water .....	40	
Starch .....	5	8
Water .....		8

Boil pineapple, honey, juice and/or water 1 min. Mix starch and remaining water and add to the boiling mixture. Cook until clear. Chill before filling unbaked pie shell.

**APPLE PIE FILLING**

	lbs.	ozs.
Honey .....	60	
Juice and/or water .....	30	
Starch .....		10
Water .....	1	
Cinnamon .....		1 ½
Canned apples (drained)* .....	100	
(weigh after draining)		

Boil honey and liquid 1 min. Mix starch and remaining water and add to boiling mixture; cook until clear. Add drained apples and cinnamon and stir. Chill before using.

\*Other forms of apples may be used.

**HONEY PECAN PIE**

	lbs.
Honey .....	100
Whole eggs .....	33
Salt .....	1
Butter (melted) .....	6
Vanilla .....	1

Line pie plate with pie dough and crimp edges. Mix all ingredients, thoroughly, just before placing in unbaked pie shell. Fill shell ¾ full with above filling and distribute pecan halves uniformly over top. Bake at 350° F. for 35 min.

### STRUESSEL TOPPING

	lbs.	ozs.	
Butter .....	10		Mix until smooth.
Shortening .....	10		
Sugar .....	10		
Honey .....	10		
Flour (pastry) .....	40		Rub with above shortening mixture until small crumbs are developed.
Nutmeg .....		1	
Salt .....		4	

## Homogenized Honey Whipped Cream

Whipped cream long has been used as a filling or topping for such bakery products as cakes, fruits, custard pies, and cream puffs. Adding honey to whipped cream may provide the delightful flavor combination needed to excite renewed interest in these fine products. By homogenizing whipping cream with honey, as much as 40 to 50 percent honey may be used. The resulting whipped cream is firm, stable, and has an excellent honey-cream flavor.

### Commercial

Whipping cream 2 parts  
Honey 1 part

**Method:** Heat two parts whipping cream and one part honey to exactly 150° F., stirring gently to prevent separation. The heated mixture

should be run through a homogenizing machine twice and then quickly cooled in a cold water bath and stirred occasionally until the temperature reaches about 60° F. Then place it under 40° F. refrigeration 24 hours or until ready to use.

To extend the shelf life, a stabilizer<sup>7</sup> may be added by bakers when the cream starts to thicken. The quantity of stabilizer used may generally equal 0.5% of the weight of the cream and honey. It may be mixed with an equal quantity of granulated sugar before adding. Since the flavor of the honey is very evident in the cream, a good floral source of honey, such as clover honeys, should be selected.

<sup>7</sup> For example, Amigel, Corn Products Sales Company, Chicago, Ill.

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**FOR YOUR FAVORITE FORMULAS**

