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DEC 9  
U. S. DEPARTMENT OF AGRICULTURE

Time and Money Costs of Meals Using Home- and Prekitchen-Prepared Foods X

Statement from a panel discussion at the 31st Annual Outlook Conference, Washington, D. C., Thursday, October 29, 1953

Summary

A test of feeding a family of four a day's meals purchased in three forms--with as little advance preparation as the market affords, with foods partially prepared, and with foods ready to serve--showed that the saving in time from using prepared foods is large, compared with the added cost. The meals using ready-to-serve foods cost over a third more, but took only about a quarter as much of the homemaker's time, compared with meals for which more preparation was done in the home kitchen (see chart). Meals emphasizing the use of partially prepared foods were a sixth higher in cost, and about half as time-consuming as the home-prepared meals.

Food costs were computed from average prices in three supermarkets in Washington, D. C. and fuel costs are from records of fuel consumed. Time costs are averages of figures recorded by two home economists, one working in a laboratory, and the other working in her own kitchen. The test covered meals for a family of four for 2 days. Thus the time data for each of the three kinds of menus are averages for 12 meals.

Objectives and plan of the test

This test was made to provide a measure of the impact of the commercial processing of food on the cost of a family's foods, on the time spent in food preparation, and on the acceptability of meals served. It is well known that pre-preparation adds to the cost of food, that it releases the homemaker's time for other activities, and that the resulting meals are less acceptable to many, but no measure of these differences was available. This investigation differed from tests of individual foods that have been made in that the foods were combined into menus to give each an importance in the total approximating its importance in home meal preparation.

Menus for three meals a day for 2 days were developed with quantities sufficient for a family of four. Each menu was expressed in terms of foods available on the market in three stages of preparation, briefly described as "for home preparation," "partially prepared," "ready to serve." (See pages 6, 7 for the menus used.)

In developing these menus the first consideration was to use foods available in Washington supermarkets in these three forms at the time of the investigation (July 1953). Some foods that are commonly used, certain popular cuts of meat for example, were not included because they were not found on the market in different forms with respect to pre-preparation.

The meals planned were of the kind generally regarded as "good," though more varied and expensive than the everyday meals of most families. To illustrate the impact of preparation on the total job of feeding a family, all meals were planned to be served at home, even though it is known that many meals are eaten away. Accordingly, the menus could be thought of as referring to two holidays, with all family members at home and with meals more elaborate and generous than usual.

Although the menus were designed with nutritional recommendations in mind, they are not presented as the "best" array of foods that could be chosen from a nutritional point of view. Specifically, the meal plans were made to conform to the recommendations of the "Basic 7" in the provision of foods from several groups. Calories were estimated in order to be sure that the meals were sufficient for four persons with relatively high nutritional requirements, among them a teen-age boy and girl. However, the exact nutrient content of the meals was not determined.

The quantities of food served were the same in the three series of meals. The foods served were also made as comparable as possible, although this could not be achieved completely because the composition of the prepared foods was not known. For example, for the meat pie the kinds of vegetables and meat and the proportions of crust, meat, and vegetables were determined for the ready-to-serve, and duplicated for the partially prepared and home-prepared products. For such other foods as cakes, cookies, and sherbet, simple recipes were used for the home-prepared products.

In short, the menus were not designed to be typical, but rather to present an example of the use of home-prepared and commercially prepared foods. The family is larger than average; all meals are served at home; the menus are somewhat more liberal and costly than average. The three sets of menus illustrate maximum differences in the use of home-prepared and commercially prepared foods rather than the combinations of these foods that are the more usual menu pattern.

#### Time costs

The time recorded in this investigation included the preparation of food, cleaning up after food preparation (washing, drying, and storing utensils and equipment used in preparation), setting the table, and serving the meals. This came to a total of 5.5 hours for home-prepared, 3.1 hours for partially prepared, and 1.6 hours for ready-to-serve meals (see chart). Not included are the washing of dishes, silver, and glassware, and cleaning of the kitchen after meals or the time that elapsed while the meals were eaten.

Time spent in active work and time spent in watching while foods were cooking were reported separately. The watching time was only 9 percent of the total. It amounted to 0.5 hour for the day for home-prepared meals and less for the other meals.

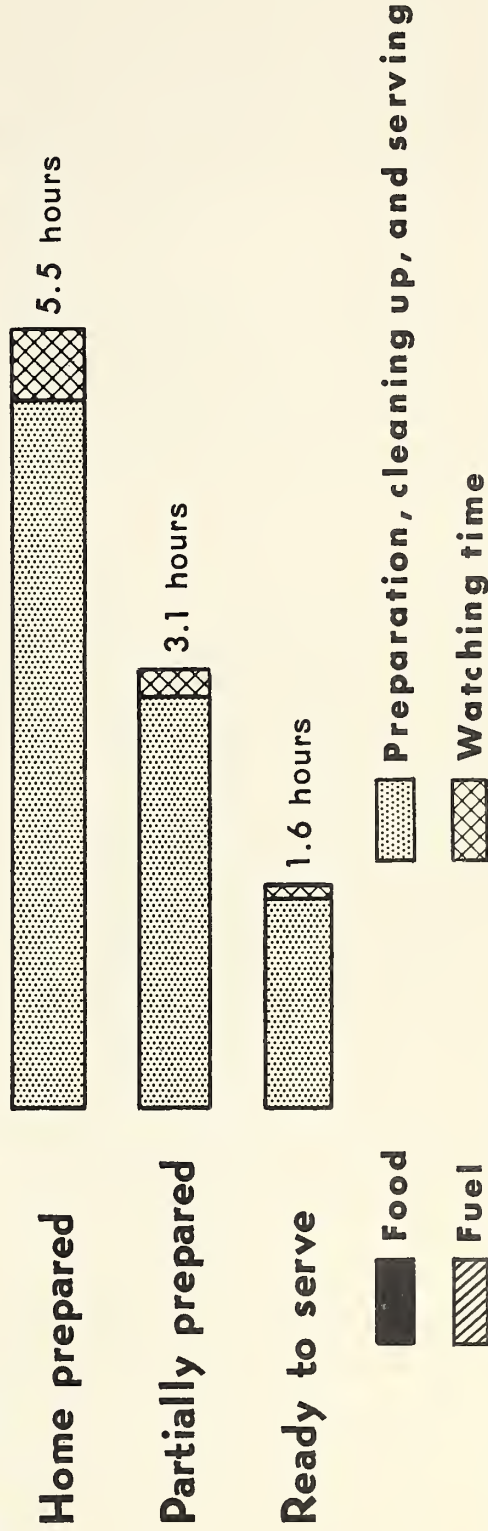
# COST OF MEALS

for a family of four, one day

## IN MONEY



## IN TIME



The time spent by the homemaker in waiting for foods to bake, chill, or freeze, was recorded but is not included in the averages reported here. Such processes required so little attention from the homemaker that she was free to undertake other work. An effort was made, however, to minimize this time by scheduling the work as a homemaker would to make most efficient use of her time in the kitchen. When foods were served that are normally prepared in quantities larger than for one meal (for example, cookies), an appropriate share of time and money costs was assigned to the meal.

Differences in time costs of meals from foods purchased in different stages of preparation were greatest for dinners, least for breakfasts. However, time costs are difficult to estimate with so few observations for dinners, because of the greater possibilities of variation. For example, the two menus and the two workers produced less uniform results for dinners than for other meals, especially for the more time-consuming home-prepared meals.

### Money costs

Food and fuel together for meals for a day for four persons cost \$4.90 for the home prepared, \$5.80 for the partially prepared, and \$6.70 for the ready to serve. Fuel costs were a small part of the total, and taking them into account had little effect in decreasing the cost differences between the three kinds of meals (see chart). Cost differences among meals from foods in the three forms were much more for lunch and dinner than for breakfast.

The cost of food served in these meals--40 cents per meal per person for home prepared; 48 cents for partially prepared; and 55 cents for ready to serve--shows the pattern of food consumption provided by the menus to be above average for the urban population as a whole. From a nationwide survey of urban families in the spring of 1948 (including parts of the U. S. where incomes and food expenditures are lower than in Washington), the average cost of family meals served at home was estimated at 32 cents per meal per person; 7 in 10 families served meals at home at a cost for food of less than 40 cents per person. Food prices have increased by about 9 percent since the spring of 1948. Since the average city family market basket in 1948 included some partially prepared and ready-to-serve foods, it is likely that the level of expenditures represented by these menus is at least 20 percent higher than average.

In setting up the menus, an effort was made to use only the fresh fruits and vegetables in season, but to avoid any that might be so briefly plentiful as to be unusually low in price. However, during July when the prices were obtained, there were no unusually low seasonal prices, because of drought conditions. Some of the fresh forms of the fruits used were even slightly more expensive than the processed forms. In another season, or in markets in another locality, the cost of the fresh products might have been less.

Food costs were estimated from prices obtained from three chain supermarkets in Washington, D. C. in the middle of the week that included July 15, 1953. Prices of individual foods were for the same quality or brand in each store whenever possible. When this was not possible, the price was obtained for the quality or brand reported by the store as sold in largest volume.

Fuel costs are for gas for the range and electric energy for the waffle iron, toaster, mixer, and ice cream freezer. Consumption was measured by meters in the laboratory situation only, as fuel consumption could not readily be measured in the home kitchen. However, the laboratory equipment was operated as the cook would have used it in her own home, that is, by estimating the time for starting the oven to preheat, rather than by determining it precisely in advance. Fuel rates are those applying to Beltsville, Maryland.

### Acceptability of meals

The meals prepared in the laboratory were served family style to a group of four members of the staff--two men and two women--who rated the acceptability of each item on the menu separately on a 5-point scale in which 5 represented very good; 4, good; 3, fair; 2, poor; and 1, very poor. In addition, each judge was asked to give his general impression of the meal as a whole. None of the panel members were trained in advance of the project to discriminate differences in quality of these particular food products. The order of serving the three types of meals, which was unknown to the tasting panel, was (a) ready to serve, (b) partially prepared, and (c) home prepared. Had the order been reversed or randomized the results might have been different, as the panel became trained to recognize quality products as the project progressed. If they had eaten the home-prepared products first, they might have rated the ready-to-serve items lower than they did. Some of the panel members remarked that they could have rated the food (in the home-prepared meals) higher than 5 if the rating scale went higher. This may have been an indication that they started too high on the rating scale for the products tested first.

Although the home-prepared meals were preferred, those made from partially prepared products were nearly as acceptable. The meals from ready-to-serve foods were less acceptable. The average combined scores were: home prepared, 4.9; partially prepared, 4.3; and ready to serve, 3.8.

Within each group, individual foods differed in acceptability. For example, some of the prekitchen-prepared foods were rated very good, but two were definitely of inferior quality when purchased. Individual foods differed also in the time-money relationship. Some of the prepared foods were judged excellent buys, in terms of their money cost and the time of preparing them; others were rated low in value for time saved. Since the purpose of this investigation was to show the differences in time and money cost in the framework of a day's meals, too few samples of each food were tested to report the specific foods in different forms most and least satisfactory, in terms of time, money, and palatability. Many more market samples would need to be tested for definitive results as to the types of food most acceptable and most economical in terms of time and money.

### Implications for home management

In making selections among the several forms in which many foods are marketed, homemakers probably consider the factors discussed here in varying degrees. It is not suggested that they should estimate either their time or

money costs with as much care as was done in this test. But time and money are critical in the home management job, and few homemakers can afford to ignore them.

The importance assigned to time, on the one hand, and money, on the other hand, is an individual and family matter. The homemaker who participated in this test, for example, was wholly responsible for the care of small children, the laundry, cleaning of the house, etc. The day's menus in the home-prepared form cost \$0.90 less than in the partially prepared form and \$1.80 less than in the ready-to-serve form. But the home-prepared meals took 2.4 hours more working time than the partially prepared, and 3.9 hours more than the ready to serve. Even if the menus had been simpler, this homemaker reported that it would have been impossible for her regularly to prepare as large a share of the family's food at home as was provided in the first set of menus without neglecting other activities more important to her family. A homemaker with paid employment might come to the same conclusion. But one with more time at her disposal might find attractive the money savings that could accrue from increasing the amount of home preparation.

The quality of the product and the importance attached to a good quality product also are highly individual matters. Both the laboratory and home worker in this experiment are more skilled than a great many homemakers and their skill was most needed for the home-prepared products. On the other hand, the standards of acceptability of those who ate the meals may be higher than average. A less skilled homemaker, or a family that does not prize quality would have less reason to prefer the home-prepared product than was true in these circumstances. But other homemakers find home food preparation a rewarding art, especially for families that set a high value on home-prepared food.

Money and time cost of meals for 1 day using home- and pre-kitchen-prepared foods (Family of four for 1 day, July 1953)

Item	Home-prepared	Partially prepared	Ready-to-serve
Money cost, total.....dollars..	\$4.90	\$5.80	\$6.70
Food.....do....	4.79	5.72	6.66
Fuel.....do....	.11	.08	.04
Time cost, total.....hours..	5.5	3.1	1.6
Preparation, cleaning up, serving <u>1</u> /.....do....	5.0	2.9	1.5
Watching <u>2</u> /.....do....	.5	.2	.1

1/ Includes cleaning up after preparation (but not after meals), and serving time (but not time while the meal was eaten).

2/ Does not include time while food was cooking and the cook was free to leave the kitchen.



### Menu items in the study

Given below are the chief menu items used in the three types of meals. For home prepared, except where noted, all menu items were prepared with separate ingredients. For the partially prepared and ready-to-serve meals, the degree of prekitchen preparation is indicated in parentheses. There were a few foods such as the toast and eggs that were the same for all three types of meals.

In addition to the foods listed, table fat was included in all meals, and milk and sugar when coffee and cereal was served. Coffee was served to adults for breakfast and dinner. Instant coffee was used for the ready-to-serve meals and percolator or drip coffee for the other two types of meals. Milk was served to adults at lunch and to the children at all meals.

#### Menu items

<u>Home-prepared</u>	<u>Partially prepared</u>	<u>Ready-to-serve</u>
<u>Breakfast</u>		
I		
Orange juice (fresh)	Orange juice (frozen)	Orange juice (canned)
Cereal, long cooking	Cereal, quick cooking	Cereal, ready to eat
Eggs, soft-cooked	Eggs, soft-cooked	Eggs, soft-cooked
Toast (purchased)	Toast (purchased)	Toast (purchased)
II		
Berries (fresh)	Berries (frozen)	Berries (canned)
Waffles, sirup	Waffles (prepared mix), sirup	Waffles (frozen), sirup
Bacon	Bacon	Bacon
<u>Lunch</u>		
I		
Beef pie	Beef pie (canned meat; pastry mix)	Beef pie (frozen)
Cole slaw	Cole slaw (preshredded)	Cole slaw (purchased)
Bread (purchased)	Bread (purchased)	Bread (purchased)
Butterscotch-nut pudding	Butterscotch-nut pudding (a mix requiring cooking)	Butterscotch-nut pudding (a mix requiring no cooking)

Home-prepared

Partially prepared

Ready-to-serve

Lunch--Continued

II

Macaroni and cheese	Macaroni and cheese (packaged)	Macaroni and cheese (canned)
Green salad and tomato with homemade dressing	Green salad and tomato (prepackaged) with dressing (homemade)	Green salad and tomato (prepackaged) with dressing (commercial)
Corn muffins	Corn muffins (prepared mix)	Corn muffins (purchased)
Peaches, sliced (fresh)	Peaches, sliced (frozen)	Peaches, sliced (canned)
Raisin cookies	Raisin cookies (prepared mix)	Raisin cookies (purchased)

Dinner

I

Fried chicken (whole, ready to cook)	Fried chicken (cut-up, ready to cook)	Fried chicken (frozen fried)
Spanish rice	Spanish rice (precooked rice; canned tomato sauce)	Spanish rice (canned)
Leaf spinach	Leaf spinach (packaged, washed)	Leaf spinach (frozen)
Fruit salad (fresh) with dressing (homemade)	Fruit salad (several kinds of canned fruits) with dressing (commer- cial) and fruit juice	Fruit salad (canned fruit salad mixture) with dressing (commercial)
Biscuits	Biscuits (prepared mix)	Biscuits (canned)
Sherbet	Sherbet (prepared mix)	Sherbet (purchased)
Angel cake	Angel cake (prepared mix)	Angel cake (purchased)

II

Hot baked ham (tendered)	Hot baked ham (canned)	Hot baked ham (canned)
Potato salad with pickle garnish--dressing (homemade)	Potato salad with pickle garnish (canned potatoes) dressing (commercial)	Potato salad (purchased)
Green beans, cut (fresh)	Green beans, cut (frozen)	Green beans, cut (canned)
Rolls	Rolls (partially baked)	Rolls (purchased)
Apple pie	Apple pie (packaged mix; canned apples)	Apple pie (purchased)