ДОНСКОЙ ГОСУДАРСТВЕННЫЙ ТЕХНИЧЕСКИЙ УНИВЕРСИТЕТ

УПРАВЛЕНИЕ ДИСТАНЦИОННОГО ОБУЧЕНИЯ И ПОВЫШЕНИЯ КВАЛИФИКАЦИИ

Кафедра «Научно-технический перевод и профессиональная коммуникация»

# Учебно-методическое пособие

по английскому языку для студентов направления
19.03.02 «Продукты питания из растительного сырья»
по дисциплине

# «Иностранный язык в профессиональной сфере»

Авторы
Грицай И.П.,
Бойко А.К.

Ростов-на-Дону, 2017

## Аннотация

Данное учебное пособие предназначено для студентов направления 19.03.02 «Продукты питания из растительного сырья», изучающих дисциплину «Иностранный язык в профессиональной сфере (английский)». Авторы пособия предлагают задания на развитие навыков изучающего и ознакомительного чтения, а также формирование коммуникативной компетенции в сфере профессионального общения.

## Авторы

ст.преп. кафедры «НТП и ПК»
Грицай И.П.
к.ф.н., доц.каф. «НТП и ПК»
Бойко А.К.

# Оглавление

# UNIT 1. BREAD PRODUCTION

*Exercise 1. Read and remember the pronunciation of the words.*

weat [wi:t] - пшеница
barley [ba:li] - ячмень
bakers's yeast [ˈbeikə ˈjist] – пекарские дрожжи
grain [grein] - зерно
flour [ˈflauə] - мука
pour [pɔ:] - литься
gluten [ˈglu:tən] – клейковина, растительный белок
elastic [iˈlæstik] – упругий, гибкий
fermentation [ˈfɜ:menˈteɪʃən] – брожение
molding [ˈməʊldin] - опрессовка
baking [beɪkɪŋ] - выпекание
conveyer [kənˈveuə] - транспортер
glycerine [glɪsəˈrɪ:n] - глицерин
rye [raɪ] - рожь
grinding [ˈgraɪndɪŋ] – шлифование

*Exercise 2. Words and phrases to remember.*

Three basic ingredients – три основных ингредиента
White flour – белая мука
Grain mill – мукомольная мельница
Additional ingredients – дополнительные ингредиенты
Industrial mixer – промышленный смеситель
A pre-measured amount of yeast – предварительно измеренное количество дрожжей
To knead the dough – замесить тесто
Carbon dioxide – углекислый газ
Slicing machine – нарезная машина
Slicing and packaging – нарезка и упаковка
Wrapping machine – упаковочная машина
Molding machine – формовочная машина

*Exercise 3. Reat and translate the text.*

Bread is made with three basic ingredients: grain, water, and bakers' yeast. The harvested grain is ground according to the type of bread being made. All grains are composed of three parts: bran (the hard outer layer), germ (the reproductive component), and endo-

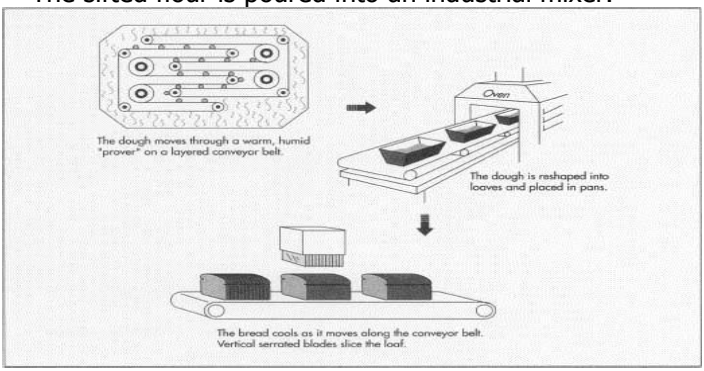
sperm (the soft inner core). All three parts are ground together to make whole wheat and rye breads. To make white flour, the bran and the germ must be removed. Since bran and germ contain much of the nutrients in grain, the white flour is often "enriched" with vitamins and minerals. Some white flour has also been fortified with fiber and calcium.

The grinding takes place at grain mills, which sell the grain to bakeries in bulk. The bakeries keep the grains in storage sacks until they are ready to be used. In the baking factory, water and yeast are mixed with the flour to make dough. Additional ingredients such as salt, fat, sugar, honey, raisins and nuts are also added in the factory.

**The Manufacturing Process**

*Mixing and kneading the dough*

- The sifted flour is poured into an industrial mixer.




- Temperature-controlled water is piped into the mixer. This mixture is called "gluten" and gives bread its elasticity. A premeasured amount of yeast is added. Yeast is actually a tiny organism which feeds off the sugars in the grain, and emits carbon dioxide. The growth of the yeast produces gas bubbles, which leaven the bread. Depending on the type of bread to be made, other ingredients are also poured into the mixer. Modern mixers can process up to 2,000 pounds (908 kg) of dough per minute.
- The mixer is essentially an enclosed drum that rotates at speeds between 35 to 75 revolutions per minute. Inside the drum, mechanical arms knead the dough to the desired consistency in a matter of seconds. Although modern bread production is highly computerized, the ability of the mixing staff

to judge the elasticity and appearance of the dough is critical. Experienced personnel will be able to determine the consistency by the sound of the dough as it rolls around the mixer. The mixing process takes about 12 minutes.

*Fermentation*

- Three methods are used to ferment the dough. In some plants, the high-speed machinery is designed to manipulate the dough at extreme speeds and with great force, which forces the yeast cells to rapidly multiply. Fermentation can also be induced by the addition of chemical additives such as 1-cysteine (a naturally occurring amino acid) and vitamin C. Some breads are allowed to ferment naturally. In this instance, the dough is placed in covered metal bowls and stored in a temperature-controlled room until it rises.

*Division and gas reproduction*

- After the dough has been fermented, it is loaded into a divider with rotating blades that cut the dough into predetermined weights. A conveyer belt then moves the pieces of dough to a molding machine. The molding machine shapes the dough into balls and drops them onto a layered conveyer belt that is enclosed in a warm, humid cabinet called a "prover." The dough moves slowly through the prover so that it may "rest," and so that the gas reproduction may progress.

*Molding and baking*

- When the dough emerges from the prover, it is conveyed to a second molding machine which re-shapes the dough into loaves and drops them into pans. The pans travel to another prover that is set at a high temperature and with a high level of humidity. Here the dough regains the elasticity lost during fermentation and the resting period.
- From the prover, the pans enter a tunnel oven. The temperature and speed are carefully calculated so that when the loaves emerge from the tunnel, they are completely baked and partially cooled. While inside the tunnel, the loaves are mechanically dumped from the pans onto shelves. The baking and cooling process lasts approximately 30 minutes.

*Slicing and packaging*

- The bread continues to cool as it moves from the oven to the slicing machine. Here vertical serrated blades move up and

down at great speeds, slicing the bread into consistently sized pieces.

- Metal plates hold the slices together while picking up each loaf and passing it to the wrapping machine. Pre-printed plastic bags are mechanically slipped over each loaf. At some bakeries, workers close the bags with wire twists.

*Exercise 4. Answer the following questions.*

a) What three parts are all grains composed of?
b) What parts of grain must be removed to make white flour?
d) Where does the grinding take place?
e) What ingredients are added into the dough?
f) How much dough per minute can modern mixtures produce?
g) At what speed does a modern mixture rotate?
h) How long does a mixing process take?
i) What methods are used to ferment the dough?
j) What machine shapes the dough into balls?

*Exercise 5. Translate into Russian.*

Three basic ingredients, cooling process lasts approximately 30 minutes, fermentation, the high level of humidity, move up and down at great speeds, dough, carbon dioxide, slicing and packaging, rye bread, an oven, vertical serrated blades, carefully calculated temperature, wrapping machine, a pre-measured amount of yeast.

*Exercise 6. Translate into English*

Тесто, производственный процесс, три основных ингридиента, ферментизация, замешивать тесто, углекислый газ, процесс выпечки и охлаждения, печь, промышленный миксер, ржаной хлеб, двигаться вверх и вниз на большой скорости, длится приблизительно 30 минут, высокий уровень влажности, высоко компьютеризированный процесс.

*Exercise 7. Summarize the text in 7-8 sentences . Make use of the following phrases:*

- the text under discussion reports on …..
- the main objective (purpose, aim) of the text is …..
- the text discusses/ considers / deals/ analyses/ deals with/

emphasizes …..

- much attention is given to …..

*Exercise 8. Complete the sentences using the Present Simple Passive.*

1) Bread _____(to make) of three basic ingredients. 2) Temperature-controlled water _____ (to pipe) into the mixture. 3) Powered conveyors _____( to use) for basic transportation. 4) These methods _____ (to use) to ferment the dough. 5) The syrup _____ (to evaporate) to get sugar. 6) The beets _____ (to put) into diffusion cells with hot water to remove the sucrose. 7) Sugar synthesized in the leaves _____ (to use) as a souse of energy. 8) Where _____ sugarcane _____? (to grow) 9) In summer the most mature fields _____ (to harvest) first. 10) Sugarcane ____ (to unload) and excessive soil and rocks _____ (to remove). 11) The beets _____ (to deliver ) at the refinery every day. 12) A wide range of flexible packaging materials is available, but the use of many of them _____ (to limit) due to high costs. 13) Boxes _____ (to use) to prevent crushing of dried foods, and in humid climates, moisture-proof flexible films can _____ (to use). 14) Depending on the type of bread to be made, other ingredients _____ also _____ (to pour) into the mixture.

*Exercise 9. Complete the sentences using the Past Simple Passive.*

1) Those jars _____ (to pasteurize) yesterday. 2) The new equipment _____ (to install) last month. 3) Three hours ago these vegetables _____ ( to process) be heating to destroy bacteria. 4) Yesterday these dried products _____ ( to pack) well in order to prevent moisture uptake and protect against spoilage. 5) These methods _____ ( to use) about ten years ago. 6) This sugar _____ (to produce) a year ago. 7) Last month the temperature and speed of baking _____ ( to calculate) by the best engineers. 8) Some chemical additives _____ ( to put) into the dough 30 minutes ago. 9) An hour ago a per-measured amount of yeast _____ ( to add) into the dough. 10) Who _____this bread _____ (to bake) by?

*Exercise 10. Complete the sentences using the Future Simple Passive.*

1) New equipment _____ (to install) in a month. 2) The

translation of this article _____ (to finish) tomorrow. 3) When _____ new equipment _____ (to install). 4) The bread _____ (to bake) in 30 minutes. 5) The sugarcane _____ (not to harvest) if it rains. 6) The beets _____ (to deliver) at the refinery next Monday. 7) A new wrapping machine _____ (to buy) in 2 months if the bakery has enough profit. 8) When _____ the new project _____ (to finish)? 9) The syrup _____ (to cool) in 2 hours. 10) About 3,700,000 tons of sugar _____ (to manufacture) from sugar beet next year.

## UNIT 2. OIL PRODUCTION

*Exercise 1. Read and learn all words. Be careful with the pronunciation.*

Olive oil – оливковое масло
Civilization – [sɪvɪlaɪˈzeɪʃn] цивилизация, культура
Evidence – [ˈevɪdəns] доказательство, данные
Approximately – [əˈprɔksɪmɪtlɪ] приблизительно, почти
Crush – [krʌʃ] дробить, колоть
Liquid – [ˈlɪkwɪd] жидкость
To separate from – отделять от
Harvest – [ˈhɑːvɪst] урожай, жатва
Solid – [ˈsɔlɪd] твердый, целый
Benefit – [ˈbenɪfɪt] выгода, польза
Enhance – [ɪnˈhɑːns] повышать, усиливать

*Exercise 2. Read and translate the text A.*

**An oil for life.**

Maria Alcala of Madrid speaks for many Mediterranean people when she says that "a meal without olive oil would be bore." No one knows when the Mediterranean civilization initially fell in love with olives. That occurred before recorded history. However, there is evidence that the civilization of oil trees began in countries around the Mediterranean Sea in approximately 4000 b.c., and 2000 years after that people in the eastern Mediterranean region began to produce oil from olives. The Mediterranean still accounts for 99% of all world olive oil production.

From ancient times until today, the basic process of producing the oil is the same. First, whole olives are crushed. Then, the liquid is separated from the solids. After that, the valuable oil is separated

from the water.

Many olive growers maintain their ancient traditions and still harvest the olives by hand.

**The benefits of olive oil.**

Olive oil has had a variety of uses through its long history. In ancient times, olive oil was used as money and as medicine. It was even used during war - heated up and dropped down on attackers. It is still used in religious ceremonies. It is great for protecting the freshness of fish and cheese. There are even olive oil lamps and olive oil soaps.

One important study showed that Mediterranean people have the lowest rate of heart disease among Western nations. This is partly associated with their frequent use of olive oil. Other studies have shown that food cooked in olive oil is healthier, and that eating olive oil twice a day reduces women's risk of getting breast cancer. The world is beginning to understand its benefits, and olive oil is no longer an unusual sight at dinner tables outside the Mediterranean region. The olive oil producing countries now sell large amount of olive oil to countries in Europe, Asia, and North and South America.

Olive oil enhances the lives of people everyone. Its benefits, recently confirmed by science, were already understood in ancient times. Mediterranean people are happy to share their secret with the world.

(Paul MacIntyre. Reading Explorer 2).

*Exercise 3. Answer the following questions:*

1. When did the cultivation of oil trees begin?
2. Which step occurs first in olive oil production?
3. Which use of oil is mentioned in the article?
4. Can olive oil reduce the risk of cancer?
5. Is olive oil better for men or for women?
6. Who uses more olive oil?

*Exercise 4. Translate into Russian:*

1. By trying to make it one, they have ended up with something akin to an attempt at mixing oil and water together.
2. Ballads and metal bands go together like oil and water, don't they?
3. But the People in the Know are the people who oil the

wheels, who make the world run smoothly.

4. Letter-writing oils the wheels of civilization.
5. A good name is better than oil.

Learn more:

- **To burn the midnight oil –** поздно засиживаться за работой
- **Dimkum oil –** (австрал) сущая правда
- **Oil and vinegar –** полная противоположность, лед и пламень
- **No oil painting** (разг) – не слишком привлекательный, не писанный красавец
- **To pour oil on troubled waters –** действовать успокаивающе, умиротворять
- **To strike oil –** а) внезапно разбогатеть, б) сделать важное открытие.

*Exercise 5. Read and translate the text B.*

**Vegetable Oil**

What is a vegetable oil? Any form of lipid that is obtained from plants which exists in liquid form at room temperature is automatically classified as a vegetable oil. In contrast to that, it will be called a vegetable fat if it is in its solid form at room temperature. This essentially means that there are many different types of vegetable oils, each coming from different plants. Most oils contain *triglycerides* which are the basic component of most lipids and can store a large amount of energy compared to sugars, which is what makes oils fattening. Although they basically have the same structure, each type of oil is **functionally and distinctly different** from one another. A few examples of the most commonly used vegetable oils are the *olive oil*, the *coconut oil* and the *almond oil*.

One downside of all vegetable oils is that they cannot be stored for extended periods of time because they will **turn rancid**, causing an unpleasant odour or smell. This happens because they chemically react with atmospheric oxygen, but this process can be slowed down by reducing its exposure to air. Different types of oil react with oxygen at varying degrees and are measured by something called **oxidative stability.**

These oils are extracted using a wide variety of ways, ranging from a process called *fractional distillation* (commonly used in the purification of crude oil) to the more traditional "*crushing*" method from parts of the constituent plant. Most of the oils are extracted from the seeds of the plant, while a small minority are extracted from other parts like the roots or stem. Some vegetable oils are inherently more expensive than the others because of the costly nature of the extraction process and also the difficulty to cultivate the particular plant. Be warned that not all vegetable oils are suitable for consumption as some are non-digestible. The inedible ones are used for other industrial purposes whereas the edible ones are mostly used as cooking oils.

A long, verbose explanation of the controversial vegetable oil.

However, some vegetable oils can cause even more harm to your health than animal oils. These are the **hydrogenated vegetable oils**. Hydrogenated vegetable oils are oils in which hydrogen have been artificially added into them to make them more stable by resisting oxidation (turning rancid) and so prolonging their shelf life or to change their physical state from liquid to solid.

A profound example would be the *margarine* which is completely made up of hydrogenated oils. This is what helps make it possible for it to exist as a solid state at room temperature. In fact, these hydrogenated oils are so harmful to health that at one point in time, substances like margarine were completely banned in countries like Canada and the United States. Therefore hydrogenation of these oils offers no real benefit and is for industrial purposes only. It has **zero nutritional value** and you should avoid consuming it altogether.

Most health experts today agree that consuming unprocessed or naturally occurring oils which are not hydrogenated are healthier than their processed counterparts. These unprocessed oils, although

polyunsaturated, contain less amounts of *trans fat* in them and have been proven by several studies to significantly lower the risk of a heart attack and the occurrence of breast cancer in women by a whopping **20%**.

Constantly consuming food that is only cooked using unprocessed oil does not ultimately mean a healthier lifestyle. Carefully balance your diet by consuming little saturated fats and avoiding artificially hydrogenated oils altogether. If you want to watch your weight, it is best to avoid oily food and reduce intake of all types of oil.

*Exercise 6. Translate from English into Russian. Explain the usage of the tense.*

1. Many oil plants are being built at present.
2. The building of this factory was being completed when I came there.
3. Flowers are being grown in this garden.
4. I will have a cup of coffee while my car is being cleaned.
5. When I came, the letters were being written.
6. While I was waiting, the room was being cleaned.
7. This olive is being eaten by me now.
8. This machine tool was being repaired at 8 yesterday.
9. The problem is being discussed now.
10. A new school was being built in our town when I arrived.
11. English is being studied by him.
12. A cake was being made by my mom when I came home.
13. The plant is being managed by my father.
14. The building is being restored.
15. Is my car being washed at the moment?

*Exercise 7. Translate from Russian into English.*

1. Книгу читали, когда они пришли.
2. Меня ждут?
3. Новый контракт обсуждается.
4. Полы сейчас не моют.
5. Иди домой! Тебя ищут.
6. Строится самый современный завод по производству

растительного масла.

7. Вчера весь день писали статью.
8. Новые дома строятся через дорогу.
9. Ты чувствуешь аромат? На кухне жарятся блины.
10. Этого мужчину держат в тюрьме, потому что он совершил что-то плохое.
11. Мне показывают новый завод.
12. Его слушают внимательно сейчас.
13. Его осматривает доктор в данный момент.
14. Я не мог пользоваться моим кабинетом вчера, т.к. его красили.
15. Новую программу тестировали вчера в три часа.

## UNIT 3. SUGAR PRODUCTION

*Exercise 1. Read and remember the pronunciation of the words.*

photosynthesis [ˌfəutəu'sɪnθɪsɪs] - фотосинтез
sucrose [su:crɒs] - сахароза
glucose [ˈglu:kəus] - глюкоза
mixture [ˈmikstʃə] - смесь
accumulate [ə'kju:mjuleit] - накапливать
cultivate [ˈkʌltiveit] - возделывать
crystal [ˈkristl] - кристал
purify [pjuətifai] – очищать
evaporation [i'væpə'teiʃən] - испарение
calcium [ˈkælsiəm] - кальций
centrifuge [ˈsentrifiu:ʤ] - центрифуга
sedimentation [ˌsedimen'teiʃən] – отложение осадка
filtration [ˈfilt'reiʃən] - фильтрация
neutralize [nju:trəlaiz] - нейтрализовать
acidity [ə'siditi] - кислотность

*Exercise 2. Words and phrases to remember*

Cane sugar – тростниковый сахар
Tropical and subtropical regions – тропические и субтропические регионы
A product of photosynthesis – продукт фотосинтеза
Sugar cane – сахарный тростник

Sugar beet – сахарная свекла
Raw materials – сырье

*Exercise 3. Read the text and answer the questions.*

Sugar is a broad term applied to a large number of carbohydrates present in many plants and characterized by a more or less sweet taste. The primary sugar, glucose, is a product of photosynthesis and occurs in all green plants. In most plants, the sugars occur as a mixture that cannot readily be separated into the components. In the sap of some plants, the sugar mixtures are condensed into syrup. Juices of sugar cane and sugar beet are rich in pure sucrose, although beet sugar is generally much less sweet than cane sugar. These two sugar crops are the main sources of commercial sucrose.

The sugarcane is a thick, tall, perennial grass that flourishes in tropical or subtropical regions. Sugar synthesized in the leaves is used as a source of energy for growth or is sent to the stalks for storage. It is the sweet sap in the stalks that is the source of sugar as we know it. The reed accumulates sugar to about 15 percent of its weight. Sugarcane yields about 2,600,000 tons of sugar per year.

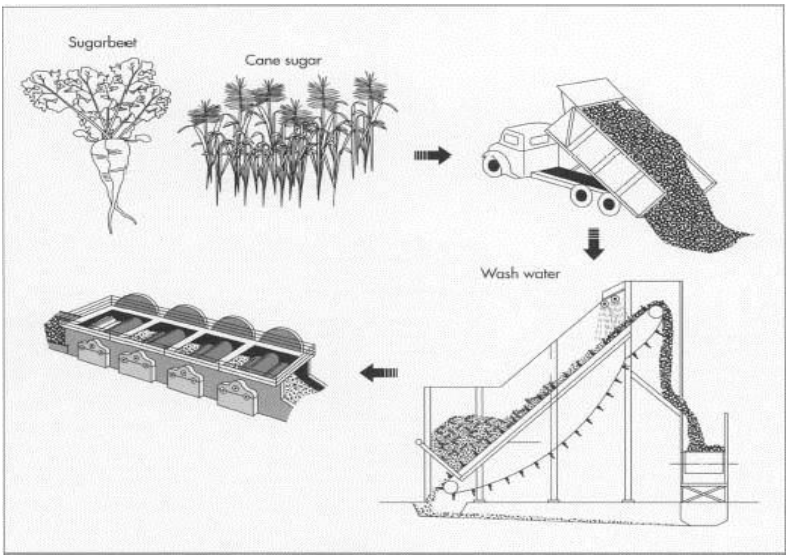
The sugar beet is a beetroot variety with the highest sugar content, for which it is specifically cultivated. While typically white both inside and out, some beet varieties have black or yellow skins. About 3,700,000 tons of sugar are manufactured from sugar beet.

Other sugar crops include sweet sorghum, sugar maple, honey, and corn sugar. The types of sugar used today are white sugar (fully refined sugar), composed of clear, colorless or crystal fragments; or brown sugar, which is less fully refined and contains a greater amount of treacle residue, from which it obtains its colour.

The Manufacturing Process

*Planting and harvesting*

- 1 Sugarcane requires an average temperature of 24 degrees C



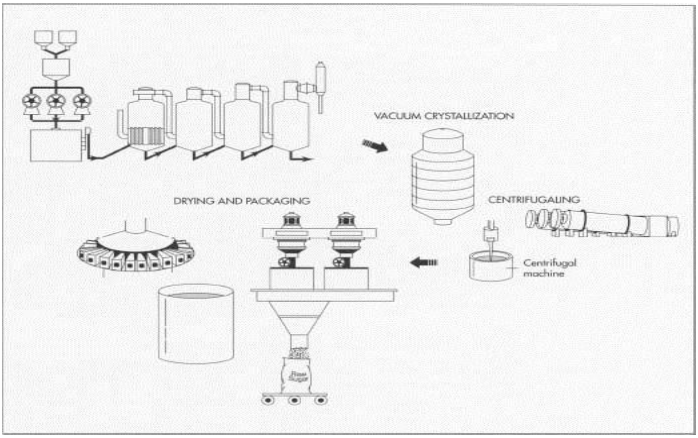

and uniform rainfall of about 80 inches (203 centimeters) per year. Therefore, it is grown in tropical or subtropical areas.

Sugarcane takes about seven months to mature in a tropical area and about 12-22 months in a subtropical area. At this time, fields of sugarcane are tested for sucrose, and the most mature fields are harvested first. In Florida, Hawaii, and Texas, standing cane is fired to burn off the dry leaves. In Louisiana, the six- to ten-feet (1.8- to 3-meter) tall cane stalks are cut down and laid on the ground before burning.

*Preparation and processing*

- 3 After the cane arrives at the mill yards, it is mechanically unloaded, and excessive soil and rocks are removed. The cane is cleaned by flooding the carrier with warm water (in the case of sparse rock and trash clutter) or by spreading the cane on agitating conveyors that pass through strong jets of water and combing drums (to remove larger amounts of rocks, trash, and leaves, etc.). At this point, the cane is clean and ready to be milled.

When the beets are delivered at the refinery, they are first washed and then cut into strips. Next, they are put into diffusion cells with water at about 79.4 C and sprayed with hot water counter currently to remove the sucrose.




After being purified, the clear juice undergoes vacuum evaporation to remove most of the water. In this process, four vacuum-boiling cells are arranged in series so that each succeeding cell has a higher vacuum. The vapors from one body can thus boil the juice in the next one, a method called *multiple-effect evaporation.* Next, the syrupy solution is vacuum-crystallized to form sugar crystals. The remaining liquid is removed using centrifugaling and drying, and the sugar is packaged.

*Exercise 4. Answer the following questions.*

1. What are the main sources of commercial sucrose?
2. What can you tell about sugarcane?
3. What other plant with the highest sugar content do you know?
4. What types of sugar are used today?
5. Why is sugar cane grown in tropical and subtropical areas?
6. How long does sugarcane take to mature?
7. How is the cane cleaned at the mill yards?
8. How are the beets processed at the refinery?
9. How is water removed from clear juice?

*Exercise 5. Translate into Russian.*

Centrifuge, acidity, raw materials, neutralize, manufacture, synthesize, sweet taste, photosynthesis, sucrose, pure glucose, accumulate, cultivate, purify, mixture, crystallization, evaporation, carbohy-

drates.

*Exercise 6. Translate into English.*

Углеводороды, кислотность, сырье, выпаривание, чистая глюкоза, сахароза, кристаллизация, возделывание, смесь, очищать, нейтрализовать, производить, фотосинтез, фильтрация.

*Exercise 7. Read and translate the text B.*

Words and phrases to remember

Crusher roller – дробильный каток

Extract – экстракт

Shredder - шредер

Revolving knives – вращающиеся ножи

Diluting - разбавление

Dissolving - растворение

To neutralize the natural acidity of the juice – чтобы нейтрализовать естественную кислотность сока

The growth of the crystals – рост кристаллов

Centrifugal (noncentrifugal) sugar – рафинированный (нерафинированный сахар)

Drying and packaging - сушка и упаковка

Soluble and unsoluble impurities – растворимые и нерастворимые примеси

*Juice extraction pressing*

- Two or three heavily grooved crusher rollers break the cane and extract a large part of the juice, or swing-hammer type shredders (1,200 RPM) shred the cane without extracting the juice. Revolving knives cutting the stalks into chips are supplementary to the crushers. (In most countries, the shredder precedes the crusher.) A combination of two, or even all three, methods may be used. The pressing process involves crushing the stalks between the heavy and grooved metal rollers to separate the fiber *(bagasse)* from the juice that contains the sugar.
- As the cane is crushed, hot water (or a combination of hot water and recovered impure juice) is sprayed onto the crushed cane countercurrently as it leaves each mill for diluting. The extracted juice, called *vesou,* contains 95 percent or

more of the sucrose present. The mass is then diffused, a process that involves finely cutting or shredding the stalks. Next, the sugar is separated from the cut stalks by dissolving it in hot water or hot juice.

*Purification of juice — clarification and evaporation*

- The juice from the mills, a dark green color, is acid and turbid. The clarification (or defecation) process is designed to remove both soluble and insoluble impurities (such as sand, soil, and ground rock) that have not been removed by preliminary screening. The process employs lime and heat as the clarifying agents. Milk of lime (about one pound per ton of cane) neutralizes the natural acidity of the juice, forming insoluble lime salts. Heating the lime juice to boiling coagulates the albumin and some of the fats, waxes, and gums, and the precipitate formed entraps suspended solids as well as the minute particles.

The sugar beet solution, on the other hand, is purified by precipitating calcium carbonate, calcium sulfite, or both in it repeatedly. Impurities become entangled in the growing crystals of precipitate and are removed by continuous filtration.

- The muds separate from the clear juice through sedimentation. The non-sugar impurities are removed by continuous filtration. The final clarified juice contains about 85 percent water and has the same composition as the raw extracted juice except for the removed impurities.
- To concentrate this clarified juice, about two-thirds of the water is removed through vacuum evaporation. Generally, four vacuum-boiling cells or bodies are arranged in series so that each succeeding body has a higher vacuum (and therefore boils at a lower temperature). The vapors from one body can thus boil the juice in the next one—the steam introduced into the first cell does what is called *multiple-effect evaporation.* The vapor from the last cell goes to a condenser. The syrup leaves the last body continuously with about 65 percent solids and 35 percent water.

The sugar beet sucrose solution, at this point, is also nearly colorless, and it likewise undergoes multiple-effect vacuum evaporation. The syrup is seeded, cooled, and put in a centrifuge machine. The finished beet crystals are washed with water and dried.

*Crystallization*

- Crystallization is the next step in the manufacture of sugar. Crystallization takes place in a single-stage vacuum pan. The syrup is evaporated until saturated with sugar. As soon as the saturation point has been exceeded, small grains of sugar are added to the pan, or "strike." These small grains, called *seed,* serve as nuclei for the formation of sugar crystals. (Seed grain is formed by adding 56 ounces [1,600 grams] of white sugar into the bowl of a slurry machine and mixing with 3.3 parts of a liquid mixture: 70 percent methylated spirit and 30 percent glycerine. The machine runs at 200 RPM for 15 hours.) Additional syrup is added to the strike and evaporated so that the original crystals that were formed are allowed to grow in size.

The growth of the crystals continues until the pan is full. When sucrose concentration reaches the desired level, the dense mixture of syrup and sugar crystals, called *massecuite,* is discharged into large containers known as crystallizers. Crystallization continues in the crystallizers as the massecuite is slowly stirred and cooled.

- Massecuite from the mixers is allowed to flow into centrifugals, where the thick syrup, or molasses, is separated from the raw sugar by centrifugal force.

*Centrifugaling*

- The high-speed centrifugal action used to separate the massecuite into raw sugar crystals and molasses is done in revolving machines called centrifugals. A centrifugal machine has a cylindrical basket suspended on a spindle, with perforated sides lined with wire cloth, inside which are metal sheets containing 400 to 600 perforations per square inch. The basket revolves at speeds from 1,000 to 1,800 RPM. The raw sugar is retained in the centrifuge basket because the perforated lining retains the sugar crystals. The mother liquor, or molasses, passes through the lining (due to the centrifugal force exerted). The final molasses *(blackstrap molasses)* containing sucrose, reducing sugars, organic nonsugars, ash, and water, is sent to large storage tanks.

Once the sugar is centrifuged, it is "cut down" and sent to a granulator for drying. In some countries, sugarcane is processed in small factories without the use of centrifuges, and a dark-brown

product (noncentrifugal sugar) is produced. Centrifugal sugar is produced in more than 60 countries while noncentrifugal sugar in about twenty countries.

*Drying and packaging*

- Damp sugar crystals are dried by being tumbled through heated air in a granulator. The dry sugar crystals are then sorted by size through vibrating screens and placed into storage bins. Sugar is then sent to be packed in the familiar packaging we see in grocery stores, in bulk packaging, or in liquid form for industrial use.

A) What does the pressing process involve?
B) How is sugar separated from the cut stalks?
C) What process is used to remove both soluble and unsoluble impurities?
D) By what means is water removed from juice?
E) Where is the high-speed centrifugal action done?

*Exercise 8. Complete the sentences using the Present Perfect Passive.*

1) The beets _____ (already, to deliver) at the refinery. 2) New equipment _____ (just, to install) at our factory. 3) A new wrapping machine _____ (yet, not buy). 4) Sugarcane _____ (never, to cultivate) in our country. 5) This article _____ (to translate) into several languages. 6) The beet roots _____ (already, to harvest) . 7) The dry sugar crystal _____ ( just, to sort) by size. 8) This technology _____ (to use) since 2000. 9) More than 2,700,000 tons of sugar _____ (to produce) this year. 10) Sugarcane _____ (already, to unload) and excessive soil and rocks _____ (to remove). 11. How much marmalade _____ (to produce) this year? 12) The beet roots _____ ( already, to clean) and _____ (to cut). 13) These packages can _____ ( to use ) several times and are usually cheap.

*Exercise 9. Complete the sentences using the Past Perfect Passive.*

1) More than 2,700,000 tons of sugar _____ (to produce) by the end of the year. 2) The beet roots _____ (clean) before they were cut. 3) The fields of sugarcane _____ ( to test ) for sucrose before they were harvested. 4) Water and yeast _____ ( to mix ) with flour

before they were put into the dough. 5) Additional ingredients such as salt, fat, sugar, honey, raisins and nuts _____ ( to add ) before the bread was put into the oven. 6) More than 10,000 _____ ( to make ) by the end of the year. 7) This equipment _____ ( to use ) before the new one was installed. 8) All the crops _____ ( to harvest) by the end of September.

## UNIT 4. RICE PRODUCTION

*Exercise 1. Read and learn all words. Be careful with the pronunciation.*

Rice [raɪs] рис
paddy [ˈpædɪ] сырец, сырой
to ditch rice fields [dɪʧ] — осушать рисовые поля
rice field — рисовое поле
to winnow rice [ˈwɪnəʊ] — просеивать рис
brown rice — шелушёный рис
quick-cooking rice — рис быстрого приготовления
rice paper — рисовая бумага
rice water — рисовый отвар
rice-hulling machine — рисообдирочная машина
rice-belly — китаец
rice binder [ˈbaɪndə] — рисовая жатка-сноповязалка

*Exercise 2. Read and translate the text.*

**Rice** is the most widely consumed staple food for a large part of the world's human population, especially in Asia. It is the agricultural commodity with the third-highest worldwide production, after sugarcane and maize. Rice cultivation requires ample water, but rice can be grown practically anywhere, even on a steep hill or mountain area with the use of water-controlling terrace systems. The traditional method for cultivating rice is flooding the fields while, or after, setting the young seedlings. This simple method requires sound planning and servicing of the water damming and channeling, but reduces the growth of less robust weed and pest plants that have no submerged growth state, and deters vermin.

Rice is the most important grain with regard to human nutrition

and caloric intake, providing more than one-fifth of the calories consumed worldwide by humans. Rice is the staple food of over half the world's population. It is the predominant dietary energy source for many countries. Rice provides 20% of the world's dietary energy supply, while wheat supplies 19% and maize (corn) 5%.

A detailed analysis of nutrient content of rice suggests that the nutrition value of rice varies based on a number of factors. It depends on the strain of rice, that is between white, brown, red, and black (or purple) varieties of rice – each prevalent in different parts of the world. It also depends on nutrient quality of the soil rice is grown in, whether and how the rice is polished or processed, the manner it is enriched, and how it is prepared before consumption.

World production of rice has risen steadily from about 200 million tonnes paddy rice in 1960 to over 678 million tonnes in 2014. The three largest producers of rice in 2014 were China (197 million tonnes), India (131 Mt), and Indonesia (64 Mt). Among the six largest rice producers, the most productive farms for rice, in 2014, were in China producing 6.59 tonnes per hectare.

Many rice grain producing countries have significant losses post-harvest at the farm and because of poor roads, inadequate storage technologies, inefficient supply chains and farmer's inability to bring the produce into retail markets dominated by small shopkeepers.

The seeds of the rice plant are first milled using a rice huller to remove the chaff (the outer husks of the grain). At this point in the process, the product is called brown rice. The milling may be continued, removing the bran, *i.e.*, the rest of the husk and the germ, thereby creating white rice. White rice, which keeps longer, lacks some important nutrients; moreover, in a limited diet which does not supplement the rice, brown rice helps to prevent the disease beriberi.

Either by hand or in a rice polisher, white rice may be buffed with glucose or talc powder (often called polished rice, though this term may also refer to white rice in general), parboiled, or processed into flour. White rice may also be enriched by adding nutrients, especially those lost during the milling process. While the cheapest method of enriching involves adding a powdered blend of nutrients that will easily wash off (in the United States, rice which has been so treated requires a label warning against rinsing), more sophisticated methods apply nutrients directly to the grain, coating the grain with a water-

insoluble substance which is resistant to washing.

*Exercise 3. Answer the following questions:*

1. What is rice?
2. What does the rice cultivation require?
3. What are the percentage of world's consumption?
4. Describe different types of rice.
5. What country is the biggest rice producer?
6. Are there any problems in rice production?
7. Describe the process of rice milling.
8. Is rice popular in our country?
9. What rice do you prefer?
10. Can rice prevent diseases?

*Exercise 4. Translate the sentences into English.*

1. Рис является главной сельскохозяйственной культуры страны.
2. Отварите рис в течение 15 минут.
3. Нам нужно около мешка с рисом.
4. Рис растёт в воде.
5. Он готовил рис на ужин.
6. Она тщательно вылепила рисовые шарики
7. Мы ели рис и бобы на ужин.
8. Она взвесить полкило риса.
9. Подавайте мясо с рисом или лапшой.
10. Тарелки были доверху наполнены рисом.
11. Рис является основной пищей простых людей.
12. Они живут на рисе и овощах.
13. Дикий рис был подан как дополнение к основному блюду
14. Террасы для выращивания риса покрывали склоны холмов.
15. В Индии, к примеру, люди едят только рис.

*Exercise 5. Translate from Russian into English.*

1. Says he wants to eat Korean rice.
2. The journalist was arrested while investigating the arrest of two policemen accused of stealing two bags of rice.

3. The ships were carrying predominantly wheat, rice, vegetable oil, baby food and spare parts.
4. A significant decline in rice production and agricultural outputs has been observed.
5. The domestic production of rice, potatoes and onions faces competition with subsidized exports of those products from other countries.
6. Exports of both sugar and rice depend on preferential marketing arrangement in Europe.
7. Major agricultural imports include frozen fish, wheat flour, dairy products and rice.
8. A farmer harvests rice in Guyana.

*Exercise 6. Translate from English into Russian. Explain the usage of the modal verb "can".*

1. Can you park in this street on Sundays?
2. I can see you tomorrow morning for half an hour.
3. I wanted to open the window but I couldn't.
4. You can buy this book; it is on sale now.
5. I can play volleyball.
6. Soon I will be able to read German books without a dictionary.
7. You can find any kind of information on the Internet.
8. Can you wait for me in the hall?
9. Julia can climb the trees easily.
10. Can she explain you how to do this exercise?
11. I could not swim when I was little.
12. Perhaps this young man will be able to help you.
13. You can't use dictionaries.
14. My sister can't go to the Italy on her own because she 13 years old.
15. You can do this exercise.

*Exercise 7. Translate from Russian into English.*

1. Она может выучить это правило позже.
2. В комнате темно. Он ничего не видит.
3. Я чувствую запах дыма. Что-то пригорело?

4. Питер не сможет прибрать в комнате сегодня, но он сможет сделать это завтра.
5. Ему никто не поверит. Его история не может быть правдивой.
6. Я умею играть на пианино, но я не умею плавать.
7. Можно мне немного посидеть с вами?
8. Она может нарисовать картину.
9. Можно мне стакан воды?
10. Я не мог получить водительские права 2 года назад.
11. Он умел читать, когда ему было пять лет.
12. Он может бегло говорить по-английски.
13. Я могу показать тебе новый мир.
14. Ты мог бы помочь мне с домашней работой завтра
15. Ты мог бы хотя бы предупредить меня!

Read for pleasure:

**he found the bean in the cake** — ему посчастливилось, повезло

**coffee bean** — кофейный боб

**horse bean** — бобы, конские бобы, плод стручок (конских) бобов

**every bean has its black** — и на солнце есть пятна

**not to have a bean** - не иметь ни гроша;

**not worth a bean** - гроша ломаного не стоит

**a hill of beans** - амер. пустяки

**he found the beans in the cake** - ему посчастливилось, повезло;

**to know beans, to know how many beans make five** - знать что к чему;

**to give (smb.) beans** - разг. побить (кого-л.) (в состязании);

**to get beans** - разг. быть наказанным, избитым;

**a hill of beans** - амер. пустяки

**full of** beans - живой, энергичный; в приподнятом настроении;

**to spill the** beans - выдать секрет, проболтаться

Supplementary texts.

**What Are Adzuki Beans: Learn About Growing Adzuki Beans.**

There are many types of food in the world that are not common in our region. Discovering these foods makes the culinary experience exciting. Take Adzuki beans, for instance. What are adzuki beans? These are ancient Asian legumes, commonly grown as a pulse or dried bean but also sometimes used fresh. They have been cultivated for centuries in China and Japan as well as other countries in the East.

Adzuki bean nutrition is off the charts with loads of fiber and vitamins. The beans are fairly easy to grow but require a long season, so start them indoors in short season climates. Growing adzuki beans in the home landscape will help you harvest the health benefits of these small beans and add some interest to the family dinner table through their diversity.

**What are Adzuki Beans?**

Legumes are good for the body and good for the landscape. This is due to their nitrogen fixing abilities which create healthy growing conditions for plants. Growing adzuki beans in your vegetable garden will harvest the soil friendly benefits while adding something new to the family table.

Adzuki beans are often served cooked with rice but may also be found in desserts due to the sweet flavor of the legumes. These versatile beans are easy to grow and well worth adding to your pantry.

Adzuki beans are small reddish-brown beans which grow inside long green pods. Pods turn lighter and paler in hue which signals it is time to harvest the seeds inside. The seeds have a scar along the side that protrudes in a ridge. The flesh of adzuki is creamy when cooked and has a sweet, nutty flavor. The plant itself grows 1 to 2 feet in height, producing yellow flowers followed by clusters of pods.

Beans may be dried or eaten fresh. Dried beans need to be soaked an hour before cooking. In Japan, the beans are cooked down into a sweet paste and used to fill dumplings, cakes or sweet breads. They are also pureed with garlic, hot mustard and ginger and used as a condiment.

## UNIT 5. LEGUMES PRODUCTION

*Exercise 1. Read and remember the pronunciation of the words.*

legumes [ˈlegju:mz] - бобовые
pulses [ˈpʌlsɪz] - импульсы
oil seed [ɔɪl si:d] – масличная культура
micronutrient [maɪkrəˈnju:trɪənt] - микронутриент
raw [rɔ:] - сырье
soybean [ˈsɔɪbi:n] - соя
peanut [ˈpi:nʌt] - арахисовый
fermented [fə(:)ˈmentɪd] - ферментированный
grinding [ˈgraɪndɪŋ] - измельчение
liquid [ˈlɪkwɪd] - жидкость
tofu [ˈtəʊfu:] - тофу
yuba [ˈu:bʌ]- фучжу
flavour [ˈfleɪvə] - вкус
coagulant [kəʊˈægjʊlənt] - коагулянт
consumption [kənˈsʌm(p)ʃən] - потребление
boiling [ˈbɔɪlɪŋ] - кипячение
drying [ˈdraɪɪŋ] - сушка
roasting [ˈrəʊstɪŋ] - обжиг
packaging [ˈpækɪʤɪŋ] - упаковка
moisture [ˈmɔɪsʧə] - влага
noodle [ˈnu:dl] - лапша
sprout [spraʊt] - росток
flour [ˈflaʊə] - мука
separator [ˈsepəreɪtə]- разделитель
labeling [ˈleɪblɪŋ] - маркировка
sterilization [ˌsterɪlaɪˈzeɪʃən] - стерилизация
denaturation [di:nætjʊˈreɪʃn] – денатурация
single-screw extruder [ˈsɪŋgl skru: eksˈtru:də] – одновинтовой экструдер

*Exercise 2. Words and phrases to remember.*

yuba [ˈu:bʌ]- фучжу
significantly higher [sɪgˈnɪfɪkəntlɪ ˈhaɪər] - значительно выше
national and international programs began [ˈnæʃənl ænd ˌɪntə(:)ˈnæʃənl prəʊgræmz bɪˈgæn] - национальные и международные программы начали...
source of protein [sɔ:s ɒv ˈprəʊti:n] - источник белка
legumes [ˈlegju:mz] бобовые
pulses [ˈpʌlsɪz] импульсы
positive growth [ˈpɒzətɪv grəʊθ] - положительная динамика роста
domestic supply [dəʊˈmestɪk səˈplaɪ] - внутренние поставки
total production [ˈtəʊtl prəˈdʌkʃən] - общий объем производства

food security [fu:d sɪˈkjʊərɪti] - продовольственная безопасность

micronutrient [maɪkrəˈnju:trɪənt] - микронутриент

rural population [ˈrʊərəl ˈpɒpjʊˈleɪʃən] - сельское население

raw material [rɔ: məˈtɪərɪəl] – сырье

non-fermented [nɒn fə(:)ˈmentɪd] – неферментированный

soybean milk [ˈsɔɪbi:n mɪlk] - соевое молоко

soybean curd [ˈsɔɪbi:n ˈke:d] - соевый творог

emulsified oil [ɪˈmʌlsɪfaɪd ɔɪl] - эмульгированная нефть

*Exercise 3. Read and translate the text.*

**Legume processing and utilization**

Plants provide almost 80 percent of the protein in the developing world. In almost all Asian countries, the major source of protein is legumes. Area, production and productivity of pulses have begun to show positive growth. Farmers are recognizing legumes as important cash crops and countries are beginning to recognize legumes' export potential (which results in a spillover effect of increased domestic supply).

After the Green Revolution, national and international research programs began turning their attention to legumes, due to the following reasons: 1) legumes play a major role in household food security; 2) they are the major source of protein, fat, supplemental energy and, more importantly, micronutrients (legumes complement the cereal diet of Asians); 3) they are the primary source of protein for vegetarians and resource poor rural and urban people; 4) they provide cash income to rural populations; 5) they help improve the soil for sustainable agriculture; 6) they diversify cropping systems (provide an alternative to cereal monocropping); 7) they have a wide range of uses as food, feed and raw material for industrial products; and 8) they are attractive to health-conscious consumers and medical practitioners.

Traditional Processing and Utilization of Legumes

The food legumes can be divided into two groups: pulses and oilseeds. The pulses group includes dry seeds of cultivated legumes which are traditional food. The oilseeds group is used primarily for their oil content consisting of soybean and peanut.

The traditional processed soybean food products known in Southeast Asia can be classified into two categories: 1) non-

fermented and 2) fermented. The former includes soybean milk, tofu or soybean curd and yuba. Soybean milk can be prepared at home by grinding whole soybean with water and straining to make rich, creamy milk-like liquid called "soy milk". The product has a unique, beany flavor. Tofu is closely associated with soy milk. Yuba is a sheet-like coagulant formed on the surface of warm soy milk as it cools. The lifted sheet of soybean contains emulsified oil from soy milk and has high protein with a delicate flavor. The production is still at the cottage scale and industry level technology is yet to be developed. Fermented soybean products include soy sauce and soy paste. Other fermented soybean products are fermented soybean, fermented white soybean and imitation fried pork rind. Peanut is prepared for direct consumption by boiling, drying, roasting and confectioning. Peanut bar and coated roasted peanut products are processed by using modern equipment. The products are packed in good quality packaging to control moisture and air to prolong shelf life. About 73 percent of mung bean production is used for local consumption. The largest processing industry is transparent noodle production and starch extraction, which accounts for about 20 percent. Transparent noodles are processed from mung bean starch. Bean sprouts are produced from mung beans and black grams. The product is produced for fresh market and for daily consumption. The soybean industry has introduced a number of new infrastructure and technologies which have, and will continue to have, significant impact on farming methods, bulk commodity storage, handling and distribution. Direct utilization of soybean in the food industry includes full fat soy flour for baking, soy-based beverages, and snack foods. Peanut processing technology has been developed similar to soybean. Peanut flour is obtained from oil extraction process. Various snacks developed from peanut bases are packed in attractive packaging. Peanut butter processing is quite a large industry. A mung bean cracking machine, a grinder which separates liquid and solid, a starch separator, a starch mixer and a noodle machine have been developed for making transparent noodles.

At present, modern biotechnology to produce soybeans with herbicide resistance has increased public awareness on biosafety and food safety. Consumers around the world have different views towards the technology. Labeling has become a major issue. However, specific method to determine genetically modified organisms (GMO) and genetically modified foods (GMF) requires more scientific infor-

mation to make labeling possible. Grains would be the fastest track to increase production capacity to meet the world population needs.

*Exercise 4. Answer the following questions:*

1. Have legumes become an important source of protein?
2. Why legumes are one the main cultivated crops?
3. How can traditional soybean food be classified?
4. How can soybean milk be prepared?
5. What fermented soybean products are produced in a large scale?
6. Is producing of transparent noodles an important processing industry?
7. Peanut processing industry has been developed similar to soybean, hasn't it?
8. What is peanut flour obtained from?
9. What appliances have been developed for making transparent noodles?
10. Is it important to increase public awareness on biosafety and food safety?

*Exercise 5. Translate into Russian*

Technology, extrusion, high pressure, ohmic, heating, screw, transportation, incentive, associate, hydrostatic, application, sterilization, protein, denaturation, enzyme, viscosity, pressurization, coagulate, electrophoresis, dissociate, homogenous.

*Exercise 6. Find in the text.*

To create new products, extrusion cooking , high pressure cooling

Food manufacturers, mechanical deterioration of materials, solid phase, major benefits, desolted soybean, minimal heat damage, hydrostatic pressure

*Exercise 7. Complete the sentences with may, might (not).*

1. His phone is switched off. He _____ be on the plane now. 2. She _____ like that skirt. It's not her size. 3. What music is this? I'm not sure but it _____ be Mozart. 4. We _____ have a picnic tomorrow, but it depends on the weather. 5. I'm not sure what to do tonight. I _____ go to the cinema. 6. Take your coat. It _____ be cold.

6. It's a difficult match, but we _____ win. 7. It's an unusual film. You _____ not like it. 8. Kate wasn't in class today. She _____ be ill. 9. I _____ go to the party, but I'm not sure. 10. I _____ have time to do everything today. 11. I _____ go to the party. I haven't decided yet. 12. She isn't at home she may be working.

*Exercise 8. Match the sentences and halves.*

| | |
|---|---|
| 1. Take your umbrella. | A. You might fall. |
| 2. Let's buy a lottery ticket. | B. It might not have your size. |
| 3. Phone the restaurant. | C. We might get lost. |
| 4. Don't stand on the wall. | D. It might rain. |
| 5. Let's take a map. | E. It might be late. |
| 6. Try the skirt on. | F. You might cut yourself. |
| 7. Don't wait for me. | G. It might be closed on Sundays. |
| 8. Be careful with that knife. | H. We might win. |

**Supplementary texts.**

*Exercise 9. Read and remember the pronunciation of the words.*

technology [təkˈnɒlədʒi] - технология
extrusion [əksˈtruːʒən] - экструзия
high pressure [haɪ ˈpreʃə] - высокое давление
ohmic [ˈɒmɪk] - омический
heating [ˈhiːtɪŋ] - отопление
screw [skruː] - винт
transportation [ˌtrænspɔːˈteɪʃən] - перевозка
incentive [ɪnˈsentɪv] - стимул
associate [əˈsoʊʃɪeɪt] - связать
hydrostatic [ˌhaɪdrəʊˈstætɪk] - гидростатический
application [ˌæplɪˈkeɪʃ(ə)n] - приложение
sterilization [ˌsterɪlaɪˈzeɪʃən] - стерилизация
protein [ˈprəʊtiːn] - белок
enzyme [ˈenzaɪm] - фермент
viscosity [vɪsˈkɒsɪti] - тягучесть
pressurization [preʃərɪˈzeɪʃn] - герметизация
coagulate [kəʊˈægjʊleɪt] - коагуляция

electrophoresis – электрофорез
dissociate [dɪˈsəʊʃɪeɪt] - диссоциировать
homogenous [həˈmɒʤɪnəs] - однородный

*Exercise 10. Words and phrases to remember.*

To create new products [tu: kri(:)ˈeɪt nju: ˈprɒdʌkts] – создавать новые продукты

Extrusion cooking [eksˈtru:ʒən ˈkʊkɪŋ] – экструзионная варка

High pressure cooling [haɪ ˈpreʃə ˈku:lɪŋ] – охлаждение под высоким давлением

Food manufacturers [fu:d ˌmænjʊˈfækʧərəz] – производители продуктов питания

Mechanical deterioration of materials [mɪˈkænɪkəl dɪˌtɪərɪəˈreɪʃən ɒv məˈtɪərɪəlz] – механический износ материалов

Solid phase [ˈsɒlɪd feɪz] – твердая фаза

Major benefits [ˈmeɪʤə ˈbenɪfɪts] – основные преимущества

Desalted soybean [di:sɔ:ltɪd ˈsɔɪbi:n] – обессоленные соевые бобы

Minimal heat damage [ˈmɪnɪml hi:t ˈdæmɪʤ] – минимальное тепловое повреждение

Hydrostatic pressure [ˌhaɪdrəʊˈstætɪk ˈpreʃə] – гидростатическое давление

*Exercise 11. Read and translate the text B.*

**Modern Processing of Legumes**

The following technologies are expected to create new products from soybean and create a new market for them: extrusion cooking, high pressure cooking, ohmic heating and others. The twin screw extruder has attracted the attention of researchers and food manufacturers because of its high capability in material transportation as compared to a single screw type. The better mixing, kneading, heat exchange and self-cleaning functions of twin screw extruders also provide an incentive to develop such food technology in order to overcome the difficulties associated with the single screw type. Recent development of twin screw extruders provides us with new applications in various food processing, especially to wet processes. High pressure cooking applies hydrostatic pressure of several hundreds MPa on foods for the purpose of sterilization, protein denaturation, control of enzyme and chemical reactions, homogeneous defrosting at

low temperature and others. The soy milk remained liquid within the range of examined pressure and its viscosity increased when the time of pressurization was less than 10 minutes. However, 500 MPa for 30 minutes solidified the soy milk. Soy milk showed better emulsifying and stability properties but had poor capacity. The hard-type tofu could be made from the pressurized soy milk . Electrophoresis and isoelectro-focusing techniques revealed that soy proteins were dissociated while some of them were coagulated by high pressure. High pressure cooking is characterized by the following: 1) the transfer of high pressure is spontaneous and does not depend on the shape of materials; 2) high pressure cooking is free from the problem of mechanical deterioration of materials caused by the agitation necessary for the homogeneous and quick heat transfer; 3) high pressure could be maintained by the mechanical method and saves the energy needed for cooking; and 4) the release of high pressure could be achieved instantly which makes the cooking controllable. When food products contain sufficient water and electrolytes to pass electric current, ohmic heating could be used to generate heat within the food products by the passage of an alternating current. The method enables the solid phase or viscous liquids to be heated as fast as thin liquids, thus making it possible to use HTST techniques on solid or viscous foods. The results clearly indicated that ohmic heating provides quick temperature rise in plants and protein solutions. The major benefits of ohmic heating are summarized as follows: 1) continuous production without heat-transfer surfaces; 2) rapid and uniform treatment of liquid and particulates, with minimal heat damage and residence-time differences; 3) ease of process control with instant shutdown; 4) reduced maintenance costs; 5) environmentally friendly system; and 6) ideal process for shear-sensitive products. Some Japanese tofu manufacturers are interested in these characteristics of ohmic heating and have started to examine its potential for tofu making. Soy protein can form the translucent gel. The process involves defatted soybean extract being dialyzed against distilled water at 7.5 pH. The dialysate is a transparent solution having less beany flavor. After heating, the desalted soybean extract keeps transparency even in the presence of salt (NaCl). When the desalted soybean extract, preheated under salt-free condition is heated again in the presence of NaCl (0.2 M), it gives a translucent gel at a lower concentration than that of non-heated desalted soybean extract. The translucent gel is melted by the follow-

ing heating and gellified again by cooling, that is, this gel is cold-setting and gel-sol transition is reversible, which is confirmed by the measurement of dynamic viscoelasticity.

*Exercise 12. Answer the following questions:*

1. What technologies are expected to create new products from soybean?
2. Why has the twin screw extruder attracted the attention of food manufacturers?
3. How can hard-type tofu be made?
4. By what parameters is high pressure cooking characterized?
5. What are the major benefits of ohmic heating?

## UNIT 6. SEAWEEDS PRODUCTION

*Exercise 1. Read and learn all words. Be careful with the pronunciation.*

alga [ˈalgə] (plural algae ˈaldʒiːˈalgiː) морская водоросль
seaweed farming [ˈsiːwiːd]- разведение морских водорослей
aquaculture [ˈækwɪkʌlʧər] аквакультура
require [rɪˈkwaɪə] требовать, нуждаться
inorganic [ɪnɔːˈgænɪk] неорганический
nutrients [ˈnjuːtrɪənt] питательный, биогенный
fiber [faɪbə] волокно, нить, клетчатка
scent [sent] запах, аромат
flavor [ˈfleɪvə] привкус, запах
clog [klɔg] забивать, засорять, препятствовать

*Exercise 2. Read and translate the text.*

**Seeweeds**

Around the world, particularly in Asia, seaweed is commercially produced on coastal farms. These farms can vary in size, with very large farms producing millions of metric tons of seaweed per year. Seaweeds covered under this ass essment include both the edible "sea vegetables," as well as seaweeds that are produced for other

uses (i.e., additives in foods). Seaweed farming, unlike many other forms of aquaculture, results in little impact, or risk of impact, to the surrounding natural environment. As a primary producer, seaweed does not require inputs of feed because it grows by photosynthesizing energy from the sun and absorbing carbon dioxide (CO2) and inorganic nutrients directly from the water.

According to statistics, people who live in Japan are healthier and actually live longer than the people in the United States.

Seaweed is a staple food of the island country of Japan. This is the key factor in their health and their longevity. Seaweed contains higher contents of fiber than vegetables, more protein than meat, and more calcium than milk. Seaweed is actually a good ingredient to put into everyone's diet.

Dr. Marco Nemesio E. Montaño from the Marine Science Institute, College of Science, University of the Philippines Diliman, Quezon City, discussed in a seminar during the 2015Agriculture Forum the health benefits of seaweeds. He underscored the multitude effects of dietary algae, which include having antioxidant, antiviral, antiinflammatory, antibacterial, antitumor and antiwrinkle properties, aside from the fact that it lowers blood pressure, lowers glucose, lowers cholesterol, and inhibit cell-cell adhesion.

In terms of wellness, a new product line developed from seaweed extracts is the Seamoy (with approved patent and trademark). This is a seaweed based, low-cost air freshener gel. It makes use of sweet floral scents to give every room, car, lockers and cabinets a clean, fresh smell. The gel could be easily handled and could be packed in a variety of ways.

The use of seaweeds as a base ingredient for air fresheners has improved the quality of those existing in the market today. Air freshener gels, specifically, usually last only for two to three weeks whereas some soft gels, which may contain soft paraffin, even cause clogging in air-conditioning units.

The seaweed-based air freshener gel uses dried red seaweed cultivated in the southern part of the Philippines and is one of the top five exports of the country. Another product from seaweeds is the red sushi sheet. The said product enhances the appearance of the sushi sheet. Product development is still on-going to improve its appearance, texture, flavor, and over-all quality.

In conclusion, seaweeds are important and significant renewa-

ble resource of the country.

*Exercise 3. Answer the following questions:*

1. Explain the notion "sea vegetables".
2. Describe the process of growing seaweeds.
3. What does seaweed contain?
4. What resources do we need to grow seaweeds?
5. Where can we use seaweeds except food?
6. What is your attitude to seaweeds?
7. Can we use seaweeds in air freshener?
8. Are seaweeds renewable or non-renewable?

*Exercise 4. Translate sentences into Russian:*

- It is a blue-green alga, a primitive plant of the same class as seaweeds or the green slime seen on rocks.
- The phenomenon was first described in a red alga and a green alga more than 30 years ago.
- The diet of Daphnia was supplemented with an algal suspension of Chlorella SP.
- After their split from the green algae, a red algal cell was engulfed by a nonphoto synthetic protist and reduced to a plastid.
- Photosynthesis and primary production were the monopoly of bacteria and algal protists that populated the world's shallow seas.

*Exercise 5. Match numbers with letters:*

1. Low tide exposed a stretch of beach strewn with seaweed and slithery rocks...
2. Seaweed was cast up by the waves.
3. Seaweed is a powerhouse of vitamins and minerals.
4. Marine plants and animals are as seaweed and whales

a. Морские растения и животные, такие же как морские водоросли и киты
b. Водоросли - это сочетание витаминов и минералов.
c. Отлив открыл участок пляжа усыпанный водорослями и скользкими камнями...
d. Водоросли были выброшены волнами.

*Exercise 6 A. Say what you must do in the morning.*

1. Get up early
2. Wash yourself
3. Air the room
4. Do morning exercises
5. Make your bed
6. Have breakfast
7. Clear away the table
8. Go to the institute

B. Say what you mustn't do being a student.

1. be late for classes
2. Miss classes
3. talk at the lesson
4. prompt each other
5. leave classroom during the lesson
6. interrupt your teacher
7. change places at the lessons.

*Exercise 7. Translate the sentences into English using must or its equivalents.*

1. Вам нужно взять такси, если хотите успеть на поезд.
2. Дети не должны играть со спичками.
3. Мы должны поговорить об этом завтра.
4. В то утро я должен был зайти в банк и поэтому я опоздал на работу.
5. Ему не надо было вставать рано, у него были каникулы.
6. Вы должны сойти на следующей остановке.
7. Они обязаны помочь вам в этой ситуации.
8. Им пришлось долго ждать поезда?
9. Вы не должны говорить по-русски на уроках английского языка.
10. Нам пришлось остаться дома вчера, так как шел сильный дождь.
11. Им не надо приходить сюда каждый день.
12. Студенты должны будут остаться после уроков.
13. Нам нужно подготовить доклады к следующему занятию? – Да.
14. Когда он должен будет ответить на все письма?

Supplementary texts.

**Bio-diesel production from seaweeds biomass**

In the process of producing biodiesel from algae is imperative that you perform the analysis of the initial biomass.

The evaluation of fat concentration is essential for determining

the most appropriate source parameter, and the Bligh and Dyer method is one of the most used for this purpose. In this procedure a key factor is the concentration of water in the seaweeds biomass, which conditions the extraction yield, and therefore the process for treating the biomass.

In the first phase the extraction is performed, incorporating various reagents depending on the properties of the initial material and the homogenization process is performed. Then comes the centrifugation step; this part of the process is essential as a function of the characteristics of the equipment will be affected process efficiency. The centrifuge Digicen 21, with rotor RT 138 and adapters for 50 ml, has been evaluated and validated for this process with excellent results.

The next stage of volatilization and quantification provide us with the optimized results, which serve to define the initial treatment of our biomass.

**Seaweed and Industry**

Macroalgae have been used for many years, mainly as binders, in the feed aquaculture industry. Their biochemical composition however has received limited attention but several studies have demonstrated that algae can be used as a partial replacement for many of the ingredients found in fish feed, such as proteins, oils, vitamin & mineral mixes, binders, antibiotics, antioxidants and colorants. In addition, biopolymers of marine origin have received increasing attention from the medical, pharmaceutical and biotechnology industries for numerous applications ranging from biodegradable plastics to food additives, pharmaceutical and medical polymers, wound dressings, bio-adhesives, dental biomaterials, tissue regeneration and 3D tissue culture scaffolds.

There are several components in seaweeds that can be used in consumer products (E401, E406, E407), animal feed and in addition the biomass can be used for bio-ethanol and bio-gas end-products. The waste products can also be used as an agent in soil improvement/fertilization.

The companies that utilize seaweeds in their products are involved in a wide range of industries, but commonly they are large multinational companies, and as such are interested in vertical integration of their commodity chains.

The concept of using plants biomass as a source of fuel is not new and it is the subject of renewed interest because of the escalating price of petroleum and, more significantly, the concern about global warming that is associated with burning fossil fuels. It also has become clear that as we struggle to feed the exponentially growing world population we will be unable to devote sufficient terrestrial plants to biofuel production, consequently the search for alternative feedstocks is the subject of intensive study. One such alternative, seaweed, can be used to produce a myriad of renewable fuels such as methane; the end product of anaerobic digestion (AD), a process whereby organic material from the algal biomass is converted to biogas . However, the indigestibility of raw seaweed is well documented and pre-treatment processes are essential for optimal production of biogas 2 . In this study, the optimisation of pre-treatment technologies are being tested with the aim of enhance the bio-digestibility of the seaweeds, increasing accessibility of the enzymes to the biomass and improving the biogas yield.

## UNIT 7. FRUITS AND VEGETABLES

*Exercise 1. Read and remember the pronunciation of the words.*

cheap source [ˈʧi:p ˈsɔ:s] - дешевый источник
fiber [ˈfaɪbə] - волокна
appetizer [ˈæpɪtaɪzə] - закуска
dessert [dɪˈzɜ:t] - десерт
techniques [tækˈni:ks] - методы
blanching [ˈblɑ:nʧɪŋ] - баланшировка
leach out [li:ʧ aʊt] – выщелачиваться
sterilization [ˈsterɪlaɪˈzeɪʃən] - стерилизация
processing [ˈprəʊsesɪŋ] - обработка
micro-organisms [ˈmaɪkrəʊ ˈɔ:gənɪzmz] - микроорганизмы
spoilage [ˈspɔɪlɪʤ] - порча
mould [məʊld] - плесень
yeasts [ji:sts] - дрожжи
vinegar [ˈvɪnɪgə] - уксус
drying [ˈdraɪɪŋ] - сушка
concentration [ˈkɒnsənˈtreɪʃən] – концентрация
fermentation [ˈfɜ:menˈteɪʃən] - брожение
vitamin [ˈvɪtəmɪn] – витамин

*Exercise 2. Words and phrases to remember.*

nutritional content [nju(:)ˈtrɪʃən(ə)l ˈkɒntent] – пищевая ценность

consume fruit and vegetable when fresh [kənˈsju:m fru:t ænd ˈvɛʤɪtəbl wen freʃ] – употреблять фрукты и овощи свежими

water soluble [ˈwɔ:tə ˈsɒljʊbl] - водорастворимый

surrounding liquid [sə:raʊndɪŋ ˈlɪkwɪd] – окружающая жидкость

many nutritions are lost [ˈmɛni nju(:)ˈtrɪʃənz ɑ: lɒst] – много питательных веществ теряется

high temperature [haɪ ˈtɛmprɪʧə] – высокая температура

destroy vitamins [dɪsˈtrɔɪ ˈvɪtəmɪnz] – разрушать витамины

stability of nutrients [stə:bɪlɪti ɒv ˈnju:rɪənts] – сохранность питательных веществ

conditions [steɪʤ kənˈdɪʃənz] – условия

high acid foods [haɪ ˈæsɪd fu:dz] – высокая кислотность продуктов

low acid foods [ləʊ ˈæsɪd fu:dz] – низкая кислотность продуктов

food poisoning [fu:d ˈpɔɪzɪnɪŋ] – пищевое отравление

*Exercise 3. Read and translate the text A.*

**Fruit and vegetable products**

**Nutritional significance**

Fruit and vegetables provide an abundant and cheap source of vitamins, minerals, and fiber. Their importance in the diet is largely determined by culture, for example, a religion such as Hinduism demands that its followers are vegetarian and their diet therefore contains a high proportion of fruit and vegetables. Other communities, however, only serve vegetables as accompaniments to main meals, and fruit as appetizers and desserts.

It is preferable to consume fruit and vegetables when fresh, as the nutritional content is then usually at its highest. Some techniques, such as blanching, leach out many water-soluble vitamins into the surrounding liquid and if this liquid is not consumed, many nutrients are lost. Other methods such as sterilization expose the food to high temperatures which destroy some of the B vitamins. The table below illustrates the stability of nutrients, when exposed to certain processing or storage conditions.

**Stability of vitamins under different conditions**

| ***Nutrient*** | ***Maximum cooking ir ight eat losses (per cent)*** |
|---|---|
| Vitamin A | 40 |
| Vitamin C | 100 |
| Biotin | 60 |
| Vitamin D | 40 |
| Vitamin K | 5 |
| Pyridoxine (Vitamin B6) | 40 |
| Riboflavin (Vitamin B2) | 75 |
| Thiamine (Vitamin B1) | 55 |

S = stable (no important destruction) U = unstable (significant destruction)

**Processing**

Although there are many similarities between the processing of fruit and vegetables, it is important to realize the following differences.

Fruit are nearly all acidic and are commonly called 'high acid' foods. This acidity naturally controls the type of micro-organisms that are able to grow in fruit products. The spoilage microorganisms that are likely to be found in such products are moulds and yeasts, which if consumed, rarely cause illness. Processing may be achieved by using preservatives such as sugar, salt and vinegar, and by drying, concentration or fermentation.

Vegetables are less acidic than fruit and for that reason are classified as 'low acid' products. A wide range of micro-organisms are able to grow in moist low-acid products, which may lead to spoilage and the possibility of food poisoning. To prevent this, vegetables can be processed by heating to destroy bacteria, or by pickling, salting, or drying to inhibit bacterial growth. Care is needed when processing low acid products, such as vegetables, to minimize the risk of transmitting food poisoning bacteria to consumers.

*Exercise 4. Answer the following questions*

1. What do fruit and vegetables provide consumer with?
2. What is fruit and vegetable importance determined by?
3. Why is it preferable to consume fruit and vegetable when fresh?
4. Does sterilization destroy some of B vitamins?
5. What is less acidic fruit or vegetable?
6. Why must vegetable be processed?
7. Are some micro-organisms able to grow in moist low-acid products?

*Exercise 5. Translate into Russian.*

Determined by culture, nutritional component, to consume fruit and vegetables when fresh, to destroy bacteria, less acidic, moist low-acid products, food poisoning, high acid foods, water-soluble, surrounding liquids, stability of nutrients, storage conditions.

*Exercise 6. Translate into English.*

Низкая кислотность продуктов, пищевое отравление, пищевая ценность, плесень, дрожжи, уксус, десерт, бланшировка, сушка, разрушать витамины, сохранность питательных веществ, чтобы предотвратить это, ферментизация, обработка, высокая температура, дешевый источник витаминов, предпочтительно употреблять фрукты и овощи свежими.

*Exercise 7. Read the text B and answer the questions below*

**Text B. Jams, jellies, marmalades and fruit cheeses.**

Collectively known as preserves, these products are finding an increased importance in many countries. Fruit is most commonly used as the raw material, but some vegetables such as pumpkin can be used.

The principles of preservation involve heating to destroy enzymes and micro-organisms, combined with a high acidity and sugar content to prevent re-contamination. The mix of ingredients is quite complex, but basically involves the correct combination of acid, sugar, and the gelling compound 'pectin' (pectin is present naturally in plants, but may also be added in a commercially-produced form), to achieve the desired gel structure. The ingredients are then boiled together to evaporate water and achieve the correct sugar content.

*Jams*

This is a solid gel made from fruit pulp or juice, sugar, and pectin. It can be made from a single fruit or from a combination, but in either ease the fruit content should be at least 40 per cent. In mixed-fruit jams, the first-named fruit should be at least 50 per cent of the total fruit added (based on European legislation). The total sugar content of jam should not be less than 68 per cent to prevent mould growth after opening the jar.

*Jellies*

These are crystal-clear jams, produced using filtered juice instead of fruit pulp.

*Marmalades*

These are produced mainly from clear citrus juices and have fine shreds of peel suspended in the gel. Commonly-used fruits include limes, grapefruits, lemons and oranges. Ginger may be used alone or in combination with the citrus fruit. The fruit content should not be less than 20 per cent citrus fruit, and the sugar content is similar to jam.

*Fruit cheeses*

These are highly boiled jam-like mixtures that have a final sugar level of 75-85 per cent and thus set in a solid block. They can be cut into bars or cubes, or further processed as ingredients in confectionery.

*Straining*

The starting material for the production of jellies is a clear juice. To achieve this, the extracted juice must be strained using a muslin cloth bag. Additionally, sugar syrups should be strained in order to remove any unwanted material.

Addition of ingredients and process control

As in all processing, it is necessary to ensure that the correct amounts of ingredients are added, and that temperatures and other process conditions are standardized. This will ensure that the product has constant quality time after time. To standardize recipes successfully it is useful to have the following:

a) a pH meter or pH papers for checking the acidity level (the optimum range is 3.0-3.3)
b) a thermometer for temperature measurement
c) accurate scales for the measurement of small amounts of ingredients such as preservatives
d) a refractometer for accurately assessing sugar content.

(Note: the boiling temperature can also be used as a less accurate measure of sugar content. The advantage is that a thermometer is cheaper than a refractometer.)

*Boiling*

Boiling can be carried out in a stainless steel or metal pot. If pans made from other materials are used there is the possibility that the fruit acids will react with the pan and fruit slowly in order to soften the flesh and extract the pectin. Once this is completed, it is vital to production boil the mixture rapidly. This change in heat output is difficult to achieve without an easily controllable heat source and the choice of heat source should be an important consideration before embarking on production. cause 'off' flavors. For larger production it is best to use a steam jacketed pan.

1. Why heating is important to preserve fruit and vegetable?
2. What are the main principles of making jams?
3. What are marmalades produced from?
4. How are fruit cheeses produced?

*Exercise 8. Give Russian equivalents to the following words and word combinations and memorize them.*

Equipment, pasteurizer, peeling machinery, steam blancher, weighting and measuring equipment, capping machine, sealing machine, fruit and vegetable chopper, cutting, slicing and dicing equipment.

*Exercise 9. Give English equivalents for the following words and word combinations and memorize them.*

Пилинг машины, паровой бланшированель, весовое и кон-

трольно-измерительное оборудование, укупорочная машина, закаточная машина, измельчитель фруктов и овощей, оборудование для резки, нарезки и смешивания, твердой завалки, напрягаясь, кипячение, оборудование, пастеризатор.

*Exercise 10. Read and translate the text C.*

**Pasteurization**

Pickles, which have an adequate preservation index, do not need to be pasteurized. However, as an additional safety measure, it is common to boil the vinegar mixture, add it to the vegetables, and fill the product into the jars while it is still hot. In this way the hot mixture will form a partial vacuum in the jar and prevent recontamination.

Sauces can be pasteurized before filling using a stainless steel pan or a steam jacketed pan, depending on the rate of production. Alternatively, pasteurization can take place after filling by placing the filled containers with the lids loosely on in a pan of boiling water and the water level around the shoulder of the jar. The time required for pasteurization will depend on the product, but most sauces are heated to between 80-95°C for five to ten minutes.

Filling and packaging

The same considerations for sterilizing and filling bottles apply as for jams. Glass jars are the most commonly-used packaging material. Pickles may also be packed in small quantities in polythene pouches. These simple pouches are sealed with a powered bar-sealer. To avoid seepage, it is suggested that a double pouch be used (i.e. an inner pouch made from food-grade polythene placed in an outer pouch made from cheaper polythene, and a label between the two).

**Dried fruit and vegetables**

Drying produce in the sun is simple and has the advantage of being a traditionally-understood technology with little or no fuel and equipment costs.

Drying removes water from the surface of the food by the combined effects of air flow, air temperature, and air humidity. The relationship between the three is important if drying is to be successful. When the moisture content is lowered below a certain level, microorganisms cannot grow, and the produce is preserved.

In humid climates, dried products must be packaged well in order to prevent moisture uptake and protect against spoilage.

*Air-dried products*

These are the most common type of dried fruit and vegetables. Some products may be blanched or sulphured to protect the natural colour and aid preservation. Dried fruit pulp is often named 'fruit leather'.

*Osmotically dried fruits*

These are fruits which are soaked in hot concentrated sugar syrups to extract some of the water prior to drying.

*Exercise 11. Give Russian equivalents for the following words and memorize them.*

Preservation index, concentrated sugar syrups, air-dried products, remove water, air humidity, to prevent moisture uptake, to protect against spoilage, additional safety measure, partial vacuum, filled containers, commonly-used packaging material, polythene pouches, glass jars, osmotically dried fruits.

*Exercise 12. Give English equivalents for the following words and memorize them.*

индекс сохранения, концентрированные сахарные сиропы, вяленые продукты, удаление воды, влажность воздуха, чтобы предотвратить поглощение влаги, для защиты от порчи, дополнительные меры безопасности, частичный вакуум, заполненные контейнеры, часто используемый упаковочный материал, полиэтиленовые мешки, стеклянные банки, осмотически высушенные фрукты.

*Exercise 13. Find the gerund. Translate the sentences.*

1) He succeeded in translating this difficult text. 2) Producing sugar is a profitable business. 3) The machine needs cleaning. 4) I am quite serious in saying that I don't want to go abroad. 5) My trying to convince him is of no use. 6) The librarian didn't object to the reader keeping the book one day longer. 7) Reading a good book gives me a lot of pleasure. 8) He never agreed to their going on that dangerous voyage. 9) He thinks of reading his report at the next conference. 10) After reading the article he made a short summary of it. 11) By reading much we learn much. 12) I'm glad to have the opportunity of reading this book. 13) Reading English is necessary for every engineer. 14) His having read that article helped him with his term work. 15) I don't remember asking this question by anybody.

*Exercise 14. Complete the sentences using the gerund.*

1) _____ (to find) gas and oil deposits at large depth is not an easy technological task. 2) He is good at _____ (to solve) mathematical equations. 3) His favourite pastime is _____ (to play) computer games. 4) A young scientist is very proud of _____ (to choose) to represent his university at the international conference. 5) He gave up the idea of _____ (to buy) new equipment. 6) He has always dreamt of _____ (to visit) other countries. 7) He persisted in _____ (to try) to solve that difficult problem. 8) He seems sorry for _____(to be) inattentive at the lectures. 9) After thoroughly _____(to examine) the student, the professor gave him a satisfactory mark. 10) After thoroughly _____(by the examination commission, the student was given a satisfactory mark. 11) This job is not worth _____(to take). 12) After (to look) through and _____ (to mark) the students' papers, the teacher handed them back. 13) She was proud of _____ (to award) the first prize. 14) The teacher was surprised at the students _____ (to do) the task so quickly. 15) You have never mentioned your _____ (to be) in Greece.

## UNIT 8. GENETICALLY MODIFIED FOOD

*Exercise 1. Read and learn all words. Be careful with the pronunciation.*

Scientist [ˈsaɪəntɪst] ученый, научный работник
Biotech [ˈbaɪətek] биотехнический, биотехнологический
Nutritional value [njuːˈtrɪʃənl ˈvæljuː] пищевая ценность
Food production [prəˈdʌkʃn] производство пищевых продуктов
To alter [ˈɔːltə] изменять, переделывать
A seed [siːd] семя, зерно
Genetic trait [ʤɪˈnetɪk treɪ] генетическая особенность
An old-age [eɪʤ] старый, пожилой
Genetic model - генетическая модель
To deal with [diːl wɪð] иметь дело, заниматься
Weed [wiːd] сорняк, трава, бурьян
Soybean [ˈsɔɪbiːn] соя, соевый
Toxin [ˈtɔksɪn] токсин, яд
Pesticide [ˈpestɪsaɪd] ядохимикат
Deficiency [dɪˈfɪʃənsɪ] недостаток, дефицит, нехватка

*Exercise 2. Read and translate the text.*

**The battle for biotech food**

Genetic engineering of crops and animals through the manipulation of DNA is producing a revolution in food production. It is also starting a battle between those who believe in its promise and critics who doubt and fear it. The potential to improve the quality and nutritional value of the vegetables and animals we eat seems unlimited. Such potential benefits notwithstanding, critics fear that genetically engineered products, so- called biotech foods, are being rushed to market before their effects are fully understood.

Biotech foods are produced from animals and plants that have been genetically altered. Genetic alteration is nothing new. Humans have been altering the genetic traits of plants for thousands of years by keeping seeds from the best crops and planting them in the following years, and by breeding varieties to make them taste sweeter, grow bigger, or last longer. In this way we've transformed the wild tomato from a fruit the size of a small stone to the giant ones we have today. From a plant called teosinte with an 'ear' barely an inch long has come out foot-long ears of sweet white and yellow corn.

On the other hand, the techniques of genetic engineering are new, and quite different from conventional breeding. Conventional breeders always used plants or animals that were related, or genetically similar. In so doing, they transferred tens of thousands of genes. By contrast, today's genetic engineers can transfer just a few genes at a time between species that are distantly related or not related at all. There are surprising examples: rat genes have been inserted into lettuce plants to make a plant that produces vitamin C, and moth gene have been inserted into apple trees to add disease resistance. The purpose of conventional and modern techniques is the same – to insert a gene or genes from an organism that carries a desired trait into an organism that does not have the trait. Several dozen biotech food crops are currently on the market, among them varieties of corn, soybeans, and cotton. Most of these crops are engineering to help farmers deal with age-old farming problems: weeds, insects, and disease. So far, problems have been few. Some biotech foods might even be safer than conventional varieties. Corn damaged by insects often contains high levels of fumonisins, toxins that are carried on the back of insects and that grow in the wounds of the damaged corn. Lab tests have linked fumonisins with cancer in animals. Studies show that most corn modified for insect resistance has lower levels of fumonicins than conventional corn damaged by insects.

However, biotech foods have had problems in the past. One problem occurred in the mid-1990s when soybeans were modified using gene S from a nut. The modified soybeans contained a protein that causes reactions in humans who are allergic to nuts. While this protein was discovered before any damage was done, critics fear that other harmful proteins created through genetic modification may slip by undiscovered. The technique of moving genes the across dramatically different species, such as rats and lettuce, also makes critics nervous. They fear something could go very wrong either in the function of the inserted gene or in the function of the host DNA, with the possibility of unexpected health effects.

Most scientists agree that the main safety issues of genetically engineered crops involve not people but the environment. Advocates of genetically engineered crops argue that some genetically modified plants may actually be good for the land, by offering an environmentally friendly alternative to pesticide, which tends to pollute water and harm animals. Far less pesticide needs to be applied to cotton plants that have been genetically modified to produce their own natural pesticide. While applied chemical pesticides kill nearly all the insects in a field, biotech crops with natural pesticide only harm insects that actually try to eat those crops, leaving the rest unharmed.

Many scientists argue that genetic engineering can help address the urgent problems of food shortage and hunger by increasing crop quantities and nutritional value, offering crop varieties that resist pests and disease, and providing ways to grow crops on land that would otherwise not support farming. According to the World Health Organization, for example, between 100 million and 140 million children in the world suffer from vitamin A deficiency. Some 500,000 go blind every year because of that deficiency, and half of those children die within a year of losing their sight. "Golden rice", a biotech variety named for its yellow color, is thought by some to be a potential solution to the suffering and illness caused by vitamin A deficiency.

Skeptics, however, claim that golden rice is little more than a public relations exercise by the biotechnology industry, which they say has exaggerated its benefits.

Whether biotech foods will deliver on their promise of eliminating world hunger and bettering the lives of all remains to be seen. Their potential is enormous, yet they carry risks. If science proceeds with caution, testing new products thoroughly and using sound judgment, the world may avoid the dangers of genetic modification, while enjoying its benefits.

*Exercise 3. Answer the following questions:*

1. Are biotech foods safe for humans?
2. Can biotech foods harm the environment?
3. Can biotech foods help feed the world?
4. What is the main idea of the text?
5. What can prevent conventional crops from growing?
6. What benefits might be associated?
7. Can "golden rice" safe the world?
8. What is the danger of fumonisins?
9. How many children die within a year, according to WHO?
10. What is the main idea of the last paragraph?

Antonyms: pesticide-free, additive-free, chemical-free, non-chemical, natural

*Exercise 4. Translate and comment the following sentences:*

1. She opposed genetically modified foods and welcomed the agreements reached at the eighth meeting of the Conference
2. Genetically modified foods being developed, patented and promoted by some corporations have raised fears of foods safety.
3. The analysis found no known instances of harmful effects on human health resulting from the consumption of genetically modified foods crops.
4. Europe's parliament has passed stringent new rules for genetically modified foods, raising American objections
5. Many consumers are concerned about the health risks of genetically modified foods .
6. The offer of genetically modified foods has created a difficult situation for the Government
7. He asked the Special Rapporteur whether he would advise people to eat genetically modified foods if death from starvation was imminent.
8. Do you think it's dangerous to eat genetically modified foods ?
9. Now look, as long as we continue to increase the population, we're going to have to continue to grow and eat genetically modified foods.
10. All efforts should also be made to ensure that consumers were privy to data on genetically modified foods products.

*Exercise 5. Study the functions of the infinitives. Translate the sentences into Russian.*

1. It was a horrible thing to have a spy in one's house.
2. To prolong this discussion is to waste time.
3. She was the first to break the silence.
4. There was nothing to be done.
5. You are too wise to understand that.
6. He went out into the street to find himself alone.
7. Soon I began to understand him.
8. To be exact, it was in 1924.
9. "To be a great painter, you work every day", he said.
10. He felt ready to leap upon him.
11. To make things worse, there was a leak in the engine-room.
12. He was too much excited to sit still and took her out into the crowded street to walk.
13. She stopped as if to ask him a question.
14. To make mistakes is only human.
15. I was hungry enough to enjoy my coffee and rolls.

*Exercise 6. Translate the following sentences into English using infinitives.*

1. Мне есть что сказать вам.
2. Вскоре вошел слуга, чтобы отвести нас в столовую.
3. У доктора не было времени, чтобы поговорить с пациентом.
4. Теперь ваша очередь рассказать мне о себе.
5. У меня есть друзья, которые могут защитить меня.
6. Мне не нравится, когда меня обманывают.
7. С ним не очень легко разговаривать.
8. Вот статья, которую нужно прочитать.
9. Я рад, что дал вам эту книгу.
10. Девушка была последней, кто видел свою хозяйку живой.
11. Она увидела меня, улыбнулась, и я вышла ей на встречу.
12. Она заставила меня написать им письмо.
13. Я хочу, чтобы вы сами поговорили с деканом.
14. Известно, что этот собор построен в 18 веке.
15. Известно, что он талантливый писатель.

## UNIT 9. CHOCOLATE PRODUCTION

*Exercise 1. Read and learn all words. Be careful with the pronunciation.*

**Confections** [kənˈfekʃn] - кондитерские изделия

**Sweets** [swiːts] - конфеты, сладости

**Candy** [ˈkændɪ] - конфета, карамель

**Hard boiling confectionery** [kənˈfekʃənərɪ] - карамельные изделия, карамель

**Chocolate confectionery -** шоколадные изделия

**Aerated [ˈeəreɪtɪd] confectionery-** взбивные кондитерские изделия

**Bakery confectionery products** - мучные кондитерские изделия

**Chewy-type confectionery** - жевательные конфеты

**Stick of confectionery** – шоколадный батончик

*Exercise 2. Read and translate the text.*

**Confections**

Confectionary industry has a long history. It starts with the discovery of honey. Chopped fruits and nuts mixed with honey was the first confectionary item in the world.

When in the middle ages cane sugar was brought to Europe it was used for the production of sugar sweets.

There are more than 2000 varieties of confections but the fundamental processes of candy making have much in common because in the majority the chief ingredient is sugar.

Next to sugar chocolate is a very common ingredient of many candies. Chocolate was first brought to Europe by Spaniards in the 16th century. At that time it was used as a beverage. Later on the manufacture of chocolate candies was started in France.

The 17th century was a period of considerable progress in confectionary. Many new types of confectionary items appeared. But till the end of the 18th century most of the process in confectionery production had been carried out manually (by hand) or by water-driving machines. The invention of steam power engine by James Watt gave rise to the development of confectionary machinery as well. Nowadays all the process in confectionary production are done by machines.

Confections are divided into several large groups: hard candies, chewy confections, aerated confections and chocolate candies.

Common sweeteners used in confections are refined crystalline cane or beet sugar, liquid sugar, corn syrup, starch, honey and some others.

Various types of candies may be prepared by varying the kind of sweetener and amount of liquid, the cooking and cooling time, and the addition of chocolate, milk products, fruits, nuts, etc.

*Exercise 3. Read and translate the text B.*

**Chocolate production.**

In this industrialized world, most of us don't know how this wonderful thing called chocolate is made. Here's how it's done, from rain forest to table.

**The Cocoa Tree**

The cocoa tree, or *Theobroma Cacao*, is a tropical evergreen native to the Americas. It is a short tree that thrives in low light under a dense rainforest canopy. It bears white flowers and a colorful fruit called the cocoa pod, which grows directly from the trunk.

**The Cocoa Pod**

The cocoa pod is an elongated capsule-like shape with a hard shell and a seedy, pulpy interior. Unripe pods are green or purple and ripe pods are yellow or orange. Suspended within the goopy interior are 20-60 seeds.

**The Cocoa Bean**

The cocoa bean is technically the seed of the cocoa pod. Chewing on cocoa beans has been proven to boost energy, mood, blood flow, and health. The Aztecs valued the cocoa bean so much that they exchanged it as currency. Today, it is valued worldwide as an ingredient for medicine, cosmetics, food, and drink. The first stage of modern chocolate production involves roasting, fermenting, drying, and shelling cocoa beans. The resulting bits are called cocoa nibs.

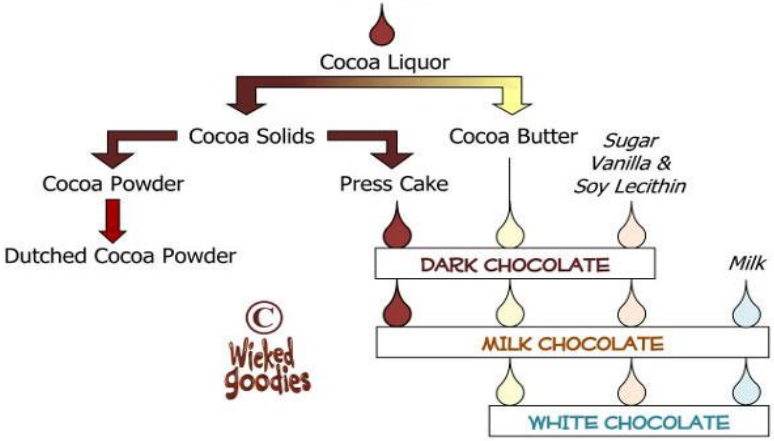
**Cocoa Nibs**

Nibs are the basis of what we know to be chocolate. They are crunchy, nourishing, and decadent with a bitter, vinegary flavor. They contain caffeine, therefore pack a buzz. They can be eaten as-is to satisfy a chocolate craving or added whole to products for crunch. Nibs can also be ground and added to foods for flavor and nutritional value. Most modern humans consider nibs to be an acquired taste and prefer the sweetened, processed version known as chocolate. In chocolate production, nibs are ground to a wet pulp to produce a paste called cocoa liquor. The below photo is of homemade cocoa liquor ground from nibs in my spice grinder.

**Cocoa Liquor**

Cocoa liquor (cocoa paste or cocoa mass) is nibs in pure liquid form. The term is deceiving in that cocoa *liquor* has neither alcohol

content nor a booze-like consistency. In fact it is rather thick. Like chocolate, it melts into a paste or hardens into a mass depending on its temperature. In U.S. supermarkets, cocoa mass is sold in blocks called *Baker's Chocolate*. More commonly, it is blended with sugars, milks, emulsifiers, and flavorings to make modern chocolate. Cocoa liquor is comprised of roughly 50% cocoa butter (fat) and 50% cocoa solids (proteins, fibers, acids, cellulose, and more).




**Cocoa Butter**

Cocoa butter is the yellowy, natural fat of the cocoa bean. It is responsible for the melting/hardening properties of chocolate. It is an extremely complex and unique lipid, whose long molecules – when heated and cooled correctly – form the tight bonds that give tempered chocolate its shine and snap. No other natural fat performs quite like it. Popular uses include:

- Confectioners add cocoa butter to melted chocolate to lower its viscosity for better pourability.
- Pharmaceutical companies use it as a base for suppositories because at room temperature, it is a solid and at body temperature, it gradually melts.
- Skin product manufacturers use it in lotions, soaps, and cosmetics as a natural moisturizer.

**Cocoa Solids**

Cocoa solids are the dark, pungent, gritty aspect of nibs. They are responsible for chocolate's reddish-brown color and enchanting flavor. In chocolate production, they are ground down to a fine powder. Cocoa solids may be pressed into blocks called *press cakes*, which are combined with other ingredients in the production of dark

and milk chocolate. They may also be pulverized into *cocoa powder*, which is used for baking purposes and beverages.

**Cocoa Powder**

Pure unsweetened cocoa powder is bitter, potent and used mostly to incorporate chocolate flavor into baked goods. In some baked goods, cocoa powder also contributes to the leavening reaction; because it is acidic, when combined in batter with an alkaline (typically baking soda), $CO_2$ bubbles form, causing the product to rise.

Any confection made with cocoa powder is only as chocolaty as the cocoa powder used. American shoppers should steer clear of Hershey brand's *Naturally Unsweetened Cocoa*, which has a weak, off taste. I recommend Ghirardelli brand's *Natural Unsweetened Cocoa*, available in the baking isle of most U.S. supermarkets.

When cocoa powder is neutralized with an alkali, it is called "dutched" cocoa powder, a different ingredient altogether.

*Answer the following questions:*

1. What was the first confectionery item?
2. When did the candy – making process start?
3. Who brought chocolate to Europe?
4. How can we change candies type?
5. Why do the main process of candies production have much in common?
6. Describe the process of chocolate production.
7. What is cacao butter?
8. How can pharmaceutical companies use cacao butter?
9. Do you like chocolate?

*Exercise 4. Read for pleasure.*

**The Top Chocolate loving nations are (lbs/yr):**

1. Switzerland 22.36
2. Austria 20.13
3. Ireland 19.47
4. Norway 17/93

**Quick Chocolate Facts**

-16 of the top 20 consuming countries are European

-in 2001 Americans consumed 3 billion pounds of chocolate, which totalled $13.1 Billion in sales

-in 2001 the sale of all other non-chocolate candy items combined was $7.6 Billion

-66% of chocolate is consumed between meals

-chocolate is North America's favourite flavour: 52% of adults surveyed like chocolate best with vanilla and fruit flavoured coming a distant second (12%)

-chocolate manufacturers currently use 40% of the world's almonds and 20% of the world's peanuts

-71% of North American chocolate eaters prefer MILK CHOCOLATE

-22% of all chocolate consumption takes place between 8pm and midnight

-more chocolate is consumed in the winter than any other season

*Exercise 5. Complete with the present simple or will.*

I'll give him your message when I __see__ __him__ (see).

a) Don't forget to turn off the lights before you _____ . (leave)

b) Go to bed when the film _____ . (finish)

c) They _____ married until they find a place to live. (not get)

d) If I see Emma, I _____ her you are looking for her. (tell)

e) I'll call you as soon as I _____ at the hotel.

f) You won't be able to park unless you _____ there early. ( get)

g) As soon it stops raining, we _____ out. (go)

h) She won't like curry if she _____ spice food. (not like)

i) Don't write anything until I _____ you. (tell)

j) When she finds out what he's done, she _____ furious. (be)

*Exercise 6. Write second conditional sentences.*

*If you/ speak to your boss, I'm sure he/ understand.*

*If you spoke to your boss, I'm sure he would understand.*

1. It/ be better for me if we/ meet tomorrow. 2. She/ not treat him like that if the really/ love him. 3. If I/ can live anywhere in the world, I/live in New Zealand. 4. The kitchen/ look bigger if we/ paint it white. 5. I/ not buy that house if I/ be you. 6. He/ be more attractive if he/ wear nicer clothes. 7. If we/ not have children, we/ travel more. 8. What/ you do in this situation if you/ be me?

*Exercise 7. First or second conditional? Complete the sentences.*

*If you tell her anything, she will tell everybody in the office. (tell)*

*We'd have a dog if we had a garden. (have)*

a) It'll be quicker if we _____ a taxi to the airport. (get)

b) If you stopped smoking, you _____ better. (feel)

c) What would you do if you _____ your job? (lose)

d) If you buy the food, I _____ tonight. (cook)

e) I think he'd be happier if he _____ alone. (not live)

f) I'll be very surprised if Marina _____ coming here. (not get lost)

g) Where will he live if he _____ the job in Moscow? (get)

h) If she didn't have to look after her mother, she _____ life more. (enjoy)

**Chocolate printing technology**

Choc Edge has introduced its latest chocolate printer – The Choc Creator 2.0 Plus. Designed from the ground up, the CCV2.0 Plus increases the potential for creativity while decreasing the printer's size and weight, "creating a must-have chocolate making experience for chocolatiers, marketing companies, and anyone looking for an exciting new way to engage with customers and clients," says the company.

Improving on the innovations of the CCV1 and CCV2, the latest Choc Creator is more reliable and easier to use than ever before, it says. A 30ml metal syringe with a removable nozzle, combined with a printing head that evenly heats the syringe, is designed to print with absolutely no blocking. The aluminium syringe has been designed to allow for the printing head to be easily cleaned after each printing run.

A removable platform is intended to enable users to easily re-

move their print for cooling without the need for a separate substrate. In addition to this a larger build envelope of 180x180x50mm means that users can create larger prints than ever before.

Posted in News on **27 January 2016**

## UNIT 10. CONDIMENT

*Exercise 1. Read and learn all words. Be careful with the pronunciation.*

Condiment [ˈkəndɪmənt] приправа, специи
Relish [ˈrelɪʃ] наслаждаться, получать удоволльствие
Flavor [ˈfleɪvə] вкус, аромат
Antioxidant [ænti:ˈɒksɪdənt] антиоксидант
Restoration [restəˈreɪʃn] восстановление, возобновление
Blood purification [blʌd pjʊərɪfɪˈkeɪʃn] очищение, очистка
Solely [ˈsəʊllɪ] исключительно, сугубо
Harvest [ˈhɑ:vɪst] урожай, жатва
Cuisine [kwi:ˈzi:n] кухня, кулинария
Palatable [ˈpælətəbl] вкусный, аппетитный

*Exercise 2. Read and translate the text.*

A **condiment** is a spice, sauce, or other food preparation that is added to food to impart a particular flavor, to enhance its flavor, or in some cultures, to complement the dish. The term originally described pickled or preserved foods, but has shifted meaning over time.

Many condiments are available packaged in single-serving packets, like mustard or ketchup, particularly when supplied with take-out or fast-food meals. They are usually applied by the diner, but are sometimes added prior to serving; for example, in a sandwich made with ketchup, mustard or mayonnaise. Some condiments are used during cooking to add flavor or texture to the food; barbecue sauce, teriyaki sauce, soy sauce are examples.

Condiments were known in Ancient Rome, Ancient India, Ancient Greece and Ancient China, and were often used to improve the taste of spoiling food; before food preservation techniques were widespread, pungent spices and condiments were used to make the food more palatable.

**Turmeric** belongs to the ginger family. Turmeric is one of the most popular spices in the Middle East and Asia. It imparts delicate yellow colour, unique flavour and pleasant relish to all dishes. This

condiment can be found in many spice mixtures but it is also used as independent ingredient.

This amazing oilseed culture has come to us from Africa. **Indian sesame** is known as well, which is by far the most popular around the world. Sesame seeds are used for the production of sesame oil, as well as a spice in cooking, medicine and other industries. Its miraculous properties are due to the fact that sesame contains a substance which is called sesamin. It is a powerful antioxidant. It helps to prevent many diseases, including cancer, and reduce blood cholesterol level, bringing great benefit to people.

The function of lowering cholesterol performs contained in the seeds of sesame beta - sitosterol. Nutritional composition of sesame seeds include carbohydrates, amino acids, proteins and vitamins A, C, E and C. They are also rich in calcium, phosphorus, iron, potassium, magnesium and other mineral compounds. It also includes phytin, which contributes to the restoration of the mineral balance of the body; also dietary fiber and lecithin.

**Saffron** is a unique spice which combines many beneficial properties. Regular consumption of this spice is very useful for the liver and blood purification, skin complexion and mood improvement and for the invigoration of the total human organism. This is the most unique herbal remedy and the most expensive spice in the world. Iranian saffron stands out among its competitors for its top quality which persists throughout its shelf life.

High price of saffron is explained by two reasons. First of all, its production is very labor-intensive, secondly, aroma, taste and medicinal properties of saffron have no equal among spices. Saffron is derived from the dried stigma and pistil of the purple saffron crocus flowers (Crocus sativus) which bloom only 10-15 days a year and the duration of the single flower blossom is only 2-3 days. Solely manual labor is used for collecting flowers and processing of crocus stigmas. Stigmas have to be cut out on the first day of the flower exposure. The quality of saffron depends on the speed of the collection and drying. A picker need to collect about 150-220 thousand flowers at dawn until the sun dried the pistils to get just one kilo of saffron. The area of one acre yields a harvest of 4-5 kilograms of saffron depending on the weather and pickers' professionalism.

**Ginger** root is a rhizome (subterranean stem). Its useful properties are confirmed by modern researches day by day. The active constituent gingerol contained in a fresh ginger root (which is converted into zingerone after culinary treatment and into shogaol in the

dried ginger root), giving ginger its spicy taste, has anti-inflammatory, antibacterial, antioxidant and anesthetic properties.

Ginger is widely used in many cuisines around the globe. It is the most popular in its Indian homeland where it is actively cultivated and exported to various countries.

**Cloves.** This spice is popular all over the world. It is used for making pickles. Spice mixtures which include cloves are used in confectionery, fish canning and sausage industries.

**Black pepper.** Pepper is the "king of Indian spices". It is extremely popular all over the world. Black pepper is obtained from the unripe fruits. These dried fruits are called peppercorns. Black pepper is used both whole and ground — as an independent condiment and in various mixtures.

In recent years Vietnam black pepper has gained worldwide popularity. The high quality blends in with the price that attracts buyers from all over the world.

*Exercise 3. Answer the following questions:*

1. What is a condiment?
2. When do we usually use condiments?
3. What is the origin of spices?
4. What is turmeric?
5. What is saffron?
6. What herbal can we use as a remedy?
7. Is saffron cheap or not?
8. What is the most popular condiment?
9. What is your personal attitude to condiments?

*Exercise 4. Translate the following sentences into Russian:*

1. The police officer is an interesting character and adds spice to the investigations.
2. Believe me, the usage of missiles and countermeasures adds a lot of spice to the game.
3. There are some variants that we have found add more spice / interest
4. Nutmeg, pepper, caraway seeds, ground ginger and the curry spices of cumin and coriander are also worth considering.
5. There is no part of the world that is not home to a variety of spices; cumin, coriander, fennel, fenugreek, nigella, sesame, anise, the list is endless

6. For this, mustard seeds and fresh green chillies are imperative, and the warming spices of cumin, coriander, and turmeric are standard.
7. Many are spiced, or flavoured with lemon zest, and further embellished with nuts and dried or candied fruit.
8. However, the curry was rich and flavourful, pungently spiced, with the medium heat level towards the upper reaches of my spice tolerance
9. I recommend spiced apricot sauce to serve with chicken.
10. Nearly all of the credits are written with condiments like mustard and mayonnaise on foods like hamburgers and corn dogs.
11. It was used as a condiment and to flavour pickles and sauces
12. Food stations need condiments such as ketchup, mustard and mayonnaise.

*Exercise 5. Supply the necessary forms of the verbs in brackets. Refer to the sentences to the past.*

1. If he … his father's advice he … himself in that miserable state (follow, not find).
2. If my friend …there everything … different (be, be).
3. He … this post if it … vacant (offer, be).
4. Even if I … a stranger he … of his misfortunes (be, talk).
5. If she … this piece of painting she … it )like, buy).
6. If anything … he … you know (happen, let).
7. If the girl … the telephone call she never …the good news (not answer, hear).
8. If they … dictionaries they … the article correctly (bring, can translate).
9. If there … a strong wind it … impossible to swim in the lake (be, be).
10. If you … here in time we … our concert (come, begin).
11. He … his train if you … him more (miss, keep).

*Exercise 6. Translate the sentences into English using the forms of the Mood referring to the Past.*

1. Если бы он был свободен вчера, он навестил бы меня.

2. Если бы вы были вчера на концерте, вы получили бы большое удовольствие.
3. Если бы я знала об этой статье раньше, я перевела бы ее.
4. Соревнования состоялись бы, если бы на полил сильный дождь.
5. Он никогда бы не узнал меня, если бы я с ним не заговорила.
6. Девочка не волновалась бы так сильно, если бы ей не задавали так много вопросов.
7. Если бы вы помогли ей, она уже бы закончила работу.
8. Вы бы не устали так вчера, если бы больше отдыхали.
9. С ним ничего бы не случилось, если бы он не торопился.
10. Если бы вы попросили меня об этом неделю назад, я помогла бы вам сразу.
11. Если бы я был на вашем месте, тогда я поступил бы иначе.
12. Если бы вы посмотрели старые газеты, вы бы нашли интересный материал для вашего доклада.
13. Если бы он был вчера в институте, мы встретили бы его.
14. Если бы мы отправили телеграмму вчера, они бы ее уже получили.
15. Если бы она зашла ко мне вчера, я бы помогла ей в этой работе.