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Food Engineering

Учебное пособие для студентов 2-го курса
инженерно-технологического факультета

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Предлагаемое учебное пособие предназначено для студентов 2 курса инженерно-технологического факультета, обучающихся по специальностям: 271200 – Технология продуктов общественного питания; 271300 – Пищевая инженерия малых предприятий; 280102 – Безопасность технологических процессов и производств, и направлено на развитие основ письменной речи, овладение грамматическими формами и оборотами, формирование навыков чтения и перевода оригинальной литературы по специальности на английском языке.

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Введение

Учебно-методическое пособие разработано в соответствии с требованиями Государственных образовательных стандартов высшего профессионального образования, утверждённых Министерством образования РФ, рабочими учебными планами, утверждёнными Учёным советом инженерно-технологического факультета.

Данное пособие предназначено для студентов 2 курса инженерно-технологического факультета, обучающихся по специальностям: 271200 – Технология продуктов общественного питания; 271300 – Пищевая инженерия малых предприятий; 280102 – Безопасность технологических процессов и производств, и имеет целью формирование навыков чтения англоязычной специализированной литературы у студентов, изучающих пищевые технологии.

Пособие включает в себя 30 текстов для изучающего и ознакомительного чтения. Тексты сгруппированы по тематическому принципу и охватывают основные вопросы производства и переработки продуктов питания как растительного, так и животного происхождения.

Тексты заимствованы из современных англоязычных источников, носят познавательный характер и по содержанию соответствуют материалу, который студенты изучают на 1-2 курсах.

Тексты снабжены предтекстовыми и послетекстовыми упражнениями, направленными на формирование грамматических и лексических навыков чтения литературы по специальности. Лексические упражнения включают задания на словообразование, нахождение синонимов и антонимов, перевод, оценку суждений, что способствует увеличению потенциального словаря наряду с повторяемостью лексических единиц в рамках тематики текстов.

Пособие рассчитано на 170 часов практических

занятий и может быть использовано в аудиторной и внеаудиторной работе студентов для развития коммуникативной компетенции – умения получать, перерабатывать и передавать информацию.

Unit 1

Food Engineering

1. Copy the following words and word combinations, transcribe, translate and memorize them.

Key words:

Food engineering, applied science, related industries, cost-effective, field of activities, food processing, instrumentation, food processing plant, government agencies, pharmaceutical companies, packaging, health care, drug/food products, waste treatment system, technical support, to employ tools, nanotechnology, technique, preservation technologies, sustainable technologies, sanitation technologies monitoring and control systems, to facilitate automation, flexible food manufacturing, efficient utilization, energy saving, reduction of effluents and emissions, storage of liquid and solid foods, chilling and freezing of goods, dehydration, thermal processing, extrusion, membrane processes, food machinery, ingredient manufacturing, shelf-life, inventory management

2. Give the synonyms to the following words. Find them in the text:

To produce, to apply, to develop, products, to hire, tools, safety, significant, efficient, technologies, monitoring, challenge, advanced, significant, food production, issues, preservation, waste, reduction

3. Give the antonyms to the following words. Find them in the text:

Liquid, heating, thermal processing

4. Give derivatives:

To apply, science, biology, to produce, pharmacy, to distribute, to employ, to preserve, to computate, to add, to utilize, to emit, to process, to store, to relate, to extrude, to know, commercial, environment, responsible

5. Make the sentences complete using the information from the text, translate the sentences from English into Russian:

a) Food engineering includes, but is not limited to, the application of … … and … … principles in food materials.

b) Prospective major employers for food engineers include companies involved in food …, food …, …, … manufacturing, …, and control.

c) Improving …, …, and … remain critical issues in food engineering study.

d) New … materials and … are being developed to provide more protection to foods.

e) Advanced monitoring and control systems are developed to … automation and … food manufacturing.

f) Energy … and … of environmental problems continue to be important food engineering issue.

g) Significant progress is being made in … management, efficient … of energy, and reduction of … and … in food production.

h) Typical topics to be discussed include modern packaging, cleaning and … technologies.

6. Translate the sentences into Russian. Identify the tenses.

a) Food engineering has been developing rapidly as a multidisciplinary field of related sciences for the last several decades.

b) Food engineers have provided the technological knowledge transfer essential to the cost-effective production.

c) Food processing plants, consulting firms, government agencies, pharmaceutical companies, and health-care firms hire food engineers.

d) Food engineering is not limited to the application of agricultural engineering and chemical engineering principles to food materials.

e) In the process of development of food engineering modern tools were employed to develop new products and processes.

f) New packaging materials and techniques are being developed to provide more protection to foods, and novel preservation technologies are emerging.

g) Advanced monitoring and control systems are developed to facilitate automation and flexible food manufacturing.

h) Significant progress is being made in waste management, efficient utilization of energy, and reduction of effluents and emissions in food production.

7. Read the text and translate it from English into Russian:

Food Engineering

Food engineering is a multidisciplinary field of applied physical sciences which combines science, microbiology, and engineering education for food and related industries. Food engineering includes, but is not limited to, the application of

agricultural engineering and chemical engineering principles to food materials. Food engineers provide the technological knowledge transfer essential to the cost-effective production and commercialization of food products and services.

Food engineering is a very wide field of activities. Prospective major employers for food engineers include companies involved in food processing, food machinery, packaging, ingredient manufacturing, instrumentation, and control. Firms that design and build food processing plants, consulting firms, government agencies, pharmaceutical companies, and health-care firms also hire food engineers. Among its domain of knowledge and action are:

- research and development of new foods, biological and pharmaceutical products
- development and operation of manufacturing, packaging and distributing systems for drug/food products
- design and installation of food/biological/pharmaceutical production processes
- design and operation of environmentally responsible waste treatment systems
- marketing and technical support for manufacturing plants.

In the development of food engineering, one of the many challenges is to employ modern tools and knowledge, such as computational materials, science and nanotechnology, to develop new products and processes. Simultaneously, improving quality, safety, and security remain critical issues in food engineering study. New packaging materials and techniques are being developed to provide more protection to foods, and novel preservation technologies are emerging. Additionally, process control and automation regularly appear among the top priorities identified in food engineering. Advanced monitoring and control systems are developed to facilitate automation and flexible food manufacturing. Furthermore, energy saving and minimization of environmental problems continue to be important food

engineering issues, and significant progress is being made in waste management, efficient utilization of energy, and reduction of effluents and emissions in food production.

Typical topics include:

- Advances in classical unit operations in engineering applied to food manufacturing;
- Progresses in the transport and storage of liquid and solid foods;
- Developments in heating, chilling and freezing of foods;
- Advanced mass transfer in foods;
- New chemical and biochemical aspects of food engineering and the use of kinetic analysis;
- New techniques in dehydration, thermal processing, non-thermal processing, extrusion, liquid food concentration, membrane processes and applications of membranes in food processing;
- Shelf-life, electronic indicators in inventory management, and sustainable technologies in food processing;
- Modern packaging, cleaning, and sanitation technologies.

8. Answer the following questions:

1. What does food engineering science include? 2. What spheres of activities are food engineers involved in? 3. What challenges is food engineering facing now? 4. What issues remain to be critical in food engineering study? 5. What systems are developed to facilitate automation and flexible food manufacturing? 6. What typical topics can be included in the discussion of essential issues in food engineering?

9. Match the two parts of the sentences. Look at the text to help you.

1) Food engineering combines …

2) Food engineers provide …

3) Advanced monitoring and control systems are …

4) Significant progress is being made …

5) One of the many challenges is …

6) Food engineering is …

7) In the development of food engineering it is important …

a) developed to facilitate automation and flexible food manufacturing.

b) in reduction of effluents and emissions in food production.

c) to employ modern tools and knowledge.

d) to develop new products and processes.

e) is a multidisciplinary field of applied physical sciences.

f) the technological knowledge transfer essential to the commercialization of food products and services.

g) science, microbiology, and engineering education for food and related industries.

10. Are the following statements true or false?

a) Energy saving isn't important for food engineering now.

b) Food engineering is a multidisciplinary field of non-applied physical sciences.

c) There is significant progress in utilization of energy.

d) Food engineering is a very narrow field of activities.

e) Control systems are developed to facilitate automation.

f) Food engineering is not limited to the application of

agricultural engineering and chemical engineering principles to food materials.

g) New packaging materials and techniques are being developed to provide more protection to foods.

11. Match the underlined words with the definitions below.

Food packaging, Nanotechnology, Food processing, Utilization

a) is the set of methods and techniques used to transform raw ingredients into food.

b) is packaging for food.

c) is statistical concept as well as a primary business measure for the rental industry.

d) is the study of manipulating matter on an atomic and molecular scale.

12. Write an abstract of the text and render it in English.

Unit 2

Food Preservation

1. Copy the following words and word combinations, transcribe, translate and memorize them.

Key words:

Spoilage, edibility, nutritive value, microorganism, yeast, fungi, flavor, rancidity, to inhibit, drying, dehydration, freezing, curing, grilling, ageing, fermentation, fat, acids, mold, deterioration, to hinder, decay, evaporation, to remove, nitrate, nitrite, smoking,

pickling, brine, solution, vinegar, cooling, to cause disease, shelf-life, food stuffs, decomposition, to expose

2. Give the synonyms to the following words. Find them in the text:

To treat, to slow down, to retard growth, sufficient, dehydration, vacuum-packing, qualities, loss of quality, food preparation, food deterioration, nutritive value, to provide, brine, purpose, a wide range of food, to occur, to detect, to allow, beverages, to roast

3. Give the antonyms to the following words. Find them in the text:

To inhibit, cellular, to add, to survive, commercially, cooking, moisture.

4. Give derivatives:

To survive, to contaminate, to treat, to spoil, to preserve, to inhibit, to modify, to cook, to deliver, to pasteurize, to grow, nutrient, rancid, age, enzyme, oxide, freeze, safe, smoke, cure, to remove, to evaporate, to create, to expire, to sterilize, to bake, microbe.

5. Make the sentences complete using the information from the text, translate the sentences from English into Russian:

a) Food preservation is the process of … and … food to stop or greatly … spoilage.

b) Maintaining or creating nutritional … , …. and … is important in preserving its value as food.

c) Preservation usually involves preventing the growth of …, … , and other … .

d) Some preservation methods require the food to be … after treatment to prevent …. with microbes.

e) Low temperature and reduction of water activity prevents microbial growth, slowing of … reactions.

f) Drying is a method of food preservation that works by … water from the food, which inhibits the growth of microorganisms and hinders quality … .

g) Drying prevents … and … from surviving in the food.

h) Curing refers to various food preservation processes, especially of meat or fish, by the addition of a combination of … , …. , …. and … .

6. Translate into Russian. Comment on use of Modal verbs.

a) What qualifies as food fit for humans in one culture may not qualify in another culture.

b) It includes processes to inhibit natural ageing and discolouration that can occur during food preparation.

c) Ordinary pasteurized milk needs constant refrigeration and should have a shelf life of 10 to 16 days unopened.

d) Foods have varying degrees of natural protection against spoilage and may require that the final step occur in a pressure cooker.

e) Barbecuing and pit-roasting may be done in a smoke- roaster, closed wood-fired masonry oven.

f) This only should be done in a well-ventilated area to prevent carbon monoxide poisoning.

g) Cold smoking can be used as a flavor enhancer for items such as pork chops, beef steaks, chicken breasts, salmon and scallops.

h) Some foods may be hot smoked to the appropriate doneness for an even deeper smoked flavor.

i) Smokehouse temperatures for cold smoking should be maintained below 38 ^{0}C.

7. Read the text and translate it from English into Russian:

Food Preservation

Food preservation is the process of treating and handling food to stop or greatly slow down spoilage (loss of quality, edibility or nutritive value) caused or accelerated by micro-organisms. Some methods, however, use benign bacteria, yeasts or fungi to add specific qualities and to preserve food (e.g., cheese, wine). Maintaining or creating nutritional value, texture and flavour is important in preserving its value as food. This is culturally dependent, as what qualifies as food fit for humans in one culture may not qualify in another culture.

Preservation usually involves preventing the growth of bacteria, fungi, and other micro-organisms, as well as retarding the oxidation of fats which cause rancidity. It also includes processes to inhibit natural ageing and discolouration that can occur during food preparation such as the enzymatic browning reaction in apples after they are cut. Some preservation methods require the food to be sealed after treatment to prevent recontamination with microbes; others, such as drying, allow food to be stored without any special containment for long periods.

Method	**Effect on microbial growth or survival**
Refrigeration	Low temperature to retard growth
Freezing	Low temperature and reduction of water activity prevents microbial growth, slowing of oxidation reactions
Drying, curing and conserving	Reduction in water activity sufficient to delay or prevent microbial growth

Vacuum and oxygen free modified atmosphere packaging	Low oxygen tension inhibits strict aerobes and delays growth of facultative anaerobes
Carbon dioxide enriched and or modified atmosphere packaging	Specific inhibition of some micro-organisms
Addition of weak acids; e.g. sodium lactate	Reduction of the intracellular pH of micro-organisms
Lactic fermentation	Reduction of pH value *in situ* by microbial action and sometimes additional inhibition by the lactic and acetic acids formed and by other microbial products. (e.g. ethanol, bacteriocins)
Sugar preservation	Cooking in high sucrose concentration creating too high osmotic pressure for most microbial survival.
Ethanol preservation	Steeping or cooking in Ethanol produces toxic inhibition of microbes. Can be combined with sugar preservation
Emulsification	Compartmentalisation and nutrient limitation within the aqueous droplets in water-in-oil emulsion foods
Addition of preservatives such as nitrite or sulphite ions	Inhibition of specific groups of micro-organisms
Pasteurization and appertization	Delivery of heat sufficient to inactivate target micro-organisms to the desired extent

Food irradiation (Radurization, radicidation and radappertization)	Delivery of ionising radiation to disrupt cellular RNA
Application of high hydrostatic pressure (Pascalization)	Pressure-inactivation of vegetative bacteria, yeasts and moulds
Pulsed electric field processing (PEF treatment)	Short bursts of electricity for microbial inactivation

Preservation processes include:

- Heating to kill or denature micro-organisms (e.g. boiling);
- Oxidation (e.g. use of sulfur dioxide);
- Toxic inhibition (e.g. smoking, use of carbon dioxide, vinegar, alcohol etc.);
- Dehydration (drying);
- Osmotic inhibition (e.g. use of syrups);
- Low temperature inactivation (e.g. freezing);
- Ultra high water pressure (e.g. fresherized, a kind of "cold" pasteurization, the pressure kills naturally occurring pathogens, which cause food deterioration and affect food safety.);
- Many combination of these methods.

Common methods of applying these processes include drying, spray drying, freeze drying, freezing, vacuum-packing, canning, preserving in syrup, sugar crystallisation, food irradiation, and adding preservatives or inert gases such as carbon dioxide. Other methods that not only help to preserve food, but also add flavour, include pickling, salting, smoking, preserving in syrup or alcohol, sugar crystallisation and curing.

8. Answer the following questions:

1. How can food preservation be defined? 2. What is important in preserving nutritional value, texture and flavor of food products? 3. What does preservation involve? 4. What are the main preservation processes? 5. What is refrigeration effect on microbial growth or survival? 6. What are drying, curing and conserving designed for? 7. How can lactic fermentation be characterized? 8. Where is sugar preservation used? 9. What is pasteurization meant for? 10. What is the difference between cold and hot smoking?

9. Skim through the text and give it a title, formulate the topic of each paragraph.

Drying is a method of food preservation that works by removing water from the food, which inhibits the growth of microorganisms and hinders quality decay. Drying food using sun and wind to prevent spoilage has been practised since ancient times. Water is usually removed by evaporation (air drying, sun drying, smoking or wind drying) but, in the case of freeze-drying, food is first frozen and then the water is removed by sublimation. Bacteria yeasts and moulds need the water in the food to grow. Drying effectively prevents them from surviving in the food.

Curing refers to various food preservation and flavoring processes, especially of meat or fish, by the addition of a combination of salt, sugar, nitrates or nitrite. Many curing processes also involve smoking.

Pickling, also known as brining or corning is the process of preserving food by anaerobic fermentation in brine (a solution of salt in water) to produce lactic acid, or marinating and storing it in an acid solution, usually vinegar (acetic acid). The resulting food is called a *pickle*. This procedure gives the food a salty or sour taste. In South Asia, edible oils are used as the pickling medium with vinegar.

Sugaring is a food preservation method similar to pickling. Sugaring is the process of desiccating a food by first dehydrating it, then packing it with pure sugar. This sugar can be crystalline in the form of table or raw sugar, or it can be a high sugar density liquid such as honey, syrup or molasses. The purpose of sugaring is to create an environment hostile to microbial life and prevent food spoilage. Sugaring is commonly used to preserve fruits as well as vegetables such as ginger. From time to time sugaring has also been used for non-food preservations. A risk in sugaring is that sugar itself attracts moisture. Once a sufficient moisture level is reached, native yeast in the environment will come out of dormancy and begin to ferment the sugars into alcohol and carbon dioxide. This leads to the process of fermentation. Although fermentation can be used as a food preservation method, it must be intentionally controlled, or the results will tend to be unpleasant

Pasteurization is a process of heating a food, usually liquid, to a specific temperature for a definite length of time, and then cooling it immediately. This process slows microbial growth in food. The process was named after its creator, French chemist and microbiologist Louis Pasteur. Pasteurization aims to reduce the number of viable pathogens so they are unlikely to cause disease (assuming the pasteurized product is stored as indicated and consumed before its expiration date). Pasteurization is typically associated with milk. It is the main reason for milk's extended shelf life. Some of the diseases that pasteurization can prevent are diphtheria, salmonellosis, strep throat, scarlet fever, listeriosis, brucellosis and typhoid fever.

Freezing is also one of the most commonly used processes commercially and domestically for preserving a very wide range of food including prepared food stuffs which would not have required freezing in their unprepared state. For example, potato waffles are stored in the freezer, but potatoes themselves require only a cool dark place to ensure many months' storage. Cold stores provide large volume, long-term storage for strategic food

stocks held in case of national emergency in many countries.

Canning is a method of preserving food in which the food is processed and sealed in an airtight container. The packaging prevents microorganisms from entering and proliferating inside. Canning involves cooking food, sealing it in sterile cans or jars, and boiling the containers to kill or weaken any remaining bacteria as a form of sterilization. Foods have varying degrees of natural protection against spoilage and may require that the final step occur in a pressure cooker. High-acid fruits like strawberries require no preservatives to can and only a short boiling cycle, whereas marginal fruits such as tomatoes require longer boiling and addition of other acidic elements. Low acid foods, such as vegetables and meats require pressure canning. Food preserved by canning or bottling is at immediate risk of spoilage once the can or bottle has been opened. Lack of quality control in the canning process may allow ingress of water or micro-organisms. Most such failures are rapidly detected as decomposition within the can causes gas production and the can will swell or burst.

Pickling is a method of preserving food in an edible anti-microbial liquid. Pickling can be broadly categorized as chemical pickling for example, in chemical pickling, the food is placed in an edible liquid that inhibits or kills bacteria and other micro-organisms. Typical pickling agents include brine (high in salt), vinegar, alcohol, and vegetable oil, especially olive oil but also many other oils. Many chemical pickling processes also involve heating or boiling so that the food being preserved becomes saturated with the pickling agent. Common chemically pickled foods include cucumbers, peppers, corned beef, herring, and eggs, as well mixed vegetables such as piccalilli.

Smoking is the process of flavoring, cooking, or preserving food by exposing it to the smoke from burning or smoldering plant materials, most often wood. Meats and fish are the most common smoked foods, though cheeses, vegetables, and ingredients used to make beverages such as whisky, rauchbier and lapsang souchong tea are also smoked.

- "Hot smoking" exposes the foods to smoke and heat in a controlled environment. Although foods that have been hot smoked are often reheated or cooked, they are typically safe to eat without further cooking. Hams are fully cooked once they are properly smoked.
- "Smoke-roasting" or "Smoke-baking" refers to any process that has the attributes of smoking with either roasting or baking. This smoking method is sometimes referred to as "barbecuing", "pit-roasting", or "pit-baking".
- "Cold smoking" can be used as a flavor enhancer for items such as pork chops, beef steaks, chicken breasts, salmon and scallops. The item can be cold-smoked for a short period, just long enough to give a touch of flavor. Such foods are ready to be finished to order by such cooking methods as grilling, sautéing, baking, and roasting.

10. Read the text again and make up questions to the underlined words.

11. Match the two parts of the sentences. Look at the text to help you.

1) Meats and fish are …

2) Typical pickling agents include …

3) Canning involves …

4) Common chemically pickled foods include …

5) Pasteurization can prevent …

6) Some preservation methods require the food …

7) Food preservation is …

a) cucumbers, peppers, corned beef, herring, and eggs, as well mixed vegetables such as piccalilli.

b) the process of treating and handling food to stop or greatly slow down spoilage (loss of quality, edibility or nutritive value) caused or accelerated by micro-organisms.

c) the most common smoked foods.

d) diphtheria, salmonellosis, strep throat, scarlet fever, listeriosis, brucellosis and typhoid fever.

e) brine (high in salt), vinegar, alcohol, and vegetable oil, especially olive oil but also many other oils.

f) to be sealed after treatment to prevent recontamination with microbes; others allow food to be stored without any special containment for long periods.

g) cooking food, sealing it in sterile cans or jars, and boiling the containers to kill or weaken any remaining bacteria as a form of sterilization.

12. Are the following statements true or false?

a) Sugaring is the process of desiccating a food by first dehydrating it, then packing it with pure sugar.

b) Freezing is the least commonly used processes commercially and domestically for preserving a very wide range of food.

c) Drying is a method of food preservation that works by adding water into the food.

d) Preservation usually involves preventing the growth of bacteria, fungi, and other micro-organisms.

e) Pickling, salting, smoking and preserving in syrup or alcohol help to preserve food and add flavor.

f) "Cold smoking" cannot be used as a flavor enhancer for pork chops, beef steaks, chicken breasts, salmon and scallops.

g) Curing doesn’t refer to food preservation and flavoring processes.

13. Match the underlined words with the definitions below.

Smoking, Pickling, Canning, Pasteurization

a) is a method of preserving food in an edible anti-microbial liquid.

b) is a process of heating a food to a specific temperature and then cooling it immediately.

c) is the process of flavoring, cooking, or preserving food by exposing it to the smoke from burning or smoldering plant materials.

d) is a method of preserving food in which the food is processed and sealed in an airtight container.

14. Write an abstract of one of the texts and render it in English.

Unit 3
Meat Processing

1. Copy the following words and word combinations, transcribe, translate and memorize them.

Key words:

Flesh, muscle, tissue, mammal, intramuscular, compound, connective tissue, muscle fiber, carcass, dressing, cutting,

slaughtering, eviscerating, skinning, cut, shoulder cut, chuck, rib, loin, sirloin, brisket, belly, breast meat, ageing, decomposition, implement, preservative, stabilizer, rancidity, freezer storage, vacuum-packing, canning, sealing, drying, moisture, fermentation, curing, smoking, additive, juiciness, tenderness, nitrite, stew, fondue, grind, loaf, pickling, to fry, recipe, spice, to season, fresh sausage, cooked sausage, jerky, trimming, cuisine, pate, delicatessen, brine, edible, sauce, pork, beef, mutton, veal.

2. Give the synonyms to the following words. Find them in the text:

Meat packing industry, inorganic substances, connective tissue, animal, usable meat, dressing, shoulder cut, rib cut, loin, picnic ham, bacon, spoilage of meat, flavor, storage life, pathogenic microorganisms, to retard, seasoning, pickling, brisket, spicy.

3. Give the antonyms to the following words. Find them in the text:

Narrow muscle fibers, overfeed, harmful, to decrease, cooked, composition, bone, to treat, red meat

4. Give derivatives:

Muscle, mammal, age, blood, skin, to cut, dress, to term, to spoil, loin, infection, to treat, rancid, to freeze, to contaminate, to can, to mix, to preserve, to season, to cure, salt, dry, to smoke, to spice, safety, juicy, tender, to serve.

5. Make the sentences complete using the information from the text, translate the sentences from English into Russian:

a) Meat is animal … that is used as food.

b) Liver, skin, brain can be described as … .

c) Meat can be broadly classified as "…" or "…" depending on the concentration of myoglobin.

d) The meat of adult mammals such as … is generally considered red, while … is generally considered white.

e) Without the application of … and … , the fats in meat may also begin to rapidly decompose leading to an objectionable taste known as … .

f) To prevent spoilage of meats, producers widely use … which helps to extend storage life.

g) … involves sealing meat in a container and then … it to destroy all microorganisms.

h) … removes moisture from meat products.

6. Translate the sentences into Russian paying attention to Complex Subject structures.

a) Meat is considered to be nutritious food.

b) The pig is believed to be the world's second largest provider of meat known as pork.

c) Meat is considered to be an essential part of human diet.

d) Cutting carcasses is said to be the next step in meat processing.

f) Meat curing and smoking are believed to be the oldest methods of meat preservation.

g) Commercial canning is known to have been introduced in 1821.

h) Variety meats are supposed to be edible and widely used by consumers.

7. Read the text and translate it from English into Russian:

Meat Processing

Meat is animal flesh that is used as food. Most often, this means the skeletal muscle and associated fat, but it may also describe other edible tissues such as organs, livers, skin, brains, bone marrow, kidneys and lungs. The word meat is also used by the meat packing industry in more restrictive sense: the flesh of mammalian species (pigs, cattle, lambs, etc.) raised and prepared for human consumption.

Adult mammalian muscle flesh consists of roughly 75 % water, 19 per cent protein, 2.5 per cent intramuscular fat, 1.2 per cent carbohydrates and 2.3 per cent other soluble non-protein substances. These include nitrogenous compounds, such as amino acids, and inorganic substances such as minerals.

The remaining protein mass consists of connective tissue (collagen and elastin) as well as organelle tissue.

Meat can be broadly classified as “red” or “white” meat depending on the concentration of myoglobin in muscle fibre. When myoglobin is exposed to oxygen, reddish oxymyoglobin develops, making myoglobin-rich meat appear red. The redness of meat depends on species, animal age, and fibre type: red meat contains more narrow muscle fibres that tend to operate over long periods without rest, while white meat contains more broad fibres that tend to work in short fast bursts. The meat of adult mammals such as cows, sheep, goats, and horses is generally considered red, while domestic chicken and turkey breast meat is generally considered white.

The quality and quantity of usable meat depends on the animal’s plane of nutrition, i.e., whether it is over- or underfed. Scientists disagree, however, about how exactly the plane of nutrition influences carcass composition.

8. Skim through the text and give it a title, formulate the topic of each paragraph.

The main steps of the slaughtering process generally include stunning, bleeding, eviscerating and skinning. Then carcasses are to be inspected and graded according to government-set standards of quality. Cutting carcasses is said to be the next step in meat processing. However, the methods of cutting carcasses of meat animals into parts, and the names given to different cuts, vary locally. Nevertheless, shoulder cuts of beef are frequently termed chuck; rib cuts are known as chops or rib steaks; the part of the loin nearest the ribs is called short steak; and the part nearest to the hip is known as sirloin. Terminology for cuts of veal, mutton, and lamb is roughly similar to that used for beef. Cured pork cuts are given a special terminology: ham is meat from the thigh and hip; a picnic ham is meat from shoulder; and bacon is side meat.

der hygienic conditions and hout other treatment, meat can stored at above its freezing nt (-1.5^{0}C) for about six weeks hout spoilage, during which e it undergoes an aging cess that increases its derness and flavor. The ilage of meat occurs, if reated, in a matter of hours or s and results in the meat oming unappetizing, sonous or infectious. Spoilage is caused by the practically unavoidable infection and subsequent decomposition of meat by bacteria and fungi, which are borne by the animal itself, by the people handling the meat, and by their implements. Without the application of preservatives and stabilizers, the fats in meat may also begin to rapidly decompose after cooking or processing, leading to an objectionable taste known as rancidity.

Freezer storage is an excellent method of meat preservation. Under typical freezer storage of -18^{0}C beef can be

stored for 6 to 12 months, lamb for 6 to 9 months, pork for 6 months, and sausage products for 2 months.

To prevent meats from being contaminated by harmful bacteria, producers widely use vacuum-packing which helps to extend the storage life under refrigerated conditions to approximately 100 days.

One more commonly used method of meat preservation is canning which involves sealing meat in a container and then heating it to destroy all microorganisms capable of food spoilage. Under normal conditions canned products can safely be stored at room temperature indefinitely.

Drying is another common method of meat preservation. Drying removes moisture from meat products so that microorganisms cannot grow. Dry sausages, freeze-dried meats, and jerky products are all examples of dried meats capable of being stored at room temperature without rapid spoilage.

Fermentation is supposed to have been an ancient form of food preservation used in the meat industry. Due to adding certain harmless bacteria to meat the former produce acid as they grow, lowering pH of the meat and inhibiting the growth of many pathogenic microorganisms.

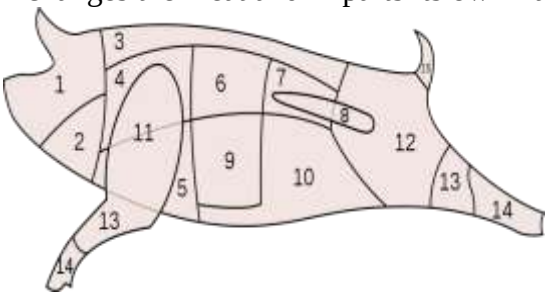
Meat curing and smoking are believed to be the oldest methods of meat preservation. They not only increase the safety and shelf-life of meat products but also improve the colour and flavour. Smoking of meat decreases the available moisture on the surface of meat products, preventing microbial growth and spoilage. Meat curing, as commonly performed in products such as ham or sausage, involves the addition of mixture containing salt, nitrite, and other preservatives. Nitrite prevents microorganisms from growing and retards rancidity in meats. Sodium ascorbate is another common curing additive, which not only decreases the risks associated with the use of nitrite but also improves cured meat colour development. Other additives include alkaline phosphates, which improve the juiciness of meat products by increasing their water-holding ability.

9. Read the text again and make up questions to the underlined words.

10. Skim through the text and sum up the main points presented in it. Write the plan of the text:

Meat is prepared in many ways, as steaks, in stews, fondue, or as a dried meat like beef jerky. It may be ground then formed into patties (as hamburgers or croquettes), loaves, or sausages, or used in loose form as in “sloppy joe” or Bolognese sauce). Some meat is cured, by smoking, pickling, preserving in salt or brine. Other kinds of meat are marinated and barbecued or simply boiled, roasted, or fried. Meat is generally eaten cooked, but there are many traditional recipes that call for raw beef, veal or fish (tartare). Meat is often spiced or seasoned, as in most sausages.

Sausage making originally developed as a means to preserve and transport meat. Sausages come in two types: fresh and cured. Cured sausages may be either cooked or dried. Most cured sausages are smoked; but this is not mandatory. The curing process itself changes the meat and imparts its own flavours.



Jerky is meat that has been cut into strips, trimmed of fat, marinated in a spicy, salty, sweet rub, or liquid, and dried or smoked with low heat (usually under 70 °C/160 °F) or is occasionally just salted and sun-dried. The result is a salty, savory, or semisweet snack that can be eaten fresh, or be stored for a long time without refrigeration.

Pastirma or bastirma is a highly seasoned, air-dried cured beef in the cuisines of the former Ottoman countries. Pastırma is prepared by salting the meat, then washing it with water and letting it dry for 10-15 days. The blood and salt is then squeezed out of the meat which is then covered with a cumin paste called *çemen* (lit., 'fenugreek') prepared with crushed cumin, fenugreek, garlic, and hot paprika, followed by thorough air-drying. Depending on the variety of the paprika, it can be very spicy but not quite as hot as, for example, hot chili.

Pastrami is a popular delicatessen meat usually made from beef, and, like corned beef, originally created as a way to preserve meat before modern refrigeration. For pastrami, the raw meat is brined, partly dried, seasoned with various herbs and spices, then smoked and steamed. Although beef navels are the traditional cut of meat for making pastrami, it is now common to

see pastrami made from beef brisket, beef round and meat turkey.

Ham is a cut of meat from the thigh of the hind leg of certain animals, especially a pig. Most ham is cured and may be served cooked or uncooked. In the U.K., South Africa, the Isle of Man, and Ireland, cuts of ham cured on the bone like bacon are known as "gammon".

Jamón (pronounced as Hamon) is the Spanish word for ham. In English it especially refers to certain types of dry-cured ham from Spain.

Back bacon is bacon prepared from centre-cut boneless pork loin. The name refers to the cut of meat, which is from the back, and distinguishes it from other bacon made from pork belly or other cuts. Like other bacon, back bacon is brined, cured, boiled, or smoked.

11. Answer the following questions:
1. What is the definition of meat? 2. What is the composition of adult mammalian muscle flesh? 3. How is meat classified depending on the concentration of myoglobin? 4. What are the main steps of the slaughtering process? 5. How can cutting be characterized? 6. What is spoilage of meat caused by? 7. What are the most common methods of meat preservation? 8. What meat products is curing meant for? 9. What types of sausages do you know? 10. What sausages are smoked?

12. Match the two parts of the sentences. Look at the text to help you.
1) Pastrami is a popular delicatessen meat usually made from beef ...
2) Fermentation is supposed to have been …
3) To prevent meats from being contaminated by harmful bacteria, …
4) Meat curing involves …
5) The remaining protein mass consists of …
6) Meat can be broadly classified as “red” or “white” meat …
7) Pastırma is prepared …

a) producers widely use vacuum-packing.
b) depending on the concentration of myoglobin in muscle fibre.
c) the addition of mixture containing salt, nitrite, and other preservatives.
d) originally created as a way to preserve meat before modern refrigeration.
e) by salting the meat, then washing it with water and letting it dry for 10-15 days.
f) connective tissue as well as organelle tissue.
g) an ancient form of food preservation used in the meat industry.

13. Are the following statements true or false?
a) Drying doesn't remove moisture from meat products so that microorganisms can grow.
b) Drying is the only method of meat preservation.
c) Jerky is meat that has been cut into strips and marinated in a spicy, salty liquid, and dried or smoked.
d) Meat is eaten cooked and raw.
e) Freezer storage isn't a good method of meat preservation.
f) Under normal conditions canned products can safely be stored at room temperature indefinitely.
g) The main steps of the slaughtering process generally include stunning, bleeding and skinning.

14. Translate the sentences paying attention to Complex Subject.
a) Meat is known to contain complete proteins.
b) These tissues are known to be made up of hollow tubes.
c) Fat is found to be distributed among the fibres of lean meat.
d) Meat is known to contain many minerals.
e) Under the microscope meat is seen to be made up of bundles of fibres.
f) Veal is known to contain less iron than beef.
g) Slow freezing is considered to injure the walls of the meat cells and to result in the loss of nutrients.
h) Meat extractives are known to have a stimulating effect on the gastric organs.
i) Losses of moisture from meat during roasting have been found to be less in larger than in smaller cuts.

15. Match the underlined words with the definitions below.

<u>Stunning, Bleeding, Carcase, Butcher</u>

a) is a person who may slaughter animals, dress their flesh, sell their meat or any combination of these three tasks.
b) is a dead body of vertebrate animals, insects and humans.
c) is the process of rendering animals immobile or unconscious,

without killing the animal, prior to their being slaughtered for food.
d) is the loss of blood or blood escape from the circulatory system.

15. Write an abstract of one of the texts and render it in English.

Unit 4
Milk Processing

1. Copy the following words and word combinations, transcribe, translate and memorize them.

Key words:

Nutrients, nutritionist, fat globules, milk composition, texture, fatty acids, lactose, casein, essential amino acids, fortified with vitamin, skim milk, dried milk, condensed milk, raw milk, fresh milk, ice-cream, yogurt, sterilization, pasteurization, homogenization, digestion, additives, flavouring, cultured buttermilk, syrup, probiotic cultures, lactic acid, to congeal, to coagulate, compound, acidic environment, fermentation, to inoculate, kefir grains, yeast, gelatin, soluble, to acidify, enzyme, rennet, to melt, diet, butterfat content, mold, ageing, curdling, fungus, dairy, whey.

2. Give the synonyms to the following words. Find them in the text:
Enzyme, beverage, mold, storage life, to vary, protein, content, low-fat milk, killing microorganisms, raw milk, ultrapasteurization, grower, spices, flavouring agents, yeast, to compose.

3. Give the antonyms to the following words. Find them in the text:
Liquid, sweet, skim, processed, raw, increase, add, improvement (about the product)

3. Give derivatives:
Flavor, to pasteurize, to homogenize, to freeze, nutrient, diet, age, to condense, to ferment, enzyme, gelatin, to separate, available, cheese, to compose, cream, to sterilize, commerce, to digest, to remove, to compensate, to accomplish, to replace, to improve, solution, to inoculate.

4. Make the sentences complete using the information from the text, translate the sentences from English into Russian:
a) Milk is a … composing of 80-90 per cent water and most often considered to be a drink, it contains 12 per cent total … and perhaps should be regarded as food.
b) The major nutrients needed by the body for good health include …, …, …, … and … .
c) … is a carbohydrate that is broken down by the body to supply energy.
d) The most important protein in milk is … , accounting for 80 per cent of milk protein.
e) Pasteurization is used to … harmful microorganisms by heating the milk for a short time and then … it for storage and transportations.
f) Milk often is homogenized, a … which prevents a cream layer from … out of the milk.
g) Milk often has … added to it for better taste or as a means of improving sales.
h) The bacteria produce … in the milk culture, decreasing its pH and causing it to congeal.

5. Translate into Russian paying attention to Participle II.
a) The solid part of milk consists of an abundance of the major nutrients needed by the body for good health.
b) In most countries almost half of the milk consumed is sold as a fresh pasteurized whole, low-fat, or skim milk.
c) Cream, butter, cheese, youghurt, dried milks, ice-cream, and condensed milk are known as dairy products.

d) Dairies print expiration dates on each container, after which stores will remove any unsold milk from their shelves.
e) This extends its shelf life and allows the milk to be stored unrefrigerated because of the longer lasting sterilization effect.
f) In areas where the cattle (and often the people) live indoors, commercially sold milk commonly has vitamin D added to it to make up for the lack of exposure to UVB radiation.
g) Reduced fat milks often have added vitamin A palmitate to compensate for the loss of the vitamin during fat removal.
h) Kefir is a fermented milk drink that originated with the shepherds of the Caucasus region, who discovered that fresh milk carried in leather pouches would occasionally ferment into an effervescent beverage.

7. Read the text and translate it from English into Russian:

Milk Processing

Milk processing is known to be highly nutritious, versatile food that has been used by humans since the beginning of recorded time. People enjoy drinking milk in its natural form and also use it to make a wide range of food products, including cream, butter, yoghurt, cheese, and ice cream.

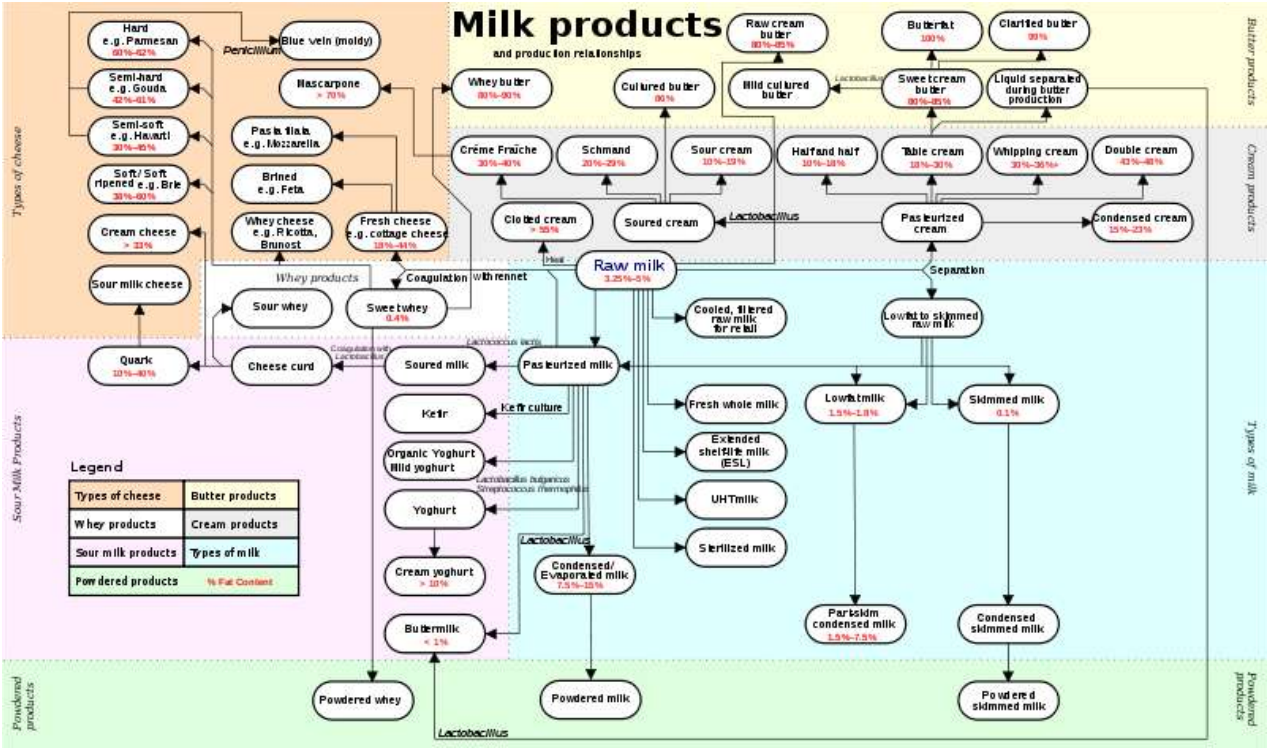
It is interesting to note that milk of all species of animals contain the same nutrients, varying only in proportions. Although milk is a liquid composing of 80-90 per cent water and most often considered to be a drink, it contains between 12-14 per cent total solids and perhaps should be regarded as a food. The solid part of milk consists of an abundance of the major nutrients needed by the body for good health, including fats, carbohydrates, proteins, minerals, and vitamins.

Cow milk has been found to contain about 3.5 to 5 per cent fat, which is dispersed throughout the milk in globules. In addition to providing milk's characteristic taste and texture, fat supplies vitamins A, D, E, and K, as well as certain fatty acids that the body

cannot produce on its own. Scientists consider sweet taste of milk to be due to lactose, a kind of sugar found only in milk. Making up about 5 per cent of milk's content, lactose is a carbohydrate that is broken down by the body to supply energy. The most important protein in milk is casein, accounting for 80 per cent of milk protein. Casein is known to be a complete protein, which means that it contains all the essential amino acids. Other proteins present in milk include albumin and globulin.

Milk contains many minerals, the most abundant of which are calcium and phosphorus, as well as smaller amounts of potassium, sodium, sulphur, aluminium, copper, iodine, manganese, and zink. Milk has been proved to be an excellent source of vitamins A and B. The milk to be sold commercially should be fortified with vitamin D.

In most countries almost half of the milk consumed is sold as a fresh pasteurized whole, low-fat, or skim milk. The rest part of the milk is processed into more stable dairy products of worldwide commerce, such as cream, butter, cheese, youghurt, dried milks, ice-cream, and condensed milk.


Milk products
and production relationships
Types of cheese
Whey products
Sour Milk Products
Butter products
Cream products
Types of milk
Powdered products
Hard e.g. Parmesan 60%–62%
Semi-hard e.g. Gouda 42%–61%
Semi-soft e.g. Havarti 30%–45%
Soft/ Soft ripened e.g. Brie 30%–60%
Cream cheese > 33%
Sour milk cheese
Quark 10%–80%
Blue vein (moldy)
Mascarpone > 70%
Pasta filata e.g. Mozzarella
Brined e.g. Feta
Whey cheese e.g. Ricotta, Brunost
Fresh cheese e.g. cottage cheese 18%–44%
Sour whey
Sweet whey 0.4%
Cheese curd
Coagulation with rennet
Raw milk 3.25%–5%
Soured milk
Kefir
Organic Yoghurt Mild yoghurt
Yoghurt
Cream yoghurt > 10%
Buttermilk < 1%
Pasteurized milk
Kefir culture
Condensed/ Evaporated milk 7.5%–15%
Powdered whey
Powdered milk
Cooled, filtered raw milk for retail
Fresh whole milk
Extended shelf-life milk (ESL)
UHT milk
Sterilized milk
Separation
Low-fat to skimmed raw milk
Low-fat milk 1.5%–1.8%
Skimmed milk 0.1%
Part-skim condensed milk 1.5%–7.5%
Condensed skimmed milk
Powdered skimmed milk
Raw cream butter 80%–85%
Whey butter 80%–90%
Cultured butter 80%
Mild cultured butter
Butterfat 100%
Clarified butter 99%
Sweet cream butter 80%–85%
Liquid separated during butter production
Crème Fraîche 30%–40%
Schmand 20%–29%
Sour cream 10%–15%
Half-and-half 10%–18%
Table cream 18%–30%
Whipping cream 30%–36%+
Double cream 42%–48%
Clotted cream > 55%
Soured cream
Pasteurized cream
Condensed cream 15%–23%
Legend
Types of cheese
Butter products
Whey products
Cream products
Sour milk products
Types of milk
Powdered products
% Fat Content

8. Skim through the text and give it a title, underline the topic sentence of each paragraph:

Pasteurization is used to kill harmful microorganisms by heating the milk for a short time and then cooling it for storage and transportations. Pasteurized milk is still perishable, however, and must be stored cold by both suppliers and consumers. Dairies print expiration dates on each container, after which stores will remove any unsold milk from their shelves. The process destroys the vitamin C content of the raw milk.

A newer process, ultrapasteurization or ultra-high temperature treatment (UHT), heats the milk to a higher temperature for a shorter time than the standard process. This extends its shelf life and allows the milk to be stored unrefrigerated because of the longer lasting sterilization effect, but it affects the taste adversely.

Microfiltration is a process that partially replaces pasteurization and produces milk with fewer microorganisms and longer shelf life without a change in the taste of the milk. In this process, cream is separated from the whey and is pasteurized in the usual way, but the whey is forced through ceramic microfilters that trap 99.9% of microorganisms in the milk (as compared to 95% killing of microorganisms in conventional pasteurization). The whey then is recombined with the pasteurized cream to reconstitute the original milk composition.

Upon standing for 12 to 24 hours, fresh milk has a tendency to separate into a high-fat cream layer on top of a larger, low-fat milk layer. The cream is sold as a separate product with its own uses; today the separation of the cream from the milk is usually accomplished rapidly in centrifugal cream separators.

Milk often is homogenized, a treatment which prevents a cream layer from separating out of the milk. The milk is pumped at high pressures through very narrow tubes, breaking up the fat globules through turbulence and cavitation.

Homogenized milk tastes blander, but feels creamier in

the mouth than unhomogenized; it is whiter and more resistant to developing off flavours. Creamline, or cream-top, milk is unhomogenized; it may or may not have been pasteurized. Milk which has undergone high-pressure homogenization, sometimes labeled as "ultra-homogenized", has a longer shelf life than milk which has undergone ordinary homogenization at lower pressures. Homogenized milk may be more digestible than unhomogenized milk.

In areas where the cattle (and often the people) live indoors, commercially sold milk commonly has vitamin D added to it to make up for the lack of exposure to UVB radiation.

Reduced fat milks often have added vitamin A palmitate to compensate for the loss of the vitamin during fat removal; in the United States this results in reduced fat milks having a higher vitamin A content than the whole milk.

To add digestion in those with lactose intolerance, milk with added bacterial cultures such as Lactobacillus acidophilus ("acidophilus milk") and Bifidobacteria ("a/B milk") is available in some areas. Another milk with Lactococcus lactis bacteria cultures ("cultured buttermilk") often is used in cooking to replace the traditional use of naturally soured milk, which has become rare due to the ubiquity of pasteurization, which also kills the naturally occurring lactococcus bacteria.

Milk often has flavouring added to it for better taste or as a means of improving sales. Chocolate milk has been sold for many years and has been followed more recently by strawberry milk and others. Some nutritionists have criticized flavoured milk for adding sugar, usually in the form of high fructose corn syrup, to the diets of children who are already commonly obese in the US.

9. Read the text again and make up questions to the underlined words.

10. Skim through the text and sum up the main points presented in it. Write the plan of the text:

The main method of producing yogurt is through the lactic acid fermentation of milk with harmless bacteria. The primary bacteria used are typically Lactobacillus bulgaricus and Streptococcus thermophilus. In some countries all yogurts are required to contain these two cultures (though others may be added as probiotic cultures). These bacteria produce lactic acid in the milk culture, decreasing its pH and causing it to congeal. The bacteria also produce compounds that give yogurt its distinctive flavor. An additional effect of the lowered pH is the incompatibility of the acidic environment with many other types of harmful bacteria. For a probiotic yogurt, additional types of bacteria such as Lactobacillus acidophilus are also added to the culture.

Kefir is a fermented milk drink that originated with shepherds of the Caucasus region, who discovered that fresh milk carried in leather pouches would occasionally ferment into an effervescent beverage. It is prepared by inoculating cow, goat or sheep's milk with kefir grains. Traditionally kefir was made in skin bags that were hung near a doorway; the bag would be knocked by anyone passing through the doorway to help keep the milk and kefir grains well mixed. Dairy-free alternatives are available, such as coconut milk kefir and soy milk kefir.

Production of traditional kefir requires kefir grains which are gelatinous community of bacteria and yeasts, mainly containing various microflora. Kefir grains contain a water soluble polysaccharide known as kefiran that imparts a rope-like texture and feeling in one's mouth. Kefir grains cannot be produced from scratch, but the grains grow during fermentation, and additional grains are produced. Kefir grains can be bought or donated by other growers. Kefir grains appear white to yellow and are usually the size of a walnut, but may be as small as a grain of rice.

Cheese is a generic term for a diverse group of milk-based food products. Cheese is produced throughout the world in wide-ranging flavors, textures, smells and forms. It is particularly associated with France, a nation renowned for its love for food.

Cheese consists of proteins and fat from milk, usually the milk of cows, buffalo, goats, or sheep. It is produced by coagulation of the milk protein casein. Typically, the milk is acidified and addition of the enzyme rennet causes coagulation. The solids are separated and pressed into final form. Some cheeses have molds on the rind or throughout. Most cheeses melt at cooking temperature.

Hundreds of types of cheese are produced. Their styles, textures and flavors depend on the origin of the milk (including the animal's diet), whether they have been pasteurized, the butterfat content, the bacteria and mold, the processing, and aging. Herbs, spices, or wood smoke may be used as flavoring agents. The yellow to red color of many cheeses is from adding annatto.

For a few cheeses, the milk is curdled by adding acids such as vinegar or lemon juice. Most cheeses are acidified to a lesser degree by bacteria, which turn milk sugars into lactic acid, then the addition of rennet completes the curdling. Vegetarian alternatives to rennet are available; most are produced by fermentation of the fungus, but others have been extracted from various species of the Cynara thistle family.

Cheese is valued for its portability, long life, and high content of fat, protein, calcium, and phosphorus. Cheese is more compact and has a longer shelf life than milk. Cheesemakers near a dairy region may benefit from fresher, lower-priced milk, and lower shipping costs. The long storage life of some cheese, especially if it is encased in a protective rind, allows selling when markets are favourable.

11. Answer the following questions:

1. Is milk known to be highly nutritious versatile food? 2. What dairy products do you know? 3. What does the solid part of milk consist of? 4. What is the most important protein in milk? 5. What is pasteurization meant for? 6. What kind of process is microfiltration? 7. What treatment is known as homogenization? 8. When additives and flavourings are used? 9. How is yogurt produced? 10. Why are kefir grains required for production of traditional kefir? 11. What do various types of cheeses depend on?

12. Match the two parts of the sentences. Look at the texts to help you.

1) Milk processing is known to be highly nutritious, versatile food …
2) Cheese consists of …
3) Kefir grains appear …
4) Ultrapasteurization extends …
5) Milk of all species of animals contain …
6) Milk often has flavouring …
7) Scientists consider sweet taste of milk …

a) white to yellow and are usually the size of a walnut.
b) shelf life of the milk and allows it to be stored unrefrigerated.
c) the same nutrients, varying only in proportions.
d) that has been used by humans since the beginning of recorded time.
e) added to it for better taste or as a means of improving sales.
f) to be due to lactose, a kind of sugar found only in milk.
g) proteins and fat from milk.

13. Are the following statements true or false?

a) The whole milk consists of fats, water and vitamins.
b) Most cheeses don't melt at cooking temperature.
c) Unhomogenized milk tastes blander, but feels creamier in the mouth than homogenized.

d) Cheese is a generic term for a diverse group of milk-based food products.
e) Microfiltration is a process that completely replaces pasteurization.
f) The separation of the cream from the milk is usually accomplished rapidly in centrifugal cream separators.
g) Kefir is a fermented milk drink.

14. Match the underlined words with the definitions below.
Churning, Homogenization, Microfiltration, Cream.
a) is intensive blending of mutually related substances or groups of mutually related substances to form a constant of different insoluble phases to obtain a suspension or emulsion.

b) is a dairy product that is composed of the higher-butterfat layer skimmed from the top of milk before homogenization.

c) is the process of shaking up whole milk (or cream) to make butter.
d) is a process which removes contaminants from a fluid (liquid & gas) by passage through a microporous membrane.

15. Translate the sentences paying attention to Complex Subject.
a) The early daily products made by man seem to have been connected with religious activities.
b) The food value of cheese seemed to have been recognized by the ancients.
c) The butter made by man quite by chance proved to be a nourishing food.
d) Until recently butter-making appeared to be in the realm of art rather than in the realm of industrial production.
e) Cheese and fermented milk seem to have been the most important dairy products in the tropic and temperature zones.
f) Butter-making proved to have originated in the countries of cold climate.
g) The Celtic and Germanic tribes seem to have been acquainted

with butter churning long before the Romans came to know this process.

16. Write an abstract of one of the texts and render it in English.

Unit 5

Bread Baking

1. Copy the following words and word combinations, transcribe, translate and memorize them.

Key words:

Dough, flour, to bake, cuisine, leaven (unleaven), to fry, yeast, baking soda, nut, seed, aroma, stale, moist, mold, crumb, crust, oven, gluten, grain, durum, spelt, wheat, rye, barley, oats, acidic, alkaline, to grind, powder, pancake, waffles, muffins, starch, paste, recipe, carbon dioxide, additive, bread improver, to rise, to dip, savory, volume of bread, loaf.

2. Give the synonyms to the following words. Find them in the text:

Leavening agent, taste, stale, inner part of bread, outer part of bread, culinary, additive, maize, dough, to store, baking powder, chemical substances, production of bread, content, common wheat, due to.

3. Give antonyms to the following words. Find them in the text:

Leaven, acidic, to rise, prehistoric, optional, stale.

4. Give derivatives:

To add, to bake, powder, to appear, to be able, stiff, fresh, appetite, to serve, option, profession, common, to vary, sweet, oil.

5. Make the sentences complete using the information from the text, translate the sentences from English into Russian:

a) … are usually baked, but in some … breads are steamed, fried, or baked.

b) Salt, fat and leavening agents such as … and … … are common ingredients.

c) Fresh bread is prized for its taste, … , quality, … and … .

d) Bread that has stiffened or dried past its prime is said to be … .

e) The inner part of bread is known as the …, whereas the outer hard portion of bread is called the … .

f) Bread is usually made from a wheat-flour dough that is cultured with … , allowed to … , and finally baked in an … .

g) Flour is a product made from … that has been … into a powdery consistency.

h) Water, or some other liquid, is used to form the flour into a paste or dough.

i) Leavening is the process of adding … to a dough before or during baking to produce a lighter more easily chewed bread.

6. Translate the sentences into Russian. Comment on use of Gerund.

a) Bread is a staple food prepared by cooking a dough of flour and water and frequently additional ingredients.

b) Although common wheat is best suited for making highly risen white bread, other wheat species are capable of giving good bread.

c) Leavening is the process of adding gas to a dough before or during baking to produce a lighter, more easily chewed bread.

d) A simple technique for leavening bread is the use of gas-producing chemicals.

e) The yeast used for leavening bread is Saccharomyces cerevisiae, the same species used for brewing alcoholic beverages.

f) Salt, fat and leavening agents are the ingredients necessary for baking bread.

7. Read the text and translate it from English into Russian:

Bread Baking

Bread is a staple food prepared by cooking a dough of flour and water and frequently additional ingredients. Doughs are usually baked, but in some cuisines breads are steamed, fried, or baked on an unoiled skillet. It may be leavened or unleavened. Salt, fat and leavening agents such as yeast and baking soda are common ingredients, though bread may contain other ingredients, such as milk, egg, sugar, spice, fruit (such as raisins), vegetables (such as onion), nuts (such as walnuts) or seeds (such as poppy seeds). Bread is one of the oldest prepared foods, dating back to the Neolithic era, and is referred to colloquially as the "Staff of life". The development of leavened bread can probably also be traced to prehistoric times.

Fresh bread is prized for its taste, aroma, quality, appearance and texture. Retaining its freshness is important to keep it appetizing. Bread that has stiffened or dried past its prime is said to be stale. Modern bread is sometimes wrapped in paper or plastic film, or stored in a container such as a breadbox to reduce drying. Bread that is kept in warm, moist environments is prone to the growth of mold. Bread kept at low temperatures, in a refrigerator for example, will develop mold growth more slowly than bread kept at room temperature, but will turn stale quickly due to retrogradation.

The soft, inner part of bread is known to bakers and other culinary professionals as the *crumb*, which is not to be confused with small bits of bread that often fall off, called *crumbs*. The outer hard portion of bread is called the *crust*.

Bread is usually made from a wheat-flour dough that is cultured with yeast, allowed to rise, and finally baked in an oven. Owing to its high levels of gluten (which give the dough sponginess and elasticity), common wheat (also known as bread wheat) is the most common grain used for the preparation of bread, but bread is also made from the flour of other wheat species (including durum, spelt and emmer), rye, barley, maize (or corn), and oats, usually, but not always, in combination with wheat flour. Although common wheat is best suited for making highly risen white bread, other wheat species are capable of giving good bread.

Quick breads usually refer to breads chemically leavened, usually with both baking powder and baking soda, and a balance of acidic ingredients, and alkaline ingredients. Examples include: pancakes and waffles, muffins and carrot cake, Boston brown bread, and zucchini and banana bread.

8. Read the text again and make up questions to the underlined words.

9. Read the text and give it a title. Sum up the main points presented in the text:

Flour is a product made from grain that has been ground into a powdery consistency. It is flour that provides the primary structure to the final baked bread. Commonly available flours are made from rye, barley, maize, and other grains, but it is wheat flour that is most commonly used for breads. Each of these grains provides the starch and protein necessary for the production of bread.

Water, or some other liquid, is used to form the flour into a paste or dough. The volume of liquid required varies between recipes, but a ratio of 1 part liquid to 3 parts flour is common for yeast breads, while recipes that use steam as the primary leavening method may have a liquid content in excess of one part liquid to one part flour by volume. In addition to water, other types of liquids that may be used include dairy products, fruit juices, or beer. In addition to the water in each of these, they also contribute additional sweeteners, fats, and/or leavening components.

Leavening is the process of adding gas to a dough before or during baking to produce a lighter, more easily chewed bread.

A simple technique for leavening bread is the use of gas-producing chemicals. There are two common methods. The first is to use baking powder or a self-rising flour that includes baking powder.

The second is to have an acidic ingredient such as buttermilk and add baking soda. The reaction of the acid with the soda produces gas.

Chemically leavened breads are called *quick breads* and soda breads. This technique is commonly used to make muffins, pancakes, American-style biscuits, and sweet breads such as banana bread.

Many breads are leavened by yeast. The yeast used for leavening bread is Saccharomyces cerevisiae, the same species used for brewing alcoholic beverages. This yeast ferments carbohydrates in the flour, including any sugar, producing carbon dioxide.

Bread improvers are frequently used in the production of commercial breads to reduce the time that the bread takes to rise, and to improve the texture and volume of bread. Chemical substances commonly used as bread improvers include ascorbic acid, hydrochloride, sodium metabisulfate, ammonium chloride, various phosphates, amylase, and protease.

Sodium/salt is one of the most common additives used in production.

Bread can be served at any temperature. Once baked, it can subsequently be toasted. It is most commonly eaten with the hands, or sometimes with a knife and fork. It can be eaten by itself or as a carrier for another, usually less compact food. Bread can be dipped into a liquid (such as gravy, olive oil, or sardine pâté), topped with various spreads, both sweet and savory, and used to make sandwiches with any number of varieties of meat, cheese, vegetables or condiments inside.

10. Read the text:

There are many variations on the basic recipe of bread worldwide, including pizza, chapatis, tortillas, baguettes, brioche, pitas, lavash, biscuits, pretzels, naan, bagels, puris, and many others.

- Anadama bread
- Beer bread
- Biscuit
- Bread roll
- brown bread
- Brioche
- Broa
- Bun
- Bush bread
- Canadian White
- Cardamom bread
- Cottage loaf
- Damper
- Flatbread
- Focaccia
- Indian bread
- Lavash
- Matzo
- Mantou
- Melonpan
- Monkey bread
- Naan
- Pita
- Portuguese sweet bread
- Potato bread
- Proja
- Pumpernickel
- Puri
- Roti
- Irish soda bread
- Rye bread
- Seed cakes

- Challah
- Chapati
- Cornbread
- Pandoro
- Paratha
- Texas toast
- Tiger bread
- Tortilla
- White bread
- Whole wheat bread
- Zopf

11. Answer the following questions:
1) What is the role of bread in daily diets? 2) How is bread baked? 3) What is a leavened bread? 4) What flours is bread made from? 5) What bread recipes are well -known in the world? 6) What does baking powder serve? 7) What quick breads do you know? 8) Why are bread improvers used? 9) How can bread be served?

12. Match the two parts of the sentences. Look at the texts to help you.
1) Bread is a staple food …
2) Chemically leavened breads are called …
3) Flour is a product …
4) In addition to water, other types of liquids that may be used …
5) Bread is most commonly eaten …
6) A simple technique for leavening bread is …
7) Quick breads include …

a) include dairy products, fruit juices, or beer.
b) with the hands, or sometimes with a knife and fork.
c) quick breads and soda breads.
d) pancakes and waffles, muffins and carrot cake.
e) the use of gas-producing chemicals.
f) prepared by cooking a dough of flour and water.
g) made from grain.

13. Are the following statements true or false?

a) Flour provides the primary structure to the final baked bread.
b) Bread improvers are never used in the production of breads.
c) The soft, inner part of bread is known to bakers and other culinary professionals as the *crumb.*
d) Rye is best suited for making highly risen white bread.
e) Bread is one of the oldest prepared foods.
f) Bread contains only flour and water.
g) Leavening is the process of adding gas to a dough before or during baking.

14. Match the underlined words with the definitions below.
Dough, Leaven, Mold, Yeast
a) are microscopic fungi that grow as single cells.
b) are fungi that grow in the form of multicellular filaments called hyphae.
c) is a paste made out of any cereals (grains) or leguminous crops by mixing flour with a small amount of water and/or other liquid.
d) is any one of a number of substances used n doughs and batters
that cause a foaming action which lightens and softens the finished product.

15. Write an abstract of one of the texts and render it in English.

Unit 6
Vegetable Processing

1. Copy the following words and word combinations, transcribe, translate and memorize them.

Key words:

Cutting, grinding, peeling, sorting, raw material, blanching, package, layer, cell, solution, implements, dirt, to eliminate defect, ripeness, uniform, skin, integrity, texture (firm and

rough), to cause damage, to condition, to inactivate, enzyme, smell, defect, treatment, steam, solids, immersion, continuous line (chain conveyor), pit, pulp extraction.

2. Give the synonyms to the following words. Find them in the text:

Cutting, external, to eliminate, defect, uniform, clean, implements, purpose, to enhance, phase, to supply, basin, pot, chain conveyor, to monitor, to submerge, loss of integrity, moreover, detrimental, contents.

3. Give the antonyms to the following words. Find them in the text:

Dirt, inner, general, filling, heating, to separate, rough texture.

4. Give derivatives:
To remove, to circulate, to replace, to penetrate, to perform, to fill, soft, to activate, to lose, to pack, to cut, to use, to prefer, ripe, uniform.

5. Make the sentences complete using the information from the text, translate the sentences from English into Russian:

a) These preliminary operations are required for the … of all fruits and vegetables, which must generally be … before anything else takes place.
b) It is advisable to use … that allow for an adequate cleaning of the material.
c) Fruit and vegetables that do not have … characteristics compared to the rest of the lot must be removed.
d) It is a form of thermal treatment, the aim of which is to … the material in several ways: to … it to facilitate the filling of the containers and to … enzymes which cause an unpleasant smell and flavor.
e) The treatment must be rapidly … by means of efficient cooling.

f) It is best to use … rather than hot water in the … process, mainly to avoid the loss of … …, like … vitamins, which occurs when hot water is used.
g) The most common method used to perform the treatment is the … of the product packed inside a metal basket in a … of boiling water.
h) Some procedures are intended for more specific applications, such as the removal of … , … , … … and others.

6. Translate the sentences paying attention to Participle I functions.
a) The operation consists of eliminating the dirt sticking to the material before it enters the processing line, thus avoiding complications deriving from the possible contamination of the raw material.
b) The washing must be performed using clean water, which should be as pure, as possible.
c) At this stage, the material that will really be used in the process will be separated from material presenting some sort of defect.
d) The function of the sorting process is precisely that of securing such a homogeneity.
e) When performing the cutting operation, special care must be taken to fulfil two conditions.
f) The cutting tools or devices must produce clean and clear cuts not involving more than a few layers of cells, to the extent possible.

7. Read the text and translate it from English into Russian:

Vegetable Processing

Preliminary operations in vegetable processing include: washing, sorting, peeling, cutting or grinding and blanching, among others.

The raw material must be processed as soon as possible (between 4 and 48 hours after it is harvested), to prevent spoilage. These preliminary operations are required for the processing of all fruits and vegetables, which must generally be washed before anything else takes place (onions and cabbages, for instance, will be washed after the removal of the dry outer layers and external leaves, respectively).

Washing is an operation that generally is the point of departure of any fruit and vegetable production process. In a small-scale operation, this activity is normally carried out in basins with recirculating water, or simply with still water that is continuously replaced.

The operation consists of eliminating the dirt sticking to the material before it enters the processing line, thus avoiding complications deriving from the possible contamination of the raw material. The washing must be performed using clean water, which should be as pure as possible, and if necessary should be made potable by adding sodium hypochlorite, 10 ml of 10%, solution for every 100 litres of water. It is advisable to use implements that allow for an adequate cleaning of the material, so that no traces of dirt are left in the subsequent phases.

Once the raw material is clean, it must then undergo the

selection phase or sorting. At this stage, the material that will really be used in the process will be separated from material presenting some sort of defect, which will become second- choice and will be used for a different purpose, or will simply be eliminated.

Such a process will entail the removal of all of the fruit and vegetables that do not have uniform characteristics compared to the rest of the lot, in terms of ripeness, colour, shape and size, or which present mechanical or microbiological damage.

Sometimes, to appreciate the uniformity or quality of a material, it is necessary to cut it in half to verify its inner contents. Uniformity is a significant quality factor, since it is of utmost importance for the material to be even and uniform. The function of the sorting process is precisely that of securing such a homogeneity.

Peeling is performed on a regular basis. It consists of the removal of the skin of the fruit or vegetable. It may be performed by using physical devices like knives or similar instruments, by using heat or chemical methods. Such methods basically aim to bring about decomposition of the walls of the external cells of the skin, so that the skin is removed as a result of the tissue's loss of integrity.

Peeling is an operation that allows for a better presentation of the product, and at the same time fosters sensory quality, for the material with a firmer and rougher texture is eliminated. Moreover, the skin often presents a colour that has been affected by the thermal processes normally used in processing methods.

8. Read the text again and make up questions to the underlined words.

9. Read the text and give it a title. Underline the topic sentence of each paragraph:

Cutting is an operation that is usually included in the different preservation processes. This operation makes it possible to achieve different objectives, like an even penetration of heat in thermal processes, uniform drying and a better package appearance, since the packed material is more even in terms of its shape and weight. In the specific case of drying, cutting enhances the surface/volume ratio, which increases the efficiency of the process.

When performing the cutting operation, special care must be taken to fulfil two conditions. First of all, the cutting tools or devices must produce clean and clear cuts not involving more than a few layers of cells, to the extent possible. In other words, they must not cause excessive damage to the tissue, to avoid detrimental effects like a change in colour, and subsequently a change in the product's flavor. Moreover, the cutting must be performed in such a way as to allow for a viable industrial performance. A way must always be found for the cutting operation to supply the greatest possible amount of usable material.

Blanching is another widely employed operation in fruit and vegetable processing. It is a form of thermal treatment, the aim of which is to condition the material in several ways: to soften it to facilitate the filling of the containers and to inactivate enzymes which cause an unpleasant smell and flavour, as well as defects in the natural colour of the product.

The operation requires great care, that is, it must be properly controlled and the temperature and time of application are to be closely monitored. Also, the treatment must be rapidly followed by means of efficient cooling. A high temperature treatment for a brief period of time is always preferable. Furthermore, it is best to use steam rather than hot water in the

blanching process, mainly to avoid the loss of soluble solids, like water-soluble vitamins, which occurs when hot water is used.

The most common method used to perform the treatment is the immersion of the product packed inside a metal basket in a bath of boiling water or in a pot in which a small portion of water forms an atmosphere of high-temperature saturated steam. In a more automated system, a steam tunnel may be used, with a continuous line or a chain conveyor which is submerged in a hot water bath. In both cases, jets of water are used for cooling.

The operations described above may be applied on a general basis, in different processes. However, some procedures are intended for more specific applications, such as the removal of pits, coring, pulp extraction and others, which must be carefully studied on a case-by-case basis to determine the best way to proceed.

10. Answer the following questions:
1. What are preliminary operations in vegetable processing? 2. How soon must the raw material be processed to prevent spoilage? 3. What does washing operation allow for? 4. In what way is sorting procedure done? 5. What devices are used in peeling? 6. What is necessary to keep in mind when performing the cutting operations? 7. Is blanching a form of thermal treatment? 8. What is the most common method used in blanching?

11. Match the two parts of the sentences. Look at the texts to help you.
1) Washing consists of …
2) Blanching is …
3) The raw material must be processed …
4) Once the raw material is clean, ...
5) Peeling is performed …
6) The cutting tools or devices must produce …
7) Jets of water are ...

a) clean and clear cuts.
b) it must then undergo the selection phase or sorting.
c) used for cooling.
d) is a form of thermal treatment.
e) by using physical devices like knives or similar instruments, by using heat or chemical methods.
f) eliminating the dirt sticking to the material before it enters the processing line.
g) as soon as possible to prevent spoilage.

12. Are the following statements true or false?
a) The preliminary operations are only required for the processing of vegetables.
b) Onions and cabbages mustn't be washed after the removal of the dry outer layers.
c) Washing is normally carried out with water that mustn't be replaced.
d) Sorting will entail the removal of all of the fruit and vegetables that do not have uniform characteristics compared to the rest of the lot.
e) Cutting is never included in the preservation processes.
f) Blanching must be rapidly followed by means of efficient cooling.
g) Preliminary operations in vegetable processing include washing, sorting, peeling, cutting or grinding and blanching.

13. Match the underlined words with the definitions below.
Peeling, Grinding, Blanching, Sorting.
a) is a cooking process wherein a vegetable or fruit is plunged into boiling water, removed after a brief, timed interval, and finally plunged into iced water or placed under cold running water to halt the cooking process.

b) is a process of grouping and labeling items with similar properties together.

c) is an operation of removing the outer skin of certain

vegetables, frequently potatoes, and fruits such as apples and pears.
d) is an abrasive machining process that uses a grinding wheel as the cutting tool.

14. Write an abstract of one of the texts and render it in English.

Unit 7
Beer Brewing

1. Copy the following words and word combinations, transcribe, translate and memorize them.

Key words:

Beverage, starch, cereal grain, malted barley, bitterness, hop, lager, ale, alcohol by volume, brewing, brewery, wort, yeast, cask, millet, strength, germination, kiln, foam, clarifying agent, precipitate, trace amounts.

2. Give the synonyms to the following words. Find them in the text:
Beverage, maize, producer, brewing company, wort, effect, cask ale, grain bill, strength, to contribute, to precipitate, to convert, multinational companies, to make beer, to compose.

3. Give the antonyms to the following words. Find them in the text:
Bitterness, home brewing, basic ingredients, acidity, bright appearance, domestic scale.

4. Give derivatives:
To brew, to ferment, flavor, to convert, to package, to mix, to germinate, sugar, bitter, sweet, carbon, to appear, to create, to clarify, foam.

5. Make the sentences complete using the information from the text, translate the sentences from English into Russian:
a) Most beer is flavoured with …, which add … and act as a natural preservative.
b) Beers are commonly categorized into two main types – the globally popular …, and the regionally ….
c) The purpose of brewing is to convert the … source into a … liquid called … .
d) The basic ingredients of beer are water; a starch source, such as …, able to be … (converted into alcohol); a brewer's … to produce the fermentation; and a flavouring such as … .
e) … in a beer provides the fermentable material and is a key determinant of the … and … of the beer.
f) Grain is malted by … it in water, allowing it to begin …, and then drying the partially germinated grain in a ….
g) The flower of the … … is used as a flavouring and preservative agent in nearly all beer made today.
h) Hops contribute floral, citrus, and … and flavours to beer.

6. Translate into Russian paying attention to Infinitive.
a) Beer to be produced at this brewery will be of the best quality.
b) The brewery is said to have been producing beer for 15 years.
c) Flavourings are thought to have been added to make beer taste exquisite.
d) Beer made in this country is said to be produced domestically.
e) The purpose of brewing is to convert the starch source into a sugary liquid called wort.
f) The beer taste is said to be improving now because of some flavourings added.
g) A mixture of starch sources is to be used to make beer a low-cost product.
h) Hops are used to contribute floral, citrus, and herbal aromas and flavours to beer.

7. Find in the text the sentences with: Participle I, Participle II, Gerund, Complex Subject, linking words.

8. Read the text and translate it from English into Russian:

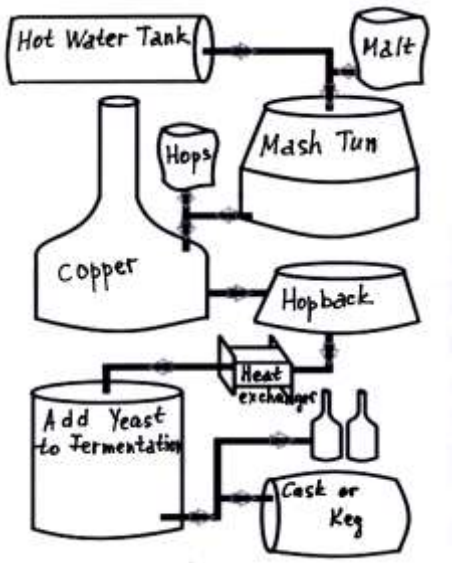
Beer Brewing

Beer is the world's most widely consumed and probably the oldest of alcoholic beverages; it is the third most popular drink overall, after water and tea. It is produced by the brewing and fermentation of starches, mainly derived from cereal grains – most commonly malted barley, although wheat, maize (corn), and rice are widely used. Most beer is flavoured with hops, which add bitterness and act as a natural preservative, though other flavourings such as herbs or fruit may occasionally be included. Today, the brewing industry is a global business, consisting of several dominant multinational companies and many thousands of smaller producers ranging from brewpubs to regional breweries.

The basics of brewing beer are shared across national and cultural boundaries. Beers are commonly categorized into two main types – the globally popular pale lagers, and the regionally distinct ales, which are further categorized into other varieties such as pale ale, stout and brown ale. This strength of beer is usually around 4% to 6% alcohol by volume (abv), though may range from less than 1% abv, to over 20% abv in rare cases.

Beer forms part of the culture of beer-drinking nations and is associated with social traditions such as beer festivals, as well as a rich pub culture involving activities like pub crawling and pubs games such as bar billiards.

The process of making beer is known as brewing. A dedicated building for the making of beer is called a brewery, though beer can be made in the home and has been for much of its history. A company that makes beer is called either a brewery or a brewing company. The purpose of brewing is to convert the starch source into a sugary liquid called wort and to convert the wort into alcoholic beverage known as beer in a fermentation process effected by yeast. When the beer has fermented, it is packaged either into casks for cask ale or kegs, aluminium cans, or bottles for other sorts of beer.



The basic ingredients of beer are water; a starch source, such as malted barley, able to be fermented (converted into alcohol); a brewer's yeast to produce the fermentation; and a flavouring such as hops. A mixture of starch sources may be used, with a secondary starch source, such as maize (corn), rice or sugar, often being termed an adjunct, especially when used as a lower-cost substitute for malted barley. Less widely used starch sources include millet, sorghum, cassava root in Africa, potato in Brazil, and agave in Mexico, among others. The amount of starch source in a beer recipe is collectively called the grain bill.

Beer is composed mostly of water. Regions have water with different mineral components; as a result, different regions were originally better suited to making certain types of beer, thus giving them a regional character.

The starch source in beer provides the fermentable material and is a key determinant of the strength and flavor of the beer. The most common starch source used in beer is malted grain. Grain is malted by soaking it in water, allowing it to begin germination, and then drying the partially germinated grain in a kiln. Malting grain produces enzymes that convert starches in the grain into fermentable sugars. Different roasting times and temperatures are used to produce different colours of malt from the same grain. Darker malts will produce darker beers. Nearly all beer includes barley malt as the majority of the starch.

Flavouring beer is the sole major commercial use of hops. The flower of the hop vine is used as a flavouring and preservative agent in nearly all beer made today. Hops contain several characteristics that brewers desire in beer. Hops contribute a bitterness that balances the sweetness of the malt. Hops contribute floral, citrus, and herbal aromas and flavours to beer. Hops have an antibiotic effect that favours the activity of brewer's yeast over less desirable microorganisms, and hops aid in "head retention", the length of time that a foamy head created by carbonation will last. The acidity of hops is a preservative.

Yeast is the microorganism that is responsible for fermentation in beer. Yeast metabolises the sugars extracted from grains, which produces alcohol and carbon dioxide, and thereby turns wort into beer. In addition to fermenting beer, yeast influences the character of flavor.

Some brewers add one or more clarifying agents to beer, which typically precipitate (collect as a solid) out of the beer along with protein solids and are found only in trace amounts in the finished product. This process makes the beer appear bright and clean, rather than the cloudy appearance of ethnic and older styles of beer such as wheat beers.

9. Answer the questions:

1. What is known as the world's oldest alcoholic beverage? 2. What are the main ingredients used to make beer? 3. What is beer

flavoured with? 4. What varieties of beer are popular in the world? 5. What is the strength of beer? 6. What is called wort? 7. In what way is grain malted? 8. Can hop be characterized as the main preservative agent?

10. Match the two parts of the sentences. Look at the text to help you.
1) Beer is the world's most widely consumed and …
2) Most beer is flavoured with hops, …
3) Beer forms part of the culture of beer-drinking nations and …
4) The basic ingredients of beer are ...
5) The flower of the hop vine is used …
6) Yeast is …
7) The starch source in beer provides the fermentable material and …

a) water, a starch source, a brewer's yeast and a flavouring.
b) the microorganism that is responsible for fermentation in beer.
c) is a key determinant of the strength and flavor of the beer.
d) which add bitterness and act as a natural preservative.
e) as a flavouring and preservative agent in nearly all beer made today.
f) is associated with social traditions such as beer festivals.
g) probably the oldest of alcoholic beverages.

10. Are the following statements true or false?
a) Beer is produced by the brewing and fermentation of starches.
b) Beers are commonly categorized into three main types.
c) Before the beer has fermented, it is packaged into kegs or bottles.
d) Hops contribute a bitterness that balances the sweetness of the malt.
e) A company that makes beer is called a bakery.
f) Different roasting times and temperatures are used to produce different colours of malt from the same grain.
g) Yeast never influences the character of flavor.

11. Match the underlined words with the definitions below.
Brewing, Malting, Packaging, Wort.
a) is putting the beer into the containers in which it will leave the brewery.
b) is the process of converting barley into malt, for use in brewing or distilling.

c) is the liquid extracted from the mashing process during the brewing of beer or whisky.

d) is the production of beer through steeping a starch source (commonly cereal grains) in water and then fermenting with yeast.

12. Write an abstract of the text and render it in English.

Unit 8

Fish Processing

1. Copy the following words and word combinations, transcribe, translate and memorize them.

Key words:

Seafood, fishery, aquatic organisms, to harvest, cultured (wild stocks), wholesale, grocery chain, retail and catering outlets, fish handling, fishing fleet, filleting, fish processing vessels, breading, fish meal, shellfish, mollusks, crustaceans, seaweeds, cultivation, mariculture, perishable, salting, desiccation, cod, herring, mackerel, salmon, tuna, sardines, to decapitate, to gut.

2. Give the synonyms to the following words. Find them in the text:

Fishery, to consume, seafood, to use, seaweeds, technique,

desiccation, to gut, to deliver, to involve, catering chain, cultivation, mariculture, promptly, common, worldwide.

3. Give the antonyms to the following words. Find them in the text:
Food products, to exclude, wholesale, primary, cultured stocks, coastal areas, partial.

4. Give derivatives:
To consume, prime, to harvest, to supply, to eviscerate, commerce, to sell, to subdivide, to distribute, to collect, to accomplish, cooking.

5. Make the sentences complete using the information from the text, translate the sentences from English into Russian:
a) Fish processing is the processing of fish and other seafoods delivered by … , which are the … of the fish products industry.
b) In practice the term is extended to cover all … organisms … for commercial purposes.
c) The products of the fishing industry are usually sold … to grocery … or to intermediaries.
d) Primary processing is involved in … and … of fresh fish.
e) With other …, fish provide the world's prime source of high-quality … .
f) Seafoods include seawater animals, such as … and … (including … and …).
g) The cultivation and farming of seafood is known as …, … , or in the case of fish, … .
h) Fresh fish is a highly … product, so it must be eaten promptly or … .
i)The oldest and still most widely used techniques of fish preservation are … and ….

6. Find in the text the sentences with Participle II, Passive Voice,

Comparison Degrees of Adjectives, Participle I, Modal Verbs and translate them.

7. Read the text and translate it from English into Russain:

Fish Processing

Fish processing is the processing of fish and other seafoods delivered by fisheries, which are the supplier of the fish products industry. Although the term refers specifically to *fish*, in practice it is extended to cover all aquatic organisms harvested for commercial purposes, whether harvested from cultured or wild stocks.

The largest fish processing companies can have their own fishing fleets. The products of the industry are usually sold wholesale to grocery chains or to intermediaries.

Fish processing may be subdivided into two major categories: fish handling (which is initial processing of raw fish) and fish products manufacturing.

Another natural subdivision is into primary processing involved in the filleting and freezing of fresh fish for onward distribution to fresh fish retail and catering outlets, and the secondary processing that produces chilled, frozen and canned products for the retail and catering trades.

Fish processing can take place aboard fishing and fish processing vessels, and at fish processing plants. Fish handling operations include sorting, dressing, cutting, eviscerating, skinning pre-cooking, breading, spicing, blanching, filleting, salting and packing.

Fish and fish products are consumed as food all over the

world. With other seafoods, it provides the world's prime source of high-quality protein: 14–16 percent of the animal protein consumed worldwide. Over one billion people rely on fish as their primary source of animal protein.

Fish and other aquatic organisms are also processed into various food and non-food products, such as sharkskin leather, pigments made from the inky secretions of cuttlefish, isinglass used for the clarification of wine and beer, fish emulsion used as a fertilizer, fish glue, fish oil and fish meal.

Fish are also collected live for research or the aquarium trade.

Seafood refers to any sea animal or plant that is served as food and eaten by humans. Seafoods include seawater animals, such as fish and shellfish (including molluscs and crustaceans).

The harvesting of wild seafood is known as fishing and the cultivation and farming of seafood is known as aquaculture, mariculture, or in the case of fish, fish farming. Seafood is often distinguished from meat, although it is still animal and is excluded in a vegetarian diet. Seafood is an important source of protein in many diets around the world, especially in coastal areas.

Fresh fish is a highly perishable food product, so it must be eaten promptly or discarded; it can be kept for only a short time. In many countries, fresh fish are filleted and displayed for sale on a bed of crushed ice or refrigerated. Fresh fish is most commonly found near bodies of water, but the advent of refrigerated train and truck transportation has made fresh fish more widely available inland.

Long term preservation of fish is accomplished in a variety of ways. The oldest and still most widely used techniques are drying and salting. Desiccation (complete drying) is commonly used to preserve fish such as cod. Partial drying and salting is popular for the preservation of fish like herring and mackerel. Fish such as salmon, tuna, and herring are cooked and canned. Most fish are filleted prior to canning, but some small fish (e.g. sardines) are only decapitated and gutted prior to canning.

There is a great variety of fish products: fresh fish, canned fish, frozen fish, cured fish, salted fish (saltfish), smoked fish, dried fish, fish fillets, fish roe, pre-cooked fish, fish oil, fish meal.

8. Answer the following questions:
1. What does the term "fish" refer to? 2. What is the difference between cultured and wild stocks? 3. What two major categories is fish processing divided into? 4. What are seafood products? 5. What is mariculture? 6. How is fish preservation accomplished? 7. What fish are usually cooked and canned?

9. Match the two parts of the sentences. Look at the text to help you.
1) Fish processing is …
2) The term *fish* is …
3) Fish handling operations include …
4) Fish, fish products and seafoods provide …
5) Fish are …
6) The harvesting of wild seafood is …
7) Fresh fish is a highly perishable food product, …
a) sorting, dressing, cutting, eviscerating, skinning pre-cooking, breading, spicing, blanching, filleting, salting and packing.
b) also collected live for research or the aquarium trade.
c) known as fishing.
d) so it must be eaten promptly or discarded.
e) the processing of fish and other seafoods delivered by fisheries.
f) the world's prime source of high-quality protein.
g) extended to cover all aquatic organisms harvested for commercial purposes.

10. Are the following statements true or false?
a) Fish processing may be subdivided into four major categories.
b) The largest fish processing companies can have their own fishing fleets.

c) The cultivation and farming of seafood is known as aquaculture, mariculture or fish farming.
d) Fish processing can take place only at fish processing plants.
e) Fish and fish products are consumed as food all over the world.
f) The oldest and still most widely used techniques of fish preservation are canning and smoking.
g) Most fish are filleted prior to canning, but some small fish are only decapitated and gutted prior to canning.

11. Match the underlined words with the definitions below.
Mariculture, A fishing fleet, A fillet, Fish stocks
a) are subpopulations of a particular species of fish, for which intrinsic parameters are the only significant factors in determining population dynamics, while extrinsic factors are considered to be insignificant.
b) is an aggregate of commercial fishing vessels.

c) is a specialized branch of aquaculture involving the cultivation of marine organisms for food and other products in the open ocean, an enclosed section of the ocean, or in tanks, ponds or raceways which are filled with seawater.

d) is a cut or slice of boneless meat or fish.

12. Write an abstract of one of the texts and render it in English.

Search for more information on the following websites:
http://www. en.wikipedia.
http://www. foodprocessing.com
http://www. foodprocessing-technology.com
http://vivas.hypermarket.net
http://www. wisegeek.com
http://mofpi.nic.in
http://www. feeindex.co.uk

Supplementary Reading:

COOKING AT HOME

The best way to learn to cook is to observe good cooks at work. However, cooking can also be learned from books, many of which are ,written in a simple and practical way for beginners, dealing first with the basics. A book will explain the equipment to be used and give an explanation of some of the words that may be unfamiliar, some are French or developed from French words.

Early cookery books often described the dish and its ingredients without giving precise cooking methods and instructions. Until the 20th century, cooks did not have accurate weighing and measuring tools, nor was it possible to set an oven at a precise temperature. Even today, precision is not always necessary, for experienced cooks often change recipes to suit their own taste and the available raw materials. Indeed, a good cook should be able to take whatever food is fresh and abundant and prepare it in a simple way to enhance its flavour, rather than to disguise it.

In a modern cookery book, recipes are usually set out with a list of ingredients, followed by the "method", or instructions.

The weights and measures are given in metric, imperial, or US standard forms. Similarly, oven temperatures are given in Centigrade or Fahrenheit for electric cookers, but a "mark" number is given for gas cookers. In American cookbooks the measurements are often given in the form of cups and spoons. These are specially defined measures based on the US standard measurements.

How to measure:	Abbreviations:
3 tsp = 1 tbs	tsp - teaspoon
4 tbs = ¼ cup	tbs - tablespoon
8 tbs = ½ cup	oz - ounce

12 tbs = ¾ cup	lb - pound
16 tbs = 1 cup	sm - small
1 cup = 8 oz	med - medium
16 oz = 1 pound	lg - large

Measuring things is a way to use numbers to say how big or small things are, or how heavy or light, or how hot or cold. Has anyone ever measured how tall you are? Has anyone ever measured how much you weigh?

You know how important measurements are if you've ever helped somebody bake a cake. When you bake a cake, you have to measure out each ingredient carefully. You use a pan that's a certain size, and you heat the oven to a certain temperature. Every step of the way, you use numbers and make measurements.

Let's look at some recipes as it should be, with numbers and units of measurement:

Flour

Ingredients:

1 cup sugar, 1 cup milk, 1 stick margarine, ½ teaspoon salt, 4 eggs, 4 ounces chocolate, 3 teaspoons baking powder, 2 cups flour

Directions:

Mix the margarine and sugar together in a large bowl until soft. Add all other ingredients; then put the mixture in a pan 13 inches long and 9 inches wide. Bake at 350 degrees Fahrenheit for 45 minutes.

Creamy French Dressing

Ingredients:

1 10 ½ -oz. can tomato soup; ¼ cup salad oil; ¼ cup honey, 1 tsp. salt; 1/2 cup vinegar or lemon juice; 1 tsp. dry mustard; ½ tsp. pepper

Directions:

Add ingredients to blender and blend on high speed for 5 seconds. Yields 1 pint and keeps well in refrigerator. This dressing also serves well as a marinade for meats and poultry or a brush-on-sauce.

Barbecue spareribs

Ingredients:

3 ½ lbs. meaty spareribs; ½ cup finely chopped onion; 1 18-oz. can tomato sauce; 1 clove garlic, minced; ½ cup sherry wine; 1 tsp. Worcestershire sauce; ½ cup honey; 1 tsp. salt; 2 tbs. red wine vinegar; ¼ tsp. coarsely ground pepper

Directions:

Place spareribs in shallow baking pan. Bake 1 hour in 350°F oven. Remove from oven and drain off fat in dish. Combine sauce ingredients and pour over spareribs. Continue baking 1 hour or until tender, basting frequently to glaze. Serves 6.

Illinois champion honey glazed loin roast

Ingredients:

2 14-oz. boneless pork loins; 4 tsp. freshly ground pepper; 3 cloves garlic; 1 cup honey; 4 tsp. Beau Monde seasoning; 3 cup cola; 4 tsp. salt

Directions:

Rub loins with cut cloves of garlic and season with mixture of Beau Monde seasoning, salt and pepper. Rub in. Tie loins together, place in plastic bag and refrigerate overnight. Put on spit. Roast 2-2 ½ hours over moderate heat or until meat

thermometer reads 170 degrees Fahrenheit. Pork must be thoroughly done and there should be no pink color. Baste every 15 minutes of roasting time with honey cola sauce. Serves 8-12.

Honey apple pie

Pastry for 8-inch double crust pie.

Ingredients:

6 cups sliced tart apples; ½ cup flour; 1 ½ cups honey ; 1 tsp. cinnamon; 1 ½ tbs. lemon juice; 1 ½ tbs. butter or margarine

Directions:

Roll out bottom crust and place in 8-inch pie pan. Arrange apple slices over pastry. Mix together honey, lemon juice and flour and pour over apples. Sprinkle with cinnamon and dot with butter. Cover with top crust and seal edges. Cut steam vents in top crust and bake at 425 degrees Fahrenheit for 40 minutes until apples are tender.

Cheese bread

Ingredients:

1 cup milk; ¼ lb. (1 cup) sharp Cheddar; ¼ cup honey; cheese, grated; 1 tbs. salt; 1 tsp. dry mustard; 2 pkg. dry yeast; ⅛ tsp. cayenne pepper; ½ cup warm water; 4 ½ - 5 cups sifted flour

Directions:

In small saucepan, heat milk to scalding. Remove from heat. Stir in honey and salt until dissolved. Cool to lukewarm in large bowl, dissolve yeast in warm water. Stir cheese, mustard, pepper and 2 cups flour into milk mixture. Beat until smooth, about 2 minutes. Gradually add remaining flour, until firm dough is formed. Turn onto lightly floured board. Grease hands and knead dough until

doubled, about 2 hours. Punch down dough; turn onto floured board and shape into loaf. Place in greased bread pan. Cover and let rise until doubled, about 1 hour. Bake at 400 t for 30-35 minutes. Cover with tent of aluminum foil for last 10-15 minutes of baking. Remove from pan and cool on rack. Makes 1 loaf.

Crisp-and-Creamy Baked Chicken

Preparation: 10 min

Total: 35 min

Ingredients:

4 small boneless skinless chicken breast halves

6 tablespoons (½ of 1 pouch) Shake N Bake Extra Crispy Seasoned Coating Mix

2 cups instant rice, uncooked

2/3 cup condensed cream of celery soup

¼ cup milk

1 cup Kraft Shredded Cheddar& Monterey Jack Cheese

Directions:

Preheat oven to 400^0F. Coat chicken with coating mix as directed on package; place in greased 13x9 –inch baking dish. Discard any remaining coating mix.

Bake 20 min. or until chicken is cooked through (170 F). Meanwhile, cook rice as directed on package.

Beat soup and milk with wire whisk until well blended. Pour evenly over chicken; sprinkle with cheese. Bake an additional 5 min. or until cheese is melted and sauce is bubbly. Serve with the rice.

Makes 4 servings.

Peanut Butter-Chocolate Banana Cream Pie

Preparation: 30 min.

Total 3 hours 30 min. (including refrigerating).

Ingredients:

35 Nilla Wafers, finely crushed

¼ cup (1/2 stick) butter, melted

2 medium bananas, halved lengthwise, quartered
2 squares Baker's Semi-Sweet Baking Chocolate, divided
½ cup peanut butter
2 cups milk
2 packages (4-serving size each) Jell-O Vanilla Flavour Instant Pudding& Pie Filling
2 cups thawed Cool Whip Whipped Topping, divided
2 tablespoons Planters Cocktail Peanuts, coarsely chopped

Directions:

Preheat oven to 350 F. Mix wafer crumbs and butter until well blended; press firmly onto bottom and up side of 9-inch pie plate. Bake 5-8 min. or until golden brown. Cool completely; top with bananas.

Make chocolate curls from ½ square of the chocolate; reserve for garnish. Microwave remaining chocolate and the peanut butter on "High" 1 min; stir until chocolate is completely melted and mixture is well blended. Drizzle over bananas; set aside. Pour milk into large bowl. Add dry pudding mixes. Beat with wire whisk 2 min. or until well blended. Gently stir in 1 cup of the whipped topping. Spread over bananas; top with remaining 1 cup whipped topping.

Refrigerate at least 3 hours or overnight. Top with chocolate curls and peanuts just before serving. Store leftover pie in refrigerator. Makes 10 servings, 1 slice each.

Jerky Chili

Ingredients:

2 tablespoon olive oil; medium yellow onion, diced; 1 teaspoon cumin; 1 teaspoon dried oregano; 1 teaspoon paprika; 1/2 teaspoon ground black pepper; 1 seeded jalapeno, minced; 1 lb beef jerky (if large, cut into 1-inch chunks); 14 ounce can chili beans; 28 ounce can low sodium crushed tomatoes; 16 ounce V8 juice

Directions:

In a large saucepan, heat the olive oil over medium-high. Add the

onion, cumin, oregano, paprika, black pepper and jalapenos. Saute for 5 minutes, or until the onion is very tender. Meanwhile, place the jerky in the food processor and pulse until well chopped. Add the jerky to the pan and saute for 3 minutes. Add the beans, crushed tomatoes and V8 juice then bring to a simmer. Cover the pan, reduce heat to low and simmer for 15 minutes or until the jerky is tender. Makes 6 servings.

Lisa's Salsa

Ingredients:

7-8 meduim to large tomatoes; 4-5 tablespoon green chilies; 2 tablespoon jalapeno peppers; 1 tablespoon garlic powder or garlic salt; 1 tablespoon onion powder; 1 tablespoon cilantro; add salt to taste

Directions:

Chop everything bite size or smaller, (jalapeno very small). Mix together and keep in fridge. Will keep for 2 weeks if it lasts that long.

Larry's Favorite - Venison Cube Steak

Directions:

Cut 1/2" steaks from the hind legs and tenderize them using a manual tenderizer. Put steaks through tenderizer 1 time. Then turn steaks 90 degrees and run through a second time. Add salt and pepper or another seasoning of your choice to flour. Generously dredge the steaks with the seasoned flour. Heat cooking oil in a skillet to 300 degrees. Place steaks in hot oil and brown on both sides. Reduce heat. Slice an onion and place slices on top of the steaks. Add water to skillet until water is even with the top of the steaks. Simmer until steaks are tender. Check water often. Remove steaks from skillet. Use water and drippings in skillet to make delicious gravy. Serve with mashed potatoes and your favorite vegetable.

Sweet Italian Sausage

Ingredients:

Backwoods sweet Italian sausage seasoning; fresh hog casings; red and yellow peppers; onions

Directions:

Make fresh Sweet Italian Sausage using Backwoods Sweet Italian Sausage Seasoning and fresh hog casings. Stuff casings with sausage and make links about 5" long. In a frying pan, saute red and yellow peppers and onions. The Sweet Italian Sausage may be cut into 1" lengths and cooked with the peppers or the sausage may be grilled or broiled seperately and then top with the sauteed peppers and onions. Serve with fried potatoes and baked beans or serve on a sandwich.

Cajun Redfish on the 1/2 Shell

Ingredients:

Backwoods Fresh Cajun seasoning and Butter or Olive Oil

Directions:

Filet a fresh red fish (you can substitute striper) leaving the scales and skin on the filet. Place red fish filet, scales down, on a platter. Generously spray filet with butter or baste with olive oil or canola oil. Sprinkle filet with Backwoods Fresh Cajun seasoning. Heat grill to medium heat and place filets (scales down) directly on the grill racks. Close cover of grill and cook until juices begin to cook out of the filet. Do not turn filet over. When filets are done, remove and place directly on serving plate scales down. Eat fish directly from the skin.

Fresh sausages

Fresh sausages are simply seasoned ground meats that are cooked before serving. Fresh sausages normally do not use cure (Prague powder #1) although cure can be used if desired. In

addition fresh sausages typically do not use smoke flavors, although liquid smoke can be used. Fresh sausages are never smoked in a cold smoker because of the danger of botulism.

The primary seasoning agents in fresh sausages are salt and sugar along with various savory herbs and spices, and often vegetables, including onion and garlic.

A British Fresh sausage typically contains around 10% butcher's rusk, 10% water, 2.5% seasoning, and 77.5% meat. At point of sale British sausages will often be labelled as "actual meat content X%". As meat can be fatty or lean, the X% is calculated using reference tables with the intention to give a fairer representation of the "visual lean" meat content.

Cured cooked sausages

Cured sausages differ from fresh sausages by including 2 teaspoons of cure (Prague powder #1) per 10 pounds of finished product. This is usually interpreted per 10 pounds of meat. This works out to 4 ounces of cure for 100 pounds of sausage.

Next the product is typically hot smoked. However, similar effects can be achieved by incorporating liquid smoke in the recipe. Smoking temperatures vary and are typically less than 155 degrees Fahrenheit (68 °C). At a temperature of 152 °F (67 °C) these sausages are fully cooked.

In some cases cold smoke is used. If so, then the sausage may be subsequently cooked in a water bath held at the proper

temperature. An example of this process is the preparation of Braunschweiger. In this style of sausage, after stuffing into 2.75-inch (70 mm) to 3-inch (76 mm) hog buns or fiberous casings, the sausage is submerged in 160 °F (70 °C) water for 2 to 2½ hours until the internal temperature reaches 152 °F (67 °C). At this point the sausage should be chilled in ice water, then cold smoked at a temperature of 115 to 120 °F (46 to 49 °C) for 2-3 hours.

Cured dry sausages

Cured dry sausages are prepared in a fashion similar to cured cooked sausages. The major difference is that Prague powder #2 will be used in place of Prague powder #1. In addition, certified meats must be used. Since these products are never heated to a temperature that can kill trichinosis, it is necessary to accomplish this by other methods. The usual method is via freezing. Pork may be rendered acceptable for use in dry sausages by freezing it using the following guidelines:

5 °F (−15 °C)	20-30 days
−10 °F (−23 °C)	10-20 days
−20 °F (−29 °C)	6-12 days

The specific regulations are quite complex and are beyond the scope of this article. They depend on the thickness of the cuts of meat, the packaging method, and other factors. In addition there are very specific requirements as to the times in the drying rooms and the temperatures in the smoke rooms.

While it is quite feasible for the small sausage kitchen or hobbyist to produce excellent cured dry sausages, a great deal of technical information is required. Alternatively, certified pork can be simply purchased.

EQUIPMENT

Slaughtering equipment, particularly for smaller-scale operations, need not be elaborate and expensive. The amount of equipment will depend on the slaughtering procedures employed. If possible, all equipment should be made of stainless steel or plastic, be rust resistant and easily cleaned and sanitized. Equipment which does not get in contact with the meat (e.g. overhead rails, working platforms, knocking pen) is usually made of galvanized steel.

Basic equipment needed for the slaughtering operation:

1) stunning gun, electrical head tongs or simple stunning equipment for direct blow
knives: sticking-15cm sharpened on both sides, skinning - 15 cm curved
2) a sharpening steel
3) oil or water sharpening stone
4) scabbard and belt for holding knives
5) meat saw - hand or electric and cleaver
6) block and tackle or chain hoist strong enough to hold the weight of the animal to be slaughtered
7) pritch, chocks or skinning rack (dressing cradle)
8) a strong beam, tripod or track 2.4 to 3.4 m from floor
9) spreader - gambrel or metal pipe
10) several buckets
11) working platforms
12) scalding barrel or tank
13) pot, barrel or system for boiling water
14) bell scrapers
15) solid scraping table or platform
16) thermometer registering up to 70°C
17) hog or hay hook
18) torch or flame for singeing

The last seven items indicate additional equipment required when hogs are scalded and scraped rather than skinned.

Useful **additional equipment**:

1) knocking pen
2) bleeding hooks (for vertical bleeding)
3) blood-catching trough
4) wash trough (tripe) Sanitation of hands and tools:
5) hand wash-basin
6) implement sterilizers

Pig Slaughter Line

Pigs to be slaughtered are relaxed by warm shower, and then they will be driven to the electric anaesthesia through the pig-driving path and turn fainted. Lifted by the foot-harnessing chain, pigs being killed and blood let will first enter the scalder to be scaled out and then to the shaver for shaving. The already shaven pigs will be punched holes in their legs on their conveyer, and then lifted to the track. Being processed from the pre-drying machine, singeing machine and black-scraping and polishing machine, the pig carcasses will directly enter the white pig cutting automatic line, and the red and white organs will be drawn out through the viscera synchronous hygienic inspection line. Then after cutting-to-halves, showering and re-examination and weighting procedures, the carcasses will be sent to the acid-discharging cabinet. Those pieces having finished discharged the acid, are either put into the market for wholesale or through the cutting department for part meat to be refrigerated and available for sale.

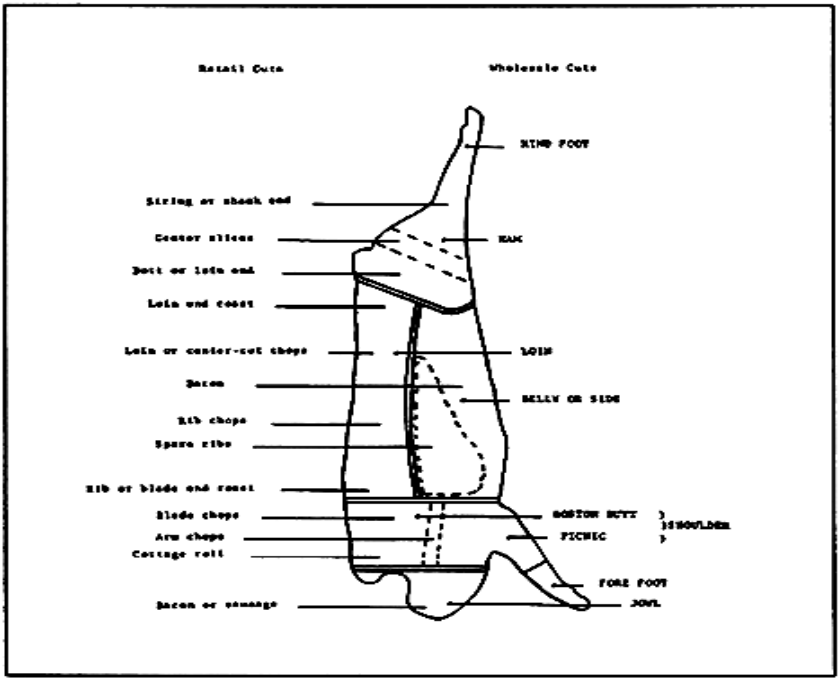


Fig. 1

Retail Cuts:
shank, center slices, butt (loin end), loin and roast, loin (center-cut chops), bacon, rib chops, spare ribs, rib (blade) and roast, blade chops, cottage roll, bacon of sausage

Wholesale cuts:
hind foot, … loin, belly (side), botton butt, picnic shoulder, fore foot, jowl

Cow Slaughter Line

The cows to be slaughtered are relaxed first by warm shower. Then the cow leading machine will lead the cow through driving path to the aerodynamic tip trunk. Hung up, the cow then will be sent to the automatic bloodletting line by the lift, and bleed. After

changing the rails, they are sent to the five-process transporter, and the pre-cutting, decorticator, breast-opening, organ removing, half-cutting etc. are conducted. The red and white organs taken out will be processed by the cattle synchronous hygienic inspection line, and the two halves of the split cattle will be sent to discharge the acid in the acid-discharging cabinet through the push-type track, so that we can get the beef of the best quality.

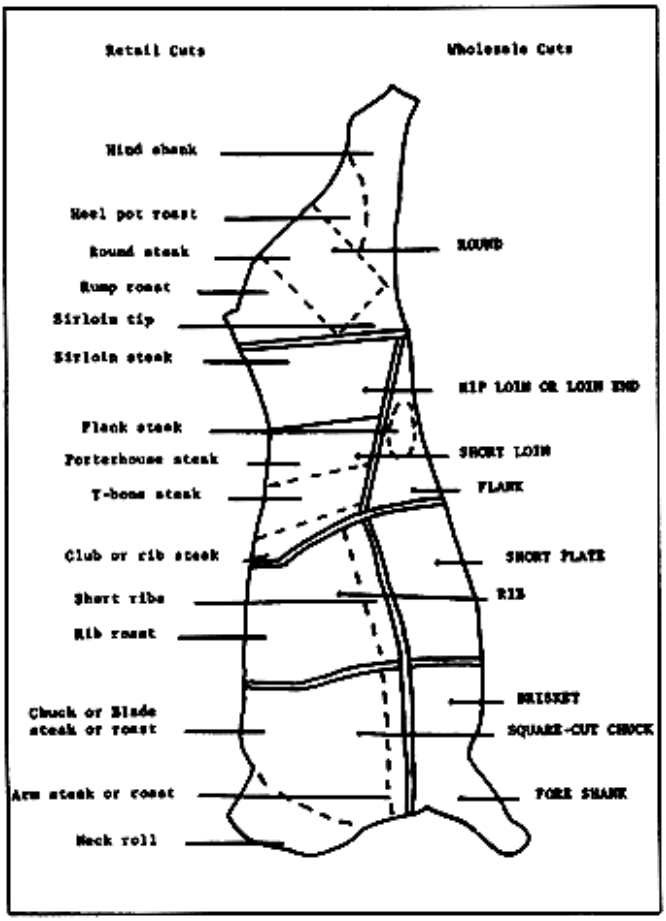


Fig. 1

Retail Cuts:
hind shank, heel pot roast, round steak, rump roast, sirloin tip, sirloin steak, flank steak, porterhouse steak, T-bone steak, club (rib) steak, short ribs, rib roast, chuck (blade) steak (roast), steak (roast), neck roll

Wholesale cuts:
round, hip loin (loin end), short loin, flank, short plate, rib, brisket, square-cut chuck, fore shank

Meatballs Machine

Meatballs machine is the specialized equipment for shaping meat balls, and the main function is to process the meat paste added with the flavorings into meat balls of different specifications and diameters. This equipment bears the qualities of lightweight, small volume, electricity saving, low price, simple structure and convenient operation. The meatballs produced are of high quality, with smooth outside and same size. This equipment can be divided into two types: Model RYJ frequency-conversion meatballs machine and Model RYJ non-frequency-conversion meatballs machine.

The meat balls production line is specially for producing all kinds of meat balls, such as pork balls, beef balls, fish balls etc. The main techniques of this production line are as follows: Arrangement, preservation, mincing or cutting and mixing, shaping, frying or boiling, cooling, packaging, and freezing of the meat materials. The main equipment includes meat balls machine and meat balls shaping trough. And the auxiliaryequipment is miner, mixer, and frying equipment, etc.

ТЕЗАУРУС

Морфология (Morphology)

Имя существительное (Noun)

Имя существительное – это часть речи, объединяющая слова, которые обозначают одушевлённые и неодушевлённые предметы (Personal and Non-Personal Nouns), вещества (Materials) и явления природы (Natural Phenomena). Они бывают исчисляемыми и неисчисляемыми (Count and Mass Nouns). Большинство существительных имеют два числа: единственное и множественное (Singular and Plural Number). В английском языке только одушевлённые существительные имеют два падежа: общий и притяжательный (Common and Possessive Case) и в 3 лице ед.ч. различаются по родам (Masculine, Feminine and Neuter Gender).

Артикль (Article)

Артикль – это служебное слово, которое служит определителем существительного, при этом собственного, отдельного вещественного значения не имеет. В английском языке существуют два артикля: неопределённый (Indefinite Article) и определённый (Definite Article).

Местоимение (Pronoun)

Местоимение - это часть речи, объединяющая слова, которые не называют предметов, а только указывают на них. По своему значению местоимения делятся на следующие разряды:

1) личные (Personal Pronouns);
2) притяжательные (Possessive Pronouns);
3) возвратные (Reflexive Pronouns);
4) указательные (Demonstrative Pronouns);
5) взаимные (Reciprocal Pronouns);
6) вопросительные (Interrogative Pronouns);

7) относительные (Relative Pronouns);
8) отрицательные (Negative Pronouns);
9) неопределённые (Indefinite Pronouns);
10) обобщающие (Universal Pronouns);
11) союзные (Conjunctive Pronouns).

Имя прилагательное (Adjective)

Имя прилагательное – это часть речи, объединяющая слова, которые выражают признак предмета. В английском языке прилагательные не имеют рода и формы множественного числа, в предложении могут играть роль определения и именной части сказуемого. Различают прилагательные качественные и относительные (Gradable or Non-Gradable Adjectives). Качественные прилагательные имеют три степени сравнения: положительную (Positive Degree), сравнительную (Comparative Degree) и превосходную (Superlative Degree).

Наречие (Adverb)

Наречие – это часть речи, объединяющая слова, которые указывают на признак действия или на обстоятельства, при которых протекает действие. Наречие относится к глаголу и показывает где, когда и каким образом действие происходит, в предложении играет роль обстоятельства и определения, и как прилагательное, может иметь три степени сравнения. По своему строению наречия делятся на простые, производные и сложные.

Имя числительное (Numeral)

Имя числительное - это часть речи, объединяющая слова, которые обозначают количество или порядок предметов при счёте. Различают количественные, порядковые и дробные числительные (Cardinal, Ordinal and Fractional Numerals).

Предлог (Preposition)

Предлог – это служебное слово, указывающее на отношение существительного или местоимения к другим словам в предложении. Предлоги выражают пространственные, временные, причинные и другие отношения и по своему значению объединяются в группы. По форме предлоги делятся на простые и составные. В роли предлогов могут употребляться некоторые словосочетания.

Союз (Conjunction)

Союз - это служебное слово, которое служит для соединения слов и словосочетаний в простом предложении или соединения простых предложений в сложном. Союзы делятся на сочинительные и подчинительные. По форме союзы бывают простыми и сложными.

Глагол (Verb)

Глагол - это часть речи, объединяющая слова, которые обозначают действие или состояние. Английские глаголы можно разделить на следующие группы:

1) знаменательные (смысловые) глаголы (Full Verbs)– выражают действие, состояние, процесс, поэтому всегда переводятся;

2) модальные глаголы (Modal Verbs) – выражают не само действие, а лишь отношение к нему, поэтому за ними всегда следует ещё и смысловой глагол. Они также всегда переводятся на русский язык;

3) вспомогательные глаголы (Auxiliary Verbs) – не выражают никакого действия, они служат для образования сложных форм глаголов, поэтому обычно не переводятся;

4) глаголы-связки (Stative Verbs) – не выражают действия, служат для связи подлежащего со смысловой частью сказуемого и показывают время, лицо, число. На русский язык эти глаголы также не переводятся.

В предложении глаголы употребляются в двух формах: личной и неличной.

Личные формы глагола (Finite Forms of the Verb)

К личным формам глагола относятся: императив (Imperative), простое настоящее время (Present Simple Tense), простое прошедшее время (Past Simple Tense). Глаголы в личной форме играют роль сказуемого.

Наклонение (Mood)

Глагол в личной форме может быть в одном из трёх наклонений: изъявительном (Indicative Mood), повелительном (Imperative Mood), сослагательном (Subjunctive Mood) . В изъявительном наклонении он имеет следующие характеристики: время (Tense), вид (Aspect), залог (Voice).

Время (Tense)

Время глагола – это грамматическая категория, которая выражает отношение действия, названного глаголом, к моменту речи. В английском языке есть три грамматических времени глагола: настоящее, прошедшее и будущее. В пределах каждого времени существуют формы, указывающие на время действия или состояния, обозначенного глаголом.

Вид (Aspect)

Понятие вида глагола в английском языке не совпадает с аналогичным понятием в русском языке ни по значению, ни по способу образования глагольных форм. Различают общий и длительный вид.

Залог (Voice)

Формы залога показывают, является ли подлежащее лицом (предметом), совершающим действие, или лицом (предметом), подвергающимся действию. В английском языке различают действительный и страдательный залог (Active Voice and Passive Voice).

Основные формы глагола (Forms of the Verb)

Английский глагол имеет 4 основные формы:

1) инфинитив (Infinitive);
2) прошедшее неопределённое время (Past Simple);
3) причастие прошедшего времени (Participle II);
4) причастие настоящего времени (Participle I).

Времена английского глагола (Tenses of the Verb)

В английском языке имеются 4 группы глагольных видовременных форм, а именно:

1) неопределённые или простые (Indefinite or Simple);
2) длительные (Continuous or Progressive);
3) завершённые (Perfect);
4) длительные завершённые (Perfect Continuous or Perfect Progressive).

Времена группы Indefinite (Simple)

Времена группы Indefinite (Simple) (неопределённые, простые) с определённым моментом не связаны. Они лишь констатируют факт совершения действия без указания на характер протекания действия и безотносительно другому действию или моменту речи.

Времена группы Continuous (Progressive)

Времена группы Continuous (Progressive) (длительные, продолженные) обозначают действие, соотнесённое с каким-то определённым моментом, действие в процессе его развития.

Времена группы Perfect

Времена группы Perfect (завершённые) выражают действие, соотнесённое (связанное) с каким-то моментом или действием, а именно действие, предшествующее этому моменту или действию.

Времена группы Perfect Continuous(Perfect Progressive)

Времена группы Perfect Continuous (Perfect Progressive) (длительные завершённые) выражают длительное действие, законченное к определённому моменту времени.

Согласование времён (Sequence of Tenses)

Под согласованием времён (или последовательностью времён) в английском языке подразумевается временная взаимосвязь между сказуемым главного предложения и сказуемым придаточного, главным образом, дополнительного предложения.

Неличные формы глагола (Non-Finite Forms of the Verb)

Неличные формы глагола выражают действие без указания лица и числа и поэтому не могут самостоятельно выполнять в предложениях функцию сказуемого. К ним относятся инфинитив (Infinitive), герундий (Gerund) и причастие (Participle).

Инфинитив (Infinitive)

Инфинитив – неопределённая (словарная) форма глагола. Различают инфинитив активного и пассивного залога (Infinitive Active and Infinitive Passive).

Причастие (Participle)

Причастие – это неличная форма глагола, которая обладает свойствами глагола с одной стороны, и свойствами прилагательного или наречия, - с другой. В английском языке различают причастие I и II. Причастие с зависимыми от него словами образует причастный оборот (Participial Construction).

Герундий (Gerund)

Герундий – это неличная форма глагола, которая обладает свойствами глагола и существительного.

Синтаксис (Syntax)

Словосочетание (Word Combination)

Словосочетание – это сочетание двух или более знаменательных слов, связанных по смыслу и грамматически и представляющих собой сложные наименования явлений объективной реальности. Словосочетание состоит из главного и зависимого слов.

Предложение (Sentence)

Предложение – это сочетание слов, выражающих законченную мысль. Слова, входящие в состав предложения и отвечающие на какой-нибудь вопрос, являются членами предложения. Они делятся на главные и второстепенные. По своему составу предложения бывают простыми (Simple Sentences) и сложными (Compound and Complex Sentences).

Простое предложение (Simple Sentence)

Простые предложения имеют только одну грамматическую основу. В зависимости от цели высказывания предложения могут быть повествовательными (утвердительными или отрицательными) (Declarative Affirmative or Negative Sentences), вопросительными (Interrogative Sentences) и побудительными (повелительными или восклицательными) (Imperative Sentences).

Сложное предложение (Compound and Complex Sentence)

Сложные предложения имеют две или несколько грамматических основ, которые соединяются между собой при помощи сочинительных или подчинительных союзов или союзных слов.

Порядок слов (Word Order)

В английском языке твёрдый порядок слов. Для повествовательных предложений характерен прямой порядок слов: подлежащее – сказуемое – дополнение –

обстоятельство (может занимать место в начале или конце предложения).

В вопросительных предложениях используется обратный порядок: вспомогательный глагол – подлежащее – смысловая часть сказуемого – остальные члены предложения, исключение составляют вопросы к подлежащему.

Виды вопросов (Types of Questions)

Существуют 4 типа вопросов:

1) общий (General Question),
2) альтернативный (Alternative Question),
3) специальный (Special Question),
4) разделительный (Disjunctive Question).

Общий вопрос (General Question)

Общий вопрос – это вопрос, который относится ко всему предложению и требует утвердительного или отрицательного ответа.

Альтернативный вопрос (Alternative Question)

Альтернативный вопрос – это вопрос, предполагающий в ответе выбор между двумя или более предметами, действиями или качествами, выраженными однородными членами предложения, соединёнными союзом or (или).

Специальный вопрос (Special Question)

Специальный вопрос – это вопрос, который относится к отдельному члену предложения и начинается с вопросительного слова.

Разделительный вопрос (Disjunctive Question)

Разделительный вопрос - это вопрос, требующий краткого утвердительного или отрицательного ответа, т.е. подтверждения или отрицания мысли, выраженной в вопросе, и который состоит из двух частей.

Подлежащее (Subject)

Подлежащее - это главный член предложения, который отвечает на вопрос «кто? что?», обозначает предмет или лицо, выполняющее действие и может быть выражен существительным, местоимением, числительным, герундием или инфинитивом.

Сложное подлежащее (Complex Subject)

Конструкция «сложное подлежащее» или «именительный падеж с инфинитивом» не имеет соответствующего оборота в русском языке. Она состоит из существительного в общем падеже или местоимения в именительном падеже и инфинитива, следующего за глаголом-сказуемым, и является в английском языке эквивалентом подлежащего придаточного предложения, на русский язык переводится дополнительным придаточным предложением.

Сказуемое (Predicate)

Сказуемое - это главный член предложения, который отвечает на вопрос «что делать?», обозначает действие, состояние или другой признак подлежащего и выражает грамматическое значение одного из наклонений. Сказуемое может быть простым и составным.

Дополнение (Object)

Дополнение – это второстепенный член предложения, который отвечает на падежные вопросы и может быть выражен существительным, местоимением, числительным, герундием или инфинитивом.

Сложное дополнение (Complex Object)

Конструкция «сложное дополнение» или «объектный падеж с инфинитивом» не имеет аналога в русском языке. Она состоит из местоимения в объектном падеже или существительного в общем падеже и инфинитива, на русский

язык переводится дополнительным придаточным предложением.

Определение (Attribute)

Определение - это второстепенный член предложения, который отвечает на вопросы «какой? который? чей?», может быть выражен существительным, местоимением, числительным.

Обстоятельство (Adverbial Modifier)

Обстоятельство - это второстепенный член предложения, который отвечает на вопросы «где? когда? куда? как?» и т.д. Различают обстоятельства места, направления, времени, способа, частоты, степени.

Краткий грамматический справочник

Личные местоимения

Число	*Лицо*	*Именительный падеж*		*Объектный падеж*		
		Подлежащее, именная часть сказуемого		**Дополнение**		
		кто? что?		Прямое кого? что?		Косвенное кому? чему?
Единственное	1-е	**I**	я	**me**	меня	мне
	2-е	**you**	ты	**you**	тебя	тебе
	3-е	**he, she, it**	он, она, оно	**him her it**	его, её	ему, ей
Множественное	1-е	**we**	мы	**us**	нас	нам
	2-е	**you**	вы	**you**	вас	вам
	3-е	**they**	они	**them**	их	им

Указательные местоимения

Этот – this; **эти** – these
Тот – that; **те** – those

Притяжательные местоимения

	относительная форма	**абсолютная форма**
мой	my	mine
твой	your	yours
его	his	his
её	her	hers
его	its	-
наш	our	ours
ваш	your	yours
их	their	theirs

Вопросительные местоимения и наречия

Кто?	**who?**
Кому?	**whom?**
Какой?	**what (+noun)?**
Какой, который из ..?	**which?**
Чей?	**whose?**
Что?	**what?**
Где?	**where?**
Когда?	**when?**
Почему?	**why?**
Как?	**how?**
Сколько?	**how many ..? (how much ..?)**

Степени сравнения прилагательных и наречий

положительная	***сравнительная***	***превосходная***
Односложные и некоторые двусложные	-er	-est
long	longer	(the) longest
многосложные	more …	(the) most …
important	more important	the most important
исключения		
good, well	better	(the) best
bad, badly	worse	(the) worst
much, many	more	(the) most
little	less	(the) least

Таблица спряжения глагола to ask
Действительный залог (Active Voice)

	Simple	**Progressive**	**Perfect**	**Perfect Progressive**
Infinitive	to ask	to be asking	to have asked	to have been asking
Present	ask, asks	am (is, are) asking	have (has) asked	have (has) been asking
Past	asked	was (were) asking	had asked	had been asking
Future	shall (will) ask	shall (will) be asking	shall (will) have asked	shall (will) have been asking

Страдательный залог (Passive Voice)

	Simple	Progressive	Perfect	Perfect Progressive
Infinitive	to be asked	to be being asked	to have been asked	
Present	am (is, are) asked	am (is, are) being asked	have (has) been asked	
Past	was (were) asked	was (were) being asked	had been asked	
Future	shall (will) be asked		shall (will) have been asked	

Модальные глаголы и их эквиваленты

Can (to be able to…)	мочь, уметь
May (to be allowed to…)	мочь, иметь разрешение
Must (to have to…, to be to…)	долженствовать
Should	следовать, долженствовать
Need	нужно, надо
Ought to	следовало бы, следует
Would	хотеть, желать
Shall	долженствовать, быть обязанным
Will	желать, намереваться
Dare	сметь, отважиться

Причастия

	Active	Passive
Indefinite Participle (Participle I)	asking	being asked
Past Participle (Participle II)		asked
Perfect Participle	having asked	having been asked

Инфинитив

	Active	**Passive**
Indefinite (Simple)	to ask	to be asked
Continuous (Progressive)	to be asking	
Perfect	to have asked	to have been asked
Perfect Continuous	to have been asking	

Основные формы английского глагола

Инфинитив (неопределенная форма глагола) ***Infinitive*** *(что делать?)*	*Прошедшее простое* ***Past Indefinite*** *(что сделал?)*	*Причастие прошедшего времени* ***Participle II***	*Причастие настоящего времени* ***Participle I***
to have to be to help to ask	had was/were helped asked	had been helped asked	having being helping asking

Герундий

Время	Залог	
	Active	Passive
Indefinite	doing	being done
Perfect	having done	having been done

Приложение 1

Сводная таблица нестандартных глаголов

Infinitive	Past Indefinite	Participle II	Перевод
to be	was, were	been	быть
to become	became	become	становиться
to begin	began	begun	начинаться
to break	broke	broken	ломать
to bring	brought	brought	приносить
to build	built	built	строить
to buy	bought	bought	покупать
to come	came	come	приходить
to cost	cost	cost	стоить
to do	did	done	делать
to eat	ate	eaten	кушать
to fall	fell	fallen	падать
to find	found	found	находить
to fly	flew	flown	летать
to forget	forgot	forgotten	забывать
to get	got	got	получать, доставать
to give	gave	given	давать
to go	went	gone	идти
to have	had	had	иметь
to hear	heard	heard	слышать
to keep	kept	kept	держать, хранить
to know	knew	known	знать
to leave	left	left	оставлять, покидать
to make	made	made	делать
to meet	met	met	встречать
to put	put	put	класть
to read	read	read	читать
to ring	rang	rung	звонить, звенеть
to run	ran	run	бежать
to say	said	said	говорить, сказать
to see	saw	seen	видеть, смотреть
to send	sent	sent	посылать
to sing	sang	sung	петь

to sit	sat	sat	сидеть
to speak	spoke	spoken	говорить
to spend	spent	spent	тратить
to stand	stood	stood	стоять
to swim	swam	swum	плавать
to take	took	taken	брать
to teach	taught	taught	учить
to tell	told	told	рассказывать
to think	thought	thought	думать
to write	wrote	written	писать

Приложение 2

Словообразование. Аффиксы:

существительных	***прилагательных***	***глаголов***	***наречий***
-or/-er	-less	-fy	-ward(s)
-ian	-able/-ible	-ize/-ise	-wise
-ion (-ation| -sion)	-ful		
-ese	-ous		
-ist	-ive		
-ance/-ence	-al		
-ment	-ic		
-ness	-y		
-hood	-ish		
-ism			
-ure			
-ing			
-ship			
-dom			
-th			

WORD BANK

A

abattoir	бойня
acid	кислота
acidic	кислотный
acidify	окислять
additive	добавка
after-taste	привкус
ageing	созревание, выдержка
ale	пиво
alkaline	щелочной
amino acid	аминокислота
aroma	аромат, вкус
aquatic	водный

B

back fat	хребтовый шпик
bacon	бекон
bake	выпекать, печь
barley	ячмень
beef	говядина
belly	грудинка
beverage	напиток
bitter	горький
blade bone	лопатка
blanching	бланширование
bleeding	обескровливание
bologna	болонская колбаса
braise	тушить (с предварительной жаркой)
breast	грудка
brine	рассол
brisket	грудная часть, подгрудок
brewing	пивоварение

brewery	пивоварня
breading	панировка
broil	жарить на открытом огне
butt	толстый край
butter	сливочное масло
butterfat	молочный жир
by-product	субпродукт

C

casing	оболочка
carbohydrate	углевод
carbon dioxide	углекислый газ
carcass	туша
canning	консервирование
casein	казеин
cask	фляга, бочка, контейнер
cause	вызывать
cereal	хлебный злак
cell	клетка
chill	охлаждать
chop	котлета, мелко измельчать
chuck	лопаточная часть говяжьей туши
clarify	очищать, делать прозрачным
cleaver	секач
coagulate	сгущать
coarse	грубый
cod	треска
cold cuts	колбасные изделия, нарезанные ломтиками
composition	состав
condensed	концентрированный, сгущенный
condiment	приправа

congeal	свертываться
content	содержимое
cook	готовить
cooked	вареный (о колбасе)
cooling	охлаждение
chuck	лопаточная часть
compound	соединение
connective	соединительный (ткань)
crumb	мякиш хлеба
crust	верхняя хрустящая корочка
crustacean	ракообразное
cultivation	разведение
curdling	сгущать (молоко)
curing	вяление, посол
cut	отруб, кусок мяса
cutting	разделка, разруб
cuisine	национальная кухня

D

dairy	молочный
damage	повреждение
dead weight	убойный вес
decay	разложение, распад
decapitate	отрубать голову
decomposition	распад, разложение
dehydration	сушка, обезвоживание
desiccation	сушка, обезвоживание
deterioration	ухудшение
diet	рацион, диета
digestion	переваривание
dip	окунание, погружение
dirt	грязь
disease	болезнь
dissect	рассекать
dissolve	растворять

dough	тесто
dressing	разделывание, обвалка, заправка салата
drip	утечка сока
drying	высушивание
drug	медикамент
duck	утка
durum	твердая пшеница

E

edible	съедобный
eliminate	устранять
employ	применять
environment	среда
enzyme	фермент
evaporation	испарение
evisceration	потрошение
expose	подвергать чему-либо
extraction	выжимание, извлечение

F

facilitate	способствовать, ускорять
fat	жир
fatty	жирный
fermentation	ферментация, брожение
fiber	волокно
filleting	разделка на филе
filling	начинка
firm	твердый, плотный
fishing	рыбная ловля
flank	пашина, бок
flavour	вкус
fleet	морской флот
flesh	мякоть
flour	мука

foam	пена
fondue	фондю
food	пища
foodstuffs	продукты питания
fore	передний
fortified	усиленный, укрепленный
freezing	заморозка
fresh	свежий
fry	жарить (в жире, масле)
fungus (fungi)	гриб

G

game	дичь
gelatin	желатин
germination	прорастание
globule	шарик
grain	зерно
grind (ground, ground)	измельчать
grocery	бакалейные товары
gut	потрошить, нутровать
gluten	клейковина, растительный белок
grease	технический жир
grilling	жарить на рашпере

H

harvest	разводить
head cheese	зельц
health care	забота о здоровье, здравоохранение
heat	подогревать
herb	трава
herring	сельдь
hind	задний
hip	бедро

hock	голень
hog	свинья
homogenization	гомогенизация
hop	хмель
hinder	препятствовать

I

ice-cream	мороженое
inoculate	инокулировать, прививать
intramuscular	внутримышечный
implement	приспособление
improver	улучшитель
inhibit	замедлять
immersion	погружение
integrity	целостность
irradiation	облучение

J

jerky	вяленое мясо
joint	сустав, отруб
jowl	щековина
juiciness	сочность

K

kefir	кефир
kidney	почка
kiln	печь
knocking	оглушение

L

lactic	молочный (кислота)
lager	пиво
lard	свиной жир
layer	слой
lean	постный

leaven	дрожжи, закваска, разрыхлитель
limb	конечность
link	колбасный батон
liquid	жидкость
liver	печень
loaf	батон
loin	поясничная часть туши, корейка

M

mackerel	макрель, скумбрия
malt	солод
mammal	млекопитающее
mariculture	морское фермерство, марикультура
meal	мука
meatball	фрикаделька
melt	таить, растапливать
microorganism	микроорганизм
millet	просо
mince	размельчать, перекручивать
mollusk	моллюск
moisture	влага
mold	плесень
muffin	сдоба, оладья
mutton	баранина
muscle	мышца
mustard	горчица

N

neck	шея
nitrate	нитрат
nitrite	нитрит
nut	орех

nutrient	питательный (вещество)
nutritionist	диетолог

O

oat	овес
offal	субпродукт
onion	лук
outlet	торговая точка
oven	печь
overhaul	перекладка мяса при посоле
oxygen	кислород

P

package	упаковка
pan	кастрюля, сковородка
pancake	оладья, блин
paste	макаронные изделия
pasteurization	пастеризация
pate	паштет
patty	рубленый шницель
peeling	очистка от кожуры, оболочки
pepper	перец
perishable	скоропортящийся
pickle	рассол, маринад
pharmaceutical	фармацевтический
pie	пирог
pig	свинья
pit	фруктовая косточка
plant	завод
porcine	свиной
pork	свинина
powder	порошок
poultry	птица
pour	наливать
precipitate	выпадать в осадок

preservation	сохранение
preservative	консервант
primal cut	сортовой отруб
probiotic	пребиотик
processing	переработка
protein	белок
PSE	бледный, мягкий, экссудативный
pulp	мякоть плода

R

rack	решетка
rancidity	прогорклость
raw material	сырье
recipe	рецепт
remove	удалять, устранять
render	вытапливать жир
rennet	сычуг
retail	розничная торговля
rib	ребро
rind	свиная шкура
ripeness	зрелость
rise	поднимать(ся)
roast	жарить
rough	грубый
round	бедренная часть туши
rye	рожь

S

salami	салями
salmon	лосось
sanitation	санитария, санитарная профилактика
sardine	сардина
savory	вкусный, аппетитный

sauce	соус
sausage	колбаса
seafood	морепродукты
sealing	герметизация, уплотнение
season	приправа
seaweed	морская водоросль
scale	чешуя
scalding	ошпарка
seed	семечка
serving	порция
shank	задняя голяшка, рулька
shelf-life	срок годности
shellfish	моллюск
shoulder	лопатка, передний окорок
simmer	варить на слабом огне
sirloin	оковалок, заднепоясничная часть туши
slice	кусочек (тонкий)
skim	снятый (о молоке), обезжиренный
skin	кожа, шкура
skinning	снятие шкуры
slaughtering	убой скота
smell	запах
smoking	копчение
soak	вымачивать, насыщать
solid	твердый
solution	раствор
soluble	растворимый
sorting	сортировка
sour	кислый
spelt	пшеница сорта «спельта»
spice	специи
spoilage	порча
stabilizer	стабилизатор

stale	черствый
starch	крахмал
steak	бифштекс, порционный кусок мяса
sterilization	стериализация
stew	тушеный
stir	мешать, помешивать
stock	запас
storage	хранение
stuff	начинять
stunning	оглушение
substance	вещество
summer sausage	летняя колбаса
sweet	сладкий
syrup	сироп

T

tallow	топленый жир
tenderloin	вырезка
tenderness	нежность
texture	текстура
tissue	ткань
topping	верхняя часть
trace elements	микроэлементы
treatment	обработка
trimming	обрезание
tuna	тунец
turkey	индейка

U

uniform	однородный
unleavened	пресный
unwholesome	недоброкачественный, вредный

V

vacuum-packing	вакуумная упаковка
variety meat	субпродукт
veal	телятина
venison	оленина
vessel	морское судно
vinegar	уксус
viscera	внутренности
vitamin	витамин
volume	объем

W

waffle	вафля
waste	отходы
wheat	пшеница
weigh	взвешивать
well done	прожаренное, доведенное до полной готовности
wiener	сосиска
whey	сыворотка
whip	взбивать
wholesale	оптовая торговля
wholesome	здоровый
wrap	заворачивать
wort	сусло

Y

yeast	дрожжи
yield	выход (продукции)
yogurt	йогурт

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