EC908 The Garden that Feeds the Family

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COOPERATIVE EXTENSION WORK

IN AGRICULTURE AND HOME ECONOMICS


W. H. Brokaw, Director, Lincoln

THE GARDEN THAT FEEDS THE FAMILY

Foreword

The present period of lowered prices has meant a diminished amount of cash in almost every home. Few, if any, of us have escaped. That cash we do have must cover almost as many items as it has ever had to cover — at least it must cover certain necessities of life, and it must pay the taxes, cover the farm operating costs for another year, etc.

Therefore, it does seem that whatever the various members of the farm family may do to conserve the available amount of cash shall be decidedly worth while, even tho the some of the amounts saved may seem small. The various small amounts added together may mean a very large saving over a period of time.

However, this saving must not be done at the sacrifice of the health of the family, if it is to be a real saving, taken in any sense of the word. Mental health may be, to a large extent, conserved by well-planned home and community recreation. The result of this, in taking the thoughts of the family away from the ever present idea of the financial depression, will be very beneficial to all concerned, and yet will not cost nearly so much as commercial entertainment might cost. Sufficient clothing and comfort and healthful conditions in living quarters may be attained in many cases at low cost. Health habits, generally, may be followed to exceptionally good advantages at the present time.

We are concerned today with the part which food plays in the matter of health, and in particular with the part which the proper varieties and quantities of vegetables play in an adequate diet.

An Adequate Diet

What do we mean by an adequate diet? We mean that diet which supplies daily a sufficient amount of the right types and right varieties of foods which make the children grow properly, mentally and physically, and which maintain the adults in a state of health, enabling them to carry reasonable responsibilities. All of the types and all of the varieties of foods need not be supplied in any one meal, but, if the diet is to be adequate, they must be supplied in the day's meals, as a whole. Of course, this implies that the logical method for insuring an adequate diet for her family is for the homemaker to plan for the day's meals as a whole — planning breakfast, dinner, and supper at one time, in order that she may be sure that each day she is providing all of the necessary food elements for the various members of her family. (Of course, as a time saver, she may plan the meals for three or four days ahead.)

Use of Food By The Body

Now, why must certain types of foods be supplied to the human body? We used to be taught that the body was like a machine — that it needed fuel, material for repair, and regulating materials. As a matter of fact, the body does need all of these things each day, but the comparison of the human body to a machine makes the matter much too simple. In the human machine, too many other factors enter into the matter of the use of the food by the body. It is more complicated than is just the simple matter of putting coal or wood into the stove or furnace, or of supplying gasoline to the motor, and knowing that when the stove or engine is...
properly regulated that it will do just what it is supposed to do. With the human engine, all of the proper materials may be supplied but they may not be really used by the body as completely as they should be used. Both outside and inside conditions may account for this. Strain; worry; lack of exercise; fresh air and sunlight; hurry in eating; eating when tired; irregular habits; lack of rest; and diseased or other irregular conditions in the body itself, are some of the evils which prevent the full use of the food by the human machine. Most of these would come under the direct control of the homemaker and she could see that such obstacles were removed. At any rate, whether or not she is able to provide conditions ideal for the use of the food, the foods which she supplies to her family should contain, not on just one day, but every day:

2. Energy-giving foods - carbohydrates (more commonly known as starches, and sugars), fats, and proteins.

Functions of Various Foods

What foods then must the homemaker supply to provide her family with these three properties each day? The compositions of many foods are such that they fulfill to some extent more than one of these three food functions, but in the main the functions are fulfilled by foods as follows:

1. Body-building
   Milk, meats, eggs, fish, cheese, nuts, dried peas and beans, whole grains. Dried peas and beans and whole grains are more perfect body builders when combined with milk. Fruits and vegetables help to build good bones and teeth.

2. Energy-giving
   Any food containing flour, sugar, cornstarch, cereals, potatoes, and other starchy vegetables; fruits containing sugar; milk, especially whole milk; butter; lard; other edible fats; fat meats; etc.

3. Body-regulating
   Fruits, vegetables, milk, meet juices, egg yolk, cod liver oil, butter, organs of animals, such as liver, sweetbreads, brain, etc. Whole grain cereals, water.

Servings and Varieties of Foods Needed in an Adequate Diet

Now that we have considered the varieties and functions of foods, what did we mean when we said "sufficient amount", and "right varieties?"

Different factors affect the amount to be consumed by each individual. Some of these are differences in people, of age, size, build, and also kind of occupation. A great deal of scientific work has been done on all of the phases of the food problem, and it would be a splendid thing if all homemakers (both women and men) could study these. However, since up to the present time this has been impossible, the homemaker may follow a few simple rules and feel sure that she has supplied her family with a sufficient quantity and with the right variety of foods.

We read so much, these days about the different food factors, that sometimes people are led to think of just some one phase of the subject as being important. For instance, sometimes they think that the only important thing is to supply enough vitamins, others feel that only fruits and vegetables are necessary, still others would do away with all but the coarse flours, and cereals, and would leave out meat entirely. As a matter of fact such people are "food faddists".
The only safe and sensible plan to follow is to arrange a diet containing proper proportions of each of the different classes of food. Each class has its own place to fill in the day's food requirement. A sensible mixture of the classes should go a very long way toward proper body development and sound health for the members of the family. If the homemaker will be sure to include the following in her menus for the day, she will be sure to give her family not only a sensible mixture of foods but one based on sound scientific principles, — in other words she shall be providing an adequate diet for them.

A quart of milk each day for each child up to 18 years of age, a pint for each adult. (A part of this may be cooked into the food, if that is desirable.)

At least three servings of vegetables each day. One of these may be potatoes or dried beans.

At least two servings of fruit (fresh or canned) each day. One raw fruit or vegetable each day. Tomatoes (canned or fresh) or oranges three times a week.

At least one egg a day.

Meat or other protein food (cheese, eggs, dried beans or peas, fish) once or twice a day.

Six to eight glasses of water a day.

Coffee or tea for adults (not more than one cup of each each day)

If the above foods are included in the diet each day, then the appetite may be satisfied with breads, butter, cereals, sweets, etc. If for any reason the supply of fruits and vegetables has to be small, then emphasis should be put upon the use of the whole grain cereals and coarse flours, although, of course, these are beneficial at all times.

Sweets should not be eaten just before meals or between meals, and children should not be allowed to have tea or coffee.

In applying this rule, the homemaker might work out her day's menus in some such manner as is shown in the following:

**Breakfast**

- Fresh fruit in season (apples, berries, etc.) or a canned or dried fruit.
- Whole wheat cereal (sugar, and whole milk)
- Egg and bacon
- Toast and butter
- Coffee for adults, milk or cocoa for children.

**Dinner**

- Roast pork
- Cabbage and apple salad
- Tea for adults
- Cottage pudding
- Baked potatoes
- Bread and butter
- Milk for children

**Supper**

- Baked beans
- Bread and butter
- Canned fruit
- Milk for all
- Stewed tomatoes
- Cookies

This menu includes just the basic requirements as listed above.
Of course, the diet for the infant and the small child must be given some special study, for faulty diets at this stage of human development have a lasting detrimental effect.

Importance of an Adequate Diet

Why is an adequate diet, such as that suggested above of so much importance? Because proper foods and food combinations are absolutely necessary for the proper physical growth of the child, and for keeping the body of the adult in a good state of health.

Unfortunately, the effects of faulty nutrition (malnutrition) do not show up immediately, and many people, while they do not starve, are living on a fare which not only stunts their growth and hinders their efficiency, but also is the direct cause of actual disease conditions in the individual. As a nation we have been accused of being a people who live on too much of a meat, potato, bread and sweets diet. These foods are all right, but they need to have the fruits, vegetables, milk and eggs added to them. The first three, fruits, vegetables and milk, have been called by Dr. E. V. McCollum, one of the foremost nutrition specialists of the time, "the protective foods" of our diets, and, to some extent, he regards eggs as being in this same protective class also.

Rickets, scurvy, some eye trouble, Bright's Disease, diabetes, anemia, goiter, and pellagra are some of the diseases which are directly or indirectly the result of faulty nutrition. Early ageing, some heart and kidney disorders, high blood pressure, so called rheumatism, constipation, over-weight and under-weight, digestive disturbances, and lowered vitality, which leaves the affected person an easy prey to infections, may be due to improper food. Many times these abnormal conditions mean that from early childhood the individual has not had the right food combinations, and, while the ill effects have not shown up immediately, they have accumulated thru the period of years with these results in middle life.

In addition, many of the young children who we think are healthy because they are not actually sick, are really suffering from malnutrition. Their teeth may be soft and imperfectly formed; their hair dull and lusterless; their gums and lips pale; their eyes showing dark fatigue circles, squinting and lack of brightness. The color of their skin may not be healthy, their chests hollow, their spines curved; their bodies thin and joints and wing bones too prominent; their breath not sweet; their faces may wear a strained expression, with a look of premature old age; they may be irritable as to disposition, become tired after very little activity, and apparently are dull mentally. These sorts of conditions may be corrected by the supplying of adequate diets.

Use of the Adequate Diet

Of course, any physical handicaps to this full utilization of the proper food should be corrected if possible (bad tonsils, etc.), and the adoption of other good health habits should be included - having sufficient sleep, rest, fresh air, out-door exercise, and sunshine. No child or other person can do his best when laboring under the handicap of malnutrition.

Much could be said too, about the desirability of the homemaker's planning and preparing the family meals to include (1) the variety mentioned (2) the palatability which comes from good cooking, and (3) the form of serving which will make the meals so attractive that the various members of the family will want to 10900m
eat the adequate diet when she has provided it. However, we cannot take time in this lesson to go into more than a suggestion of this.

Varieties and Quantities of Vegetables Needed

We are concerned today especially with the idea of producing at home a sufficient variety of vegetables, in sufficient quantity for each family (no matter what its size) both for use in the growing season and for canning and storing for winter use. The adequate diet must be supplied on each day throughout the winter and spring as well as on each day of the summer and fall season. The garden should be so planned this spring that enough of a sufficient variety of vegetables may be produced for the entire year.

What do we mean by "enough of a sufficient variety of vegetables"? To summarize in regard to this point, we mean that if her family is going to have in its daily food all of the different kinds of minerals and vitamins which are necessary to keep the members from a state of malnutrition or of dietary disease, the wise homemaker will see to it that at least ten different varieties of vegetables shall be planted in her garden. She will see to it that these are so chosen that she may give her family at least three different servings each day, (one of these may be potatoes or dried beans). Preferably, she will have one of these be a green or yellow or leafy vegetable, arrange to have tomatoes three times a week, and a raw vegetable each day when she is not having a raw fruit.

Canning Budget for Vegetables

To insure having these things thru the winter, how much ought the homemaker to plan to can and store? The following table deals with this, the table having been worked out on the basis that during the eight non-growing months each person gets one-half of his weekly vegetable requirement from canned vegetables and the other half from dried or stored vegetables. This means the supplying of seven servings of canned vegetables to each person each week in addition to seven servings of stored or dried vegetables and potatoes or dried beans.

Budget of Canned Vegetables - One Person for Eight Months (36 Weeks)

<table>
<thead>
<tr>
<th>Vegetables</th>
<th>Servings per week</th>
<th>Servings 8 mo.</th>
<th>Servings Per Pint</th>
<th>Number Pints</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tomatoes</td>
<td>2</td>
<td>72</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>Greens</td>
<td>1</td>
<td>36</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Other Vegetables</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beans</td>
<td>4</td>
<td>144</td>
<td>4</td>
<td>33</td>
</tr>
<tr>
<td>Beets</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carrots</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corn and peas</td>
<td>7</td>
<td>252</td>
<td>6</td>
<td>60</td>
</tr>
</tbody>
</table>

*Greens, asparagus, chard, beet tops, spinach, dandelions, other greens (raw cabbage, lettuce and celery).

Multiply the number of pints in each case by the number of people in the family, and add 10% to the total thus attained to allow for company, for breakage of jars, etc.
## Budget of Stored Vegetables - One Person for Eight Months (36 Weeks)

<table>
<thead>
<tr>
<th></th>
<th>Servings per week</th>
<th>Servings per 8 mo.</th>
<th>Servings per pound</th>
<th>Number of pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Squash</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parsnips</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turnips</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salsify</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beets</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carrots</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cabbage</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Though seven servings of vegetables per week for 36 weeks have been listed, it does not mean that one should have the 7 servings of canned vegetables each week. It is wiser to use the stored vegetables more freely during the fall and early winter months, since they deteriorate in quality as spring approaches, even tho they do not actually spoil.

This budget does not contain dried vegetables, and does not include lettuce, celery, and other products which should go to make up a well-balanced diet. These may be substituted for any of the stored products. They might well replace some of the carrots or beets which appear in both the stored and canned budgets. Nutrition specialists advise one raw vegetable or fruit each day. The budget of dried and fresh fruits calls for fresh fruit five days in the week, but one should plan to have either a raw vegetable or fruit daily. This may easily be followed out by using raw cabbage, raw carrots, celery, lettuce, fresh fruits, or canned tomatoes. Canned tomatoes are classed with raw products because the vitamin is not lost during the cooking process as it is with most vegetables.

The amounts in this budget were figured from data furnished by the Department of Home Economics, Agricultural College, University of Nebraska, and taken largely from quantities served at the University Cafeteria.

For our standard servings, we use the following:
- **Vegetables**: 1/3 cup per serving, for corn and peas.
- **Vegetables**: 1/2 cup per serving for the other vegetables.
- **Fruits**: 1/3 cup per serving, for canned and dried fruits.

The number of servings for stored vegetables range from three servings per pound to nine servings per pound. The data for cabbage was obtained by averaging the number of servings per pound for creamed cabbage, cold slaw, and buttered cabbage.

### Size of Garden

To provide all of this, the planting table found in Extension Circular 1211 "The Farm Vegetable Garden" will help the homemaker to decide how much of each variety of vegetable to plant according to the size of her family.

The planting plan given in connection with the plot showing the size of the garden may be followed just as it is given (with, of course, additions to, or
subtractions from the length of rows to make it of proper size for the family),
or one vegetable may be substituted for another of the same class. That means,
for instance, that if the members of the family do not care for turnips, another
root vegetable such as rutabagas or parsnips, etc., may be substituted for all
or part of the turnips in the space allowed for them in the garden plot, without
lessening the effectiveness of the garden as far as its supplying the proper variety
needed in the diet is concerned. In the same way one leafy vegetable may be
substituted for another leafy vegetable or one stem vegetable for another stem
vegetable, etc.

This farm vegetable garden circular No. 1211 as you will note, gives
also a table recommending a depth and space of planting for each kind of vegetable,
and advising the amount of seed or number of roots or sets for a certain number of
feet of row. The amounts recommended, of course, should have to be changed
in proportion to any changes made in the feet of row. The same ideas might be brought
out in connection with the plan dealing with the town vegetable garden given on
the last two pages of the circular.

The points in gardening discussed subsequently, and as found in The Farm
Vegetable Garden circular, apply to gardens whether they are located in the country
or in the town, (Refer to all points brought out in the circular)

Location of Garden

Use of Manure in the Garden

Soil Preparation

Seed

Raising Plants

Planting the Garden

Transplanting

Care of the Garden

Mulching

Water for the Garden

Insects and Their Control

(Prepared by Sarah Porter Ellis, Acting State Extension Agent, Women's Work,
Approved by E. H. Hoppert, State Extension Agent, Horticulture; by Foods Division,
Home Economics Department and by Jessie G. Greene, Assistant State Extension Agent
in 4-H Club Work)