

МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ РОССИЙСКОЙ ФЕДЕРАЦИИ
ФЕДЕРАЛЬНОЕ АГЕНТСТВО ПО ОБРАЗОВАНИЮ

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FOOD INDUSTRY

МЕТОДИЧЕСКИЕ УКАЗАНИЯ
ПО АНГЛИЙСКОМУ ЯЗЫКУ

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Данные методические указания представляют собой подборку текстов, упражнений, диалогов по темам “Foodstuff management”, “Milk and Milk Products” для студентов 2 курса факультета пищевых производств. Предлагаемые в методических указаниях упражнения способствуют развитию диалогической и монологической речи, а также развивают умения перевода и восприятия иноязычной речи на слух. Предназначено для использования на практических занятиях по английскому языку.

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Содержание

Введение	4
1 Foodstuff management.....	5
1.1 Lesson1 Principles of menu making.....	5
1.2 Lesson2 Vitamins.....	8
1.3 Lesson3 Composition of eggs.....	12
1.4 Lesson4 Meals and cooking.....	15
1.5 Lesson5 Food preservation.....	18
2 Milk and milk products	23
2.1 Lesson1 Nutritional value of milk.....	23
2.2 Lesson2 Milk products.....	26
2.3 Lesson3 History of development of the dairy industry in our country.....	30
2.4 Lesson4 The structure of the dairy industry in our country.....	34
2.5 Lesson5 When you cook.....	37
3 Texts for supplementary reading.....	40
Список использованных источников	46

Введение

Данные методические указания по английскому языку предназначены для студентов факультета пищевых производств по специальностям .

Целью методических указаний в соответствии с Программой по иностранным языкам является подготовка студентов к использованию иностранного языка в их будущей профессиональной деятельности, т.е. обучение как письменной, так и устной форме общения. Кроме того, полученные знания могут служить базой для дальнейшего самообразования.

В области обучения устной речи методические указания готовят обучаемых к осуществлению подготовленного монологического высказывания в виде сообщения или доклада. Данные методические указания готовят студентов к участию в диалоге, что предполагает необходимость развития умения выражать собственное мнение, одобрение или неодобрение чужих высказываний, осуществлять запрос информации и т.д.

Помимо этого, студенты готовятся к письменному общению на английском языке. В этом плане предусмотрено формирование умений, необходимых для написания сочинений на заданную тему, перевода текстов по специальности.

Тематический отбор материала позволяет ознакомить студентов с терминологией по данной теме. Методические указания состоят из 10 разделов, включающих основные тексты для изучающего чтения, упражнения для развития навыков устной и письменной речи.

1 Foodstuff management

1.1 Lesson 1 Principles of menu making

1.1.1 Read the following words. Mind their meaning

- 1 to furnish – снабжать, предоставлять
- 2 essential – необходимый, ценный
- 3 secretion of fluids – выделение жидкостей
- 4 starch - крахмал
- 5 carbon dioxide – углекислота, углекислый газ
- 6 to dispose – располагать, размещать
- 7 kidney - почка
- 8 tissue - ткань
- 9 to eliminate – очищать, удалять из организма
- 10 to supply - снабжать
- 11 to overlook – не учитывать
- 12 the bran of cereal – отруби хлебного злака
- 13 bulk – грубая пища
- 14 fibrous – волокнистый, жилистый
- 15 the outer coats – внешние оболочки
- 16 fuel foods – пища как источник энергии
- 17 waste products – отходы
- 18 leafy green vegetables – листовые овощи
- 19 digestive tract – пищеварительный тракт
- 20 malnutrition – недостаточное питание
- 21 foodstuffs – продукты питания

1.1.2 Pronounce the following words correctly

Chemical, physiology, balance, blood, hydrogen, alcohol, phosphorus, sulphur, calcium, source, onion, dietetic, rhythmic.

1.1.3 Read and translate the text

Principles of menu making

No one food furnishes all the necessary food elements. A day's, or even a week's menus should be considered as a unit, rather than one meal. By varying the foods from meal to meal, and day to day, one may include all the essential foods.

A thorough knowledge of the chemical composition of foods, and of the physiology of digestion, makes possible a wiser selection of food. One must maintain a good balance of carbohydrates, fats, proteins, and the regularly elements, i.e., minerals, cellulose, water, and vitamins. The adult person requires a certain amount of fuel

foods for the constant functioning of the many involuntary body activities, as muscular tone, secretion of fluids, respiration, and circulation of blood.

The big factor that increases the demand for fuel is exercises or work. Therefore, the more a person exercises, the more he requires fuel foods. These fuel foods are those foods which contain carbon, hydrogen, and oxygen.

The food that contain carbon, hydrogen, and oxygen are classified as (1) the carbohydrates, i.e., starches and sugars, (2) the fats, and (3) the proteins: meat, milk, eggs. In the body these three classes of foodstuffs produce energy and leave, as waste, carbon dioxide, and water.

Proteins, the animal foods, have an added element of nitrogen, and sometimes phosphorus, sulphur, and iron. Since the tissues of our bodies are composed of these same elements, proteins have a special function of building new tissues and of keeping in repair old tissues. If proteins are used for fuel in the body, only the carbon, hydrogen, and oxygen are used, and the nitrogen, sulphur, phosphorous, and iron are but waste products to be eliminated through the kidneys. Proteins are expensive foods, and if used as fuel, only part of the elements are really utilized in the body.

It is therefore wise to use carbohydrates and fats to furnish the fuel for the body, and to use just enough protein to keep the tissues in repair. Tissue building is fairly constant in the adult. It is only in case of actual body growth that extra supply of protein is necessary. Therefore children and invalids require a good supply of milk, eggs, and other simple proteins to build up new tissues.

Our bodies are so complicated in form, that starches, fats, and proteins are not sufficient to supply all our needs. Certain minerals, as iron, calcium, phosphorous, and iodine are equally important in the repair and functioning of the body. Calcium forms a large per cent of bones and teeth. Iron is needed in the blood, and in other body fluids. Sources of iron are eggs, fresh, leafy green vegetables, onions, carrots, and the bran of cereals. In general we may say, the necessary minerals may be secured by using daily a variety of vegetables, fruits, whole cereals, and plenty of milk and eggs.

Another dietetic factor is cellulose, or bulk, of the food. The bulk is obtained from the fibrous part of fruits, and vegetables, and from the outer coats of cereals. Cellulose is neither fuel nor tissue builder, but as waste it increases the rhythmic movement of digestive tract, and acts as a cleaner.

1.1.4 Answer the following questions

What are the main principles of menu making?

What do the fuel foods contain?

How many classes of foodstuffs do you know?

Proteins have a special function of building new tissues, haven't they?

What minerals are important in the repair and functioning of the body?

Where can we find iron sources?

What is cellulose's role in our diet?

1.1.5 Say whether the following statements are true or false. Use the following: *that's right; nothing of the kind; I don't agree; I think that's exactly so; that's true; that's not right*

- 1 The human bodies are so complicated in form, that starches, fats, and proteins are sufficient to supply all our needs.
- 2 In the repair and functioning of the body only iron is very popular.
- 3 Iron is needed in the blood and in other body fluids.
- 4 Sources of iron are eggs, fresh, leafy green vegetables, onions, carrots, and the bran of cereals.
- 5 Cellulose is neither fuel nor tissue builder.
- 6 There is one perfect food.

1.1.6 Find in the text and prove that

- 1 The adult person requires a certain amount of fuel foods.
- 2 It is wise to use carbohydrates, fats, and just enough protein.
- 3 Certain minerals are equally important in the repair and functioning of the body.
- 4 Cellulose, or bulk, of the food is another important dietetic factor.

1.1.7 Translate the words and word combinations given in brackets

- 1 (Дневной) or even (недельный рацион) should be considered as a unit, rather than one meal.
- 2 The more a person exercises, the more he requires (пища как источник энергии).
- 3 In the body these three classes of (продуктов питания) produce energy and leave as waste, carbon dioxide, and water.
- 4 If proteins are used for fuel in the body, only (углерод, водород и кислород) are used, and the nitrogen, sulphur, phosphorus, and iron are but (отходы) to be eliminated through the kidneys.
- 5 Therefore children and invalids require a good supply of milk, eggs, and other simple proteins to build up (новые ткани).
- 6 Our bodies are so complicated in form, that starches, fats and proteins are (недостаточны) to supply all our needs.
- 7 (Источники железа) are eggs, fresh, leafy green vegetables; onions, carrots, and the bran of cereals.
- 8 Cellulose is neither fuel nor tissue builder, but as waste it increases the rhythmic movement of (пищеварительного тракта), and acts as a (очиститель).

1.1.8 Give sentences of your own using the following words and word-combinations

fuel food, leafy green vegetables, proteins, cereals, food stuffs, digestive tract, deficiency, shortage, iodine, the essential foods.

1.1.9 Read and translate the article and give your opinion on this topic

How much food do you think you will eat by the time you are seventy nine?

The average Frenchwoman, for example, will eat:

25 cows	9,000 litres of orange juice
40 sheep	6000 litres of mineral water
35 pigs	1.37 tonnes of apples
1,200 chickens	768 kg of oranges
2.07 tonnes of fish	430 bags of carrots
5.05 tonnes of potatoes	720 kg of tomatoes
30,000 litres of milk	1,300 lettuces
13,000 eggs	Hundreds of packets of coffee, sugar,
50,000 loaves of bread	spaghetti, etc.
12,000 bottles of wine	8 kg of dirt

Delicious, isn't it? How many cows and pigs have you swallowed already? Scientists say that we eat about half-a-ton of food a year – not counting drink! Some people eat even more. According to WHO (World Health Organization), Americans are the fattest people in the world. 55% women and 63% of men over 25 are overweight or obese. Russia, The Czech Republic and Finland also have some of the heaviest people in Europe. Even in such countries as France, Italy and Sweden, Europe's slimmest nations, people (especially women) are becoming fatter. The epidemic is spreading! So think twice before you start eating!

1.1.10 Get ready to speak on

- 1 Three classes of foodstuffs.
- 2 Important minerals and cellulose.
- 3 Principles of menu making.

1.2 Lesson 2 Vitamins

1.2.1 Read the following words. Mind their meaning

- 1 to cease – переставать, прекращать
- 2 to attribute – приписывать, относить
- 3 rutabagas – брюква
- 4 rickets – рахит
- 5 lassitude – усталость, апатия
- 6 acid solution – кислый раствор
- 7 delicate – тонкий, легкий (о пище)
- 8 intricate – сложный, затруднительный
- 9 to weave – соединять, сплетать
- 10 vital – жизненно важный
- 11 to omit – пренебрегать, упускать
- 12 exclusion - исключение

- 13 excessive – чрезмерный, излишний
14 to retard – замедлять, задерживать
15 to delay – препятствовать
16 apt – вероятный, возможный
17 intestinal – кишечный

1.2.2 Give Russian equivalents to the following word combinations

leafy green vegetables, sweet potatoes, eye diseases, the embryo of cereals, uncooked greens, appetite's sake, sugar ferments, stomach digestion, holiday dinner, intestinal disorders.

1.2.3 Read and translate the text

Vitamins

Much has been said in the past few years about a new set of necessary food constituents, called vitamins. Scientists have found that without these the body ceases to function properly. Many of the common diseases attributed to malnutrition are now said to be caused by a lack in the diet of one, or two, or all of the vitamins.

Vitamin A is found in leafy green vegetables, eggs, yolk, butter, cream, carrots, rutabagas, spinach, cabbage, yellow corn, and sweet potatoes. It is fairly stable to heat. Lack of this constituent causes eye diseases, and forms of rickets. Vitamin B is found in plant life, as oranges, spinach, cabbage, turnips, beets, tomatoes, carrots, potatoes, onions, and the embryo of cereals. Deficiency of vitamin B causes a lack of appetite, and general lassitude. Vitamin C is easily destroyed by heat, except in acid solution. Good sources of vitamin C are tomatoes, and uncooked greens, orange and lemon juice, fresh fruit, raw cabbage, and raw beets. Its absence is shown in skin diseases.

We may say that to avoid any dangers to shortage of these protective foods, the diet must contain milk, fresh vegetables, leafy greens, eggs, butter fat, and whole cereals. Canned vegetables may lose much of their value as sources of vitamins, due to high pressure cooking, especially if one does not use the liquid in which they are canned.

For the growing child one must provide a goodly supply of foods rich in mineral and vitamins. In the delicate and intricate weaving of new body cells it is of the utmost importance that no one of the vital constituents be omitted. There is no one perfect food. No vegetable or fruit can be used to the exclusion of all others. A variety of all the many fruits and vegetables is essential, not only for appetite's sake, but for the actual needs of the body.

A good balance between fat, sugar, and protein is to be desired. Excessive sugar ferments in the stomach cause distress from gas. Fat retards stomach digestion. Therefore, in a meal rich in fat and sugar, the action of the stomach is delayed until fermentation takes place. This is apt to happen after a holiday dinner.

Excessive use of meat tends to intestinal disorders, due to increased bacterial action. Meat is of such pleasing flavour that one must guard against the excessive use of meat to the exclusion of all essential vegetables, fruits, and dark breads.

It is not expected that every meal of the day will contain all the desired foodstuffs in the proper amounts, but the day's meals, or the week's meals, can be considered as a unit. Surely in the course of a week the meals can have a good balance of starch, sugar, whole cereals, fat, milk products, eggs, meat, and variety of vegetables and fruits.

1.2.4 Answer the following questions

What is the reason of the common diseases?

What must the diet contain?

Is there one perfect food?

What supply of food is necessary for the growing child?

Why is a good balance between fat, sugar and protein to be desired?

What tends to intestinal disorders?

Can every meal of the day contain all the desired foodstuffs in the proper amounts?

1.2.5 Complete the following sentences and translate them

1 Vitamin A is found in

2 Vitamin B is found in

3 Good sources of vitamin C are

4 Canned vegetables may lose

5 In the delicate and intricate weaving of new body cells

6 In a meal rich in fat and sugar,

7 Meat is of such pleasing flavour

8 In the course of a week the meals

1.2.6 Fill in the blanks with the suitable words from the text

1 Much has been said in the past few years about a new set of necessary food ..., called vitamins.

2 Many of the common diseases attributed to ... are now said to be caused by a lack in the diet of one, or two, or all of the vitamins.

3 ... of vitamin B causes a lack of appetite, and general lassitude.

4 Vitamin C is easily destroyed by heat, except in

5 We may say that to avoid any dangers due to shortage of these protective foods, the diet must contain milk, fresh vegetables, leafy greens, eggs, butter fat, and whole cereals.

6 In the ... and ... weaving of new body cells it is of the utmost importance that not one of the vital constituents be omitted.

7 Excessive sugar ferments in the stomach ... distress from gas.

8 It is not expected that every meal of the day will contain all the desired ... in the

proper amounts.

1.2.7 Translate these sentences into English

1 Молоко и молочные продукты имеют важное значение в ежедневном рационе человека.

2 В ежедневный рацион питания обязательно должны входить витамины, так как их недостаток приводит к различным заболеваниям.

3 Фрукты и овощи являются источником витаминов и минеральных солей.

4 Ржаная мука содержит больше минеральных солей, жиров, витаминов, чем белая, и поэтому более питательна.

5 Важно, чтобы в недельный рацион питания человека входили все необходимые для жизнедеятельности организма вещества.

6 Пища является источником энергии для живого организма.

1.2.8 Work in pairs. Imagine that you are going on a picnic. Make up dialogues discussing the food and utensils (посуда) that you are going to take. You can use the following expressions:

Why don't we take ...

We are sure to need ...

We can't do without ...

... will be of use, no doubt.

... is a must (настоящая
необходимость)...

It could be a good idea to take ...

We'll certainly need ...

1.2.9 Explain the meaning of the following proverbs

1 The proof of the pudding is in the eating.

2 You can't eat a cake and have it.

3 The appetite comes with eating.

4 Man does not live by bread alone.

5 Too many cooks spoil the broth.

6 First catch your hare then cook him.

7 You cannot make an omelette without breaking eggs.

8 Enough is as good as a feast.

9 Hunger is the best sauce.

10 Dog does not eat dog.

1.2.10 Get ready to speak on

1 Function of vitamins in our diet.

2 A good balance between fat, sugar, and protein.

3 There is no one perfect food.

1.3 Lesson 3 Composition of eggs

1.3.1 Read the following words and word combinations. Mind their meaning

- 1 indispensable – необходимый, обязательный
- 2 colloidal – коллоидный
- 3 abundant – обильный
- 4 external – внешний, наружный
- 5 significance – важность, значительность
- 6 smooth (shiny)- гладкий (блестящий)
- 7 emulsify – делать эмульсию, превращать в эмульсию
- 8 sufficient – достаточный
- 9 valuable source – ценный источник
- 10 exposure – выставление, местоположение
- 11 thickening power – способность сгущать (ся)
- 12 ease – легкость
- 13 baking powder – пекарный порошок
- 14 food value – пищевая ценность
- 15 egg poached – вареное яйцо
- 16 scrambled eggs – яичница-болтуня
- 17 leavening agents – разрыхлитель

1.3.2 Read the words according to transcriptions and find them in the text

[ˈlesiθin], [kənˈstitjuənt], [ˈælbjumin], [ˈglɔbjulin], [dʒeləˈti:n], [dʒiˈlætinəs], [kənˈsistənsi], [ˈkɒntənt], [ˈklɔrəfil].

1.3.3 Find Russian equivalents to the following word combinations

Colloidal form, colloidal nature, brown-shelled and white eggs, a clean-shelled egg, phosphorus-containing compound, dietary constituent, cookery processes, technique of mixing and baking, food materials, keeping qualities.

1.3.4 Read and translate the text

Composition of eggs

Eggs are indispensable in the average diet. They contain in colloidal form many of the more important but less abundant food materials, vitamins and minerals, along with fat and protein, and are easily digestible, easily prepared, nutritious, and concentrated food in themselves, as well as being most important in the preparation of many other foods because of their colloidal nature.

There are great differences in eggs which may be attributed to many causes: the feeding and care of the hens, the kind of hen, and the care of the eggs after they are laid.

The consumer has little or no way to judge the quality of an egg from its external appearance. Difference in size does not indicate difference in quality. The colour of the shell is of little significance. The investigation has proved brown-shelled and white eggs alike in composition and in every property. A clean-shelled egg indicates

a clean hennery and, therefore, an egg of better keeping qualities and flavour than those with dirty shells. An egg shell with a chalky appearance is usually fairly fresh. A shiny smooth shell indicates an old egg.

The composition of an egg is roughly 75 per cent water, 12 per cent protein, 12 per cent fat and 1 per cent minerals and vitamins. The fat is all contained in the yolk, where it is present with the protein in highly emulsified form. A large percentage of it is in the form of a phosphorus-containing compound known as lecithin. Most of the minerals of the egg are found in the yolk. Of these the iron is the most important, being present in sufficient amount to make eggs of the most valuable sources of this necessary dietary constituent.

The whites are a 12 percent colloidal solution of the proteins, albumin, mucin and globulin, with few, if any, vitamins and no fat. It is thought that mucin, a compound protein, is largely responsible for the gelatinous consistency of the whites. The value of egg whites depends on the fact that they represent the most easily digestible proteins, and from the point of view of the cook they are indispensable.

The colour, the flavour, and the vitamin content of the yolk are all dependent upon the food which the hen eats. Foods containing chlorophyll increase the depth of the yellow colour. The vitamin A and B complex are always present, the former in abundance. The vitamin D may or may not be present, being apparently dependent on the content of the hen's diet and her exposure to sunlight.

1.3.5 Answer the following questions

What do eggs contain?

What does a shiny smooth egg shell indicate?

What is the composition of an egg? (Compare the yolk and the white)

What are the colour, the flavour and vitamin content of the yolk dependent upon?

Are vitamins A, B, D always present in the yolk?

The thickening power of eggs is due to the ease with which the protein coagulates, isn't it?

Where is the emulsifying property of eggs illustrated well?

1.3.6 Make up sentences joining the given parts of them

- | | |
|---|---|
| 1 Eggs are indispensable | 1 where it is present with the protein in highly emulsified form. |
| 2 The consumer has little or no way | 2 in the protein present in colloidal form. |
| 3 The fat is all contained in the yolk, | 3 depend upon the technique of mixing and baking. |
| 4 It is thought that mucin, a compound protein, | 4 in the average diet. |
| 5 For most cookery processes the value of the eggs lies | 5 to judge the quality of an egg from its external appearance. |
| 6 The actual leavening and thickening | 6 is largely responsible for the gela- |

accomplished by the use of eggs

tinous consistency of the whites.

1.3.7 Ask questions to which these sentences are the answers

1 There are great differences in eggs which may be attributed to many causes.

2 The investigation has proved brown-shelled and white eggs alike in composition and in every property.

3 The iron is present in sufficient amount to make eggs of the most valuable sources of this necessary dietary constituent.

4 Foods containing chlorophyll increase the depth of the yellow colour.

1.3.8 Give sentences of your own using the following words and word combinations

Nutritious, consumer, property, ability, grade, size, new-laid egg (freshly laid egg), baking powder, scrambled eggs, food value.

1.3.9 Text for written translation

Changes in eggs on keeping

The shell of freshly laid egg is completely filled, the yolk spherical in shape, and the white thick and gelatinous. The new-laid egg contains no bacteria which promote spoilage. It may contain drops of blood or bits of extraneous matter. Soon after the egg is laid, evaporation of the water with the dissolved carbon dioxide takes place through the porous shell. As these gases leave the shell, air containing microorganisms enters. At the same time, some of the water passes from the white to the yolk, and the whites begin to lose their gelatinous consistency and become thinner. The exact cause of this liquefaction of gelatinous egg white is not known.

The change may be physical or chemical. It is well known that eggs with thin white do not poach well, as the thin white spreads before coagulation starts.

Other changes in the egg occur as the egg ages. The membrane which surrounds the yolk becomes stretched and weakened by increasing amount of water. The yolk no longer appears spherical but flattens out when the egg is broken into a dish; sometimes the stretched membrane around the yolk will be broken on cracking the egg.

The change in the location of the water appears to be due to the changing hydrogen-ion concentration of the egg through loss of carbon dioxide. The pH of the egg white increases from about 7.6 when the egg is freshly laid to 9.7 after keeping, an increase in alkalinity of about 100 per cent.

The enlargement of the air space is due to the evaporation of moisture from the egg, but as the loss of water depends on the relative humidity of the storage space the size of the air space is not positive indication of either the age of the egg or its quality.

1.3.10 Get ready to speak on

- 1 Food value of eggs.
- 2 Composition of eggs.

1.4 Lesson 4 Meals and Cooking

1.4.1 Read the following words and word combinations. Mind their meaning

- 1 stick to – придерживаться, держаться
- 2 intricate – запутанный, сложный
- 3 cuisine [kwɪˈzi:n] – кухня, стол
- 4 sentence to - осуждать
- 5 starve – голодать
- 6 course – блюдо
- 7 soft drinks – безалкогольные напитки
- 8 starter – первое блюдо
- 9 herring – сельдь, селедка
- 10 steak – бифштекс
- 11 chop – отбивная (котлета)
- 12 to have a bite – перекусить, закусить
- 13 mislead – вводить в заблуждение
- 14 eat out – питаться вне дома
- 15 shrimp – креветка
- 16 inedible – несъедобный
- 17 the table groans with food – стол ломится от яств
- 18 stuff – достаточный запас
- 19 pickle – соленье, маринад

1.4.2 Pronounce the following words correctly

Diet, sausage, bacon, marmalade, waffles, cocoa, sophisticated, Chinese, Italian, restaurant, biscuits, calories

1.4.3 Read and translate the text

Meals and Cooking

Living in Russian one cannot but stick to a Russian diet. Keeping this diet for an Englishman is fatal. The Russians have meals four times a day and their cuisine is quite intricate.

Every person starts his or her day with breakfast. Poor Englishmen are sentenced to either a continental or an English breakfast. From the Russian point of view, when one has it continental it actually means that one has no breakfast at all, because it means drinking a cup of coffee and eating a bun. A month of continental breakfasts for some Russians would mean starving. The English breakfast is a bit better, as it consists of one or two fried eggs, grilled sausages, bacon, tomatoes and mushrooms.

The English have tea with milk and toast with butter and marmalade. As a choice one may have corn flakes with milk and sugar or porridge.

In Russia people may have anything for breakfast. Some good-humoured individuals even prefer soup, but. Of course, sandwiches and coffee are very popular. One can easily understand that in Great Britain by one o'clock people very much ready for lunch. Lunch is the biggest meal of the day. That would be music for a Russian's ears until he or she learns what lunch really consists of. It may be a meat or fish course with soft drinks followed by a sweet course.

The heart of a Russian person fills with joy when the hands of the clock approach three o'clock. His or her dinner includes three courses. A Russian will have a starter (salad, herring, cheese, etc.), soup, steaks, chops, or fish fillets with garnish, a lot of bread, of course, and something to drink. The more the better. At four or five the Russians may have a bite: waffles, cakes with juice, tea, cocoa, or something of the kind.

In Great Britain they have dinner at five or six. Soup may be served then, but one should not be misled by the word "soup". British soup is just thin paste and a portion is three times smaller than in Russia. A lot of British prefer to eat out. "Fish and Chips" shops are very popular with their take-away food. The more sophisticated public goes to Chinese, Italian, seafood or other restaurants and experiments with shrimp, inedible vegetables and hot drinks.

Supper in Russia means one more big meal at seven. The table groans with food again. In England it is just a small snack – a glass of milk with biscuits at ten.

Most Russians have never counted calories and they are deeply convinced that their food is healthy. Some housewives may admit that it takes some time to prepare all the stuff, including pickles, home-made preserves and traditional Russian pies and pancakes. But they don't seem to mind too much and boil, fry, roast, grill, broil, bake and make. Paraphrasing a famous proverb one can say: 'what is a Russian man's meat is a British man's poison'. (What is one man's meat is another man's poison – Что русскому хорошо, то немцу – смерть (посл.).

1.4.4 Answer the questions

How many times a day do the Russians have meals?

What is the difference between English and Russian breakfast?

Do the Russians have lunch?

Where do the English prefer to eat?

Have most Russians ever counted calories?

1.4.5 Say when you have meals and what you like to eat and drink for breakfast, dinner and supper. Say what you dislike for breakfast, dinner and supper

1.4.6 Say which drinks are good for health and which are not. Give your reasons

Orange juice, milk, skimmed milk, tea, coffee, beer, brandy, cognac, Scotch whisky, Coca-Cola, Pepsi-Cola, apple juice, tomato juice, pineapple juice, gin, rum, vodka, champagne, port, dry sherry, sweet sherry, vermouth, ale, lager

1.4.7 Study the list of English verbs and group the ones close in meaning matching them with the Russian verbs. Comment upon the difference in their meanings

English: to swallow, to crunch, to champ, to hog, to munch, to gobble (up), to nibble at something, to gnaw, to gulp, to chew, to devour, to bolt, to bite

Russian: пожирать - ... - ... - ...

глотать - ... - ... - ...

жевать - ... - ... - ...

грызть - ... - ...

откусывать - ... - ...

1.4.8 What do we call places where people go to eat? Match the words in the left column with the definitions in the right column

- | | |
|-------------------|--|
| 1 snack bar | A. originally a British public house license to serve beer and other alcoholic beverages. Customers get their drinks from the counter and either stand there or sit at the tables. Some light snacks like pies and sandwiches are served |
| 2 café/ cafeteria | B. a counter where food and drink may be bought and eaten (e.g. in a railway station or on a train) |
| 3 pizzeria | C. small restaurant mainly concentrating on cakes, sandwiches, coffee and tea. Choice of food is often very limited |
| 4 refectory | D. a place where guests normally come fairly late and stay until the small hours. Always with dancing and often also with floor shows. Food is sometimes available |
| 5 buffet | E. a place where students or workers have their lunch, usually connected with a school, office or factory |
| 6 night club | F. a nice place where meals are served to customers |
| 7 canteen | G. a modest restaurant where customers collect their food on trays at counters and carry it to tables. Choice of dishes is based on convenience and speed, with food like hamburgers, sausages and sandwiches |
| 8 pub | H. a restaurant specializing in pizzas, and other Italian-type food |
| 9 restaurant | I. a university café |

1.4.9 What types of restaurant would you recommend to the following people?

- 1 A young couple who want food and some entertainment late at night.
- 2 A man who wants a meal in a place where he can meet some local people.
- 3 Someone wanting a quick, cheap meal.
- 4 Someone at a railway station.
- 5 Someone who wants non-English food.
- 6 A student staying at the university all day.
- 7 A factory worker at lunch-time.
- 8 A family who wants to celebrate some special occasion.

1.4.10 Write an essay on one of the following topics:

- 1 From All Diets I Choose ...
- 2 Non-Traditional Food – Pros and Cons.
- 3 Better Cooks – Men or Women?
- 4 Each Family Has its Own Style of Cooking.
- 5 What I Like and What I Hate to Eat.

1.5 Lesson 5 Food preservation

1.5.1 Read the following words and word combinations. Mind their meaning

- 1 spoilage – порча
- 2 due to – обусловленный
- 3 harmless – безвредный
- 4 lactic acid – молочная кислота
- 5 dough – тесто
- 6 yeast – дрожжи, закваска
- 7 undesirable – нежелательный
- 8 mold – плесень, плесенный грибок
- 9 hygiene – гигиена
- 10 perishable foods – портящаяся пища
- 11 to prolong – продлевать, продолжать
- 12 availability – (при-)годность
- 13 wholesome – полезный, здоровый
- 14 ravages – разрушительное действие
- 15 living tissues – живые ткани
- 16 to assist – содействовать, принимать участие
- 17 decay – гниение
- 18 minute size – мельчайший размер
- 19 to split off – отделять
- 20 resistant - стойкий, прочный

1.5.2 Give the corresponding Russian equivalents of

Food spoilage, green vegetables, root vegetables, well-balanced diet, can, cure, vinegar, sour milk, original organism, spore-bearing organisms, canned foods, nutritive value, cell division

1.5.3 Read and translate the text

Food preservation

Food spoilage is due to the growth of microorganisms in the food. In the course of their development these produce, in some cases, harmless products, such as lactic acid in sour milk or carbon dioxide and alcohol in bread dough made with yeast; in others harmless but undesirable products, such as the flavour which mold imparts to bread; while, in still other cases, harmful toxins are produced. Food preservation has both hygienic and economic aspects. From the point of view hygiene, food is preserved in order to prevent the formation of products which are harmful to the body. Many essential but perishable foods are preserved for the purpose of prolonging the period of availability. Oranges or tomatoes supply vitamin C from January to January. Green vegetables as well as the more stable root vegetables can be fresh or in cans at any time. Thanks to improved methods of food preservation, it is now possible for everyone at all times to have clean, wholesome food – a well-balanced diet.

For those who have studied bacteriology, the ravages of food by microorganisms make an old story. In all living tissues microorganisms are found which assist either in the growth of the plant or animal or in the decay. In addition the air, water, and all other substances with which food comes in contact contain microorganisms foreign to the natural food but capable of reacting the solutions present in it.

Thus any food is subject to either decay or spoilage by the growth of microorganisms. Our study of microorganisms will confine itself to a description of the different classes and the conditions which are favourable or unfavourable to their growth. There are three classes – molds, yeast, and bacteria. All are characterized by their extremely minute size and their wide distribution. Microorganisms multiply more rapidly at moderate temperatures – for the most part about 40 °C and their growth is checked at very low temperatures.

Microorganisms may multiply in two ways. In one, a microorganism splits off a part of itself which resembles the original organism in appearance and method of reproduction. In the other, a rounded mass called a spore is developed, which is unlike the parent form but will develop into a similar organism, provided the conditions for growth are favourable. A spore differs from the microorganism from which it comes in being more resistant to conditions unfavourable to growth. Whereas most microorganisms are destroyed by boiling water, many types of spores which have been held at high temperatures will later grow and multiply, when the conditions of their environment become more favourable for growth. For this reason spore-bearing organisms are more difficult to destroy than those which multiply by simple cell division.

1.5.4 Answer the following questions

What is food spoilage due to?

Why is food preserved?

Is it possible now for everyone to have clean, wholesome food at all times?

Any food is subject to either decay or spoilage by the growth of microorganisms, isn't it?

How many classes of microorganisms do you know?

Do microorganisms multiply more rapidly at moderate or low temperatures?

How may microorganisms multiply?

What is the difference between a spore and the microorganisms from which it comes?

1.5.5 Agree or disagree with the following statements. Give your reasons. Use:

For disagreement:

That's not quite right.

Oh no, quite on the contrary.

It says in the text ...

For agreement:

That's right.

Exactly.

I agree entirely.

1 Food spoilage is due to the growth of microorganisms in the food.

2 Microorganisms development produce, in some cases, harmless products; in others harmless but undesirable products, while, in still other cases, harmful toxins are produced.

3 It is no impossible for everyone at all times to have clean, wholesome food – a well-balanced diet.

4 Only in some living tissues microorganisms are found which assist either in the growth of the plant or animal or in the decay.

5 There are three classes of microorganisms which are characterized by their extremely minute size and their wide distribution.

6 All microorganisms are destroyed by boiling water.

7 Spore-bearing organisms are more difficult to destroy than those which multiply by simple cell division.

1.5.6 Give sentences of your own using the following words and word combinations

Moisture, appearance, yeast, mold, decay, cure, vinegar, can, bread, dough, minute, size, fermentation, nutritive value

1.5.7 Translate from Russian into English

1 Как известно, пищевые продукты быстро портятся.

2 Микроорганизмы делятся на несколько классов: плесень, дрожжи и бактерии.

3 В основном плесень образуется в темноте, но иногда и на свету. В большинстве случаев плесень прекращает расти, если она подвергается солнечному освещению.

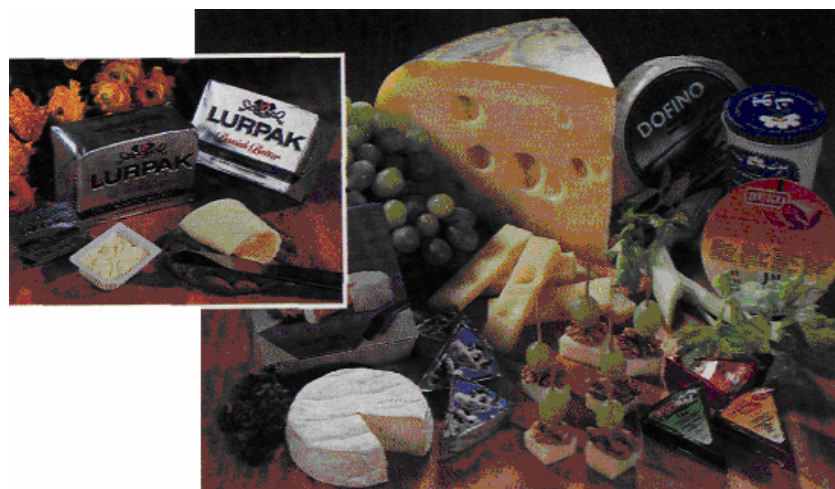
4 Вкус сыров и масла изменяется под воздействием бактерий.

5 С другой стороны, порча консервированных продуктов – мяса, молока, овощей – тоже происходит под воздействием роста бактерий.

6 Самый благоприятный способ хранения пищевых продуктов в холодильниках; в этом случае вкус, вид и питательная ценность продуктов изменяются незначительно.

7 Хранение сухих продуктов питания имеет свои преимущества: они занимают меньше места, а продолжительность их хранения не зависит от температуры.

1.5.8 Imagine that you're a head of a big restaurant. You've just read the advertisement about dairy products you're interested in. Ask questions about the production of this company.



MD Foods, which was founded in 1970, produces an extensive variety of dairy products. High quality, hygienic Danish dairy products and close co-operation with clients and business partners form the basis of our growing success.

Each year **MD Foods** produces about 200,000 tons of cheese and 50,000 tons of our famous Lurpak butter. Our assortment is tailored for leading retail chains, institutional as well as industrial clients. Our range of products also includes liquid milk, fresh yoghurt without preservatives, cream, etc.

Main figures

Dairies	40
Milk intakes (1,000 tons)	3,000
Owners (farmers)	9,500
Employees	6,800
Annual turnover (DKK million)	12,000
Export share	60%

Product range

- * Cheese
- * Butter
- * Milk products
 - Longlife milk and cream
 - Yoghurt
 - etc.

1.5.9 Get ready to speak on food as a subject of decay.

1.5.10 Role play "A Students' Party"

Setting: At a university hostel.

Situation: Two groups of Russian and British students decide to celebrate some holiday (Christmas, New Year, Easter, etc.) together and cook national dishes to treat each other. They cook, discuss the recipes, make others guess, what they have put into the dishes, and choose the best cooks.

Cards 1-7 – Russian students. They cook ravioli, borsch, Russian salad.

Cards 8-14 – English students. They cook a pudding, turkey, vegetables.

2 Milk and Milk Products

2.1 Lesson 1 Nutritional Value of Milk

2.1.1 Read the following words and word combinations. Mind their meaning

- 1 nutritious – питательный
- 2 versatile – многосторонний
- 3 mammal – млекопитающее
- 4 udder – вымя
- 5 species [spi:ʃi:z] – вид
- 6 insulating – изоляционный, изолирующий
- 7 reindeer – северный олень
- 8 consumption – потребление
- 9 nutrient – питательное вещество
- 10 disperse – распространять
- 11 globule – шаровидная частица
- 12 deflect – преломлять
- 13 ray – луч
- 14 opalescent – опаловый (имеющий молочный отлив)
- 15 abundant – богатый
- 16 skim milk – снятое молоко
- 17 constituent – составная часть, компонент
- 18 digestible – легко усваиваемый
- 19 carbohydrate – углевод

2.1.2 Read the words according to transcriptions and find them in the text

[ˈjɒgət] [brest] [ju:ˈni:k] [si:l] [ˈprəuti:n] [la:mə] [ˈbʌfələu] [ˈtekst] [læktəs]
[ˈkeisiin] [ˈmɔlikju:l] [pəˈtæsiəm] [ˈsəudiəm]

2.1.3 Read and translate the text

Nutritional Value of Milk

Milk, highly nutritious, versatile food. People enjoy drinking milk in its natural form and also use it to make a wide range of food products, including cream, butter, yogurt, cheese, and ice cream.

Female mammals produce milk to feed their newly born young. Milk is produced in the mother's mammary glands, which are found, for example, in the breasts of humans or the udders of cows, sheep, or goats. Each species of mammals produces milk with a unique composition designed to meet the specific needs of its infants. For instance, the milk of animals that need to develop a thick layer of insulating fat,

such as seals, has a high fat content. The milk of animals that grow rapidly, such as cows, which double their weight in 50 days, is rich in protein and minerals.

Humans drink the milk produced from a variety of domesticated mammals, including cows, goats, sheep, camels, reindeer, buffaloes, and llama. By far the vast majority of milk used for commercial production and consumption is from cows.

Most milk is composed of 80 to 90 percent water. The remaining 10 percent consists of an abundance of the major nutrients needed by the body for good health, including fats, carbohydrates, proteins, minerals, and vitamins.

Cow milk typically contains about 3.5 to 5 percent fat, which is dispersed throughout the milk in globules. In addition to providing milk's characteristic taste and texture, fat supplies vitamins A, D, E, and K as well as certain fatty acids that the body cannot produce on its own.

Lactose, a kind of sugar found only in milk, gives milk its sweet taste. Making up about 5 percent of milk's content, lactose is a carbohydrate that is broken down by the body to supply energy.

The most important protein in milk is casein, accounting for 80 percent of milk protein. Casein is a complete protein, meaning that it contains all of the essential amino acids, which the body cannot manufacture on its own. Casein molecules and globules of fat deflect light rays passing through milk, giving milk its opalescent appearance. Other proteins present in milk include albumin and globulin.

Milk contains many minerals, the most abundant of which are calcium and phosphorus, as well as smaller amounts of potassium, sodium, sulfur, aluminum, copper, iodine, manganese, and zinc. Milk is perhaps the best dietary source of calcium – one liter of milk supplies as much calcium as 21 eggs, 12 kg of lean beef, or 2.2 kg of whole wheat bread. Milk is an excellent source of vitamins A and B2. All other vitamins are present also, but in lower doses. Vitamin D is typically added to commercially sold milk. Vitamin A, which is found in the globules of fat, is removed when fat is skimmed away to make low-fat or skim milk. Generally, vitamin A is replaced during the production of commercially sold low-fat milk.

The great importance of milk in the diet is due to that fact that it contains most of the essential food constituents in easily digestible form.

2.1.4 Answer the following questions

What do people use milk for?

Is milk of animals rich in protein and minerals?

What is most milk composed of?

What is lactose?

Does milk include only casein?

What minerals does milk contain?

Why does milk have the great importance in the diet?

2.1.5 Give the corresponding English equivalents of

Составная часть, раствор, растворимый, нерастворимый, свертывание (коагуляция), творог, жировые шарики, сладкий творог с мускатным орехом и сливками, масло, сметана, сыворотка, простокваша, нерастворимые соли, свертываться, свернувшееся молоко, созреть, осадить.

2.1.6 Find in the text and prove that

- 1 Each species of mammal produces milk with a unique composition.
- 2 Fat supplies vitamins.
- 3 The most important protein in milk is casein.
- 4 Milk is the best dietary source of calcium.

2.1.7 Give sentences of your own using the following words and word-combinations

Constituent, content, ingredient, solution, soluble salts, flavour, whey, cream, to curdle, whip, curd, cottage cheese, butter

2.1.8 Complete the list with names of food or drink. Skip the letters X and Z

A – apple juice	N -
B –	O -
C –	P -
D –	Q -
E –	R -
F –	S -
G –	T -
H –	U -
I –	V -
J –	W -
K –	X -
L –	Y -
M –	Z -

2.1.9 Comment on the quotations

‘Tell me what you eat and I will tell you who you are.’

Anthelme Brillant-Savarin

‘Man is the only animal that can remain on friendly terms with the victims he intends to eat until he eats them.’

Samuel Butler

‘A gourmet is just a glutton with brains.’

Philip W. Haberman Jr.

‘Where the guests at a gathering are well-acquainted, they eat 20 percent more than they otherwise would.’

Edgar Watson Howe

‘The whole of nature, as has been said, is a conjugation of the verb to eat in the active and passive.’

William Ralph Inge

2.1.10 Get ready to speak on

- 1 Milk and its Composition.
- 2 Nutritional Value of Milk.

2.2 Lesson 2 Milk Products

2.2.1 Read the following words and word combinations. Mind their meaning

- 1 diet - пища, питание
- 2 solution – раствор
- 3 albumin –
- 4 acidity – кислотность
- 5 retail – продажа
- 6 whip – взбивать
- 7 curd – свернувшееся молоко
- 8 curds – творог
- 9 coagulation – коагуляция, свертывание
- 10 to ripen – созревать
- 11 variety – разнообразие
- 12 whey – сыворотка
- 13 churn – маслобойка, сбивать
- 14 lump – ком, крупный кусок
- 15 to pasteurize – пастеризовать
- 16 pathogenic – болезнетворный
- 17 butter milk - пахта

2.2.2 Find Russian equivalents to the following word combinations

- | | |
|----------------------------|-----------------------------------|
| 1 composition of milk | a. жировые шарики |
| 2 essential minerals | b. продукты распада |
| 3 soluble salt | c. растворимая соль |
| 4 insoluble salt | d. взбитые сливки |
| 5 to be held in suspension | e. молочно-кислые бактерии |
| 6 colour pigment | f. состав молока |
| 7 lactic acid bacteria | g. процесс созревания (молока) |
| 8 whipping cream | h. красящий пигмент |
| 9 cottage cheese | i. прессованный творог |
| 10 high percentage | j. в зависимости от породы коровы |
| 11 decomposition products | k. высокое процентное содержание |
| 12 fat globules | l. ценные минеральные вещества |

13 ripening process
14 according to breed of cow

м. нерастворимая соль
п. находиться во взвешенном
состоянии

2.2.3 Read and translate the text

Milk products

The amounts of various constituents in milk vary, from season to season, with the food of the cow and the breed.

The average percentage of water is 87. The carbohydrates present is lactose, which is held in solution along with minerals as soluble salts. The yellow colour of milk is due to the colour pigment of the fat, which, in turn, is derived from the green food eaten by the cow. The principal proteins present are casein and albumin.

Cream. The cream of milk is best separated by a centrifuge, which may be so regulated that cream of any desired fat-content may be obtained. Cream contains the same constituents as milk, but in a very different proportion. It resembles milk in many of its properties. Heat affects it in a similar fashion, and lactic acid bacteria develop in it, producing acidity. Cream intended for retailing is usually of two grades – heavy or whipping cream and coffee cream.

Whipping cream must contain not less than 30 per cent of fat and coffee cream not less than 18 per cent.

Cheeses. “The curd of milk which has undergone changes in its composition through the growth of microorganisms” is a fair definition of cheese. Most cheeses are made from the acid curds.

Cottage cheese represents the casein of milk separated by acid coagulation, along with a high percentage of calcium salts and fats. The water is not very thoroughly pressed out of this cheese so it contains many of the soluble salts of the milk. The curd produced by acid constitutes a green cheese, which must be allowed to “ripen”, undergoing marked changes in the constituents of the curd. The course of ripening depends upon the microorganisms present in the green cheese.

All cheeses may be considered as rich sources of protein and protein decomposition products, and of minerals, especially calcium. The composition of each cheese vary according to its preparation. Some contain more of the whey of the milk, or more of the fat of the milk, and these influence the percentage of other constituents. There are approximately 400 known varieties of cheese.

2.2.4 Answer the following questions

What kinds of milk do you know?

How can the cream of milk be obtained?

How are coffee and whipping creams differentiated?

Give the definition of cheese.

What does cottage cheese represent?

What other milk products do you know?

2.2.5 Pick up the right answer among those given below

- 1 The yellow colour of milk is due to the ...
 - * fat globules.
 - * proteins.
 - * colour pigment.
- 2 Lactic acid bacteria developed in cream produce ...
 - * acidity.
 - * sweetness.
 - * flavour.
- 3 Cottage cheese represents the casein of milk separated by ...
 - * lactic coagulation.
 - * acid coagulation.
 - * pasteurization.
- 4 The course of ripening of green cheese depends upon ...
 - * decomposition products.
 - * soluble and insoluble salts.
 - * microorganisms.

2.2.6 Make up sentences joining the given parts of them

- | | |
|--|---|
| 1 The amounts of constituents in milk depends upon ... | a. ... from the acid curds. |
| 2 The legal amount of water in a butter is ... | b. ... to its preparation. |
| 3 The cream of milk is best separated ... | c. ... less than 16 per cent. |
| 4 Most cheeses are made ... | d. ... the season and the breed of cow. |
| 5 The composition of each cheese will vary according ... | e. ... by a centrifuge. |

2.2.7 Translate the following sentences from English into Russian

- 1 Milk and milk products are available in many forms.
- 2 Fresh fluid milk is almost always pasteurized.
- 3 Evaporated, dry, frozen, condensed and fermented milk (butter-milk and yogurt) are used in preparation of food.
- 4 Evaporated skim milk may be diluted with an equal amount of water and used like fresh skim milk.
- 5 You can use dry milk in addition to fluid milk to increase the nutritive value.
- 6 Consumer interest in yogurt and yogurt products has reached an all-time high and now is still be climbing.
- 7 To improve the vitamin content of milk, many dairies add vitamin D either by special food given to the cows or by addition to the milk.

2.2.8 Find out what the following idioms mean matching the two parts

- | | |
|---|---|
| 1 to bite off more than one can chew | A. to have a lot of tasks |
| 2 to take something with a pinch of salt | B. extremely rich in producing food |
| 3 to have a lot on one's plate | C. to be sold out very quickly |
| 4 to know which side one's bread is buttered on | D. to make an unpleasant thing seem less so |
| 5 flowing with milk and honey | E. not to believe entirely |
| 6 to sell like hot cakes | F. to be an unwanted member of a trio |
| 7 a storm in a tea-cup | G. where one is in a position of advantage |
| 8 to sugar the pill | H. for certain |
| 9 to play gooseberry | I. to attempt to do more than one can |
| 10 as sure as eggs is eggs | J. disturbance over a trifling matter |

2.2.9 Get ready to speak about milk products

2.2.10 Text for written translation

Butter

If cream is whipped or churned for a long time, the fat globules combine, and fat separates out in lumps which include some of the proteins, milk sugar and salts with a considerable quantity of water adhering. This mass is essentially butter. Most of the butter on the market is made from pasteurized cream to which a starter (a culture of bacteria) has been added. The main purpose of pasteurization is to reduce the number of microorganisms which might be pathogenic or produce undesirable flavour in the butter.

Milk with known content of lactic acid bacteria is added to start the "ripening" of the pasteurized cream. During the ripening process compounds are produced which give butters their characteristic flavours. At the same time, the lactic acid produced aids in the more complete separation of fat from the other constituents of cream (butter-milk). After the ripening process, the cream is churned to separate the fat. The amount of colouring matter to be added depends upon the amount of natural colour in the cream, and this varies according to breed of cow and the amount of green food consumed by her. The separated fat is washed to remove the adhering buttermilk, but carefully, as too much washing produces a flat-tasting butter. Salt is now added for three reasons: it helps in the removal of buttermilk, it enhances the flavour of the butter, and it improves its keeping qualities. The amount of salt added varies with the amount of water left in the butter; the more water the more salt. The legal amount of water in butter is less than 16 per cent.

2.3 Lesson 3 History of development of the dairy industry in our country

2.3.1 Read the following words and word combinations. Mind their meaning

- 1 landlord - помещик, землевладелец
 2 to exceed – превышать, быть больше

- 3 output – выработка. выпуск
- 4 annual – ежегодный
- 5 gross – валовой
- 6 milk yield – надой молока
- 7 prior to – раньше, до
- 8 craft – ремесло
- 9 improvement – улучшение
- 10 steady – постоянный
- 11 efficient – эффективный, продуктивный
- 12 to account for – составлять определенную часть
- 13 collective (state) farms – колхоз (совхоз)
- 14 purchase – закупка, приобретение
- 15 share – доля, часть
- 16 live-stock – домашний скот
- 17 to attach – прикреплять
- 18 scale – масштаб
- 19 treatment – обработка
- 20 to own – владеть, обладать
- 21 simultaneously – одновременно
- 22 fluctuate – колебаться, меняться
- 23 to amount - составлять, равняться

2.3.2 Pronounce the following words correctly

Organization, private, major, export, adequate, ton, mechanized, source, technology, productivity, consolidation, mechanize, apparatus, Ukrainian, Georgian, Moldavian, hygienic

2.3.3 Read and translate the text

History of development of the dairy industry in our country

Industrial processing of milk in Russia began at the end of the 18th century with the organization of cheese production on landlords' farms. Later, at the end of the 19th century, butter making began to exceed cheese making. An important role in butter making was played at that time by small producers' dairies side by side with private capital. The major part of the butter production was exported to the countries of Western Europe because of the absence of an adequate home market.

There was practically no whole milk production at that time in Russia. Thus, in 1913 milk plants with a total output of 100 tons milk per day existed only in six towns in our country. Altogether there were in 1913 only 6,900 small, nonmechanized milk processing plants, their annual volume of milk processing reaching only 2.3 million tons, i.e. 7% of the gross milk yield.

As will be seen from the above, industrial processing of milk in Russia prior to 1917 was a backward branch of national economy, and is usually described as a primitive domestic craft.

The considerable improvement in the material well-being of the Soviet people, the steady increase of sources of raw milk in our country and the wide introduction of modern highly efficient equipment and up-to-date technology at our dairy plants accounted for the rapid development of the dairy industry.

Collective and state farms played an important role in state purchases of milk; their share in 1953 was 71% and in 1963, 94.6%.

An increase in milk production in our country came as a result of the increase in live-stock, on the one hand, and of the increase in milk productivity, on the other.

The consolidation of our dairy farms attached to the state and of the collective farms made it possible to mechanize on a wider scale the process of milking and milk treatment on these farms. More than 127 thousand sets of milking apparatus were owned by the state and collective farms and made it possible to milk simultaneously 13-14 million cows.

Milk was paid for on the basis of its fat content, the calculations being made in accordance with its basic fat content in one ton (kilogramme) and cream was paid on the basis that the fat content of 1 kg of cream must amount to 10%. Thus, the price for milk and cream fluctuated depending on their fat content.

Basic fat content was different in different Republics of the Soviet Union, a certain average having been fixed for each. Thus, for the Russian Soviet Federative Socialist Republic it amounted to 3.7%; for the Ukrainian Soviet Socialist Republic and for the Georgian Soviet Socialist Republic this figure was 3.6%; and for the Moldavian Soviet Socialist Republic the average figure was 3.5%. The actual fat content of milk in our country in 1962, was 3.68% on the average.

Milk delivered to state dairy plants possessed the following physical and chemical as well as hygienic properties: fat content not less than 3.2%, density not less than 1.027; acidity not more than 3.2%, 20°T; temperature not exceeding 10-15°C.

2.3.4 Answer the following questions

When did industrial processing of milk begin in Russia?

Was the major part of the butter production exported to the countries of Western Europe?

How many milk processing plants were there in 1913?

What accounted for the rapid development of the dairy industry?

Did collective and state farms play an important role in state purchases of milk?

What was milk paid for?

Milk delivered to state dairy plants possessed the following physical, chemical and hygienic properties, didn't it?

2.3.5 Fill in the blanks with the suitable words from the text

1 At the end of the 19th century, butter making began cheese making.

- 2 There was practically milk production at that time in Russia.
- 3 Industrial processing of milk in Russia 1917 was a backward branch of national economy.
- 4 Collective and state farms share in 1953 was ...% and in 1963, ...%.
- 5 More than 127 thousand sets of milking were owned by the state and collective farms.
- 6 Basic fat was different in different Republics of the Soviet Union.

2.3.6 Choose the right answer among those given below

- 1 Industrial processing of milk in Russia began at the end of the 18th century with the organization of production on landlords' farms.
 - * butter
 - * cheese
 - * cream
- 2 In 1913 milk plants with a total output of 100 milk per day existed only in six towns in our country.
 - * kilogrammes
 - * tons
 - * pounds
- 3 and state farms played an important role in state purchases of milk.
 - * landlords'
 - * collective
 - * private
- 4 An increase in milk production in our country came as a result of the increase in
 - * sources of raw milk
 - * equipment
 - * live-stock
- 5 More than 127 thousand sets of milking apparatus were owned by the state and collective farms and made it possible simultaneously 13-14 million cows.
 - * to milk
 - * to breed
 - * to clean
- 6 Price for milk and cream fluctuated depending on their content.
 - * vitamins
 - * fat
 - * carbohydrates

2.3.7 Look at the different dishes in the pictures. Match the dishes with the countries below.

1 – Italy

India Italy the United States Mexico Spain Morocco Japan



2.3.8 Ask and answer about each dish. Follow this example:

A: Picture 1. What's it called?

B: It's a pizza.

A: Which country is it from?

B: It's from Italy.

A: What are the ingredients?

B: Flour, cheese, tomatoes, mushrooms and oil.

2.3.9 Highlight the meanings of the English proverbs and make up situations to illustrate them

1 Forbidden fruit is sweet.

- 2 Tastes differ.
- 3 Honey is sweet but the bee stings.
- 4 Take it or leave it.

2.3.10 Get ready to speak about the history of dairy industry in our country.

2.4 Lesson 4 The structure of the dairy industry in our country.

2.4.1 Read the following words and word combinations. Mind their meaning

- 1 to deliver – поставлять, доставлять
- 2 batch – партия
- 3 acidity – кислотность
- 4 tank – цистерна, бак
- 5 vessel – сосуд
- 6 respectively – соответственно
- 7 sample – проба
- 8 reduction – изменение состояния
- 9 contamination – загрязнение
- 10 density – плотность
- 11 to attach – назначать, прикреплять
- 12 detergent – очищающее, моющее средство
- 13 procurement – поставка
- 14 provided – при условии, в том случае, если
- 15 schedule - план, график

2.4.2 Read the words according to transcriptions and find them in the text

[plɑ:nt] [ˈlikwid] [weit] [ˈmeʒə] [ˈintəvl] [mæˈstaitis] [ˈpraivət] [ˈdaʊtfl]
[ˈteknɪkl] [maɪkrəʊbaɪˈlɒdʒɪkl] [ˈkwɔlɪti] [ˈpækɪd] [ˈvetrənəri] [ɜ:ˈθɔrəti]

2.4.3 Read and translate the text

The structure of the dairy industry in our country

The processing of milk is carried out in the following plants: butter-making, cheese-making, city milk plants producing liquid milk, as well as farm plants, condensed and dried milk plants. Dairy farms deliver milk, as a rule, directly to the plant.

Before being delivered to the plant the milk is to be filtered and cooled. Each batch of milk is delivered together with the document which indicates the weight, fat content, acidity, temperature and the time of delivery. Acidity is checked in each tank or vessel respectively, and the fat content is measured in each batch of milk, the sample being taken from each vessel; the temperature is measured selectively. Reduction test and contamination test are carried out once in ten days. The density of

milk, and other characteristics are checked at regular intervals. Mastitis, brucellosis and other tests are also carried out.

Milk from private farms is analyzed for fat content, contamination and density are checked not less than once in ten days, and acidity is checked only in doubtful cases.

Special departments of technical control have been organized at dairy plants chemical and microbiological laboratories attached to them. The chemical laboratory is responsible for the tests of both milk properties and its quality as well as the tests of milk products; it is to control all technological processes, packaging materials, the concentration of detergents and the finished products. The microbiology laboratory carries out sanitary inspection (inspection of the apparatus, its sanitary condition, cleanliness of the personnel and the pasteurization effect).

2.4.4 Answer the following questions

Where is the processing of milk carried out?

What tests are carried out before?

How is milk from private farms analyzed?

What is the chemical laboratory responsible for?

What inspections does the microbiology laboratory carry out?

2.4.5 Agree or disagree with the following statements. Give your reasons. Use:

For disagreement:

That's not quite right.

Oh no, quite on the contrary.

It says in the text ...

For agreement:

That's right.

Exactly.

I agree entirely.

1 There are different dairy plants in our country.

2 Each batch of milk is delivered without documents.

3 Acidity is checked in each tank or vessel respectively.

4 Reduction test and contamination test are carried out once in five days.

5 The chemical laboratory carries out sanitary inspection.

6 The microbiology laboratory is to control all technological processes, packaging materials, the concentration of detergents and the finished products.

2.4.6 Put in the missing prepositions looking for help in the text.

1 Dairy farms deliver milk, as a rule, directly ... the plant.

2 Before being delivered ... the plant the milk is to be filtered and cooled.

3 The fat content is measured in each batch of milk, the sample being taken ... each vessel.

4 Reduction test and contamination test are carried ... once in ten days.

5 Milk from private farms is analyzed ... fat content, contamination and density are checked not less than once in ten days.

6 Special departments of technical control have been organized ... dairy plants chemical and microbiological laboratories attached ... them.

2.4.7 Match the phrases in the left column with the words in the right column

- | | |
|---------------|------------------|
| 1 a bottle of | A. jam |
| 2 a packet of | B. parsley |
| 3 a drum of | C. toothpaste |
| 4 a cake of | D. cleanser |
| 5 a carton of | E. juice |
| 6 a jar of | F. chocolates |
| 7 a tin of | G. eggs |
| 8 a tube of | H. honey |
| 9 a bunch of | I. sugar |
| 10 a box of | J. soap |
| 11 a tub of | K. luncheon meat |

2.4.8 Think and say what else can be sold in cartons, bunches, etc.

- | | |
|-------------|------------|
| a bottle of | a drum of |
| a carton of | a bunch of |
| a packet of | a jar of |
| a tin of | a box of |

2.4.9 Exclude from the lists below products which cannot be sold as prepared, frozen, dried, tinned

pre-prepared	frozen	dried	tinned
garlics	cherries	bananas	flour
steaks	onions	fish	pork
fish fillet	turkey	meat	peaches
potatoes	bread	ham	lettuce
tomatoes	spaghetti	plums	tuna

2.4.10 Get ready to speak about the structure of the dairy industry in our country

2.5 Lesson 5 When you cook

2.5.1 Read the following words and word combinations. Mind their meaning

- 1 superior – лучший, высшего качества
- 2 ally – союзник
- 3 flavour – вкус
- 4 to modify – смягчать, видоизменять
- 5 salad dressings – приправа к салату
- 6 tenderness – мягкость, нежность
- 7 pastry – кондитерские изделия

- 8 homogenized milk – гомогенизированное молоко
- 9 to treat – обрабатывать, подвергать действию
- 10 tiny – очень маленький, крошечный
- 11 evaporated skim milk – сухое обезжиренное молоко
- 12 off-flavour – безвкусный
- 13 to decompose – разлагать на составные части
- 14 fermented – заквашенное
- 15 to caramelize – карамелизовать
- 16 custard – заварной крем
- 17 condensed milk – сгущенное молоко
- 18 interchangeable – равнозначный
- 19 to curdle – свертывать(ся)
- 20 gravy – подливка, соус

2.5.2 Pronounce the following words correctly

Effort, major, to bind, bread, pasteurized, pressure, ingredient, recipe, yoghurt, dessert, granular, texture

2.5.3 Read and translate the text

When you cook

You can prepare better food if you know what goes on in the food you are preparing and why things happen as they do. Foods change physically and chemically during cooking. If you know their composition and structure you can control these changes and have superior products from your efforts. Protein, fats, and carbohydrates are your major allies (and may be problems) in cooking.

Fats give flavour and richness to foods, in which they occur naturally, as in milk, eggs, and meat, and the foods to which they are added, as in vegetables, baked products, and salad dressings. They are used to fry or to cook foods and to add tenderness to breads, cakes and pastry.

Carbohydrates have a part in thickening, tenderizing, or sweetening cakes, breads, candies, ice cream, and other foods.

Each group of foods has its own chemical and physical properties that determine the best method of preparing or cooking it. Eggs are highly useful in cooking. They give colour and flavour and hold other ingredients together.

Milk and milk products are available in many forms. Fresh fluid milk is almost always pasteurized. It may be homogenized – treated under pressure to reduce the size and increase the number of tiny fat globules so they will rise to the top as cream.

Low cooking temperatures are recommended when milk is a main ingredient of recipe. Long cooking at high temperatures coagulates some protein, causes an off-flavour in the milk, and caramelizes the lactose that is, it decomposes or breaks it down into simpler compounds. The milk gets a brown colour.

You can use most forms of milk in place of fresh, whole milk in recipe. Exceptions are buttermilk and yoghurt, which might give an unwanted flavour, and sweetened condensed milk, which contains such a high percentage of added sugar that it is used almost entirely in making candy, cookies, and desserts.

Homogenized milk may be used interchangeably with non-homogenized milk in a number of dishes. Cornstarch puddings made with homogenized milk are more granular. Homogenized milk tends to curdle more readily than nonhomogenized milk in soups, gravies, scalloped potatoes, cooked cereals, and custards.

Evaporated skim milk, one of the newer forms of milk, may be diluted with an equal amount of water and used like fresh skim milk. Cereal products are cooked to absorb water, soften the texture, modify the starch and protein, and develop full flavour.

2.5.4 Answer the following questions

When can you control physical and chemical changes in foods during cooking?

What are our major allies in cooking?

What do proteins help during cooking?

What do fats give to foods?

What are carbohydrates functions in food?

What temperature is recommended in cooking when milk is a main ingredient of recipe?

What occurs in the milk during long cooking at high temperatures?

What kinds of milk may be used in place of fresh whole milk in recipe?

2.5.5 Find in the text and prove that

1 Foods change physically and chemically during cooking.

2 Milk and milk products are available in many forms.

3 Buttermilk and yoghurt can't be used in a recipe.

4 Homogenized milk and evaporated skim milk may be used in a number of dishes.

2.5.6 Give sentences of your own using the following words and word-combinations

Pastry, tenderness, gravy, salad dressing, property, ingredients, fresh fluid milk, off-flavour, sweetened condensed milk, cereal products, a number of dishes, full flavour

2.5.7 Translate into Russian

1 In the preparation of pastry, fat is worked into the flour and water added in amounts sufficient to hold all together.

2 Tenderness results from the separation of most of the flour particles by fat.

3 When ordinary egg white is heated, coagulation of the protein takes place because the egg white has the ions necessary to precipitate the denatured protein.

4 Within recent years it has been definitely proved that, with the exception of potato starch, raw and cooked starches are equally well digested.

5. Milk which is not perfectly fresh may curdle when it is scalded, although there was no suspicion of sourness before heating.

6 Raw apples and other light-coloured fruits often darken from exposure to air when they are cut.

2.5.8 Look through the list of products and say which of them are sold in Russia:

1) by the kilo,

2) by quantity,

3) by tens.

Fish, carrots, kiwi, meat, eggs, pineapples, sausages, rye bread, oranges.

Look through the list of products and say which of them are sold in Great Britain:

1) by lbs (pounds),

2) by quantity,

3) by dozens.

Cheese, lemons, grapes, white bread, ham, mangoes, eggs, potatoes, chickens.

2.5.9 Discuss this text in your dialogues. Work in pairs.

Some milk for everyone every day:

Children 3 to 4 cups

Teen-agers 4 or more cups

Adults 2 or more cups

There are plenty of ways to get milk into meals. Many people never tire of drinking milk – plain or in flavoured beverages, hot or cold.

Many get of their daily quota of milk by using it on cereals.

Cooked foods and other prepared foods offer additional way to get part of the recommended amount of milk.

In food prepared with milk each serving can provide: $\frac{1}{2}$ to 1 cup of milk in soups and chowders. $\frac{1}{4}$ to $\frac{1}{2}$ cup of milk in scalloped or creamed vegetables, meat, fish or eggs. $\frac{1}{4}$ to $\frac{1}{3}$ cup of milk in desserts such as ice cream, puddings, custards, and cream pies.

You can step up the milk included in many foods that contain fluid milk by adding non-fat or whole dry milk.

Four tablespoons of dry milk added to each cup of fluid milk used in a recipe doubles the milk content of the dish.

Poudings and the pie filling made with evaporated milk carry more milk into meals if 2 or more parts of evaporated milk are added to 1 part of water instaed of the usual 1-to-1 proportion. Cheese, too, provides many opportunities for adding milk value to dishes.

2.5.10 Get ready to speak on

- 1 Physical and chemical changes during cooking.
- 2 Milk's role in food cookery.

3 Texts for supplementary reading

Yeasts

Yeasts, unlike molds, will grow only on foods containing sugars. The reaction called fermentation changes the sugar to alcohol and carbon dioxide with minute quantities of other products. Although yeasts will grow only in the presence of sugar, they may be found widely distributed.

The mixture of various kinds of yeasts present everywhere in the air is called wild yeast. Yeasts multiply either by spores or by cell division. Among the essentials for the growth of yeasts are sugar, oxygen, water and certain inorganic salts such as those of calcium, nitrogen, and sulphur. They are easily destroyed by high temperatures (100 °C). The alcohol which they produce in their life processes slows down and, finally, completely checks further growth. For this reason beverages of high alcoholic content can be obtained only by distillation.

In strong sugar solution yeasts multiply slowly.

All fruit juices are subject to fermentation, unless the yeasts which they naturally contain are destroyed, which may easily be done by bringing the juices to boiling temperatures and sealing in clean containers while hot. Apple juice which ordinarily becomes "hard" in a few days may be kept for months or years this method.

Bacteria

Although there are many properties which are characteristic of all bacteria, the differences in the behaviour of the different kinds of bacteria are greater than those of the different kinds of yeasts and molds.

Bacteria are widely distributed. Like yeasts and molds, they may be found anywhere — in the air, water, soil, and in all foods. In a less acid medium they multiply most rapidly, and, therefore, it is the less acid foods which are most subject to bacterial decomposition. The products of decomposition vary with the kind of food and the kind of bacteria. While in most cases we wish to decrease the bacteria content, certain foods are made desirable by products of bacteria growth. Sauerkraut owes its flavour and physiological effects to the lactic acid which is produced by the microorganisms in the course of its preparation. The flavours of cheeses, butter, and butter substitutes are also products of bacterial activity. On the other hand, the spoilage of canned foods (консервированные продукты), meats, milks and vegetables is also due to the products of bacterial growth.

Bacteria require moisture for growth. Exposure to sunlight for sufficient length of time destroys bacteria but not their spores. The temperature for optimum growth will vary (20 to 55 °C) with the kind of bacteria. Bacteria are more difficult to destroy than the other microorganisms.

The methods of food preservation may give temporary preservation by checking the growth of microorganisms or permanent preservation by destroying them.

Refrigeration or cold storage is the most common method of temporarily preserving food. Indeed, it is one of the most satisfactory of all methods of food preservation, as it does not markedly alter either the taste, appearance, or nutritive value of the food. Refrigeration is practised in the home and commercially. It is most successful with the foods which are least subject to bacterial decomposition, but other foods may be preserved a long time if freezing temperatures are used. Fish and animal products can be kept only by refrigeration at very low temperature. Considerable success is now being experienced in the preserving of fish and meat and of many fruits and vegetables by freezing. New methods of freezing and better storage facilities for frozen products have improved the flavour and texture of the food so treated.

The electric refrigerators are somewhat colder and contain drier air and are, therefore, more successful for the preservation of foods which are subject to bacterial growth.

Drying

Drying has been a means of food preservation for centuries and is still used for many foods. It promotes preservation by removing the water essential for the growth of all microorganisms. We find in the market dried fruits, milks, meats, and vegetables, but the varieties of each are few.

The method of drying varies greatly with the food. Foods containing sugar require less drying than others. Within the last few years, intensive efforts have been made to produce dried products which are not only clean but also will resemble fresh foods in appearance and nutritive value.

Dried foods occupy less storage space and may be stored without consideration of temperature. Most dried foods require soaking before cooking in order to restore the water lost by drying. The dried foods most commonly used are prunes, raisins, currants, apples, apricots, peaches, figs, dates, beans, fish, beef, and mushrooms.

Chemical preservation

Many foods are preserved by the use of added substances, which destroy or check the growth of microorganisms. Although many chemicals are known which could be used to help in the preservation of foods, few are allowed by government authorities.

Among the legal chemicals are benzoic acid and sodium benzoate. Sulphur dioxide (SO_2) and sodium bisulphate (NaHSO_3) are used in dried fruits such as apples, because the darkening of the fruit is lessened by their presence. These sulphur compounds have also a preserving action.

Smoke contains phenols which help in the preservation of smoked products. The preserving action of cloves and cinnamon depends upon their eugenol or cinnamic aldehyde content.

Potassium nitrite and potassium nitrate, used in the curing (“corning”) of pork and beef, improve the taste and redden the colour. They have no preservative effect.

Salted products are usually partly dried as well as salted. Common examples are found in chipped beef and salt codfish. Less drying is necessary when salt is used, as the concentrated salt solution preserves by osmosis.

Canning

Canning is the most common form of food preservation. Preservation is insured by the use of sufficient heat to destroy all microorganisms which might develop in the canned product during storage. The temperature in the canning of food depends upon several factors, the hydrogen-ion concentration of the food, the number of microorganisms present in the uncooked food and the rate at which heat can penetrate the food to be canned.

It has already been stated that bacteria and their spores become less resistant to heat as the hydrogen-ion concentration of the media increases. Consequently, foods of high hydrogen-ion concentration may be preserved either by a low temperature for a long time or by a short heating period at a high temperature. In canning, boiling temperature 100 °C is considered low, 115 to 119°C high.

It may be noted that foods of high acid concentration require either less time, or lower temperature, or both, than the less acid foods.

The time allowed for processing is governed not only by the hydrogen-ion concentration but also by the rate at which the heat penetrates into the food. It is well known that metals are better heat conductors than asbestos.

Experiments have shown that the rate of heat penetration is governed by a number of factors, some of which are more predictable than others. It goes without saying that the food in the centre of a glass jar will take longer to reach sterilization temperature than that in a tin, can, that large-size containers require a longer time than small, that food which is processed at 115 °C reaches 100 °C sooner than that processed at 100 °C, and that a jar of cold food requires a longer period than one of preheated food.

Formerly it was thought that this treatment "set the colour and flavour" of the food, but now it is known that blanching has no such exalted position in the 'canning ritual but serves merely to reduce the bulk (spinach), or to help remove the skins (tomatoes, peaches, beets), or to set vegetable protein solution (corn).

The cook-in-the-kettle method consists in cooking the food in an open kettle until all has reached sterilization point, or longer if desired. The food is then packed and sealed in clean sterile jars. From a bacteriological point of view it is obvious that this method of canning is applicable only to foods which provide a poor medium for the growth of microorganisms, such as acid fruits or fruits in sugar syrup. It has certain advantages over the other method in that it requires less apparatus and usually less time.

The cook-in-the-can method describes itself. Food to be canned is washed, blanched if necessary, cut into suitable pieces, and placed in either tin cans or glass jars. Hot water, usually containing either salt or sugar, or both, is added to fill completely the can or jar, which is placed in a suitable cooker to destroy the

microorganisms present. Tin-canned food is sealed before processing. All food which is commercially canned in tin cans is heated previous to sealing.

Storage of Canned Food

While every effort is made to destroy the microorganisms of the food during the processing, it should be remembered that if any spores resist the temperature of the cooker, then development will be hindered by storing the canned food at low temperatures. Low temperatures are also unfavourable to the reactions which take place between the food and the tin or iron. It has been shown that the natural colour of fruits is preserved much better by storing fruits in a warehouse at 0 °C, than at higher temperatures, no discolouration being observable after two and a half years of storage. It is recommended, therefore, that canned food which is not to be used within a very short time should be stored at a temperatures as near 0 °C as possible.

Canned food is graded. Many labels on canned foods do show a grade for the product. Definitions of these grades are given as follows: the fancy grades (высший сорт (экстра)) use uniformly perfect fruit in the best state of ripeness and of the largest size. The fruit is packed in a thick syrup. Cans of choice grade (лучший сорт (отборный)) fruit contain nearly perfect fruit of average size in a medium syrup. Standard grade uses smaller, less uniform fruit in a thinner syrup.

In addition to these, there are two lower grades which are used largely for cooking.

Butter

Butter has been used for various purposes since 2000 B.C. or before. Its use as a food is modern. In the early centuries butter was offered as a sacrifice in worship or used for medical purposes in skin diseases. During the seventeenth century it could be purchased in shops but was sold "for external use only". Later it was used as flavouring for foods.

Uses of butter in cookery. The use of butter in cookery has decreased considerably in the last 15 years. Its advantages and disadvantages are more accurately weighted. It is the most expensive fat, being two and three times more expensive than others. Sufficient quantities of fats are used in the average home to make it worthwhile to substitute for butter wherever it is wise. Butter still holds place of honour where the flavour of the fat is of importance to the flavour of the food. More of butter than of any other fat must be used in cookery, as its fat content seldom exceeds 85 per cent. Many cooks, who use a less expensive fat than butter in their cakes, grease the cake tin with butter fat. The fat of the cake itself is so intimately mixed with the starch and other constituents that its flavour is masked, but the absorbed film of butter fat on the outside makes the first bite of cake more pleasing if butter is used on the pan. On the other hand, the presence of other constituents besides the fat makes butter a poor fat with which to grease pan. The protein present coagulates and sticks to the pan while the water occupies space where fat should be.

If butter is to be used for greasing a pan, either the butter fat only or a thick coating of whole butter should be used.

Shortening power of fats

It has already been shown that fats differ considerably in keeping qualities and in their value in frying. Similarly, we find variations in shortening power of fats. Many experiments have been done to test this variations. Strange as it may seem, the scientists, basing his results on accurate impersonal tests, agrees very closely with the bakers who draw their conclusions from years of practical experience.

To visualize how a fat acts in a baked product helps us to understand its shortening power. When flour is mixed with milk or water, the starch is held in a meshwork of developed gluten. This mass is elastic, and when baked is a tough product to break. When fat is added to the ingredients, the results are different as the fat prevents the gluten from forming a mesh-work structure. The fat is not soluble in any of the ingredients. When cold it is absorbed by the gluten as a film and separates the particles it surrounds. During the baking the starch similarly absorbs the fat. A good deal of the water passes off, but the fat remains surrounding or partly absorbed by, the particles of gluten and the starch granules. The tenderest product is one in which the fat has surrounded the largest surface of gluten and starch. Since fats differ in their susceptibility to absorption, it is obvious that the same amount of different fats will shorten more or less well.

Manufacture of margarin

Oleomargarin is made from animal and vegetable fats, churned with milk. The principal oils used are oleo oil, neutral lard, peanut oil, cottonseed oil, and coconut oil.

One of the most important steps in the manufacture of margarin is the churning, the temperature of the mixture in the churn depending upon the formula used. In general, such a temperature should be used as will create a perfect emulsion of the milk and oils; 80° to 85 °C is often employed for white goods or even a somewhat colder temperature, while for natural colour goods a little higher temperature is usually employed, so as not to destroy the colour.

Two general methods of crystallizing the emulsion are used, one the vat method and second the sluice method. The advantage of the second is that the crystallized margarin gravitates directly into trucks, whereas in the vat method it must be removed by manual or mechanical labour.

Ripening

After crystallizing, some manufacturers have allowed the margarin to ripen further, in order to develop flavour, the time required for this being about twelve hours at a temperature of 70 °C. This, however, depends upon the grade of goods.

Other manufactures immediately put their goods onto the workers, salt them, and print and package them, allowing the flavour to develop during transit.

In general, it may be said that the fresher the goods gets to the buying public the better. The working of the goods has an important bearing on the consistency and body of the same European methods having been developed much further along this line than the average American methods. The latter are being rapidly improved, however.

A good oleomargarin should contain about 2½ per cent of salt, 13½ per cent of moisture and ½ of 1 percent of casein, and it should also have a smooth, uniform velvety body, with no trace of visible moisture. The flavour of the product is the most important thing to consider, a clean, acid buttermilk flavour being most desirable.

Fruits and vegetables

Fruits and vegetables are made up chiefly of cellulose, hemicellulose, and peptic substances that give them texture and form. Starch, sugar, acids, minerals, and vitamins are present in varying amounts. Many changes take place when a fruit or vegetable is cooked. The flesh is softened by alteration of the cell structure. In starchy vegetables (овощи, содержащие крахмал), like potatoes, the starch gelatinizes during cooking; pectins, proteins and hemicellulose also change. In frying potatoes and other vegetables, some of the sugar is caramelized. Colouring pigments also undergo chemical change when heat is applied.

Fruits tend to keep their shape better in a sugar syrup because the syrup attracts water from cells through osmotic pressure and leaves a more dehydrated cell structure. Sugar is absorbed into the fruit only after the tissues are softened by cooking. Many fruits, like apples, plums, peaches, and apricots, can be cooked in water to soften it, and then the sugar is added to the fruit puree.

Vegetables are more vulnerable to mistreatment in cooking than many other foods. For the best in colour, texture, and flavour, one should cook all vegetables the shortest time possible because they are less palatable when they are overcooked.

The commonest method of cooking fresh or frozen vegetables is in a small amount of water in a tightly covered saucepan. For many leafy vegetables, like spinach and shredded cabbage, the cooking time is less than 5 minutes. Other methods of cooking vegetables include baking, braising, steaming, and frying.

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