

T H E S I S

"Fireless Cooking"

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O U T L I N E F O R T H E S I S

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References

- I. Good Housekeeping Magazine.
- II. 1905 Thesis.
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FIRELESS COOKERY

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The principle of fireless cooking is that of recoloration, or the retention of heat previously generated, through complete insulation. It should, perhaps, be explained here that the word "fireless" is a misnomer. The proper word is "recolorator", which literally means the conserving of heat, just as "refriguator" means the conserving of cold. In both instances, the initial calor (heat) and frigidity must be provided.

In cooking, ordinarily, heat food to a certain temperature; then leave it over the fire, not to get hotter -----that would be impossible but to keep it at that degree of heat. The equalization of the surrounding temperature compels you to keep on supplying heat, to cause the food to continue at the cooking temperature. If, once the food is made hot, we insulate it so that the heat cannot escape, the cooking will go on just as if you continued to supply additional heat. A method has long been sought, by which the heat energy once generated, might be conserved without having to add constantly thereto, both for hygienic as well as economic reasons. Hygienic, because it is admitted by all, that any food cooked comparatively slow, at an even temperature is not only more nutritious, but also more palatable than that cooked fiercely over, on, or in, the hottest possible temperature. Economic, because the cooker saves time, fuel and annoyance. While things are cooking one does not have to watch them to prevent their burning or to see if they are done. The cooker rarely overdoes its part, even though the contents be forgotten for several hours. It saves fuel and an over-heated kitchen, and it reduces the butcher's bill, because in using it, one does not buy so many chops and roasts and steaks, which are all expensive. Cheaper cuts of meat may be used to advantage. Moreover, it is certainly a helpful companion for the working woman, the one who goes out to business every day.

She may cook her entire dinner while getting her breakfast; and last but far from least, it will help to solve the great problem of who shall do the cooking, for if the house keeper will only learn how, the greater part of the burden may rest upon the fireless cooker.

An important detail in using the fireless cooker is the amount of water to be used in the kettles. It must be remembered that the water does not evaporate in the cooker, so the amount used should be just enough to cover, or what is required for gravy. Before putting things into the cooker be sure that they are heated through. It takes longer to heat a large piece of meat through than a smaller one. Whole potatoes, apples and other vegetables and fruits require more time to heat through than those that are sliced. It takes longer to heat a kettle which is full than one which is only half full. So judgment should be used in preparing each article.

The art of fireless cooking seems to have originated in Germany, although a "fireless stove" was exhibited in Paris as early as 1867, under the name of "Norwegian Automatic Cooker". No notice was taken of it, however, and the next heard of arrangement was from a German house-wife, who constructed one with a packing of hay for the purpose of keeping food warm that had been already cooked. She soon found that the cooking temperature was maintained for several hours and that food, which was only partially cooked, cooked be completed in this "hay-box".

Upon further experimentation, it was discovered that from 3 -5 minutes of actual boiling upon the stove for many articles of food was sufficient, and the process would be completed in the box. Other foods, such as cracked wheat, navy beans, and meats require from 10 -20 minutes boiling. Many foods are warm enough to serve

after being in the cooker ten hours. Some foods as baked beans, brown bread, and roasts may be partially prepared in the box and browned in the oven.

There are commercial fireless cookers on the market at the present time that advertize baking and roasting, but these require the use of hot radiators. All that is required for the construction of an ordinary cooker is a tight box packed with some non-conducting material. Hay, straw, newspapers, asbestos, mineral wool, wool, felt, excelsior, cork, cotton and some especially prepared papers have been used. A packing box, a candy bucket, a trunk or a corner closet may be converted into a fireless cooker by lining it with sheet asbestos and packing with some of the above mentioned materials, leaving a nest in the center for the kettle, and making a pillow of the same material to fit snugly over the top. Any kind of cooking utensils may be used if they have tightly fitted covers. It is better ordinarily to use granite, as tinware rusts when let stand so long in moisture. Tin covers on granite buckets are not satisfactory for the above reason.

The expense of making a cooker is comparatively small. The asbestos is 60¢ per sheet and sheets are 40x42 inches. It can be purchased from any hardware or plumber's supply house. Asbestos wool is 25¢ per lb., mineral wool 6¢ per lb., wool from 40 to 60¢ per lb. and cork can be purchased from any grocery store at ten cents per barrel as white grapes come packed in this material and they are glad to dispose of it. In using asbestos wool, It must not be packed too tightly or there will be no air spaces which are required to retain the heat. Wool is the most expensive but by far the best. Mineral wool is perhaps the most economical, because the initial

expense is small and the temperature tests are but little lower than the wool. Following tests were made in boxes packed in mineral wool, cork, wool and excelsior.

Water Tests made in the Fireless Cooker. Centigrade Scale Iqt. water.

Kinds	1hr.		2hr.		3hr.		4hr.		5hr.		6hr.		7hr.		8hr.		9hr.		10hr.	
Mineral Wool	70	72	60	71	61	66	61	59	52	53	51	49	55½	42	32	31	42	41	42	40
Wool	72	76	71	72	69	69	63	58	55	57	53	53	52	44	35	32	43	44	44	41
Cork	72	72	72	71	66	65	62	64	53	51½	51	48½	51	39	33	32	43	43	43	41
Excelsior	75	75	73	72	69	68	65	60	57	58	55	53	49	44	27	34	44	44	42	38

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Food	Preparation before putting in box	Time in Cooker	Kind	Results
Cream of Wheat	Boiled 5 min. over flame	8 hrs.	Mineral wool Cork Wool Excelsior	Thoroughly cooked. Flavor improved over ordinary cooking.
Oatmeal	" " " " "	8 hrs.	"	" " "
Rice	" " " " "	4 hrs.	Cork	Well done and kernels were whole and dry.
Lima Beans	Soaked over night Boiled 15 minutes left in cooker ----- then boiled 15 min. more and left in cooker -----	4 hrs. over night	Mineral wool	Thoroughly cooked and beans remained whole.
Navy Beans	Soaked over night Boiled 15 minutes ----- " " " Baked in electric oven $\frac{1}{2}$ hr.	4 hrs. over night	Excelsior	Well done and beans whole.
Meat 2lb. roast	Seared over flame ----- Roasted 15 minutes -----	5 hrs. over night	Cork	Well done. Did not have red color but was well seasoned and had an excellent flavor.
Meat 4lb. roast	Covered with water boiled 15 minutes ----- " " "	5 hrs. over night	Wool	Done, but had a red color.
Prunes	Soaked over night boiled 10 minutes and sweetened.	5 hrs.	Cork	Well cooked and fruit was left in perfect shape.
Peaches	Soaked over night Boiled 10 minutes	5 hrs.	Wool	Very tender and the fruit was not cooked to pieces.
Potatoes	Boiled 5 minutes	2 $\frac{1}{2}$ hrs.	Cork	Done and left whole.
Onions	" " "	4 hrs.	Mineral Wool	Done and no odor while cooking.
Custard	Heated through	1 $\frac{1}{2}$ hrs.	Excelsior	Firm and done.

Chocolate Steamed Pudding	Boiled 10 minutes	2½ hrs. Wool	Thoroughly cooked but not quite dry enough.
Tapioca Custard	Boiled tapioca 20 minutes in double boiler.	2 hrs. Wool	Thoroughly cooked and firmly molded.
Macaroni	Boiled 5 minutes	3 hrs. Wool	Well done and shape was well kept.
Brown Bread	Boiled 15 minutes	6 hrs. Wool	Not done.
" " " "	" " " "	" "	" "
Brown Bread	" 45 "	6 hrs. Excelsior	Thoroughly cooked.
	Hot flat iron put in kettle		
Cabbage	Boiled 5 minutes	2½ hrs. Wool	Well done.
Soup Stock	Meat boiled 15 min. Cut meat and boiled 15 minutes.	8 hrs. Excelsior over night "	Thin stock Rich stock well flavored and meat done.
Corn Starch mold	Heated through	2½ hrs. Wool	Done and firmly set.
Chocolate corn starch	" "	2½ hrs. Mineral wool	" " "

The practical use of fireless cooking is plainly seen. If one goes camping or has a summer cottage they can take a fireless cooker with them. It has proved very successful in army life as the food can be cooking while on the march. An expert Chef will tell that cereal itself is very inexpensive but the principal expense is the fuel required for cooking. Onions and cabbage may be cooked every day without a particle of odor permeating the house. Is it not unreasonable for a woman to keep a hot fire in her stove for three or four hours to cook a piece of meat, when fifteen minutes is sufficient? A fireless cooker saves 75% in cost of fuel.

For a bachelor-man or girl compelled to patronize restaurants or the typical boarding house for their meals, should be all means become acquainted with a fireless cooker. By the use of an electric plate, gas burner, or chafing dish to start the things, they could prepare for themselves a nourishing meal with little trouble and slight expense. They could put the things into the cooker mornings and noons and so twice a day would be glad to return to their lonely home. There are so many simple dishes which every young lady or young man, too, if they do not know much about cooking can prepare. The preparation of the food would soon become a pleasure and what a variety of dishes one can have as compared with the sameness of things in restaurant or boarding house.