

A Pressure or a Fireless Cooker---Which?

By ETHEL CESSNA MORGAN

"**S**HALL I buy a pressure or a fireless cooker?"

To get the facts as to the advantages of these two types of cookers, as well as to compare them with the open stove method of cooking, the Home Administration Department at Iowa State College has recently tested these cookers.

What has been found out, in a nutshell, is this: that both cookers show a great economy in time and money over the open stove method of cooking, and that the pressure cooker is somewhat more economical than the fireless—but that both have their places in the home, according to the needs of the housewife.

Principle of Fireless Cooker

Fireless cookers have been used for many, many years in their simplest forms. In fact, the savages who buried their corn and their meat in the hot ashes were using the fireless cooker principle—utilization of retained heat. The "hay-box" was another early adaptation of this same idea.

Modern fireless cookers have added the principle of radiated heat to that of retained heat. The difficulty with the old "hay-box" was that it began to cool off immediately and lost heat so rapidly that the food was insufficiently cooked. This has been remedied in the modern cookers by the use of soap stones or steel disks. By pre-heating these to a high temperature and putting one on the bottom of the well and sometimes one on the top of the cooker pans, a high temperature may be retained for a long period. Food left in such a cooker for several hours is still hot enough for table service when removed.

Aluminum-lined wells, multiple pans and ventilation for escaping steam are other refinements of the modern commercial fireless cookers.

Full directions for making very satisfactory home-made fireless cookers may be obtained by sending a request to the Agricultural Extension Department, Iowa State College, Ames, Iowa. These also may be obtained from many other land-grant colleges. These are made from cheese boxes, butter tubs, small barrels, large lard cans and other inexpensive receptacles and may be made at a low cost of from 50c to \$4.50, depending upon what material is available at home. One compartment commercial cookers, which of course have more refinements than the simpler home-made ones, cost from \$15.00 to \$22.00.

The cooking of foods in the fireless cooker is possible because it has been found that it is not necessary to boil food to cook it. The fireless cooker lends itself particularly to foods which require long cooking at low temperatures, such as stews, fibrous vegetables and dried fruits and vegetables.

Fireless cookers have many advantages. Very often the food products are superior to those cooked by ordinary methods, many healthful foods which require long cooking are rendered practical for daily menus, there is much less food wasted by being cooked away, less fuel is used and there is much less demand on the homemaker's time and strength, freeing her for other household tasks or pleasures.

Some find a "closed up" taste to the foods to which they object. Where the cooker is sanitary, this is due to flavors being retained in the food rather than steaming into the air. This often disappears after the food has stood for a few minutes in the air or it may be overcome by placing the meat, for instance, into the oven a few minutes to brown.

There are many uses for fireless cookers. One homemaker suggests that she finds it useful to put the Sunday dinner in the cooker while preparing breakfast; to leave dinner in for the men at home when going away for the day; to send a hot dinner to the men when their work is too far away to come home at noon; to prepare one or two of the main dishes of the meal at breakfast time, when much time must be spent in the garden or other out-of-doors work, to use when it is necessary to cook unusually large amounts.

Another gets water from a nearby spring early every summer morning and keeps it in her cooker so that she may have cool drinking water during the day—for fireless cookers will keep things cool as well as hot.

These are but suggestive of the many uses to which the fireless cooker may be put. It will be found a very valuable household "friend".

Pressure Cooker

In recent years pressure cookers have been adapted to home use and have become very popular and have outsold the fireless cookers in many sections. Miss Florence E. Ward reports that for 1920, 2509 pressure and steam cookers were bought for the farm kitchens in 30 states of the North and West, while during the same period, 1661 fireless cookers were made at home and 310 purchased, and she estimates that 1,008,519 hours have been saved by the use of these and other household helps. When we add to the number those purchasing cookers in the large towns and cities and the increase in numbers and popularity since these figures were given, we see that pressure and fireless cookers have become a very important factor in house-keeping.

The pressure cooker is based on a very different principle from the fireless. We all know that it is impossible to cook foods higher than the boiling temperature under ordinary

conditions. But by cooking them under pressure a much higher temperature can be reached. The following table is interesting in this connection: Boiling point at

Atmospheric pressure is.....	212° F.
At 5 pounds pressure	230° F.
At 15 pounds pressure	240° F.
At 20 pounds pressure	243° F.
At 25 pounds pressure	266° F.

This means that food may be cooked much more quickly. Using this principle, a number of manufacturers have developed pressure cookers which are thoroly safe for domestic use at a price within the reach of many.

Features of Pressure Cooker

The essential features of a pressure cooker are a strong kettle, usually of heavy aluminum, an air tight cover with secure locking device, a pressure gauge, steam vent and safety-valve which is simple and reliable. Any standard pressure cooker is perfectly safe if operated according to directions.

It is particularly adapted to the cooking of cheaper cuts of meat, fibrous vegetables and a limited number of puddings (the temperature can be controlled by using a low pressure during the raising process and a higher pressure during the finishing).

The following are the main advantages claimed for the pressure cooker:

1. Time, labor and fuel are saved.
2. Cheaper foods are made available for every day use.
3. Foods are never burned in cooking.
4. Foods keep hot longer in the heavy aluminum kettle.
5. In cooking tough cuts of meat, flavors are retained to a greater extent because there is no loss of volatile material.
6. An entire meal may be cooked in one container, thereby saving dish-washing as well as fuel. (Flavors do not mix.)
7. Foods are sterilized by the high temperatures.

Most of the objections to the pressure cooker come from cooking at too high a pressure. Foods so cooked are sometimes "cooked to pieces" and the flavor distorted by the high temperature. Most of the objections are overcome by the proper manipulation of the cooker.

One of the greatest advantages is the quick cooking of the cheaper cuts of meat. There is a saving not only in fuel cost, but in food costs and the homemaker's time as well.

Not long ago, I served a pigeon dinner for Sunday company in a trifle less than an hour's time, starting with raw birds. Ordinarily, pigeons of assorted ages require at least three hours' cook-

ing, but by the use of the pressure cooker they were cooked till the flesh was ready to fall away from the bone in the time it took me to cook the potatoes and set the table.

By using foods requiring about the same time, a whole meal may be prepared at once with no absorption of odors.

As to cost and ease of operation of fireless and pressure cookers, an interesting comparative study has just been carried on in the Home Equipment Department, using a gas stove.

A menu made up of different and representative types of food, which, with the addition of a salad, made a complete and properly balanced meal, was chosen. This menu was Swiss steak with onions, tomatoes and carrots, rice as a vegetable and chocolate bread pudding. This was cooked five times in the pressure cooker, four times in a one-compartment fireless cooker and three times on top of the stove under as nearly identical conditions as possible with the following results:

COST TABLE

Cooker	Food Weight	Fuel	Cost at \$2.00		Labor Necessary
Pressure	5.28	12.43 cu. ft.	\$.0248	\$.0124	50 min. prep. 1 hr. in P. C. (not constant watching)
Fireless	5.20	15.89	.0316	.0158	1 hr. 20 min. (prep.)
Open kettle	5.28	27.03	.027	.027	2 hr. 35 min.

Savings resulting.

(Compared with open kettle method generally used.)

Saving	Pressure Cooker	Fireless Cooker
Saving in Fuel	14.60 cu. ft.—54 %	11.14 cu. ft.—41 %
Saving in Labor	45 min. 22.5%	75 min 51.2%

From the above tables it is evident that there is a decided saving in fuel by the use of either cooker. When translated into terms of money we can see just what this saving would be. A study of gas bills in a given city indicated that the average gas bill for a family of four is \$5.50 a month, or 15 cents a day. Assuming that 10 cents would be used in preparing the dinner meal, according to the above figures, \$.054 would be saved each time a pressure cooker meal similar to the above was prepared, and \$.041 saved each time a similar fireless cooker dinner was served. By frequent use of either cooker a substantial saving in the monthly gas bill would be made.

There is also a decided saving in labor in each case. It took less time to prepare the food for the pressure cooker, but longer intermittent watching, while with the fireless cooker the necessity of pre-heating the stone and having the foods at boiling temperatures when placed in the cooker required more time, but when the meal was once in the cooker it could be absolutely out of mind until serving time.

The resulting food products were carefully scored according to set standards and were as acceptable in quality as those cooked on top of the stove with the exception of the rice. The meat was decidedly better in the cookers, with a slight advantage in favor of the fireless cooker. That cooked on top of the stove was cooked away, darker and of poorer flavor, while the rice cooked in the cookers was very palatable. The larger quantity of water which could be used in the ordinary method gave a slight advantage as to distinctness of the individual grains.

The type of cooker the homemaker chooses depends upon her needs. Each has its advantages. If her household duties are such that she prefers to get her dinner early in the morning so that she may have freedom for a shopping trip or work in the garden, by all means she should have a fireless cooker. If she prefers to cook her meal quickly, with possibly a roast, while she is setting the table and preparing the rest of the meal, the pres-

tender. Breaking them or peeling down the end is the best method of testing. The fibers will show closely united threads when the stalks are tender.

Lettuce is now used as a salad vegetable the year 'round, but leaf lettuce, which is at its best in the spring, is seldom served otherwise. The leaves should not be more than eight inches long, and the ends must be free from the milky white liquid which gives the leaf such a bitter taste. The leaves should be light green in color and crisp.

Besides lettuce, there are several tempting greens which have all the qualities necessary for a satisfying salad. For instance, there is the water cress plant, of which there are several varieties. The leaves of the plant are round-lobed and smooth, and the stems are long and slender. The color ranges from bright to olive green. Most water cress is found along shores or near a spring. The plant is sold in bunches or by the pound.

Spinach is another green, which is more of the fern variety than water cress. It is a deeper green and the leaves are larger. In buying spinach, make certain that the leaves are free, or nearly so, from sand. The stems should be pale green and the fibers should snap when broken.

Swiss chard is a third garden green which is a favorite in many homes. This plant grows to about one foot in height and is more like leaf lettuce than any other green. It has a long white stem, which may be eaten as celery. The veins are white instead of green.

The dandelion is being used on more menus now than heretofore. In many city stores the plants may be purchased as other greens, but most everyone has all he wants of this plant in his own yard. One store sells dandelion sprouts, which are the white roots just below the leaves and above the brown roots. The only thing to watch when buying the plant is that there is not an excess of the milky white liquid on the roots, which shows that the plant is old and tough as well as bitter.

All in all, freshness and cleanliness are the two factors which determine the desirability of fresh fruits and vegetables. Learn to judge them by appearance and smell. Buy them in the early morning, once or twice a week, and keep them in cool places until you use them. Your spring menus may be made attractive and inviting if you choose your fruits and vegetables with the same care as you do your staples.

Justice is the only worship;
Love is the only priest;
Ignorance is the only slavery;
Happiness is the only good.
The time to be happy is now,
The place to be happy is here,
The way to be happy
Is to make other
People happy.

—R. G. Ingersoll.

Helps for the Spring Market Basket

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to about six to eight inches in height, although sometimes a stalk ten inches long will be suitable for food purposes. Usually, however, after the middle of June stalks tend to become tough and woody, and to develop fern leaves.

Asparagus stalks should snap briskly when broken. This is a good test for freshness and desirability of the stalk. The color of the best stalks is pale green, with faint white or slightly yellow ends. The size of the stalk has little to do with the crispness, as many slim shoots are extremely tough and some of the thicker ones may be quite