- Breads
- Chapter 22
- Page 383
- Guide to Good Food textbook
- Types of Breads
- Quick Breads
    - Prepared in short amount of time
    - Leavened with a powder leavening agent
        - Baking powder
        - Baking soda
    - Examples
        - Biscuits
        - Muffins
        - Popovers
        - Cream puffs
        - Waffles
        - Banana bread
- Types of Breads
- Yeast Breads
    - Take more time
        - Kneading and rising time
    - Leavened with gases formed from chemical reactions with yeast
    - Examples
        - Loaf bread
        - Dinner rolls
        - English muffins
        - Cinnamon rolls
- Selection
- Freshly baked
    - Bakery
- Partially baked
    - Brown-and-serve
- Refrigerated
    - Dough (rolled biscuits)
- Frozen
    - Dough or baked form
- Cost
- Convenience affects cost
    - Brown-and-serve may cost more than a frozen dough
- Buying sometimes still cheaper than making homemade
- Price affected by:
    - product
    - size of product (large loafs may cost more but are cheaper per serving)

- Brand
- extra ingredients

- Storage
- Many bread products can be stored at room temperature
  - Also in refrigerator or freezer
  - Prevents mold but can dry bread
- Frozen products need to be frozen
- All bread products need to be stored tightly sealed, whether on counter or in freezer
- Basic Ingredients
- Flour
- Leavening agents
- Liquids
- Fat
- Eggs
- Sugar
- Salt
    - Each ingredient has a specific purpose
- Flour
- Give structure to baked products
  - Created by 2 proteins in wheat flour
    - Gliadin and glutenin
  - When flour is mixed with liquid, these proteins form gluten
    - Gluten gives strength and elasticity to dough
    - Gluten behaves in similar manner as bubble gum: at first is soft and easy to chew, then is elastic enough to blow bubbles, then so elastic it hurts your jaw to chew
- Flour
- Flour comes from cereal grains
  - White wheat flours used most in baking
- Classifications:
  - Bread flour
  - All-purpose flour
  - Cake flour
    - All contain protein and starch, just in different amounts (bread has most proteins, cake least)
- Use kind of flour recipe calls for
  - 1 Cup cake flour = 1 Cup All purpose – 2 Tablespoons
- Leavening Agents
- Make baked products rise and become light and porous
  - By producing gases
- Leavening gases
  - Air
    - Incorporated in by beating eggs and other ingredients in mixing process

- Steam
  - Created by liquid in dough being heated
- Carbon dioxide
  - Chemical reaction of ingredients
    - Yeast, baking powder, baking soda

- Leavening Agents
- Yeast
  - Microscopic, single-celled plant
  - When sugar added to yeast, yeast acts on the sugar
    - Sugar feeds yeast
    - Carbon dioxide and ethyl alcohol are made
    - This process is called FERMINTATION
  - Forms of yeast
    - Compressed, active dry, fast rising
- Leavening Agents
- Baking soda
  - An alkali
  - When added to flour mixture and heated, carbon dioxide released
  - Doesn't taste the best
    - An acid ingredient counters this
      - Buttermilk, brown sugar, vinegar, fruit or fruit juices
- Leavening Agents
- Baking powder
  - Mixture of a dry or salt acid, baking soda, and a starch or flour
  - Most are double-acting
  - Release carbon dioxide when moistened and even more when heated
  - Use exact amounts to prevent products from collapsing
  - Liquids
- Add moisture and help dry ingredients to dissolve or mix together
- Hydrate proteins and starch in flour
  - To form gluten from proteins
  - For starch to gelatinize
- Create steam during baking for rising
- Examples are water, milk, and juices
  - Eggs and fats sometimes liquids
  - Fat
- Tenderizing agent
  - Separates flour particles into layers
- Adds flavor
- Aids in leavening
  - Because of separating those flour particles
  - Also because air bubble incorporated during beating process are trapped by fat
- Eggs

- Incorporate air in beating process
- Add color and flavor
- Contribute to structure
  - Egg proteins coagulate when heated
  - Adds elasticity and structure
- Works as an emulsifier
  - Makes things stick together
- Sugar
- Sweetness
- Tenderizes
- Helps crusts brown
- In yeast breads:
  - Feeds the yeast in fermentation process
- Brown sugar:
  - Usually interchangeable with white sugar
  - Different flavor
  - Gives more moisture than granulated sugar
- Salt
- Adds flavor
- In yeast breads:
  - Regulates yeast, preventing carbon dioxide from being produced too quickly
  - This caused bread to be difficult to handle
  - Also causes bread to have bad appearance
- Quick Bread Mixing Methods
- Most dough mixed by 1 of 3 methods:
  - Biscuit method
  - Muffin method
  - Conventional cake (mixing) method
- Biscuit Method
- Used for biscuits and pastry
- Dry ingredients sifted together over bowl
- Fat cut in with pastry blender until resembled coarse cornmeal
- Liquid added last
- Muffin Method
- Used for muffins, waffles, griddle cakes, popovers, and some coffee cakes
- Dry ingredients sifted together
- Beaten eggs combined with liquid and melted fat (ingredients at room temp.)
- Liquid mixture added to dry
- Batter stirred
- Conventional Mixing Method
- Used for shortened cakes, some coffee cakes, breads leavened with baking powder and some cookies
- Fat and sugar creamed together

- Beaten until light and fluffy
- Beaten eggs added
- Dry ingredients sifted in separate bowl and added to liquid
- Preparation of Quick Breads
- All quick breads have same ingredients in different proportions and mixed by different method
- Gluten usually developed by stirring
  - If mixed too much or over handled gluten will over develop
    - Bread will be compact and tough
- Preparation of Biscuits
- 2 types: rolled or dropped
- Rolled biscuits:
  - Rolled out
  - Cut with biscuit cutter
  - Soft dough
  - Baked on ungreased baking sheet
- Dropped biscuits
  - Have more liquid
  - Batter dropped from spoon on greased pan
- Both mixed with biscuit mixing method
  - Characteristics of Biscuits
- High quality rolled biscuit:
  - Even shape, smooth, level top
  - Straight sides, even brown crust
  - Inside in white/creamy white
  - Crumbs are moist and fluffy
  - Peel apart in layers
- Undermixed biscuits:
  - Low volume, rounded top
  - Rough crust, tender crumbs
- Overmixed biscuits:
  - Low volume, rounded top
  - Smooth top, tough and compact crumbs
- Preparation of Muffins
- Mixed by muffin method
- May have other ingredients
  - Fruits, nuts, cheese, etc.
- Characteristics of Muffins
- High quality muffins:
  - Thin, evenly browned crust
  - Top is symmetrical, looks rough
  - Texture is uniform, crumbs tender and light
- Undermixed muffins:

- Low volume and flat top
- Crumbs are coarse

- Overmixed muffins:
  - Peaked top, pale, slick crust
  - Tunnels inside (narrow, open air pockets)
- Other Breads
- See page 392 and 393 for preparation techniques for popovers and cream puffs
- Read and summarize in space below
- Popovers:
- Cream Puffs:
- Microwaving Quick Breads
- Several can be baked in the microwave:
  - Nut breads, muffins, coffee cakes, corn bread and biscuits
- Other breads work well to prepare, freeze, and reheat in microwave:
  - Waffles, griddle cakes
- Popovers and cream puffs DO NOT microwave well, will not form crusts
- Breads will not brown
- Yeast Breads
- All purpose flour works
- Liquid
  - Plain water, potato water or milk
  - Need to be warm to activate yeast
  - Recipes may state that milk should be scalded, but not necessary if using pasteurized milk
- Yeast Breads
- Yeast:
  - Too much causes dough to rise too quickly
  - Too much gives undesirable taste and look
  - Too little yeast lengthens fermentation time
- Yeast affected by temperature of liquid
  - Too high kills yeast cells
  - Too low slows down activity
- Yeast Bread Mixing Methods
- Yeast breads mixed by 1 of 4 methods:
  - Straight-dough method
  - Fast mixing method
  - Sponge method
  - Batter, or no-mix, method
- Straight-dough Method
- Yeast softened in warm water
  - 80-85 degrees for compressed yeast
  - 110-115 degrees for active dry or fast rising
- Room temperature milk is used

- Cold ingredients slow yeast activity
- Sugar, fat, and salt added to milk
- Yeast combined with liquid mixture
- Part of flour added, mixed till smooth
- Rest of flour added to form dough
- Straight-dough Method
- If using this method to prepare refrigerator yeast breads or rolls:
  - Usually extra yeast, sugar and salt needed
  - Dough is mixed, kneaded, and covered and put in refrigerator
  - Heat from dough continues fermentation once in refrigerator
  - Dough should double in size
  - Dough shaped and baked next day
  - Fast Mixing Method
- Works well with active dry or fast rising yeast
- Yeast mixed with other dry ingredients and some of the flour
- Liquid & fat heated to 120-130 degrees
- Heated liquid added to dry ingredients
- Eggs & rest of flour added to form dough
- Softening yeast not necessary
- Sponge Method
- Liquid, sugar, yeast & part of flour mixed
  - This mixture called a *sponge*
- Sponge becomes bubbly and light
- Cooled melted fat, salt and rest of flour added to sponge to form dough
- Batter Method
- Recipes using this method use less flour
- Yeast mixture is thinner than a dough
- Modification of straight-dough method that eliminates kneading
  - Gluten developed by stirring
- Quickest mixing method
- Yeast Bread Preparation
- During mixing and kneading gluten develops
- Yeast produces carbon dioxide which gives volume to bread
- Careful measuring, sufficient kneading, controlled fermentation temperatures, right pan size and right baking temperatures all produce a successful yeast bread
- Kneading
- Once a yeast dough formed it must be kneaded
- Most of gluten formed during kneading
- Should be rhythmical
- With fingers fold dough in half toward you
- With heels of hands push against dough
- Turn dough ¼ a turn, repeat process until dough is smooth and elastic
- Kneading

- Do not add too much extra flour when kneading
- Too much flour makes dough stiff
- Do not be too rough with dough
- Too much pressure at beginning makes dough sticky and hard to handle
- Too much pressure at end can tear dough or destroy gluten
- Fermentation
- After kneading dough needs to rest in a warm place
- During resting yeast acts of sugar to form carbon dioxide and ethyl alcohol
- This process is called *fermentation*
- Alcohol evaporated during baking
- Carbon dioxide causes bread to rise
- Dough should at least double in volume
- Fermentation
- To test dough to see if it has doubled:
    - Gently press 2 fingers into dough
    - If an indentation remains dough has risen enough, if dough bounces back it hasn't
- Fermentation times depends on kind and amount of yeast, temperature of room, and kind of flour used
- Fast-rising yeast dough rises 50% faster
- 80-85 degrees is optimal
- Punch the Dough
- Most dough needs punched down after it becomes light (after 1st rising)
- This releases some of the carbon dioxide
- Firmly push fist into dough to punch
- Bring edges of dough to center and turn so smooth side is on top
- May need 2nd rising time
- Shaping
- After punched down, divide into portions as directed by recipe
- Use a sharp knife
- Let rest 10 minutes after divided
- To shape, gently pat dough flat to release large air bubbles
    - Use fingers if needed to release air
- Gently shape, seal dough by pinching ends and center seam
- Let loaves rise
- Baking
- Times and temperatures will vary
- Usually start is hot oven
- During first few minutes of baking dough will rise dramatically
    - This rapid rising is called *oven spring*
- After oven spring occurs temperature may be reduced to prevent burning
- Remove from pans immediately and place on cooling racks
- Cool completely before slicing & storing
- Characteristics

- High quality loaf bread:
  - Large volume, smooth, rounded top
  - Golden brown
  - Texture fine and uniform
  - Crumbs tender and elastic with spring
- Over or under worked yeast dough will have low volume
- If rises too long top of loaf will be sunken and side will overhang, coarse texture
- If doesn't rise long enough will have large cracks and be compact
- Microwaving Yeast Breads
- Frozen dough can be defrosted in microwave
- Loaf bread can rise and be baked in microwave but will lack crisp, brown crusts
- Batter bread work better because of lack of crust
- Variations
- Using different flours
- Dried fruit, nuts, herbs or cheeses
- Tops can be brushed with butter
- Different shapes and sizes can be used
- Review
- Complete To Review questions 1-14 page 402
- Write out and define To Know vocabulary terms on page 402