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## Adequate and Economical Meals

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# Adequate and Economical Meals

Susan Z. Wilder

Extension Nutritionist

AT the county project determination meetings which were held during the early fall months in twenty-eight counties in the state the women discussed the summary of 1200 food questionnaires as well as the survey summary secured through the cooperation of doctors, dentists and grocerymen. The survey showed that 15 percent of the children in the families reporting were fussy about their food, 16 percent of the mothers had difficulty in getting the children to drink milk, 15 percent of the children did not eat raw tomatoes and 20 percent did not eat cooked tomatoes. Twenty-three percent did not eat cooked vegetables at all. That the average homemaker falls short in not using enough milk, green vegetables and cereals was brought out more strikingly in the house to house survey carried out in four townships in Brookings county by the Rural Sociology Department, State College.

The buying habit of homemakers, reported by grocerymen, revealed some facts which show that there is a distinct trend toward a greater use of foods that are fundamental to the balanced diet. The sale of fruits and vegetables, both canned and fresh, has increased in the last five years, in some cases as high as 300 percent. More canned vegetables such as tomatoes and spinach and more fresh vegetables are being sold. Canned fruit, especially gallon cans are in greater demand. More dark bread and prepared cereals and less cookies are being sold than three years ago.

It is interesting to note the fruits and vegetables which the grocerymen reported in greatest demand throughout the state:

Canned Vegetables	Fresh Vegetables	Canned Fruit	Fresh Fruit
Corn	Head lettuce	Peaches	Oranges
Peas	Celery	Pineapple	Apples
Beans	Cabbage	Apricots	Bananas
Spinach	Onions	Berries	Grapefruit

The following remarks by grocerymen indicate something of the trend in food purchases over the last three year period: "Farm people buy more fresh fruit such as apples, bananas and oranges. Town people buy more oranges and grapefruit."

"Nearly everyone buys grapefruit and oranges for breakfast."

"Homemakers can their own peaches. They purchase berries in gallon packs. There is a good trade in peaches, prunes, and peas."

"Pineapples and bananas are the Saturday country trade."

"Every family seems to use lettuce, celery, and cabbage."

"We keep fresh vegetables and fruits before the public all the time as a drawing card."

"There is a greater tendency to buy canned vegetables. Not much demand for pickles. Do not handle pickles in bulk anymore."

"Farmers use more sugar than town people."

"Some families use 9 to 10 gallons of corn syrup in a year. The country uses more than the town."

"Cheap candy is not in demand."

"Very little jell is sold."

E A T R I G H T — F E E L R I G H T

After a discussion of these facts the homemakers concluded that one of their problems in feeding the family was to know the nutritive value of different foods as compared with their cost in order that they might be sure of serving adequate meals on the money they have to spend.

Probably one-fourth to one-half of the family income is spent for food.

The cost of food gives no indication of its nutritive value. Therefore the mother will have to depend upon her knowledge of the nutritive value of the different foods and her ability to buy the greatest nutritive value for the money she has to spend.

The "analysis of individual foods" and "systematic animal feeding" has increased our knowledge of the value of common foods needed in a carefully planned dietary. The homemaker should know the nutritive value of these food groups in order that she may feed her family adequately and economically.

Breadstuffs and other grain products furnish energy and protein but they are low in minerals and vitamins. The whole grains contain some minerals and vitamins and can be used to advantage in an inexpensive dietary.

Sugars and fats are excellent sources of energy. Butterfat should be used in the diet because of vitamin A.

Meats furnish protein and fat. Generally they are low in minerals and vitamins. They must be supplemented by fruits and vegetables.

Fruits and vegetables supply minerals and vitamins but very little protein and energy. In an inexpensive diet fresh fruits and vegetables should be used freely in season. Canned fruits and vegetables, especially canned tomatoes, dried fruits and stored vegetables should be used out of season and supplemented with as many fresh fruits and vegetables as the mother feels she can afford.

Milk is an excellent source of energy, vitamins, protein and mineral. Milk should be used in the diet to make up the deficiencies of the grains. Rich whole milk should be used liberally in an inexpensive diet.

A diet of bread, meat, potatoes, fat and sugar may seem to satisfy the appetite but it will lack the needed minerals and vitamins which milk, vegetables and fruits can supply.

Protein foods are expensive. Meat, fish and poultry are more expensive than milk, cheese and eggs. The grain products supply some inexpensive proteins. They should be used to supplement milk and eggs but not in place of them.

Milk is the cheapest source of calcium. Fresh vegetables and whole grains are cheap sources of phosphorous and iron.

It is not known how much of each vitamin is present in a food nor how much each individual needs.

Milk is particularly rich in vitamins A and B and has some C, D, E. Green vegetables which furnish three vitamins are the cheapest to buy. Spinach and lettuce are rich in vitamins A, B, and C, and cabbage is fairly so. Carrots are rich in A, B, and often times C. The white potato is rich in B and C and has some A. The potato should not be used in place of vegetables rich in A or those that have more bulk but may be used to supplement them. Tomatoes are rich in A, B, and C. Canned tomatoes are a source of vitamin C since it is not lost in the process of canning. Of the fruits, oranges are rich in A, B, and C. Apples and bananas are an econ-

omical source of B and some C. They are especially good eaten raw. Most fruits at the height of the season are an economical source of vitamin C.

In planning inexpensive meals the homemaker should include those foods which supply heat and energy at a low cost. Most foods with a high starch, sugar or fat content will do this. The cost of 100 calorie portions of food in the following table indicates that sugar, rice, potatoes, bread, butter and bacon are inexpensive heat and energy foods.

The Cost Per 100 Calorie Portions of Some Common Foods

Food	Measure	Weight	Cost per unit	Cost per 100 cal. portion
Apples	1 large	8 oz.	.10c lb	.05c
Bacon	2 small slices	$\frac{3}{4}$ oz.	.45c lb	.028c
Beef roast	1 small slice	$1\frac{1}{2}$ oz.	.25c lb	.0225c
Bread	1 thick	$1\frac{1}{8}$ oz.	.10c lb	.0082c
Butter	1 cubic inch	$\frac{1}{2}$ oz. (nearly)	.39c lb	.011c
Candy	3 small pieces	1 oz. (nearly)	.50c lb	.031c
Carrots	1 large	8 oz.	.05c lb	.025c
Cereal—puffed wheat	$1\frac{1}{4}$ cups	1 oz.	.39c lb	.033c
Cheese	$1\frac{1}{2}$ cubic inches	$\frac{4}{8}$ oz.	.35c lb	.0168c
Cream	$\frac{1}{4}$ cup	2 oz.	.50c lb	.031c
Eggs	$1\frac{1}{8}$ medium	$2\frac{1}{2}$ oz.	.37c doz.	.044c
Sugar—loaf	5 half pieces	1 oz. (nearly)	.09c lb	.0056c
Sugar—granulated	$1\frac{3}{4}$ level T	1 oz. (nearly)	.07c lb	.0043c
Milk	$\frac{7}{8}$ cup	1 oz. (nearly)	.10c qt.	.0166c
Potatoes	1 medium	5 oz.	.03c lb	.009c
Peas	$\frac{1}{2}$ cup	$3\frac{1}{2}$ oz.	.15c lb	.0437c
Prunes	3 large	$1\frac{1}{2}$ oz.	.25c lb	.0227c
Rice—boiled	$\frac{3}{4}$ cup	4 oz.	.10c lb	.00625c
Salmon—canned	$\frac{1}{2}$ cup scant	$2\frac{1}{2}$ oz.	.35c lb	.072c
Tomatoes—fresh	3 tomatoes	1 lb	.30c lb	.30c
Tomatoes—canned	2 cups	1 lb, 4 oz.	.15c lb	.13c

The following brief discussion, with tables, of two food groups which have had a large increase in sales within the last five years, according to the summary of the survey from grocerymen, will suggest a method of study that may be applied to different foods by the homemaker who wishes to feed her family a well balanced diet and at the same time cut down on the amount of money that she spends for food.

Foods which are put up in small packages are more expensive than the larger packages of the same kind. The use of many wrappings and elaborate decorations adds to the cost.

SOME COMMON SOURCES OF EFFICIENT PROTEIN

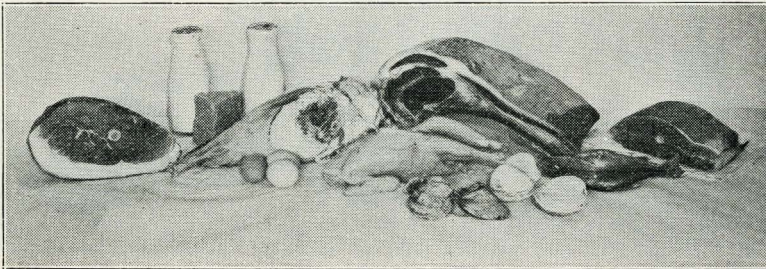


Fig. 1

U. S. Bureau of Home Economics

Cheese  
Eggs

Fish, All Kinds  
Meat, Lean, All Kinds

Milk  
Poultry, All Kinds

E A T R I G H T — F E E L R I G H T

Package goods are more convenient for the groceryman and the homemaker. Whether the homemaker buys in large or small packages or in bulk she will be influenced by available storage space. The homemaker is sure of receiving the package product as it left the factory. It will be clean. There will be no substitutions. The quality will always be the same. The net weight of the contents will be stated on the outside of the package. A package of apparently two pounds often contains considerably less. The wise homemaker will not be deceived by the apparent size of the package.

#### Comparison of Twenty-seven Brands of Breakfast Foods

Uncooked	Pkg. as Purchased			Cost		100 Cal.
	Lb.	Oz.	Cups	Pkg.	Lb.	
Oats—No. 1	1	8	7½	15	15	.0048
Whole Wheat	1	12		30	30	
Wheat Bran	1		7½	22	12	
Farina Cream		1		15	15	
All Wheat	1	4		25	20	
Raisin and Bran		10		15	24	
Wheat Meal	1	8		25	16	
Oats—No. 2		14		15	17	
Rollod Wheat	1	6		25	18	
Cream Flakes	1	8		25	16	
Rice	1		2½	10	10	.0062
<b>Ready to Serve</b>						
Whole Bran		10		15	24	
Wheat Biscuit		12		15	20	
Bran Flakes		6		10	26	
Rice Flakes		6		15	40	
Rice—Puffed		4.5	8½	18	60	.028
Wheat—Puffed		4.5	8	15	50	.0375
Bran—Plain		10		15	24	
Wheat Flakes		8		15	30	
Rice Flakes		8		15	30	
Corn Flaked		13	12	15	18	.0156
Toasted Wheat		13		15	18	
Flakes		10		15	24	
Wheat Flakes with Bran		14		20	22	
Whole Wheat Flakes		8	8	10	10	.005
Shredded Wheat		12	12	15	20	.0125
Bran Flakes—No. 2		10		15	24	

The names of the brands have been changed from the original.

#### SOME COMMON SOURCES OF VITAMIN A

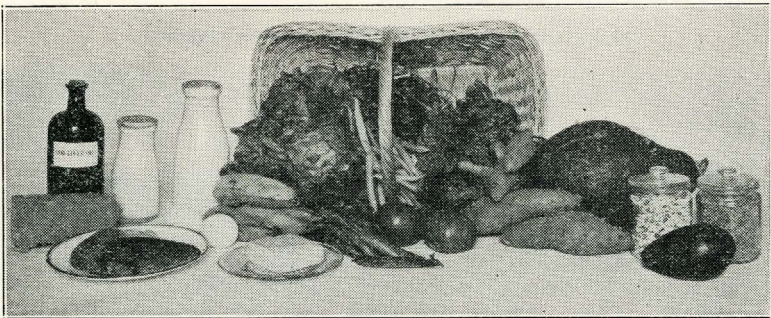


Fig. 2

Avocados  
Bananas  
Beans, String  
Butter

Carrots  
Cheese  
Cod-liver Oil  
Cowpeas, Dried

Cream  
Dandelion and other  
Eggs  
Lentils

U. S. Bureau of Home Economics

Lettuce  
Liver  
Milk  
Peas

Sweet Potatoes  
Spinach  
Squash  
Tomatoes

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These twenty-seven brands of breakfast foods were carried in stock by one small town groceryman. He said that women are not interested in the actual amount that the package contains, that they purchase breakfast foods by the apparent sizes of the package. The packages of ready-to-serve breakfast foods contain less than a pound. Most of the uncooked breakfast foods contain more than a pound, but seven of the eleven indicate a fraction less than two pounds. The ready-to-serve breakfast food packages were generally larger than the others but they contain less by weight than the uncooked. The cost per package was about the same in the ready-to-serve breakfast foods but higher in the uncooked. When the cost was figured on a pound basis the prepared breakfast foods were very expensive. Greater nutritive value for the money invested was

The Summary of a Comparison of Six Different Brands of Peas

CANS OF PEAS EXAMINED	Wt. of can as bought	LIQUID		SOLID FRUIT		Cost per Can	Cost per lb. of Solid Fruit
		Amt.	Wt.	Amt.	Wt.		
1. ¼ in. below top. Large somewhat marked	1lb-8½ oz.	⅞c	7½ oz.	2c	13½ oz.	22	26
2. ¼ in. below top. Very small. Somewhat broken	1lb-8 oz.	⅞c	7½ oz.	2c	12¾ oz.	22	27
3. ¼ in. below top. Medium small. Slightly broken	1lb-9 oz.	⅞c	7¼ oz.	2 1-16c	13¾ oz.	20	23
4. ½ in. below top. Very cloudy. Uneven color. Badly broken	1lb-8 oz.	⅞c	7 oz.	2 1-16c	13¼ oz.	15	17
5. ½ in. below top. Medium large. Almost no broken. Even color. No blemishes	1lb-10 oz.	⅞c	7½ oz.	2¼c	14½ oz.	25	27
6. 1-16 in. below top. Medium large. Very little broken	1lb-9 oz.	⅞c	7½ oz.	2¼c	13½ oz.	15	17

SOME COMMON SOURCES OF VITAMIN B

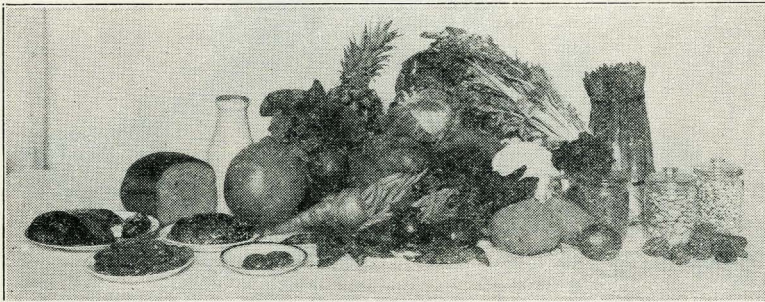


Fig. 3

U. S. Bureau of Home Economics

- |              |             |             |         |          |              |
|--------------|-------------|-------------|---------|----------|--------------|
| Asparagus    | Cauliflower | Grapefruit  | Lettuce | Onions   | Potatoes     |
| Beans, Dried | Celery      | Kidney      | Liver   | Oranges  | Pineapples   |
| and Fresh    | Cowpeas     | Lemons      | Milk    | Parsley  | Rutabagas    |
| Brains       | Egg Yolk    | Lentils     | Nuts    | Parsnips | Spinach and  |
| Cabbage      | Fish Roe    | Whole-grain | Okra    | Peas     | other greens |
| Carrots      |             | Products    |         |          | Tomatoes     |

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obtained from the uncooked breakfast foods. If the homemaker must count the cost she will serve uncooked breakfast foods most of the time. Occasionally, for variety, she may wish to use the ready-to-serve breakfast foods.

The homemaker should also make a study of the different brands of canned products sold in her neighborhood in order that she may get the best returns for her money.

The following outline indicates some of the things to consider in making such a comparison before purchasing canned vegetables:

The cans should be full when opened. The contents of the can of peas were from one-sixteenth to one-fourth of an inch below the top. The liquid barely covered a medium solid pack of peas. The amount of solid and liquid in the cans of peas varied slightly. The least expensive cans contain the most solid. The liquid was very cloudy in number four. It should have been more clear. The peas were of uneven color. Some were very yellow, others were badly broken. Number one had peas of fairly even size but with brown specks. Number two contained very small peas of even size and color. They might make attractive serving, however, they were mostly water and skins. They did not have as much food value as the peas which were larger and of good quality. While number five peas were of excellent quality they were not worth ten cents more per can.

Before buying canned fruits a number of points must be considered. Canned fruits in large pieces and of fine texture, as sliced pineapple, are graded the highest. They are the most expensive because there are very few pieces to a can. The fruits packed in halves are of the next grade. The sliced fruits are less expensive. The crushed fruits are the cheapest. Fruits are put up in different syrup densities. The thinner syrups are used with the cheaper fruits. "Pie Fruit" is canned in water, generally in number ten gallon cans weighing between six and eight

#### SOME COMMON SOURCES OF VITAMIN C

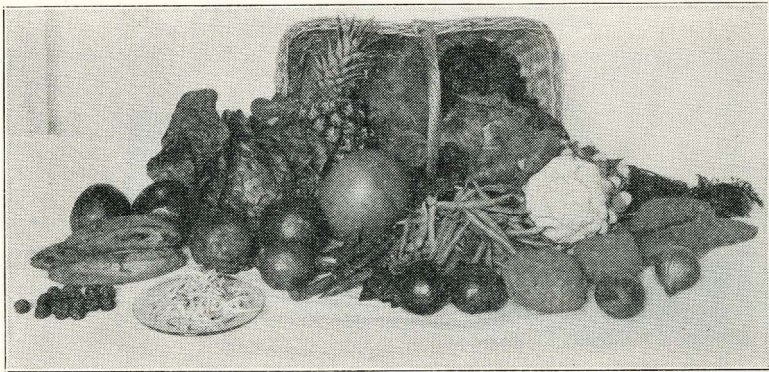


Fig. 4

Apples  
Bananas  
Cabbage  
Carrots, Young

Cauliflower  
Grapefruit  
Guavas  
Lemons

Onions  
Oranges  
Peaches  
Peas

U. S. Department of Home Economics

Pineapples  
Potatoes  
Raspberries  
Rutabagas

Spinach  
Sprouted Legumes  
String Beans  
Tomatoes

E A T R I G H T — F E E L R I G H T

pounds; apples, berries, prunes and cherries are especially popular in this size can.

The homemaker needs to know the weight of the liquid and solid in the can of vegetables or fruit. The price will be no indication of the quality or amount of the contents. Keen competition and the demand for reduced prices have led to the reduction of the size of the can. The cans are still known by their old numbers which is misleading as to the weight of the contents.

Expensive Day's Dietary	Inexpensive Day's Dietary
<p><b>Breakfast</b>                      Orange                      Shredded wheat (sugar) Milk with cream                      Toast (white bread) Butter                      Bacon                      Milk Coffee</p>	<p><b>Breakfast</b>                      Prune sauce                      Oatmeal (sugar) Whole milk                      Graham gems Butter                      Milk Coffee</p>
<p><b>Lunch</b>                      Roast chicken Mashed potatoes                      Gravy                      Rutabagas Lettuce salad (plain)                      Fruit gelatin with whipped cream                      Graham rolls Butter                      Milk Coffee</p>	<p><b>Lunch</b>                      Ham loaf Baked potato                      Raw cabbage—Carrot salad                      Whole wheat bread Butter                      Apple Betty Lemon sauce                      Milk Coffee</p>
<p><b>Supper</b>                      Salmon Hashed brown potatoes                      Buttered onions                      Baking powder biscuits Butter—Jell                      Pineapple sauce Cake                      Milk</p>	<p><b>Supper</b>                      Baked beans Tomatoes (canned)                      Boston brown bread Butter                      Peach sauce Cooky                      Milk</p>

**References**

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- Rose—The Foundations of Nutrition
- Sherman—Chemistry of Food and Nutrition

**SOME IRON FOODS**

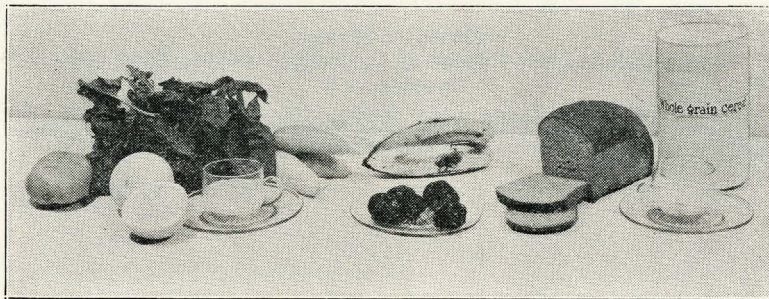


Fig. 5

Orange Juice  
Spinach

Carrots  
Whole Grain Cereal  
Prunes

U. S. Bureau of Home Economics

Bananas  
Potatoes

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