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Cereals

Mary A. Dolve

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CERWALS

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.

<table>
<thead>
<tr>
<th>Cereal</th>
<th>Water per cent</th>
<th>Protein per cent</th>
<th>Fat per cent</th>
<th>Carbohydrates per cent</th>
<th>Cellulose per cent</th>
<th>Mineral matter per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>10.6</td>
<td>12.2</td>
<td>1.7</td>
<td>72.8</td>
<td>2.4</td>
<td>1.8</td>
</tr>
<tr>
<td>Corn</td>
<td>10.6</td>
<td>10.6</td>
<td>4.3</td>
<td>71.7</td>
<td>1.7</td>
<td>1.5</td>
</tr>
<tr>
<td>Oats</td>
<td>11.0</td>
<td>11.6</td>
<td>5.0</td>
<td>59.1</td>
<td>9.5</td>
<td>2.0</td>
</tr>
<tr>
<td>Rye</td>
<td>10.5</td>
<td>12.2</td>
<td>1.5</td>
<td>71.8</td>
<td>2.1</td>
<td>1.9</td>
</tr>
<tr>
<td>Rice</td>
<td>12.0</td>
<td>8.0</td>
<td>2.0</td>
<td>76.0</td>
<td>2.0</td>
<td>1.6</td>
</tr>
<tr>
<td>Barley</td>
<td>10.9</td>
<td>12.0</td>
<td>2.3</td>
<td>62.5</td>
<td>1.8</td>
<td>2.5</td>
</tr>
</tbody>
</table>

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 used. 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 as 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 contain 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 solubile
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. Min-
eral 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 in-
creases 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 watch-
ing. Fireless cooker is also good.

Breakfast Cereals.

<table>
<thead>
<tr>
<th>Kind of Cereal</th>
<th>Salt</th>
<th>Cups of Grain</th>
<th>Amount of Water or Milk</th>
<th>Time of Cooking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole grain</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rice</td>
<td>1 ts.</td>
<td>1</td>
<td>3 times the cereal</td>
<td>20-30 min.</td>
</tr>
<tr>
<td>Wheat, etc.</td>
<td>1 ts.</td>
<td>1</td>
<td>3 times the cereal</td>
<td>2 plus hrs.</td>
</tr>
<tr>
<td>Granules</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cream of Wheat</td>
<td>1 ts.</td>
<td>1</td>
<td>4 times the cereal</td>
<td>30 min.</td>
</tr>
<tr>
<td>Cornmeal</td>
<td>1 ts.</td>
<td>1</td>
<td>4 times the cereal</td>
<td>3 or more hrs.</td>
</tr>
<tr>
<td>Stir at first till smooth and creamy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flakes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rolled oats</td>
<td>1 ts.</td>
<td>1</td>
<td>2 times the amount</td>
<td>1 hr.</td>
</tr>
<tr>
<td>Petticoats, etc.</td>
<td>1 ts.</td>
<td>1</td>
<td>2 times the amount</td>
<td>30 min.</td>
</tr>
<tr>
<td>Do not stir</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hominy (fine)</td>
<td></td>
<td></td>
<td>4 times the amount</td>
<td>1 hr.</td>
</tr>
</tbody>
</table>

**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 on stove 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 sautéed 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  Heat loaf
Cereal jelly  Muffins
Croquettes  Puddings
Hash  Soup
Pancakes

MEALS FOR DESSERT

Oatmeal Cookies

1 egg  1 c. fine oatmeal
1/4 c. sugar  2 c. flour
1/4 c. thin cream  2 ts. baking powder
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 share, and bake in an moderate oven.

Rice with Strawberry Sauce

1/2 c. rice  2 c. milk
1 1/2 c. sugar  1 box strawberries
1/3 c. butter  1/2 ts. salt

Wash rice and cook in the milk until soft addition 1/2 c. of sugar and salt. Remove the cover and allow the mixture to thicken. Pick over, wash and mash the strawberries. Add one-third c. 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  
2 c. fruit  
1 c. powdered sugar  
\( \frac{1}{4} \) 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 tbs. cocoa  
\( \frac{3}{4} \) ts. salt  
3 eggs  
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 tbs. 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  
\( \frac{1}{3} \) c. flour  
\( \frac{3}{4} \) ts. salt  
2 tbs. 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 tbs. butter  
3\( \frac{1}{2} \) ts. salt  
2 onions, (medium)  
grated or ground  
2 pinonios, (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 oven dish use 4 cups water.

Hot Weather Luncheon Salad

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

\[
\begin{align*}
&\frac{1}{2} \text{ c. yellow cornmeal} \quad 1 \text{ tb. sugar} \\
&1\frac{1}{2} \text{ c. boiling water} \quad 1 \text{ tb. butter} \\
&1 \text{ ts. salt} \quad 1\frac{1}{2} \text{ c. boiling water} \\
&2 \text{ large apples}
\end{align*}
\]

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 eachlayer 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

\[
\begin{align*}
&1 \text{ can corn} \quad 1 \text{ sliced onion} \\
&4 \text{ c. potatoes (cut in } \frac{1}{4} \text{ inch slices)} \quad 4 \text{ c. scalded milk} \\
&2 \text{ inch cube fat salt pork} \quad \text{salt} \quad \text{pepper}
\end{align*}
\]

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)

\[
\begin{align*}
&2 \text{ quarts shelled corn} \\
&2 \text{ tablespoons lye} \\
&1 \text{ pint cold water} \\
&1 \text{ gal. boiling water}
\end{align*}
\]

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 into 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 paddle. When washing the hominy, do not put the hands into the first wash waters.

Canning (From F. B. No. 339)

<table>
<thead>
<tr>
<th>Process</th>
<th>Hot water bath</th>
<th>Steam pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scald or blanch</td>
<td>3 min.</td>
<td>5-10 lb. 10-15 lb.</td>
</tr>
<tr>
<td></td>
<td>120 min.</td>
<td>60 min. 40 min.</td>
</tr>
</tbody>
</table>

Hominy Croquettes

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

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

White Sauce for Above Mixture

4 T. flour
2 T. fat
1 c. milk
1/3 ts. pepper
1/3 ts. salt

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

Tomato sauce to Serve with Croquettes

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

Hominy Griddle Cakes

1 c. milk
1 1/2 c. flour
1/2 c. hominy (chopped or 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  
1/2 ts. salt  
1 egg beaten  
pepper

Share 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  
1 c. soft bread crumbs  
1/2 c. melted butter  
1/4 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 1/2 hours. Serve with tomato sauce.

Tomato Sauce

2 tb. fat  
2 tb. flour  
1/2 ts. salt  
1/8 ts. pepper  
1 c. stewed and strained 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  
1 1/2 c. bran  
1/2 c. flour  
1/2 c. chopped nuts  
1/2 c. chopped figs  
2 tb. sugar  
1/2 c. sour milk  
1/4 ts. baking powder  
1/4 ts. soda  
1/4 c. boiling water  
1/2 ts. salt  
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 30 minutes. Bake in a moderately hot oven 30 to 45 minutes.

REFERENCES: