

UGC NET HOME-SCIENCE SAMPLE THEORY

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VPM CLASSES

For IIT-JAM, JNU, GATE, NET, NIMCET and Other Entrance Exams

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Food Groups :

Introduction: Food groups are a part of method of classification for the various food that human consume in their every day lives, based on the nutritional properties of these types of food and their location in a hierarchy of nutrition.

Foods have been classified in to different groups depending upon the nutritive value for the convenience of planning diets.

Table 1 : Basic Five food Groups : ICMR

S.No.	Food Groups	Main Nutrient
I.	Cereals, Grains and products : Rice, wheat, Ragi, Bajra, Maize, Jowar, Barley, Rice, Flakes, wheat, flour.	Energy, protein, Invisible fat vitamin – B ₁ , vitamin-B ₂ , folic acid, iron, fiber.
II	Pulses and legumes : Bengal grams, Black Gram, Green gram, Red Gram, Peas, Rajmah ,Soyabeans and Beans	Energy, Protein ,invisible fat, vitamin B ₁ , vitamin B ₂ , folic acid calcium, Iron fiber
III.	Milk and Meat products: Milk: Milk, curd, skimmed milk, cheese. Meat : Chicken, liver, fish, egg, meat	Protein, fat, vitamin B ₁₂ , calcium, protein, fat, vitamin-B ₂ .
IV.	Fruits and vegetables: <ul style="list-style-type: none"> • Fruits: Mango, Guava, Tomato, Papaya, orange lime, water melon. • Vegetables: Spinach, Drumstick leaves, mustard leaves, coriander leaves. • Other veg: Carrots, Brinjals, Ladies finger, Capsicum onions. 	Caretenoids, vitamin C fiber Invisible fat, carotenoids vit B ₂ folic acid calcium iron fiber Carotenoids folic acid calcium fiber
V.	Fats and Sugars : Fats : Butter, Ghee, Hydrogenated oils Sugars: Sugar, And Jaggery.	Energy, Fats, essential fatty acids Energy.

Significance of the five food group system :

The five food group system can be used for the following purposes :

- (i) Planning wholesome balanced menus to achieve nutritional adequacy.
- (ii) Assessing Nutritional status a brief diet history of an individual. Based on assessment, Nutrition education can be imparted to the individual.

Food Pyramid: The food guide pyramid was introduced in 1992 by USDA as a general plan of what to eat each day. The food guide, pyramid is a valuable tool for planning a health promoting diet. By incorporating the principle of Balance, variety and moderation an individual can still eat their favorite foods. Food guide pyramid is meant for use by the general healthy population as a guide for the amount and types of food included in a diet.

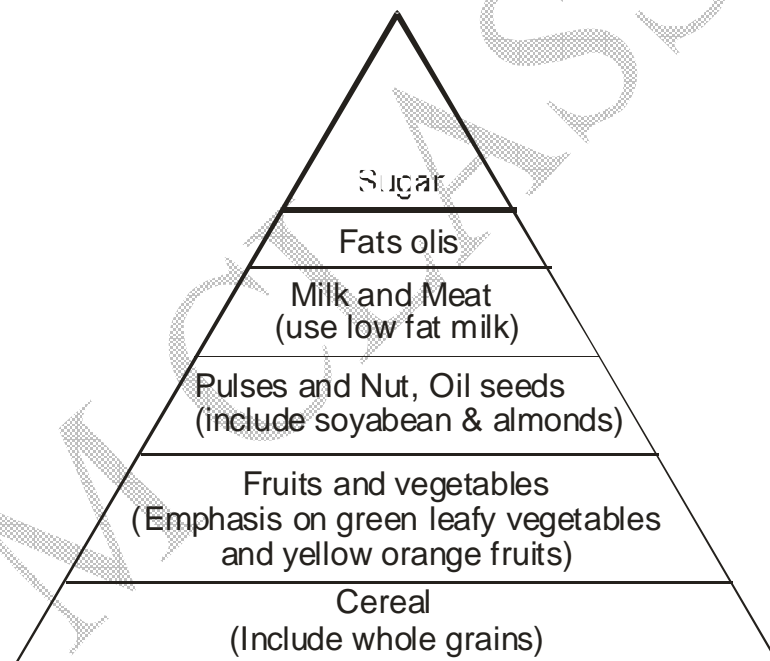


Fig 1 the food guide pyramids.

Use of food Pyramid in various factors :

1. Balance: It means choosing food from different food groups.
2. Variety: This means including different foods within each food groups.
3. Moderation: This means keeping serving size reasonable. This involves self controls :

Classification of food Groups :

I. Cereal and cereal products: Cereals form the staple food of the human race. In India wheat, rice, maize, oats, jowar, ragi and bajra are the common cereals and millets used.

- **Nutritive value of cereals:** Cereals are an important and economic source of energy. Hundred grams of cereals supply 340 K. Calories of energy. Cereals are also a significant source of protein in the diet of people where staple food is cereals.

Cereal protein is incomplete as it lacks an essential amino acid. Lysine. Refined cereals lose part of the protein minerals, and B-complex vitamins in milling. Whole grain contains more vitamins, minerals and fibre than refined grain and are valuable dietary sources of iron, phosphorus, thiamine, and fibre.

- **Role of cereals in cookery :**

1. Cereals form the staple diet and contribute to most of the calorie requirement and half of the protein requirement.
2. Cereals are used as thickening agent, corn flour in custards, corn flour in white sauce, macroni in soups.
3. Cereals are used as coating agent ex. Maida pasta in cutlets or bread crumbs in cutlets.
4. Cereals are used in sweet preparations ex: - Rice payasum, wheat halwa.
5. Cereals products like corn flakes and rice flakes are used as ready to use foods.
6. Fermented foods made from cereals are used as breakfast foods or snacks ex: - Idli, dhokla.

II. Vegetables and fruits: India with its diverse, but favourable agro climatic conditions produces a wide range of tropical fruits and vegetables. Vegetables are plants or parts of plants served with the main course of a meal. Vegetables contain a wide range of characteristics flavours. By proper choice of vegetables the desired flavor of a meal can be obtained.

Classification of vegetables :

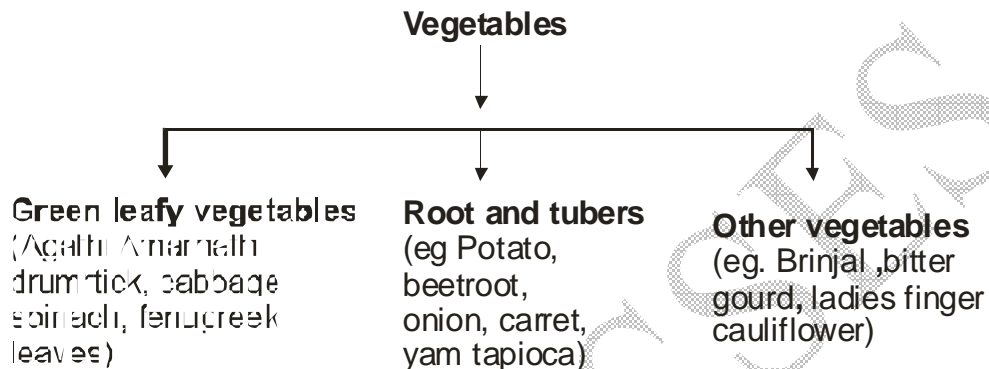


Fig: 2 Classifications of Vegetables.

- **Need for Inclusion of fruit and vegetables in the days menu:**

1. Fruits and vegetables provide vitamins and minerals required for growth and maintenance of health and are termed as protective foods.
2. Roots and tubers provide energy.
3. Vegetables are low in fat and can be used liberally in low calorie diets for weight reduction.
4. Besides providing nutrients they add variety to the diet. They make the diet attractive by their texture, flavous and colour.
5. Fruits and vegetables contain phytochemicals. Which means wide variety of plant compounds naturally produced by plants.

III. Pulses, Nuts and oil seeds: Pulses are the edible fruits or seeds of pod-bearing leguminous plants. The term pulse in India is used for edible legumes.

- **Nutrient content of Pulses:** Pulses gives 340 calories per 100 gram which is almost similar to cereal calorie. They are a rich source of protein containing about 18-25% proteins. All pulses contain sufficient amount lysine which is deficient in cereals.
- **Toxic substances in pulses:** Some toxic substances are naturally present in some pulses. These include trypsin inhibitors and haemoagglutinins.
- **Role of pulses in Cookery :**

1. Pulses are rich in protein and B vitamins and improve the quality of cereal protein.
2. Pulses give satiety due to high protein and fiber content.
3. They contribute to fermentation in preparation of idli and dosa.
4. They are used in salad as sprouted gram.
5. They are used as a part of seasonings in curries.

Nuts and oil seeds :

- **Nutritive value of nuts :**

1. Nuts are a rich source of protein and fat and a good source of B-vitamins and antioxidants vitamin E. They are a concentrated source of energy.
2. Ground nuts are a very rich source of protein and fat. They are exceptionally rich in niacin.
3. The white flesh of coconut is rich in calories though not a very good source of protein.

- **Role of Nuts in cookery :**

1. Nuts are used in fresh, raw, roasted, boiled or salted forms and also fried forms.
2. Nuts are used as thickening agents.
3. Sweets and chutneys can be made from nuts.

IV. Milk and Meat Products :

Milk is the normal secretion of mammary gland of mammals. Its purpose in Nature is to provide good Nourishment for the young of the particular species.

- **Nutritive Value of Milk :**

Milk is a complex fluid containing protein, fat, carbohydrate, vitamins, and minerals.

1. The main protein in milk is casein and it constitutes 3.0 – 3.5% of milk.
2. The fat content of milk varies from 3.5% to 8.0%.
3. Milk also contains phospholipids and cholesterol.
4. The important minerals in milk are calcium, phosphorus, sodium and potassium.

- **Types of processed milk :**

- (i) Skimmed milk
- (ii) Toned milk
- (iii) Standardized milk
- (iv) Homogenized milk

- (v) Evaporated milk
- (vi) Condensed milk
- (vii) Flavored milk
- (viii) Milk powder.

- **Meat Products :**

- **Nutritive value and selection criteria of meat products :**

1. Meat is a very good source of protein. The average protein content of meat varies from 16-25%.
2. Meat fats are rich in saturated fatty acids. The cholesterol content of meat is 75 mg/100 gm
3. The fat content of Meat varies from 5-40%.
4. It is an excellent source of B-complex vitamin particularly B₁₂.

- **Role of Milk and Meat products in cookery :**

1. Milk contributes to the nutritive value of the diet.
2. Milk acts as a thickening agent along with starch.
3. Milk is also used in desserts.
4. Egg acts as a thickening agent. Egg protein coagulates on heating.
5. It acts as Binding agent coagulates between 65-70°C.
6. Egg is an emulsifying agent.

V. Sugar and Oils :

- **Nutritive value of sugar :**

Sugar honey and Jaggery are sweetening agents. They are added to Beverages and foods to increased palatability. The Nutritive value of sugar, honey and Jaggery is given below :

Table 2 :

ITEM	ENERGY	CARBOHYDRATE	CAICIUM	IRON
	(K.cal)	(g)	(mg)	(mg)
Sugar	398	99.4	12	0.15
Jaggery	383	95.0	80	2.65
Honey	313	79.5	5	0.69

- **Fats and Oils:** Fats are an important component of the diet and is present naturally in many foods.

Invisible fats are those present inherently in foods.

Visible fats are those fats that are made from these products.

- **Role of sugar and oil in cookery:**

1. It is used as a sweetening agent.
2. Used in the preparation of sugar syrup and preservation in Jams and Jellies.
3. High concentration of sugar prevents the growth of microorganisms.
4. Fat is used as a medium of cooking in shallow and deep frying.
5. It helps in leavening
6. Fat improves palatability.

Key Points:

1. Use of food pyramid influence a person's diet while it is used in Balance, variety and moderation.
2. Cereals form the staple diet can contribute to the most of the calorie requirement and half of the protein requirement.
3. The extracted oils are crude and contain many constituents like fatty acids, gums, waxes etc.
4. Pulses are poor source of carotene and vitamin C but fairly rich in niacin but germination increase the vitamin C content of pulses.
5. Milling is the process which removes the coarse outer layer of bran and germ.