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CEREALS

by

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CEREAL FOODS

The grains used for food are called cereals, and form the most common and cheapest food stuff. From the table below it will be seen that cereals contain the ingredients of a mixed diet.

Composition of Cereals, (Average)

Cereal	Water per cent	Protein per cent	Fat per cent	Carbo- hydrates per cent	Cellulose per cent	Mineral matter per cent
Wheat	10.6	12.2	1.7	71.5	2.4	1.8
Corn	10.6	10.0	4.3	71.7	1.7	1.5
Oats	11.0	11.8	5.0	59.1	9.5	3.0
Rye	10.5	12.2	1.5	71.8	3.1	1.9
Rice	12.0	8.0	2.0	76.0	1.0	1.0
Barley	10.9	11.0	2.3	68.5	2.8	2.5

In addition to the above, cereals also contain vitamins. Vitamin B. is found near the germ; the mineral matter chiefly in the germ and outer coverings. Because of the location of these valuable substances, they are lost in the milling process unless the whole grain flour and cereals are made. The reasons for removing the germ and outer coverings are because of keeping quality and that many people prefer the white bread.

If the white bread is used very largely the whole grain should be used as breakfast foods and other ways or large amounts of vegetables and fruits should be used.

The protein of the cereals can be used more completely by the body for building and repairing purposes if combined with milk. Hence cooking the breakfast cereals in milk and also serving milk with the cereal foods greatly increases their value.

CEREALS FOR SCHOOL CHILDREN

Well cooked cereals are one of the essential foods of childhood. There is no dish that will start a child off to school so well as a cereal cooked in milk and served with whole milk. Use the whole cereals as rolled oats and wheat frequently. These are better building foods than the finer cereals because they contain more minerals, vitamins, and protein. The bran or coarse cellulose in these cereals necessitates thorough cooking. The child should be taught to use sugar sparingly on cereals.

CEREALS MADE POPULAR THROUGH ATTRACTIVE PREPARATION

Cooking of Cereals (General)

The cereal foods are largely characterized by starch and consequently placed in group III in the food calendar. The starch is intimately associated with cellulose, a tough substance somewhat like the fiber of wood. The coverings of the grain contains a very large amount of cellulose. The fibrous material seen in rolled oats is largely cellulose. The starch granules itself is covered with cellulose.

The cellulose and the nature of the starch itself determines the best method of cooking cereals. Heat makes starch more soluble and hence more easily digested. Cellulose is an indigestible product. Heat and moisture softens the cellulose and ruptures it so the digestive juices can act upon the starch more readily. The cellulose however is of value in the diet in that it gives bulk and acts as a stimulant for peristaltic action and flow of the digestive juices as it brushes against the walls of the digestive tract. Mineral matter also exists with the cellulose.

Cereals should be cooked for a long time because:

1. Long cooking develops the flavor of the cereals.
2. Heat softens the cellulose.
3. By rupturing and softening the cellulose coverings of starch granules, etc., the starch is made more accessible to the digestive juices.
4. Heat causes starch to become more easily digested.

Cereals should be cooked so that they are firm. This increases chewing which means more thorough mixing with saliva as this is the first digestive juice to act upon starch in the process of digestion.

The double boiler is good for preparing cereal breakfast foods as it can be cooked for a long time without burning and little watching. Fireless cooker is also good.

Breakfast Cereals.

General table for cooking cereals.

Kind of Cereal	Salt	Cups of Grain	Amount of water or milk	Time of cooking
<u>Whole grain</u>				
Rice	1 ts.	1	3 times the cereal	20-30 min.
Wheat, etc.	1 ts.	1	3 times the cereal	2 plus hrs.
<u>Granules</u>				
Cream of Wheat	1 ts.	1	4 times the cereal	30 min.
Cornmeal	1 ts.	1	4 times the cereal	3 or more hrs.
Stir at first till smooth and creamy				
<u>Flakes</u>				
Rolled oats	1 ts.	1	2 times the amount	1 hr.
Pettibohns, etc.	1 ts.	1	2 times the amount	30 min.
Do not stir				
Hominy (fine)		1	4 times the amount	1 hr.

METHOD OF COOKING

Place the measured water and salt in the upper part of the double boiler and bring to boil. (Place the upper part of boiler over flame or hot part of stove.) When water is boiling rapidly shake the measured cereal in slowly so as not to stop boiling. The rapidly boiling water keeps the grains in motion. Thus the heat reaches the starch equally and the grains will stand out separately when done. Do not stir while cooking. If the grains should settle to the bottom of the vessel, shake the vessel or lift up the mass with a fork. Boil in this manner about ten minutes and then place

in outer part of double boiler and cook for required length of time. If using fireless cooker put the cereal that has been started as above in the cooker and let cook over night. This long process of cooking softens the fiber, does not over-cook the protein and develops that fine nutty flavor due to complete cooking of the starch.

VARIATIONS

Fruits such as dates, figs, raisins, prunes, may be added to breakfast cereals to vary them. Children sometimes will eat a serving with a few dates in it when they won't eat it otherwise.

LEFT OVER CEREALS

Cereals left over may be molded in bread pans and cut into slices. These may be either sauted or fried in deep fat and served with crisp bacon, sausage, jelly or syrup.

Left over cereals that may be left over can be utilized in a good many ways depending on the quantity.

A few suggestions are as follows:

Bread	Meat loaf
Cereal jelly	Muffins
Croquettes	Puddings
Hash	Soup
	Pancakes

CEREALS FOR DESSERT

Oatmeal Cookies

1 egg	1 c. fine oatmeal
$\frac{1}{4}$ c. sugar	2 c. flour
$\frac{1}{4}$ c. thin cream	2 ts. baking powder
$\frac{1}{4}$ c. milk	1 ts. salt

Beat egg until light, add sugar, cream and milk; then add oatmeal, flour, baking powder, and salt, mixed and sifted. Toss on a floured board, roll, cut in shape, and bake in amoderate oven.

Rice with Strawberry Sauce

$\frac{1}{2}$ c. rice	2 c. milk
$1\frac{1}{4}$ c. sugar	1 box strawberries
$\frac{1}{3}$ c. butter	$\frac{1}{2}$ ts. salt

Wash rice and cook in the milk until soft adding $\frac{1}{4}$ c. of sugar and salt. Remove the cover and allow the mixture to thicken. Pick over, wash and mash the strawberries. Add one-third cup sugar, and set in a warm place for a couple of hours, in order to extract the juice. Make a hard sauce of the butter and the remaining sugar, and when ready to serve stir into it the strawberries.

Rice Dainty

1 $\frac{1}{2}$ c. cooked rice
 $\frac{2}{3}$ c. fruit
 $\frac{1}{4}$ c. powdered sugar
 $\frac{3}{4}$ c. whipped cream

Mix rice, fruit and powdered sugar, sold in cream. Chill before serving.

Chocolate Rice Pudding

1 c. rice or cream of wheat
5 c. milk
1 c. sugar
2 tb. cocoa
 $\frac{1}{2}$ ts. salt
3 eggs.
 $\frac{1}{8}$ ts. cinnamon

Cook rice in scalded milk. When almost tender, add cocoa and sugar, salt and cinnamon, finish cooking. Fold in slightly beaten egg yolks, pour into an oiled baking dish. Cover with meringue and brown in oven.

Meringue

2 egg whites
4 tb. powdered sugar

Fold sugar into stiffly beaten egg whites.

BREAKFAST CEREALS FOR LUNCHEON OR SUPPER DISHES

Rice with Cheese Sauce

1 $\frac{1}{2}$ c. milk
1 $\frac{1}{2}$ tbs. flour
 $\frac{3}{4}$ ts. salt
2 tb. butter
1 $\frac{1}{2}$ c. grated cheese
Cayenne pepper

Stir the flour and the salt smoothly into one-half cup of milk heat the remaining milk carefully to the boiling point, preferably in a small frying pan. Add the butter, thicken with the flour mixture. Let all boil together about two minutes, and then set aside to cool slightly while grating the cheese. Add the cheese, and bring slowly to boiling, stirring constantly. Season highly with cayenne or white pepper and serve hot on boiled rice.

Spanish Rice

1 c. rice, white or brown
3 c. water
2 c. tomato
2 tb. butter
3 $\frac{1}{2}$ ts. salt
2 onions, (medium)
grated or ground
2 pimentos, (cut fine)

Put the mixture on the stove and let come to a boil. When it boils cover and set in the oven. Cook from 1 $\frac{1}{2}$ or 2 hours in the fireless cooker. If cooked in open dish use 4 cups water.

Hot Weather Luncheon Salad

Rice and salmon in equal parts, with boiled or mayonnaise dressing.

Scalloped Cornmeal and Apples

$\frac{1}{2}$ c. yellow cornmeal	1 tb. sugar
$1\frac{1}{2}$ c. boiling water	1 tb. butter
1 ts. salt	$1\frac{1}{2}$ c. boiling water
2 large apples	

Add cornmeal to boiling, salted water; cook in double boiler 1 hour. Pare apples and slice thin. Arrange apples and corn meal in alternate layers in a baking dish and sprinkle each layer with salt and sugar. Melt the butter in $\frac{1}{4}$ c. boiling water, pour over the mixture and bake until apples are soft. Serve with butter or a syrup.

Corn Chowder

1 can corn	1 sliced onion
4 c. potatoes (cut in $\frac{1}{4}$ inch slices)	4 c. scalded milk
2 inch cube fat salt pork	salt
	pepper

Cut pork in small pieces and fry out, add onion and cook 5 minutes, stirring often so that onion does not burn. Par boil potatoes 5 minutes in enough boiling water to cover; drain and add potatoes to fat, then add 2 c. boiling water, cook until potatoes are soft, add corn and milk, then heat to boiling point. Season with salt and pepper.

HOMEMADE HOMINY

(From Iowa State College, Extension
Service Circular)

2 quarts shelled corn
2 tablespoons lye
1 pint cold water
1 gal. boiling water

Put lye into kettle and add cold water; when dissolved, add boiling water and mix thoroughly. Stir in the corn, and bring to boiling point in 15 or 20 minutes. Boil 20 minutes, stirring constantly. If the mixture cooks down so thick that corn begins to stick to kettle, add more boiling water. After boiling 20 minutes test some corn in cold water. If the eyes (or that part of kernel which has been attached to the ear) fall out when touched, the corn is ready to wash. If eyes do not come out, boil a few minutes longer and test again.

Remove from stove, fill kettle with cold water and stir thoroly. Drain off water; repeat four or five times.

A wooden churn dasher is very good to use in the washing, as it loosens the eyes and one does not need to put the hands in the water. After the lye is washed off, continue working with corn until eyes are all out.

Cover corn with cold water and bring to a boil; drain off and repeat same process three or four times. After the last boiling, cover corn with cold water, bring to the boiling point and boil for three or four hours. As the corn swells, add more cold water.

The hominy can be started one day and finished the next. On the first day, carry the process thru the different washings, then let stand over night in cold water. Next day, drain off water, cover with cold water and boil as mentioned above. However, two or three boilings will be sufficient if lye has been properly washed off.

CAUTION: Do not use anything but an iron kettle and stir with a mangle. When washing the hominy, do not put the hands into the first wash waters.

Canning (From F. B. No. 339)

Scald or blanch	Hot water bath	Steam pressure
3 min.	120 min.	5-10 lb. 10-15 lb.
		60 min. 40 min.

Hominy Croquetts

2 c. hominy (ground)	1 ts. syrup
1/3 c. grated cheese	salt
1 c. thick white sauce	pepper
	paprika

Mix hominy with white sauce, cheese and seasoning to such a consistency that it can be moulded into shape. Shape into croquetts roll in fine bread crumbs, then in egg, then crumbs again, and fry in fat.

White Sauce for Above Mixture

4 T. flour	1 c. milk
2 T. fat	1/4 ts. salt
	pepper

Melt fat in double boiler, add flour and salt. Add milk. Cook until thick and use for bordering croquetts.

Tomato sauce to Serve with Croquetts

Make as above only using 1 c. tomato (strained) in place of the milk.

Hominy Griddle Cakes

1 c. milk	1/2 c. hominy (chopped or
1 1/2 c. flour	Mashed)
	1 egg.

Mix and sift dry ingredients. Add slowly the milk with beaten egg, then hominy. Fry as hot griddle cake.

Hominy Rolls with Sausage or Bacon

2 c. chopped hominy	1 egg beaten
$\frac{1}{2}$ ts. salt	pepper

Shape the above mixture like sausages and roll in crumbs. Place them in a roasting or iron frying pan, alternating with link sausages or strips of bacon. While baking, turn once or twice in sausage fat.

Macaroni Loaf

1 c. cooked macaroni	2 tb. ground pimento
1 c. soft bread crumbs	1 ts. onion juice or
$\frac{1}{4}$ c. melted butter	1 small onion, ground
	1 c. grated cheese.
$\frac{1}{2}$ ts. salt	
1 ts. parsley, (if you have it)	
3 eggs	
1 c. scalded milk	

Combine all ingredients down to eggs; then slightly beat eggs, add to them the milk stirring constantly. Add egg and milk mixture to rest. Turn into a baking dish lined with buttered paper or buttered crumbs. Set the pan or folds of paper in a dish of hot water and bake in moderate oven $\frac{3}{4}$ hours. Serve with tomato sauce.

Tomato Sauce

2 tb. fat	$\frac{1}{8}$ ts. pepper
2 tb. flour	1 c. stewed and strained
$\frac{1}{2}$ ts. salt	1 slice onion
	tomatoes

Melt fat, add dry ingredients and blend thoroughly. Cook tomatoes with slice of onion and add tomatoes gradually to fat and flour. Hines tomato soup thickened, a little butter, and paprika added makes a good sauce.

Gems, Bran

2 ts. fat	$\frac{1}{2}$ c. sour milk
$1\frac{1}{2}$ c. bran	$\frac{1}{2}$ ts. baking powder
$\frac{1}{2}$ c. flour	$\frac{1}{2}$ ts. soda
$\frac{1}{4}$ c. chopped nuts	$\frac{1}{2}$ c. boiling water
$\frac{1}{4}$ c. chopped figs	$\frac{1}{2}$ ts. salt
2 tb. sugar	$\frac{1}{2}$ ts. cinnamon

Cream fat, add sugar, and sour milk. Mix and sift dry ingredients; add nuts and fruits. Add bran and mix with first mixture. Bake in slow oven about 20 minutes.

Nut Bread

4 c. flour	1 c. milk
1 c. sugar	1 c. chopped nut meats
6 ts. baking powder	salt
1 egg	

Mix and sift dry ingredients. Add egg and milk, making a soft dough as for baking powder biscuits. Add nuts and turn into loaf pan which has been well oiled. Let stand 20 minutes. Bake in a moderately hot oven 30 to 45 minutes.

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