KAZAKH NATIONAL AGRARIAN UNIVERCITY

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DEPARTMENT OF VETERINARY AND SANITARY EXAMINATION AND HYGIENE

Theme: Types of vegetables and their classification. The procedure and sampling technique in the study of vegetables.

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PLAN

1. Classification Of Vegetables

CLASSIFICATION OF VEGETABLES

In this group we may conveniently class all food products not elsewhere discussed.

Beans, peas, andcorn, when taken in the immature state, are classed asvegetables. The importance of this group of food products is not their great food value per pound (succulent vegetables contain anywhere from 75 to 95 per cent ofwater); it is the great variety of nutritive substances which they contain. Lettuce containscellulose,proteids, active chloro-phyl, pentoses, sugars and starches, representingcarbohydratesin various processes of transformation; small quantities offat, and a relatively large per cent of mineralsalts, besides numerous flavoring materials. All other edible plants contain many of the same elements in different proportions.

Read more:http://chestofbooks.com/health/nutrition/Diet-Encyclopedia/Classification-Of-Vegetables.html#.VlddF9LhDIU#ixzz3scy4AreD

Composition of lettuce.

Edible vegetables may be conveniently grouped according to that portion of the plant which we consume. These groups are: a Above ground b Roots and tubers c Leafy or succulent d Cucurbita family

Melons, cantaloups, and tomatoes are on the border line between vegetables andfruits. The following groups of vegetables are made up according to these classifications:

(A) ABOVE GROUND

Beans -
Dried
Green Beets
Brussels sprouts Cauliflower Corn Eggplant Lentils (dried) Okra Peas
Dried
Green

(C) LEAFY OR SUCCULENT VEGETABLES

Beet-tops Cabbage Celery-Dandelion Kale Lettuce Parsley Romaine Radish-tops Spinach Turnip-tops Watercress

ROOTS AND TUBERS

Artichokes Asparagus Carrots Onions Potatoes - Sweet White Parsnips Radishes Turnips

(D) MISCELLANEOUS VEGETABLES (OF THE CUCUR-BITA FAMILY)

Cantaloup

Muskmelon

Pumpkin

Squash

Watermelon

VALUE OF SUCCULENT VEGETABLES.

Succulent vegetables are very essential in a well-rounded bill of fare, and the neglect of their use is one of the errors in dietetics. The most important function of succulent or leafy vegetables is in the supply of pure water and mineral salts. They give to the body that which cannot be obtained elsewhere.

The diet of the average person is composed of too many solids, especially Vegetable juices aid the digestion of all food of the carbohydrate class. Cereal products compose a very large proportion of the civilized diet, especially in America, yet the starch of cereals is the most difficult of all starches to digest and to assimilate. The water and solvent juices in fresh vegetables and succulent plants are important factors in the digestion and the assimilation of cereal starches. The relative importance of salads and succulent

PLANTS IN THE DIET MAY BE GRADED ACCORDING TO THE FOLLOWING TABLE:

1 Spinach
2 Turnip-tops
3 Dandelion
4 Lettuce
5 Romaine
6 Endive
7 Celery
8 Cabbage
9 Kale
10 Watercress
11 Parsley
12 Beet-tops

THE WHITE POTATO

The Irish or white potato is the only true tuber that is used very extensively as an article of food. It is formed chiefly of starch and water. The starch of this tuber is very coarse and much softer, more soluble, and hence much more digestible than the starch of cereals orlegumes. Baking is the best method of preparing the white potato. The skins or peeling should be eaten in order to balance the diet as to cellulose, which is a most important article in the excitation of peristalsis of both thestomachand theintestines.

THE SWEET POTATO

Root vegetables.

The sweet potato is a root, and differs chiefly from the Irish potato in that it contains more sugar and less starch. The sweet potato is more wholesome than the Irish variety. Measured by its chemical contents, it is one of the best foods of all the tuber group.

The root vegetables given in the order of my preference are: Carrots, parsnips, turnips and beets. Carrots are exceedingly nutritious and palatable in anuncookedstate, eaten withnuts.

THE MELON

Tomatoes may be considered upon the border line between vegetables and fruits. They are exceedingly useful in cases of intestinalcongestionand torpidity of the liver.

The watermelon is very wholesome. The water is rich in sugar, while the pulp is composed of a soft fiber, which is a mildstimulantto the digestive and the excretory organs. Muskmelons and cantaloups are rich in natural sugar. They are non-acid, hence in harmony with nearly every known article of food. Considering their chemical neutrality and food value, they are about the best articles of diet in the watery or juicy class

The pumpkin and the squash, which are closely related to the melon, are of the genus cucurbita, and are divided into three species:

1 Pepo or pumpkin

2 Maxima or winter squash

3 Moschata, the pear-shaped squash.

With a slight variation of the water content, all of these varieties contain much the same elements of nutrition. However, the pumpkin is most important to the student of dietetics - (1) because of its food value, and (2) because of its prolific and universal growth.

SUGARS AND SIRUPS

It will aid the student greatly in comprehending this subject if he will review the chemical composition of sugars as given in Lesson IV (Chemistry Of Foods) under "Carbohydrates/' Vol. I, p. 107.)

Sugar in its various forms is a very prolific food product. It is the principal substance contained in nearly all fruits, but we shall confine our discussion here to the various sugars and sirups as they appear in commerce, freed from the other materials with which they are associated in nature.

Origin of beet-sugar.

BEET-SUGAR

Contrary to common belief, the greatest proportion of the world's supply of sugar comes from the sugar-beet. Sugar, which was once manufactured solely from the maple-sap and the sugar-cane, was discovered about one hundred years ago, to be present in beets. A very interesting historical fact is that the sugar-beet industry owes its origin to the efforts of Napoleon to supply France with home-produced sugar, because of the tariff or embargo laid upon foreign commerce. As a result of this effort all of Central Europe is now a heavy sugar-producing region. The method of production and the quantity of sugar contained in the sugar-beet have been so greatly improved that the present industry is quite able to compete with the production of sugar from cane in the tropical regions. Crude sugar from sugar-beets is very unpalatable, but the refined or crystallized form of beet sugar is chemically identical with cane-sugar.

CANE-SUGAR. REFINED SUGAR

Sugar-cane, though not so important as formerly, is still grown very extensively in several of the Southern states - Cuba, Porto Rico, and many semi-tropical countries. The chief distinction between cane-sugar and beet-sugar is that the crude cane-sugar, before it is refined, is a very wholesome and palatable product. The brown sugar of commerce is uncrystallized, or unrefined cane-sugar, and is fully as wholesome, and to most tastes more palatable than the granulated product. It is to be regretted that fashion has decreed we should use white sugar.

Refined sugar, whether produced from beets or cane, is sometimes slightly contaminated with sulfurous acid and indigo, which are used for bleaching purposes, and if present in any quantity are very objectionable.

SIRUPS AND MOLASSES

The original sources of sirups, besides commercial glucose, are cane-sirup, made directly by evaporating the juice of the sugar-cane; maple-sirup, made from the pure maple-sap; sorghum-sirup, or molasses, from the juice of the sorghum-cane, which is grown extensively in the South and Central West; and last, yet perhaps most common, "New Orleans" molasses, which is the residue from the manufacture of cane-sugar. This may be very wholesome if taken from the first drippings of the crystallized sugar, but if taken from sugar refineries it contains chemicals that have been used in the refining and the bleaching processes, and is a very doubtful product. An excellent quality of sirup can be made in the home by adding to the brown sugar a certain quantity of water, and boiling down to the desired consistency.

MAPLE-SUGAR

Maple-sugar, which is made by boiling or evaporating the sap of the sugar-maple, is a product decidedly superior in natural flavor to either beet or cane-sugar. Maple-sugar contains a small proportion of glucose andlevulose, but its chief distinction from other sugars is a matter of flavor. The hickory tree contains flavors somewhat similar to the maple. A cheap substitute for maple-sugar has been manufactured by flavoring common sugar with the extract of hickory bark.

The other forms of dry sugar obtainable in the market aremilk-sugar and crystallized glucose. The chief use of milk-sugar as an article of diet is in humanizing cow's milk forinfant feeding. The dry glucose, or, as it is sometimes called, grape-sugar, is not commonly seen in the market for the reason that it is difficult to crystallize, hence it is much cheaper to market glucose in the form of sirups.

The Manufacture, Composition And Uses Of Glucose

Commercial glucose, as was explained in Lesson IV (Chemistry Of Foods), is made by treating starch with dilute acids, and its wholesomeness depends entirely upon the care with which this is done. Theoretically, glucose is a very good food. In practise it is somewhat risky because cheap chemicals used in its manufacture may leave harmful and poisonous substances in the finished product. The manufacture of glucose is an excellent illustration of the objections to man-made foods as compared with natural foods. When we eat grapes we know that we are taking one of the most important substances required in the life-processes in a perfectly pure, unadulterated and wholesome form. Science has taught man to manufacture the identical substance that is found in the grape from corn, which is a much cheaper product, but the temptation to economize for the sake of dividends, and to allow the commercial spirit to control in the manufacture of food products is always present. For this reason the manufactured article comes under suspicion, while the natural form we know to be "exactly as represented." The principal uses of glucose are for table sirups and confectionery. Pure glucose as an article of food lacks flavor; for this reason the usual method of manufacturing sirups is to mix glucose and some other form of sirup or molasses.