МИНИСТЕРСТВО СЕЛЬСКОГО ХОЗЯЙСТВА РФ

ФГБОУ ВО «Кубанский государственный
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ПЕРЕРАБОТКА СЕЛЬСКОХОЗЯЙСТВЕННОГО СЫРЬЯ (В КУРСЕ АНГЛИЙСКОГО ЯЗЫКА)

Учебное пособие

Краснодар
КубГАУ
2019

УДК 811.111:664(075.8)
ББК 81.432.1
Ч-59

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Ч-59 Переработка сельскохозяйственного сырья (в курсе английского языка) : учеб. пособие / О. П. Чижова, И. В. Карпенко. – Краснодар : КубГАУ, 2019. – 92 с.

ISBN 978-5-0097-830-6

Учебное пособие разработано в соответствии с рабочей программой дисциплины «Иностранный язык (английский)», программой по иностранным языкам для неязыковых вузов. В пособие включены аутентичные тексты по специальности, научно-популярные статьи из зарубежных периодических изданий, а также упражнения, направленные на развитие навыков говорения, чтения и перевода оригинальной литературы в профессиональной сфере.

Предназначено для обучающихся факультета перерабатывающих технологий.

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ISBN 978-5-00097-830-6

ПРЕДИСЛОВИЕ

Учебное пособие разработано на основании типовой программы обучения иностранным языкам в неязыковых вузах и предназначено для самостоятельной работы обучающихся факультета перерабатывающих технологий очной и заочной формы обучения.

Издание состоит из оригинальных текстов, тематика которых соответствует направлениям подготовки: 35.03.07 Технология производства и переработки сельскохозяйственной продукции, 19.03.02 Продукты питания из растительного сырья.

Целью пособия является развитие, совершенствование и закрепление навыков чтения аутентичных английских текстов по специальности; овладение специальной терминологией; формирование у обучающихся определенного уровня коммуникативной компетенции, который позволит им пользоваться английским языком на практике. Реализация этой цели осуществляется благодаря специально подобранным текстам, содержание которых полностью соответствуют содержанию учебной программы.

Лексический материал и тексты разделов объединены общей тематикой. В каждом разделе дается словарь основных слов и словосочетаний с переводом, тексты на английском языке, теоретические сведения по грамматике английского языка, задания для формирования лексических и грамматических навыков.

Важной частью пособия являются задания из раздела «Speaking», которые содержат диалоги, кейс-задания или вопросы для обсуждения с партнером, целью которых является развитие навыков говорения.

PART I

UNIT 1

Grammar

В английском языке существует такое понятие как залог (**Voice)**, который указывает на то, выполняет ли подлежащее действие самостоятельно (активный / действительный (Active) залог), или действие совершается над ним (пассивный / страдательный (Passive) залог). Таким образом, есть два залога: **Active Voice, Passive Voice.** Существует своеобразная система глагольных времен (Tenses) в действительном **(Active**) залоге, которые делятся на четыре группы: Indefinite (Simple), Continuous (Progressive), Perfect, Perfect Continuous (Progressive). В каждой из этих групп есть Present, Past, Future.

Начнем с настоящего времени – **Present**

Present Simple	**Present Continuous**	**Present Perfect**	**Present Perfect Continuous**
Образование			
+ V/V (e) s I go to school every day. Molly goes to school every day -don't/doesn't V I don't go to school every day. Molly doesn't go to school every day. ? Do/Does + S +V	+am/is/are Ving. I am sitting. She is singing. They are playing. -am/is /are not +Ving I am not playing. He isn't watching. We are not listening.	+ have/has +V3 I have watched this film. She has done her homework. -have/has not +V3 I haven't met her before He has not watched the film. ? Have/Has + S + V3. Have we met before?	+ have / has been Ving I have been working. She has been waiting. -Have/has not been Ving I haven't been waiting for you. She hasn't been running. ? Have/ has + S+ been Ving

Do you go to school every day? Does Molly go to school every day?	? Am / Is /Are + S+ Ving Am I sitting? Is she listening? Are they singing?	Has Molly read this book?	Have you been working all day long? Has he been running?
Употребление			
Обычное, регулярно повторяющееся действие. Molly often visits her granny. *Расписание.* The ship leaves at 8 sharp. *Факты, законы природы.* It often rains in autumn.	*Действие происходит длится) в данный момент.* She is watching TV now. *Действие происходит в данный период.* I am reading M.Twain these days. *Запланированное действие.* I'm flying to Madrid.	*Действие завершено, но нет указания на момент совершения.* She has done her homework. *Действие завершено, нет указания на момент совершения и есть результат важный в данный момент.* I have bought some flour, so we can bake a cake.	*Действие, которое длилось до настоящего момента (возможно, действие продолжается и сейчас).* She has been waiting for you for 3 hours.
Слова-указатели. Маркеры времени			
Usually, generally, once a month, twice a week, always, every day/week/mont, never, often, seldom, sometimes, rarely	Now, at the moment, at present	lately, recently, twice, several times, ever, never, just, already, yet, for, since	For, since

Прошедшее время – **Past**

Past Simple	**Past Continuous**	**Past Perfect**	**Past Perfect Continuous**
Образование			
+ V2 I played hockey. Molly went to the zoo. -didn't +V I didn't play hockey. Molly didn't go to the zoo. ? Did +S+V Did you play tennis? Did Sara go to the zoo?	+Was/were+ Ving She was sleeping. They were dancing -was/were not Ving She was not crying. We were not waiting for him. ? Was /were +S+Ving Was she writing a letter? Were you dreaming?	+Had +V3 I had done my homework by 6 o'clock. -Had not +V3 She hadn't finished cooking before her mother came. ? Had+S+V3 Had she come before midnight?	+Had been Ving I had been crying before he came. -had not +S+ been Ving I hadn't been cooking by midnight. ? Had + S + been + Ving Had she been crying till midnight?
Употребление			
Обычное единичное действие в прошлом. I visited my granny last month. *Цепь событий в прошлом.* I opened my bag, found the key and	*Действие, которое длилось в определенный момент прошлого.* She was dancing at 5 o'clock yesterday. *She was sleep-*	*Действие закончилось до момента в прошлом.* I had watched the film before we went to the cinema. *She had fallen asleep before*	*Действие длилось до момента в прошлом.* Sally had been waiting for half an hour and then she decided to go home.

started the car.	*ing when her brother came.*	*midnight yesterday.*	
Слова-указатели. Маркеры времени			
yesterday, last (that) month, the day before yesterday, last (that) week\month\year, in 2010, on the 10 of April, ago	all day /night long, at that moment/time, while, at 5 o'clock, when +Past Simple	By, by the time, before	all day long, by, before, since, for

Будущее время – **Future**

Future Simple	**Future Continuous**	**Future Perfect**	**Future Perfect Continuous**
Образование			
+ will V I will stay with you forever. -won't (will not) V He won't help you. ? Will +S+V Will you come to my party?	+will be Ving I will be reading at 2 o'clock tomorrow. -Won't be Ving She won't be sleeping if you come later. ? Will +S+be Ving Will you be waiting for me?	+Will have +V3 I will have read the book by tomorrow. -Won't have V3 She won't have cooked dinner by that time. Will+ S+have V3 Will you have finished homework by midnight?	+ will have been Ving I will have been waiting for you till midday. -won't have been Ving I won't have been reading for so long. ? Will +S + have been doing Will you have been doing your homework till 5 o'clock?
Употребление			
Одиночные или последовательные действия в	*Действие длится в определенный*	*Действие закончится до момента в*	*Действие длится до момента в будущем.*

будущем I will meet you at the station. She will come home and then she will take a shower.	*момент будущего.* I will be lying on the beach at this time tomorrow.	*будущем.* I will have written all the letters by 5pm.	Molly will have been living in Kongo for three years next November.
Слова-указатели. Маркеры времени			
Tomorrow, the day after tomorrow , tonight, one of these days, next week/month, in an hour /minute, later, soon, in (the) future	all day /night long, at that moment/time, while, at 5 o'clock, when	By, by the time, before	all day long, by, before, since, for, till

Exercise 1. ***Put the verbs in brackets in the correct form.***

A. In 1747 Marggraf (to discover) crystals of sugar in the red beet.

B. The food industry (to produce) such foods that (to look) and (to taste) like meat but are made from soyabean proteins.

C. Look! They (to eat) your skyscraper sandwiches!

D. If people have enough calcium and phosphorus their bones (to be) strong.

E. Our ancestries (to bake) bread on the flat stone at that time.

F. The latest industrial inventions (to bring) great increase in the production of food.

G.Like our days certain people (to have) certain food taboos in the future because of religious law.

H. Some people believe that by 2030 food deficiencies (to disappear) in Africa.

I. Improved methods of storing and of preserving (to revolutionize) food industry by the last century.

J. The Indians (to collect) and (to concentrate) the juice of the

hard maple for many years before America was discovered by white man.

Exercise 2. ***Translate sentences into English.***

A. К следующему сезону наша фирма будет консервировать уже более десяти видов фруктов.

B. Улучшение методов хранения и переработки помогли произвести намного больше видов продуктов в этом году.

C. Несмотря на рост международной торговли, отличия в видах пищи и способах её приготовления будут существовать очень долго.

D. Дрожжи превращают сахар в углекислый газ и спирт.

E. Много новых видов кондитерских изделий появились во Франции в 17 веке.

F. К 16 веку Эрнандо Кортес, испанский завоеватель Мексики, привез в Европу первые какао бобы.

G. Новые способы обработки какао бобов разовьют необычный вкус шоколада.

H. В средние века люди употребляли дробленые орехи и фрукты с медом вместо конфет.

I. Все больше новых брендов продукции появляется на международном рынке в наши дни.

J. Вот уже несколько лет эта фабрика производит уникальный вид йогурта с кусочками фруктов.

Reading

Vocabulary list

1) frantic	неистовый, бешеный
2) to blur	стирать, делать неясным
3) pace	скорость
4) amid	на фоне
5) venture	коммерческое предприятие
6) whey	сыворотка
7) to spawn	создать
8) to dry out	иссякнуть

9) setback	задержка развития
10) turmoil	путаница, кризис
11) array	спектр
12) ever-greater	постоянно увеличивающийся
13) commitment	обязательства
14) to relinquish	отказываться
15) to outpace	обгонять

Exercise 1. ***There are some terms that refer to globalization, but some letters are missing. Can you complete the words?***

c_a_ge, info_m_ti_n, a g_ow_ng a_pet_te, to f_ed, a_lia_c_, w_or_d_id_, f_r_i_n m_rk_ts, d_ir_ p_o_uc_s, r_pi_l_, d_ve_o_in_ c_un_r_e_, p_c_.

Exercise 2. ***Before you read text 1, answer and discuss some questions.***

1. Why is the whole world in our hands?
2. What are the prospects of the world economy?
3. How has the world become a smaller place?

Exercise 3. ***Scan text 1 to find the following information and order the information chronologically according to their appearance in the text.***

− Forms of alliances
− Problems of global alliances
− Globalization indicators
− Advantages of global alliances

TEXT 1

MILK AND DAIRY PRODUCTS

With the new millennium we are all wondering which way the world is heading. The frantic pace of global change often blurs our view of the road ahead. However, amid all uncertainties, one thing seems clear: the world is becoming a smaller place. Just look at the phenomena of the World Wide Web and global satellite communi-

cations. Suddenly the other side of the planet is not so far away anymore and as barriers fall, opportunities arise. A freer flow of both global information and trade is helping us build relationships that not too long ago would have seemed hopelessly remote and inaccessible. As world markets continue to open up, the dairy industry will benefit by forging global alliances: working relationships between a supplier in one country and an end-user in another.

Global alliances go far beyond "I have this for sale. Will you buy it?" They involve a frequent exchange of product specifications, technical know-how, market intelligence and competitive intelligence. Global alliances let U.S. companies get inside foreign markets and take advantage of the opportunities they offer. To understand the value of global alliances, consider this: about 96% of the world's population lives outside the United States. That is a lot of mouths to feed. People in developing nations have a growing appetite and, over the long term, more and more overseas markets will be looking for U.S. dairy products. Global alliances are one way to meet that demand.

A global alliance may be a formal joint venture, with a seller and a buyer creating and jointly owing a third company. It may be a three-or four-way partnership, a chain between a

U.S manufacturer, a trading company, an importer, an overseas customer and an end-user, or it may also be a two-way flow of products, where a U.S. seller/exporter also imports products from its overseas customer.

No matter which form they take, global alliances offer limitless possibilities. Global alliances have helped U.S. whey manufacturers spawn numerous new products and applications worldwide, particularly in Japan and Mexico. They will help U.S. manufacturers and marketers enjoy vast opportunities throughout South America when the European Union's export subsidies dry out. Despite setbacks like Mexico's financial crisis a few years ago and the current economic turmoil in Asia, over the long term more and more foreign markets will continue to emerge for a growing array

of U.S. dairy products in ever-greater volumes.

Still, global alliances are not for everyone. Like any meaningful relationship, they require a big commitment of time and resources. You may need to relinquish some control to your overseas partner. They also present a risk that you will rely too much on your new partner or not enough. Nonetheless, for the sake of your future success, I urge you to consider building global alliances. Long-term growth in overseas markets is expected to outpace U.S. market growth by at least five-to-one. In the rapidly expanding markets of the millennium, global alliances will make a world of difference.

(Drier, Jerry, New Products and Marketing Insights, Dairy Foods, June 1998)

Exercise 4. ***Scan text 1 and find synonyms for the following expressions:***

a) to form alliance…
b) to spread out a product…
c) range of products…
d) to give over control unwillingly…

Exercise 5. ***Read text 1 and then decide if the statements below are true (T) or false (F). Correct the false ones.***

A. As barriers crash, opportunities increase.

B. Alliances involve relationships between suppliers and end-users inside one country.

C. There is one common type of alliance.

D. Global alliances have vast opportunities throughout the world.

E. Alliances do not require a large amount of time and resources.

Exercise 6. ***Answer the questions.***

1. What kind of global changes do we notice at the beginning

of the new millennium?

2. Why are global alliances important?
3. What are the possible forms of partnerships?
4. What are the benefits and problems of global alliances?
5. How will global alliances make a world of difference?

Exercise 7. ***Use words from each box to make word compounds. Then match them to the definitions below.***

Frantic	forge	growing	limitless	spawn	dairy

New products	possibilities	global alliances	pace	appetite	products

1. An enormous array of activities.
2. To form a range of advanced items.
3. To create a worldwide unions.
4. Incredible rapidity.
5. Mounting needs.
6. Their base is a liquid form from a chewing animal.

Speaking

Exercise 1. ***Work with a partner to practice greetings and small talk. Look at the phrases in the box.***

Useful phrases

Meeting people	Offering hospitality
Hello, Mr/Ms…I'm…	Can I take your coat?
Nice to meet you!	Please come in and take your seat.
It's nice to meet you too!	Can I get you a cup of coffee/tea?
May I introduce you to…?	Would you like something to drink?
Have you met…?	Yes, please./ Yes, that would be great.

	No thank you./ No, thanks.,

Exercise 2. ***There are some information for you and your partner. Try to compile a dialogue, using useful phrases above mentioned.***

YOU	YOUR PARTNER
You work in a trade department. Today a new colleague from your overseas parent company is coming to the office for the first time. (He / She only speaks English)	It's your first day in your new job as a member of the trade department in one of your company's European partnership
You have been asked to welcome the new colleague show him/her around the office, and make him/her feel comfortable. At the end you should introduce your new colleague to the head of the department	You only speak English, but hope to start learning the local language soon. One of your new colleagues will meet you and show you around the company. Make small talk and ask questions about the company. (How many people work there? Do company they have a canteen? Does the offer language classes? etc.)

UNIT 2

Grammar

Образование форм Passive Voice

Временные формы страдательного залога образуются при помощи вспомогательного глагола «to be» в соответствующем времени и смыслового глагола в форме причастия прошедшего времени Past Participle (третья форма глагола).

Таким образом, общая схема образования представлена на картинке:

При изменении времени в страдательном залоге **изменяется только глагол «to be»**, смысловой глагол имеет

во всех временах одну и ту же форму – третью (Past Participle / Participle II.

Выбор временных форм пассивного залога осуществляется на основании тех же правил, что и соответствующих форм активного залога. Наречия времени могут служить маркерами при выборе необходимой формы.

При образовании вопросов в пассивном залоге перед подлежащим ставится либо сам глагол «to be» в соответствующем времени, либо вспомогательный глагол употребляемого грамматического времени.

При образовании отрицательной формы частица not ставится:

1) либо после глагола «to be»;

2) либо после вспомогательного глагола употребляемого грамматического времени.

Утверждение		**Отрицание**	**Вопрос**
He is asked	*Present Simple*	He is not asked	Is he asked
He was asked	*Past Simple*	He was not asked	Was he asked
He will be asked	*Future simple*	He won't be asked	Will he be asked
He is being asked	*Present Progressive*	He is not being asked	Is he being asked
He was being asked	*Past Progressive*	He was not being asked	Was he being asked
He has been asked	*Present Perfect*	He hasn’t been asked	Has he been asked
He had been asked	*Past Perfect*	He hadn’t been asked	Had he been asked
He will have been asked	*Future Perfect*	He won’t have been asked	Will he have been asked

Обратите внимание, что в пассивном залоге отсутствует группа времен Perfect Continuous, нет здесь и формы Future Continuous.

Модальные глаголы в пассивном залоге

Если в состав сказуемого в активном залоге входят модальные глаголы или их эквиваленты, то в страдательном залоге это сказуемое будет выглядеть следующим образом: **модальный глагол + be + Past Participle Например**: We must finish work in May. (Мы должны закончить работу в мае.) – Our work must be finished in May.

Exercise 1. ***Open the brackets using Passive Voice.***

A. Butter (to make) exclusively from milk or cream.
B. The first tealeaves (to bring) to England in 1600.
C. The data of the experiment (to evaluate) now.
D. The processed food qualities (to improve) through the use of plastic packaging in the near future.
E. Our food (to modify) and (to improve) since the ancient time.
F. A market study (to conduct) by a group of young scientists last week.
G. Proteins (to contain) in fish and dairy products.
H. Many nutritional problems (to solve) by the scientists by the end of the 19th century.
I. They (to help) with this difficult problem next time.
J. True fats and oils (to compose) of hydrogen, carbon and oxygen.

Exercise 2. ***Translate the following sentences paying attention to the predicates in Passive Voice.***

A. Many years ago food processes were mainly based on experience and traditions**.**

B. The problem of liquids separation is being studied at our research institute.

C. Size enlargement of articles is often referred to as

moulding.

D. Sometimes in the extraction of solids, physical separation can be followed by mechanical separation.

E. When pipes are not used they should be dried by passing through hot air.

F. Tankers for storage of liquid foods are usually made of stainless steel.

G. The temperature and humidity of the room in which boxes are stored must be taken into consideration.

H. The importance of fats and oils has been generally recognized since the ancient time.

I. The iodine value is being defined now.

J. Maize was introduced into Spain by Arabs in the 13th century.

Reading

Vocabulary list

1) ohmic	активный
2) precipitation	осадки
3) host	множество
4) oxidative	окислительный
5) to succeed	добиваться
6) to aware	сознавать
7) handling	обработка
8) inventory	запас
9) pulsed	прерывистый
10) oscillating	вибрирующий
11) feedstock	исходное сырье
12) to inquire	узнавать
13) to derive	получать, извлекать
14) oat	овес
15) pilot	пробный, экспериментальный
16) scale-up	пропорциональное

	увеличение
17) extrusion	горячее прессование
18) adsorption	всасывание, поглощение
19) distillation	перегонка
20) to challenge the audience	призвать слушателей
21) viable	пригодный

Exercise 1. ***Discuss these questions.***

1. Do you know any of the new technologies in food industry?
2. How can new technologies be transferred to developing countries?

Exercise 2. ***Match some processes and their definitions.***

1. Sterilization	a) the use of living organisms to depart components of a mixture (especially to remove pollutants)
2. Pasteurization	b) this process can be achieved through heat, chemicals, irradiation, high pressure and filtration
3. Bio separation	c) it is used widely in the dairy industry

Exercise 3. ***Scan text 2 to find the following information:***

− Problems with minimally processed food

− Conditions for transferring new technologies to developing countries

− Type of studies carried out to assist industry

− Examples of emerging technologies

TEXT 2

FOODS AND THEIR CONSTITUENTS

The last Food Engineering Symposium focused on engineer-

ing strategies for cost- effective research and developments in food. Many speakers talked about research and development becoming more expensive and they stressed the need to develop strategies and to optimize resources. Rakesh Singh of Purdu University, presented an overview of research being done to improve existing processes and to develop emerging technologies. He described unit operations involved in sterilization, pasteurization and bioseparations and discussed microwssesave, radiofrequency and ohmic heating research, as well as research on such separation technologies as membrane separations, precipitation electrophoresis, chromatography and supercritical fluid extraction.

Robert Baker of USDA's Subtropical Products Laboratory said that in the future, minimally processed or fresh-cut fruits and vegetables are expected to represent 25 % of all produce sales and 50% of dollar volume. While minimal processing often dramatically increases the value of raw material, it brings with it a host of new problems associated with production, packaging and storage. Since minimally processed fruits are viable tissue, packages must allow proper gas exchange and minimize oxidative flavour or colour loss, yet prevent development of anaerobic conditions. For a minimally processed product to succeed, he said, all members of distribution chain must be made aware of the need for appropriate handling, storage and inventory control.

Gustavo Barbosa of Washington State University, discussed emerging technologies such as pulsed electric fields, pulsed light, oscillating magnetic fields, and high hydrostatic pressure, saying that they are not necessarily better than current technologies but offer new opportunities. He also pointed out the need to identify and measure engineering properties to properly implement emerging technologies such as combinations of air drying with microwaves, pulsed electric fields with thermal treatments and high pressure with ultrasound. He stressed that food engineers must not just develop unit operations and let others use them, but must take a team approach.

Larry Dawley of Greenstock Resources Inc. said that more than 1000 new prepared foods are introduced each year, but only about 10% of them may be regarded as successful. With the availability of technologies to produce a broad range of functional, cost-competitive ingredients from diverse source of feedstocks, the success rate should be much higher. To develop an appropriate food ingredient, he said, one must first inquire what the customer wants in a product, then identify whether that requires a protein, fiber, starch, or oil, then look at the kinds of technologies that are available to produce that ingredient and then choose the raw material. He illustrated this approach with process to develop value-added ingredients derived from wheat, oats and sunflowers.

Ernesto Hernandez of the Food Protein R&D Center, Texas University, described the approach that his group takes in assisting industry in developing and carrying out research and development projects, namely, conducting bench and pilot plant studies followed by scale-up studies. He then described the unit operations and chemical processes used in oilseed processing, such as drying, extrusion, pressing, solid-liquid extraction, neutralization reactions, centrifugation, adsorption and distillation. He stressed that these operations and processes need to be well understood for design and scale-up processes.

William Washburn of Food International Inc. California, said that many U.S. food processors have become involved in the handling and processing of food products in developing countries, but the results have not always been good. To develop R&D strategies and provide technology transfer to developing countries, he said consideration must be given to the entire programme from sourcing raw materials to marketing product. He reviewed specific projects showing how modern technology can contribute to the improvement of product quality and process efficiency in developing countries and challenged the audience to see opportunities to work in developing countries to broaden their perspective.

(IFT Annual Meeting Highlights, August 1997, Vol 51, No 8)

Exercise 4. ***Read about the last Food Engineering Symposium in text 2 and be prepared to answer the questions.***

1. What current technologies are being studied for further development?
2. What conditions must be fulfilled for a minimally processed product to succeed?
3. What new opportunities do emerging technologies offer?
4. How many new products are successful at the market?
5. How can industry be helped?
6. What is a tendency in food processing today?

Exercise 5. ***Complete the table with utterances of the speakers from different countries.***

Speakers	**country**	**review**	**problem**	**problem solving**
Rakesh Singh				
Gustavo Barbosa				
Larry Dawly				
Ernesto Hernandez				
William Washburn				

Exercise 6. ***Translate the following expressions and use them in your own sentences:***

a) cost-effective research

b) emerging technologies

c) produce sale

d) scale-up studies

e) cost-competitive ingredient

f) to source raw material

Exercise 7. ***Use words from the descriptions to complete the table. The first one is done for you.***

Verb	Noun
1) to develop	development
2) to …	improvement
3) to extract	…
4) to store	…
5) to …	distribution
6) to …	adsorption
7) to press	…

Now use verbs and nouns from above to complete the sentences. You may need to change the form.

1. Purdu University has done some researches … unit operations.
2. Minimal processing brings a lot of problems on production, packaging and …
3. The need for handling, storage and inventory control is in base of … chain.
4. The high … technologies have new opportunities.
5. The … countries require certain conditions for transferring

new technologies.

6. … is one of the oilseed processing.

Speaking

Exercise 1. ***Now choose one of the technologies and prepare a short presentation. Use the following structure to plan your talk.***

1. **Planning a talk**. No matter what language it is in, a good talk has a very clear structure.
2. **Introduction**. Explain who you are, how your talk will benefit the audience. Give a brief outline of what you plan to say.
3. **Main body**. Go into detail about your different topics.
4. **Summary**. Briefly remind your audience what you have covered, and repeat your main points.
5. **Conclusion.** Stress your main message, and make sure the audience knows how they can use this message.

UNIT 3

Grammar

Степени сравнения прилагательных и наречий

Односложные прилагательные и двусложные прилагательные, оканчивающиеся **на -y, -e, -er -ow**, образуют сравнительную степень путём прибавления суффикса **-er**, а превосходную степень – путём прибавления суффикса **-est** к положительной степени.

Многосложные и большинство двусложных прилагательных образуют степени сравнения при помощи слов **more** – *более* или **less** – *менее*; **the most** – *самый, наиболее*; **the least** – *наименее,* которые ставятся перед прилагательными в положительной степени.

После сравнительной степени употребляется союз **than,** который соответствует русскому ***чем***.

Для усиления сравнительной степени употребляются наречия **much** и **far**, которые ставятся перед прилагательными в сравнительной степени и переводятся на русский язык словами *гораздо, значительно*. Степени сравнения односложных наречий и двусложных типа **early**, **quickly, slowly** образуются так же, как и степени сравнения соответствующих прилагательных. Остальные наречия, оканчивающиеся на **-ly**, образуют степени сравнения с помощью слов **more, the most**.

При сравнении двух предметов, которым в равной степени присуще одно и то же качество, употребляется сравнительный союз **as … as** - *такой же ... как, так же ... как*. Прилагательное употребляется в исходной форме. Если же степень качества различна, употребляется союз − *не*

такой … как, не так … как. В конструкции **the (more) … the (better)** артикли, стоящие перед прилагательными и наречиями в сравнительной степени, переводятся *чем …, тем.* Например: **the earlier … the better** – *чем раньше…, тем лучше.*

Большинство прилагательных имеют именно такие формы образования сравнительных степеней, однако есть и исключения. Некоторые прилагательные являются неправильными и их степени сравнения образуются по-другому.

Их стоит заучить:

Неправильные прилагательные (Irregular Adjective)	**Сравнительная форма (Comparative Form)**	**Превосходящая форма (Superlative Form)**
Good (хороший)	**Better** (лучше)	**The best** (лучший)
Bad (плохой)	**Worse** (хуже)	**The worst** (худший)
Far (далеко)	**Farther / further** (дальше)	**The farthest / the furthest** (дальше всего)
Little (маленький, мало)	**Less** (меньше)	**The least** (меньше всего)

Many (много)	**More** (больше)	**The most** (больше всего)
Old (старый)	**Elder/ older** (старее, старше)	**the eldest / the oldest** (самыйстарый,старший)

Exercise 1. ***Define what words are nouns, and what words express degrees of comparisons:***

Proper, healthier, supporter, later, better, smoother, easier, harder, longer, consumer, cooker, boiler, smaller, older, lighter.

Exercise 2. ***Put the words in proper degrees of comparisons. Don't forget to add the article where it needs.***

A. After losing weight fat cells have to work (hard) to extract fat from the bloodstream.

B. Eating fish every week may keep our brain (much) active during our older years.

C. People who rarely eat fish have a (fast) decline in their thinking.

D. Adults who skip breakfast are (little) mentally and physically efficient for longer periods during the day.

E. Eating breakfast can raise metabolism by as (much, many) as 10 percent.

F. Eating a (big) meal in the morning and a (small) meal at night optimizes your daily energy levels.

G. There are (much, many) and (much, many) children who are extremely overweight or even obese.

H. Some British schools are running competitions for (healthy) class of the week to help their pupils make the right food choices.

I. Fast food makes you fat that is why Americans are (fat)

people in the world.

J. Some people count the number of calories they eat every day, so that they can try to take in (few) calories and lose weight.

Exercise 3. ***Translate into Russian.***

A. Changes in fats can be detected by smell and taste before they can be detected by chemical tests, but in general the fresher the fat and the better its keeping quality, the better the keeping quality of the product it is combined with.

B. Usually there is less fat absorption at higher cooking temperatures.

C. The larger the surface for a given weight of material, the greater the area over which fat may be absorbed.

D. It can be stated that the longer the food is cooked, the greater the fat absorption is.

E. The unsaturated fatty acids cover much greater areas per molecule than the saturated ones.

F. Shortening power or the ability of fats and oils to make a product tenderer so that it breaks or crushes more readily is due to several factors.

G. As a class the marine oils are among the cheapest of all fats and oils.

H. It is important to know that suspensions of fine particles tend to behave rather differently from coarse suspensions.

I. In a centrifugal field the particle may reach a very much higher velocity because the centrifugal force may be many thousands of times greater than the gravitational force.

J. It is possible to obtain a very much drier solid by centrifugal action than by draining under gravity.

Reading

Vocabulary list

1) pace	скорость
2) share consumer's food dollar	доля потребительского доллара
3) buoy	поддерживать на поверхности
4) disposable	одноразовый
5) overwhelm	преодолеть, ошеломить
6) merchandise	товар (когда речь идет о бренде)
7) goods	товар (когда речь идет о назначении)
8) retain	сохранять
9) prime	расцвет, лучшее время
10) NPO – New Product Development	разработка нового изделия
11) inhere	быть присущим
12) repositioning	изменение положения, перестановка
13) versatility	разносторонность, подвижность
14) fortification	витаминизирование
15) puree	пюре

Exercise 1. ***Discuss these questions.***

1. How many new products become successful at the market?
2. What is important to develop a new successful product?

Exercise 2. ***There are some terms that refer to new product development, but some letters are missing. Can you complete the words?***

s_ e_f, d_ _a_d, s_p_l_, d_e_a_y, v_r_e_y, i_c_m_, f_a_u_e, i_n_v_t_o_,

c_u_o_i_g, m_r_h_n_i_i_g, a_v_r_i_i_g, i_t_o_u_t_o_,

r_p_s_t_o_i_g, c_o_c_.

Exercise 3. ***Scan text 4 and order the following subtitles chronologically according to their appearance in the text.***

A. NPD efficiency focus
B. Categories of food product innovations
C. Definition of a new product
D. Driving forces of a new product generation

TEXT 4

MINERALS AND VITAMINS

Food manufacturers have been generating new products at an amazing pace in an effort to retain shelf space and a share of the consumer's food dollar. Several factors have been identified as driving forces behind this pace of new introductions. On the demand side, the demand for greater convenience, healthier and safer products, special dietary considerations, product variety, and other product features have been buoyed by greater disposable incomes.

On the supply side, retailers have grown their capacity to handle more products, manage categories, and generally become more responsive to even slight changes in consumer preferences through innovations such as customer loyalty programs.

Consumers have a tremendous range of alternatives in their shopping experience, almost to the point of being overwhelmed. Couponing, merchandising and advertising of new food products have kept pace with the number of new introductions. The introduction of new food products has become a strategic tool employed by manufacturers to gain or retain prime shelf space. Product life cycles for these new products are remarkably short, with industry sources estimating 96 % of these new products are no longer on the shelf after one year of their release. Intensified competition between food manufacturers and shorter product life cy-

cles, have raised the importance of focus on new product development (NPD) efficiency.

Increasing or changing development costs associated with a variety of regulatory and internal research activities have similarly heightened interest in NPD.

It is important at this point to clarify some of the terms and concepts inherent to most discussions relating to new products since they range from truly innovative and different products to only slight reformulations. There are degrees of newness. New products can fall in any one of three general categories: a product not previously produced by the company but exists in the market, a product presented to a new market, or a totally new product to the marketplace. These basic definitions have been modified or expanded by several authors in an attempt to bring some conceptual clarity to the research and practice of new product development. Robert Cooper, for example, categorizes new products as follows:

New to the World Products

New Product Lines

Additions to Existing Product Lines

New Product Definition Improvements/Revisions to Existing Products

Repositioning / Retargeting

Cost Reduction

New to the world – types of products are produced by the company for the first time with no existing satisfactory substitutes produced by competitors. With *new product lines*, a company enters an established market with a product that is new to the company but not to the marketplace. By making *additions to existing product lines*, a firm can produce a product which is fairly new to the marketplace. *Revisions of existing products* are aimed at improving the existing product. *Repositioning or retargeting* occurs when firms enter a new market segment with the old product. *Cost reduction products* allow a firm to reduce the cost of the product but still provide the same benefits that the old, existing product has provided to the customer.

Food product innovations can come in two forms:

a) Food Packaging Innovations include:

– new packaging materials that improve shelf- life, freshness and quality;

– new packaging that presents the food in new and different ways (new shape or new design);

– new packaging that increases product versatility (i.e. packaging that can be used in the

microwave and oven);

– new packaging that increases ease of use (milk carton designs that are easily opened).

b) Food Product Innovations include: organic foods and health foods, prepared meals, fortification (addition of vitamins, minerals), new manufacturing techniques that improve sensory qualities such as minimal processing, heat treatments etc.

A good example of product innovation is exhibited in yoghurt product innovation. The food packaging has been segmented, namely the fruit puree has been taken out. In other words, the manufacturer has presented the product to the consumer in a way that offers a choice regarding the way how the product can be consumed – either mix at the start, mix at each spoonful or eat separately. This type of innovation could be quickly developed to further product differentiation. For example, the degree of segmentation could be increased or a third type of product could be added (topping).

(Woods,Timothy,& Demiralay, Aslihan,1998, An Examination of NewFood Product Development Process)

Exercise 4. ***Read about the New Food Product Development in text 4 and be prepared to answer the questions.***

1. Why do manufacturers produce new products?
2. What is the usual life cycle of a new product?
3. What defines a new product?
4. When is food packaging defined as innovative?

5. What type of food is included in food innovation?
6. Give examples of product innovations.

Exercise 5. ***Translate the following expressions and use them in your own sentences.***

a) product versatility …
b) food fortification …
c) retargeting …
d) disposable income …

Exercise 6. ***Use words from each box to make word compounds. Then match them to the definitions below.***

amazing	food	product	life	minimal
dollar	variety	cycle	processing	pace

1. When you can choose in the grocery store.
2. Every product has its …
3. It is a rate that surprises you.
4. A part of saved money.
5. The least manufacturing.

Exercise 7. ***Complete the table with the examples of two forms of Food Product Innovations.***

	New improvement	**Your own examples**
Food Packaging Innovations		
Food Product Innovations		

Speaking

Exercise 1. There is a good example of product innovation in the text. It's the yoghurt product. Think about your product innovation. For example, cheese. Discuss with your partner new manufacturing

techniques that can improve sensory qualities such as minimal processing, heat treatments etc. Use some useful phrases in your dialogue:

– I'm afraid that's not quite right.
– At first glance, it appears clear…
– Could you please…?
– I can't agree with you.
– This seems to be…
– I'm sorry but…
– I see what you mean.

PART II

UNIT 4
Grammar

Modal verbs
Модальные глаголы

Название модального глагола	**Случаи употребления**	**Пример**
CAN ***(could; will be able to)*** – мочь, уметь	Выражает умение, физическую и умственную возможность, способность	*Can you work with the processing equipment?* Ты умеешь работать с технологическим оборудованием?
	Выражает возможность выполнения действий при соответствующих обстоятельствах	*You can see the plant through the other window.* В другое окно вы можете увидеть завод.

	Выражает разрешение или просьбу	*Can I use your instrument?* Можно я воспользуюсь твоим инструментом? *Yes, you can use it.* Да, ты можешь им воспользоваться.
	Выражает сомнение и неуверенность	*Can it be true?* Неужели это правда?
	Выражает невероятность	*You couldn't have done it.* Не может быть, что вы это сделали.
MAY ***(might; will be allowed to)*** – иметь возможность, допускаться	Выражает разрешение	*May I borrow your mixer?* Можно мне взять твой миксер?
	Выражает предположение с оттенком неуверенности	*He may be ill.* Возможно, он болен.
	Выражает неодобрение или упрек	*You might have helped me.* Ты бы мог мне помочь.
MUST ***(had to; will have to)*** – быть должным,	Выражает обязательность совершения действия	*You must fill in the correct data.* Вы должны вносить правильные данные.
	Выражает запрещение	*He mustn't smoke here.* Вы не должны здесь курить.

обязанным	Выражает эмоциональный совет	*You mustn't miss the lecture. It is very important.* Ты не должен пропустить эту лекцию. Она очень важна.
HAVE/HAS TO ***(had to; will have to)***	Выражает долженствование, вызванное обстоятельствами, вынужденную необходимость	*Yesterday she had to stay at work.* Она должна была (ей пришлось) остаться на работе вчера.
– быть вынужденным, нужно	Выражает отсутствие необходимости	*You don't have to go there.* Тебе не обязательно идти туда.
BE TO ***(was/were to; will be to)*** – быть должным	Выражает необходимость, вытекающую из заранее намеченного плана или договоренности	*We are to discuss it next time.* Нам нужно обсудить это в следующий раз.
	Выражает нечто неизбежное, предопределенное заранее	*It was to happen.* Это должно было произойти.
OUGHT TO ***(ought to + Perf. Infinitive; ought to)*** – следует	Выражает совет или желательность	*You ought to eat healthy food.* Тебе следует употреблять здоровую пищу.

	Обозначает, что желательное действие не было выполнено	*She ought to have called earlier.* Она должна была позвонить ему раньше.
	Выражает, что было совершено нежелательное действие	*He oughtn't to have read this paper.* Тебе не следовало было читать эту бумагу.
SHOULD ***(should + Perf. Infinitive; should)*** – следует	Выражает моральную обязанность, долг или совет	*Containers should be examined for defects.* Следует проверить емкости на наличие дефектов.
SHALL	Выражает обещание, намерение, предостережение	*He shall get his money.* Он получит свои деньги.
WOULD	Выражает вежливую просьбу	*Would you help me?* Не поможете ли вы мне?
	Выражает какое-то привычное и повторявшееся в прошлом действие, напоминая в таких случаях глагол «used to»	*Henry would often write interesting articles about human diet.* Генри, бывало, писал интересные статьи о рационе человека.
	Выражает стойкое нежелание совершать какие-либо действия.	*He wouldn't listen to me.* Он никак не хотел слушать меня.

WILL	Выражает вежливое распоряжение	*Will you be quiet, please!* Тише, пожалуйста.
	Выражает вежливую просьбу или предложение	*Will you have some coffee?* Будешь кофе?
NEED – иметь потребность	Выражает необходимость в вопросительных и отрицательных предложениях по отношению к настоящему и будущему времени	*You needn't bring the documents.* Вам не нужно (нет необходимости) приносить документы.

Exercise 1. ***Translate the sentences containing modal verbs.***

1. A conveyor may be as long as required.
2. In long-term storage measures must be undertaken to protect the product from spoilage.
3. Combination of mechanical and pneumatic conveying can be used in moving boxes weighing up to 150 kg.
4. The surface of vats and vessels should be smooth and corners should be avoided.
5. Particular care should be taken to prevent fires and explosions of some sensitive food powders.
6. Pipe insulation is necessary for cold pipes, e.g. in refrigeration systems, in order to prevent moisture condensation which may induce microbial growth.
7. Short belt conveyors can be part of a continuous weighing system.
8. It should be noted the ton in the United States is equal to 2000lb, i.e. 908 kg.

Exercise 2. ***Make the sentences in the future and past tenses. Translate the sentences.***

***Example*:** You must remember the importance of vegetables.
You had to remember the importance of vegetables.
You will have to remember the importance of vegetables.

1. People must use carbohydrates with care.
2. We may consume milk in the form of cheese, butter and cream.
3. Iron can form the red blood cells.
4. Pregnant women must use more minerals in their diet.
5. This industry doesn't flourish as one can expect.
6. The body's need may be met by other nutrients.
7. You must eat the particular amount of food.

Exercise 3. ***Fill in a correct modal verb. Translate the text.***

Minerals

The minerals we have in our system are very important in our vital processes. We … have iron in our blood to get oxygen from the air, and we … have small traces of copper or the iron … be assimilated. Calcium and phosphorus … be present to make our bones and teeth and to perform various other functions.

Minerals … be present not only in our food, but they … occur in a form which … be assimilated by the body. If your diet lacks iron, you … make up the deficiency eating iron ore, because such a material is not assimilable. You … have copper but you … get it by sprinkling fine grains of copper-bearing rock on your salad.

FRUIT AND VEGETABLE PROCESSING

TEXT A

Vocabulary

1) procurement	закупка, поставка
2) treatments	методы обработки
3) peeling	очистка от кожуры
4) blanching	бланширование
5) pickling	заквашивание
6) preservation	консервирование
7) detergents	очищающие и моющие средства
8) sanitizers	дезинфицирующие средства
9) feasible	возможный
10) residuals	остаточные примеси
11) consignment	партия
12) to contaminate	заражать, загрязнять
13) contamination	заражение
14) hazardous materials	опасные вещества
15) emissions	выбросы
16) maturity	спелость, зрелость
17) maturometer	матурометр
18) moisture	влага
19) succulometer	прибор для определения сочности плодов, влагомер
20) insoluble solids	нерастворимые сухие вещества
21) to handle	перекладывать, перебирать
22) asparagus	спаржа
23) prone	предрасположенный
24) deterioration	повреждение
25) rodent	грызун
26) humidity	сырость, влажность

Word Study

Exercise 1. ***Give the Russian equivalents to the following words.***

Operation, mixing, package, canning, dehydration, steam, to fall into freezing, syruping, crystallizing, spices, label, harvesting, crop, specification, neighbouring, content, to inspect, bin, to cover, delay, to ensure.

Exercise 2. ***Translate the following word combinations.***

Processing of fruits and vegetables, raw material, manufacturing processes, chemical preservation, food acids, minor ingredients, packaging materials, quality control staff, agricultural chemicals, approved conditions, gaseous emissions, physiological maturity of the raw materials, visual inspection, tactile properties, sweet corn, moisture content, refractive index, green peas, to minimize mechanical damage, properly constructed bins, appropriate containers, hydro-cooled or iced, processing plant, suitable conditions, excessive deterioration.

Exercise 3. ***Match the word and its definition.***

1) to blanch	a) to make a substance or place dirty or no longer pure by adding a substance that is dangerous or carries disease
2) maturity	b) a chemical, usually a liquid, that contains hydrogen and has a pH of less than seven
3) to contaminate	c) the act of keeping sth in its original state or in a good condition

4) succulent	d) to prepare food, especially vegetables, by putting it into boiling water for a short time
5) acid	e) a liquid or powder that helps remove dirt, for example from clothes or dishes
6) preservation	f) to put sth into a box, bag, etc to be sold or transported
7) detergent	g) the state of being fully grown or developed
8) to package	h) containing a lot of juice and tasting good

The processing of fruits and vegetables involves several steps or unit operations which start with the **procurement** of the raw material. Following preparative **treatments** such as cleaning, **peeling**, **blanching** and mixing; the product is processed and packaged to give the required finished product. The manufacturing processes fall into four groups:

− canning;
− dehydration;
− freezing;
− **pickling**, syruping, crystallizing and chemical **preservation**.

The raw materials for the fruit and vegetable processing industry include:

− fruits and vegetables;
− sugar, salt, spices, food acids and other minor ingredients;
− water and steam;
− containers, labels and packaging materials;
− **detergents** and **sanitizers**.

Fruit and Vegetables

Quality control staff should become familiar with the practices involved in growing, harvesting and transporting the fruits and vegetables to the processing factory.

Field Practices: Quality control staff should determine what agricultural chemicals are used by growers and how and when they are applied to the crop. Only produce that has been grown under approved conditions (and that complies with the processor's specifications for the raw material) should be accepted for processing because it is seldom **feasible** to analyse raw fruits and vegetables for **residuals** of agricultural chemicals before the **consignment** is processed.

The growing areas should also be inspected to ensure that the raw fruits and vegetables are not **contaminated** with other potentially **hazardous** materials such as toxic waste water or gaseous **emissions** from neighbouring industries.

Maturity of fruits and vegetables. The quality of many processed fruits and vegetables is markedly influenced by the physiological maturity of the raw materials at the time of harvest. The maturity of fruits and vegetables is often determined by visual inspection and from the tactile properties of the products but objective methods are also used. For example, the maturity of sweet corn is related to its **moisture** content, refractive index and to the **succulometer** reading; the maturity of green peas is indicated by the content of alcohol **insoluble solids** and by the readings of such instruments as **maturometer** or texture measuring system.

Transport of fruits and vegetables. The quality of the final product is often influenced by the way the raw fruits and vegetables are harvested and **handled** during transport from the growing area to the factory. Quality control staff should inspect these operations to ensure that the raw materials are handled carefully to minimize mechanical damage. These products should be transported in clean, properly constructed bins or other appropriate containers without delay to the processing plant. Loads of raw fruits and vegetables should be covered during transport for protection from the sun, rain and **contamination**. Some vegetables, such as green

peas and **asparagus** which are **prone** to rapid self-heating and **deterioration** in quality, should be hydro-cooled or iced if the delay between harvesting and processing is likely to be longer than a few hours.

Storage of raw fruits and vegetables. Quality control staff should also inspect the raw fruits and vegetables during storage at the processing plant to ensure they are:

− protected from attack by **rodents** and insects;

− stored under suitable conditions of temperature and **humidity** for periods which do not allow excessive deterioration;

− handled carefully to minimize mechanical damage.

Exercise 4. ***Choose the correct answer.***

1. Quality control staff should determine …

a) what agricultural chemicals are used by growers

b) how and when agricultural chemicals are applied to the crop

c) the maturity of fruits and vegetables

2. The maturity of sweet corn is related to …

a) its peel

b) its leaves

c) its moisture content

3. Raw fruits and vegetables should be transported …

a) in clean, properly constructed bins or appropriate containers

b) in refrigerators

c) in open trucks

4. Quality control staff should also inspect the raw fruits and vegetables during storage at the processing plant to ensure they are…

a) mature

b) stored under suitable conditions of temperature and humidity

c) are not contaminated with hazardous materials or gaseous emissions from neighboring industries

d) protected from attack by rodents and insects

Exercise 5. ***Find in the text the equivalents to the following word combinations.***

Требуемый конечный продукт; знакомы с методами; как и когда они применяются к сельскохозяйственным культурам; выращенный в одобренных условиях; потенциально опасные вещества; в момент сбора урожая; часто определяется путем визуального осмотра; к показаниям прибора для определения сочности плодов; чтобы гарантировать, что сырье перебирается бережно; должны быть прикрыты в процессе транспортировки; такие как зеленый горох и спаржа; снижение качества; вероятно, будет больше, чем несколько часов; не допустить чрезмерного ухудшения.

Exercise 6. ***Say if it is true or false. Correct the wrong statements.***

1. The processing of fruits and vegetables involves several steps or unit operations which start with the packaging of the raw material.

2. The raw materials for the fruit and vegetable processing industry do not include water and steam.

3. Quality control staff should determine what agricultural chemicals are used by growers and how and when they are applied to the crop.

4. The maturity of fruits and vegetables is often determined by its weight.

5. The quality of the final product is not often influenced by the way the raw fruits and vegetables are harvested and handled during transport from the growing area to the factory.

6. Green peas and asparagus are prone to rapid self-heating.

7. Quality control staff should also inspect the raw fruits and vegetables during storage at the processing plant to examine which chemicals are used by growers.

8. The raw fruits and vegetables may not be handled carefully.

Exercise 7. ***Answer the questions.***

1. Which operations does the processing of fruits and vegetables involve?
2. Enumerate four groups of the manufacturing processes.
3. What should quality control staff determine during the crop maturation on the field?
4. How is the maturity of fruits and vegetables determined?
5. What special requirements should be taken into consideration during the transportation of raw materials?
6. Why does quality control staff inspect the raw fruits and vegetables during storage?

Exercise 8. ***Find in the text A the sentences with modal verbs. Translate them.***

Speaking

Exercise 9. ***Imagine that you are the specialist of quality control staff. Say:***

a) why should the quality of crop on the field be examined;

b) how can succulometer and maturometer help you;

c) in what condition should products be transported;

d) how do you inspect the raw fruits and vegetables during storage.

Exercise 10. ***Give a short summary of the text A.***

TEXT B

Vocabulary

1) consignment	партия товаров, отправка
2) can	жестяная банка
3) drum	ящик
4) jar	банка, кувшин
5) pouch	пакет
6) tray packs	лоток
7) seam	стык, шов
8) flange	борт
9) lacquer	лакировочное покрытие
10) adhesion	липкость
11) to assess	определять
12) to withstand	выдержать, вытерпеть
13) gasket	уплотнитель, герметик
14) closure	закрытие, крышка
15) corrosion	ржавчина
16) acidic	кислотный
17) sulphur dioxide	двуокись серы
18) to adhere	приклеиваться
19) permeability	проницаемость
20) integrity	прочность
21) to conform	соответствовать
22) accuracy	точность

Exercise 1. ***Read text B and choose the best headline.***

− *Containers, labels and packaging materials*
− *Shelf life of products*

– *Types of closures*

Quality control staff should inspect each **consignment** of containers, labels and packaging materials to ensure that they are delivered in good conditions and that the items comply with the purchasing specification. In addition, samples of primary containers (**cans**, **drums**, glass **jars**, flexible **pouches** and bags and semi-rigid aluminium **tray packs**) are examined to determine that the properties of these items that are critical to the safety and storage stability of the product are satisfactory.

Cans. Samples of cans should be examined to determine that the following features are within specifications:

– the double **seam**;

– the side seam and **flange** of the open end;

– the type and coating mass of internal **lacquers**, and their coverage and degree of **adhesion**;

– the tin coating mass;

– the structure of the loose ends and the placement and amount of compound.

Some cans are also filled with water and closed so that the canner's double seam may be **assessed**.

Glass containers. Samples of glass containers should be examined for defects in construction and for variations in sizes that may affect their ability to be properly closed and to **withstand** impacts and other abuses which are encountered during filling, closing, processing, distribution and storage. The sealing surface of glass containers should be horizontal and smooth and it makes a cleanly-defined and continuous contact with the **gasket** when the **closure** is applied under usual processing conditions.

Many types of closures are applied to glass containers. The critical factors influencing the quality of the seal on glass containers include the dimensions of the closure and the type, quantity and distribution of the gasket material. The storage performance of glass containers closed with metal closures often depends on the resistance of the closure to **corrosion** by the product, especially an

acidic product containing salt and **sulphur dioxide**. Metal closures are usually protected by an internal lacquer which must have excellent barrier properties. Sample closures should therefore be examined to determine that the lacquer is essentially continuous, applied at the specified coating mass and **adheres** strongly to the surface of the metal

Plastic pouches and semi-rigid aluminium tray packs. Semi-rigid aluminium tray packs have some technical features in common with plastic pouches in that they are closed by heat sealing and they have some flexibility. The identity and thickness of plastic packaging materials mainly determine the barrier properties of the package. If the shelf life of the product is critically dependent on the barrier properties of the package, the oxygen **permeability** and/or the water vapour permeability and the **integrity** of sample packages is determined before they are used in production.

Labels, cartons and other containers. Quality control staff should inspect and measure these items to determine that they **conform** to the purchasing specifications. The information displayed on labels and on containers is to be checked for **accuracy**. The registration and quality of the printing and art work is also assessed.

Exercise 2. ***Match the parts of the sentences.***

1. Samples of cans should be examined …	a) are applied to glass containers
2. Samples of glass containers should be examined …	b) have some technical features in common with plastic pouches
3. Many types of closures …	c) protected by an internal lacquer which must have excellent barrier properties.
4. The storage performance of glass containers closed with metal closures …	d) to determine that the following features are within specifications
5. Metal closures are usually …	e) mainly determine the barrier properties of the package.

6. Semi-rigid aluminium tray packs …	f) should be checked for accuracy.
7. The identity and thickness of plastic packaging materials …	g) often depends on the resistance of the closure to corrosion
8. The information displayed on labels and on ultimate containers …	h) for defects in construction and for variations in sizes

Exercise 3. ***Match the English word combinations with their translation.***

1) glass containers	a) стеклянные банки
2) metal closures	b) двуокись серы
3) plastic pouches	c) упаковка-лоток
4) glass jars	d) металлические крышки
5) water vapour	e) качество хранения
6) sealing surface	f) продольный шов
7) sulphur dioxide	g) полиэтиленовые пакеты
8) tray pack	h) стеклянные тары
9) barrier properties	i) срок годности
10) storage performance	j) барьерные свойства
11) shelf life	k) уплотняемая поверхность
12) side seam	l) оловянное покрытие
13) tin coating	m) водяной пар

Exercise 4. ***Replace Russian words with the English ones.***

1. Some cans should also be (наполнены) with water and closed so that the canner's double seam may be assessed.

2. Quality control staff should inspect and (измерять) these items to (определить) that they conform to the purchasing specifications.

3. Many types of closures are applied to (стеклянным) containers.

4. The critical factors include the (размеры) of the closure and the type, quantity and distribution of the (герметик).

5. (Полужесткий) aluminium tray packs have some technical features in common with plastic pouches.

6. Samples of glass containers should be examined for (дефекты) in construction and for variations in sizes.

TEXT C

Exercise 1. ***Translate the following text using the dictionary.***

Preservation treatments

The preservation treatments involve different physical and chemical processes and they require different actions to ensure that safe, stable products are produced.

Canned foods

The safety and storage stability of canned foods, including heat-processed foods in drums, glass containers, flexible and semi-rigid containers, depend on the product being heated at a specified temperature for a specified time.

The most commonly used heating media are hot water, sometimes under a superimposed pressure, and air-free saturated steam. Quality control staff should ensure that the primary control instruments for heat-sterilization processes, the thermometer and clock, are accurate and maintained in good condition.

At regular intervals, perhaps weekly, heat-sterilizing equipment is inspected. Special attention should be given to the valves on the compressed air and water lines that are connected to steam-heated sterilizing equipment. The traps on steam-heated retorts are also examined to ensure that condensate is quickly removed from retorts. The steam, water and air distribution pipes are inspected for blockages and rust deposits and the systems used to circulate water in water-heated equipment are checked to determine that the equipment is operating satisfactorily.

Dehydrated foods

The safety and storage stability of dehydrated foods, including some syruped and crystallized foods, depend on the moisture content of the product being reduced to a value at which potential spoilage organisms cannot grow.

Although equilibrium relative humidity is the best index of the amount of water available for microbial growth, quality control of dehydration processes is usually based on the measurement of moisture content. The relationship between moisture content and equilibrium relative humidity varies according to the composition of the food so the moisture content required to give a shelf-stable product should be determined for each food.

Sulphur dioxide is added to some foods before, during or after the drying process, sometimes as an anti-microbial agent, but more often to block non-enzymic browning of the product during storage.

Frozen foods

The critical factor in ensuring that frozen foods are safe and store satisfactorily is the temperature of storage which should be maintained at an essentially constant value at or below - 18°C. Quality control staff should measure the temperature of the product as it leaves the production line to ensure that freezing is complete and to determine whether the product should be close- or open-stacked in the cold storage room. The temperature of the cold storage room should be monitored at least twice daily or preferably by using a chart recorder. Quality control staff should also inspect the cold storage space to determine that it is clean and that stock is properly handled and rotated.

Pickled and chemically preserved foods

Spoilage of these foods is prevented by establishing a defined chemical environment throughout the product and by processing the raw materials so that the product is contaminated only by low numbers of micro-organisms. The materials used to make these products shelf-stable include: acetic and other food acids; benzoic acid; salt; sugar; sorbic acid and sorbates; and sulphur dioxide. In

many cases the pH of the food must also be controlled to obtain shelf-stable products.

Exercise 2. ***Translate into Russian.***

1. We really do need more storage space.
2. The heating is insufficient to kill the bacteria.
3. High water pressure ruptured the pipe.
4. In 1886, Ernst von Bergmann introduced heat sterilization of surgical instruments
5. They turned off the main water valve to the house.
6. We need to certify that the repairs have been satisfactorily carried out.
7. Roots are not able to absorb moisture when the soil is frozen.

Exercise 3. ***Make your own sentences with the following words.***

To involve, to ensure, process, spoilage organisms, product, humidity, to freeze.

Exercise 4. ***Retell text C in Russian.***

USEFUL ENGLISH

− An **idiom** is a phrase or an expression that has a figurative, or sometimes literal, meaning.

Here are some English idioms that are connected with *“fruit”.*

‘To bear fruit’ – приносить плоды, давать результаты.

Hickock continued writing letters his conviction and one of those at last **bore fruit**.

Хикок продолжал писать письма, в которых протестовал против вынесенного ему приговора. Одно из этих писем наконец дало результаты.

'A forbidden fruit' – запретный плод.

It is somewhat ironic that many places which need water most critically have huge reserves in their front yard – California and Texas for example. Yet the salt in sea water makes it a **forbidden fruit**.

Как это ни парадоксально, но районы, более других страдающих от недостатка влаги (например, Калифорния и Техас), имеют буквально под самым носом колоссальные запасы воды. Но, увы, это запретный плод, ибо в морской воде растворены соли.

'Like peas (or like as two peas) in a pod'– похожи как две капли воды.

From their cruel jaws to their bushy tails they were **as like as peas** in their likeness to timber-wolves.

Эти собаки с могучими челюстями и пушистыми хвостами были точным подобием волка.

'In the raw' – как есть, без прикрас, в естественном состоянии.

'Tell me, Chief', she said, 'you've seen human nature **in the raw**… Doesn't it make

– Скажите мне, шеф, – спросила она, – не становитесь ли вы циником,

you frightfully cynical?' 'Quite the contrary', he said.	оттого что человеческая натура… вам слишком хорошо известна во всей её неприглядной наготе? – Совсем наоборот, – ответил он.

'Food for thought' – пища для размышления.

His study certainly provides **food for thought**.	Его исследование, безусловно, обеспечивает пищу для размышления.

'To let (or blow) off steam'– отвести душу, дать выход своим чувствам (выпустить пары).

Now that you've **let off some steam**, try again.	Теперь, когда вы выпустили пар, попробуйте еще раз.

Exercise 5. ***Match the idiom with its meaning.***

1. To let off steam	**A.** So similar as to be indistinguish-able or nearly so.
2. In the raw	**B.** To get rid of pent-up energy or strong emotion.
3. Like peas in a pod	**C.** Something that warrants serious consideration.
4. Bear fruit	**D.** To have good results.
5. Food for thought	**E.** Someone or something that one finds attractive or desirable partly because the person or thing is unob-

	tainable.
6. A forbidden fruit	**F.** In its true state; not made to seem better or more palatable than it actually is.

Check yourself

1. Cross out an inappropriate word in each line.

1) cleaning, peeling, sterilizing, blanching;
2) plastic, spoilage, aluminium, glass;
3) to analyse, to inspect, to influence, to examine;
4) drum, jar, can, label;
5) humidity, moisture, water, dehydration;
6) to cool, to dry, to freeze, to ice;
7) recorder, measurement, size, dimension.

2. Match the word phrases with their translation.

1) canned foods	a) сырье
2) gasket material	b) нерастворимые сухие вещества
3) acetic acid	c) чрезмерное повреждение
4) insoluble solids	d) подготовительная работа
5) vapour permeability	e) срок годности при хранении
6) excessive deterioration	f) консервы в жестяных банках
7) preparative treatment	g) персонал службы технического контроля
8) storage stability	h) уксусная кислота
9) quality control staff	i) герметик
10) raw material	j) паропроницаемость

3. Answer the questions.

1. What is the temperature of storage for frozen products?

a) at or below – 18°F

b) at or below – 18°C

c) at or below – 10°C

2. How is the maturity of fruits and vegetables determined?

a) by visual inspection

b) by low numbers of micro-organisms

c) by cleaning

3. Why are packaging materials used?

a) to dehydrate foods

b) to indicate the maturity of the raw materials

c) to ensure the safety and storage stability of the product

4. How are raw fruits and vegetables transported to the factory?

a) in flexible aluminium containers

b) in water

c) in clean, properly constructed bins

5. What is blanching?

a) to prepare food, especially vegetables, by putting it into boiling water for a short time

b) to put smth into a box, bag, etc. to be sold or transported

c) to make a substance or place dirty or no longer pure by adding a substance that is dangerous or carries disease

Speaking

Choose a topic to discuss with your partner. Ask your partner so many questions as you can:

− Transport of fruits and vegetables;
− Glass containers;
− Preservation treatments of frozen and dehydrated foods.

Helpful phrases:

To begin with, I would suggest...
Would you go along with that...
No, I'd rather think that...
Well, you certainly have a point, but...
Don't you think...?
That's absolutely right...

UNIT 5

Grammar

Non-finite forms of the verb
Неличные формы английского глагола

Неличные формы глагола	**Инфинитив** (The Infinitive)	соответствует неопределенной форме глагола в русском языке	**to swim**

	Причастие (The Participle)	соответствует причастию и деепричастию в русском языке	**the girl swimming in the pool**
	Герундий (The Gerund)	подобного соответствия в русском языке нет	**swimming**

Формы инфинитива

	Действительный залог	**Страдательный залог**
Present	to go	to be gone
Present Continuous	to be going	–
Perfect	to have gone	to have been gone
Perfect Continuous	to have been going	–

Функции инфинитива

Подлежащее	To read is a great pleasure.	Читать – большое удовольствие.
Часть именного составного сказуемого	High water content is required to increase the size of granules.	Высокое содержание воды требуется для увеличения размера гранул.
Определение. Инфинитив в	The device to be tested has been	Прибор, который надо испытать (подлежащий

функции определения стоит после определяемого слова	brought to our laboratory.	испытанию), принесли в нашу лабораторию.
Обстоятельство цели или следствия. В функции обстоятельства цели инфинитиву могут предшествовать союзы: in order, so as (чтобы, для того чтобы)	He went there so as to help you.	Он пошел туда, чтобы помочь вам.

Exercise 1. ***Translate the following word combinations as in the example.***

Example: *the oils to be refined − масла, которые должны быть очищены.*

Flour to be used for cakes, factors to be considered, the problem to be discussed, foodstuffs to be transported, milk to be heated, substances to be solved in water, the product to be obtained, energy to be supplied, a diet to be balanced, raw foods to be processed.

Exercise 2. ***Translate the following sentences as in the example.***

Example: *To stay healthy our bodies need about 40 different nutrients. − Чтобы оставаться здоровым, нашему организму нужно около 40 различных питательных веществ.*

1. Oil is refined to remove dirt and other impurities.

2. To describe a food specialist it is necessary to tell what he does and what he knows.

3. To grow fruit one must have good soil.

4. Salt is added to the mixture to remove the glycerin.

5. The oils are mixed together in the right proportion to obtain the needed type of soap.

6. To develop products of tomorrow you should purchase up-to-date equipment for your research department.

Инфинитив с **to**	Инфинитив без **to**
Для выражения цели *She went out to buy some books.*	После модальных глаголов *You must do it.*
После определенных глаголов, таких как advise, agree, appear, decide, expect, hope, promise, refuse и т.д. *He promised to be back soon.*	После выражений had better/would rather *I'd rather have stayed in last night.*
После определенных прилагательных, таких как angry, happy, glad и т.д. *I am glad to meet you.*	После make/let/see/hear/feel (для выражения законченного действия) *Let me tell you a few words about this problem.*
После вопросительных слов where, how, what, who, which *Has she told you where to meet them?*	В предложениях, которые начинаются с Why not? *Why not discuss this situation right now?*
После слов like, would like, would prefer для выражения предпочтения *I'd like to go for a walk.*	
После существительных	

It's pleasure to work here.	
После конструкций too/ enough *It is too difficult to translate.*	

Инфинитивные обороты

Субъектный инфинитивный оборот (Complex Subject)

Предложения с субъектным инфинитивным оборотом переводятся на русский язык:

1) безличным предложением (*говорят, что ...; известно, что* …), за которым следует придаточное дополнительное предложение с союзом *что;*

2) простым предложением с вводными словами: *как известно, как считали, вероятно, по-видимому.*

He **is said to work** hard at his English.	*Говорят*, что он упорно работает над английским.
This laboratory **appears to be working out** new possible applications of a laser.	*По-видимому*, эта лаборатория разрабатывает новые применения лазера.

Exercise 3. ***Translate the following sentences with Complex Subject.***

1. Arabia is believed to be the birth place of cheese-making.
2. Butter made by man quite by chance proved to be a nourishing food.
3. The early dairy products seem to have been connected with religious activities.

4. Lipids are known to occur in all species of animals and plants and in many microorganisms.

5. Fat is known to increase the food value of the product.

6. This type of oil is said to have some advantages.

7. The food industry was considered to have its roots in the remote past.

8. Butter-making proved to have originated in the countries of cold climate.

Объектный инфинитивный оборот (Complex Object)

Объектный инфинитивный оборот (Complex Object) состоит из следующих компонентов:

существительное **(**в общем падеже) или ***местоимение*** (в объектном падеже **me, him, her, us, you, them**)	+	инфинитив смыслового глагола

We consider **the results to be** satisfactory.	Мы считаем, что результаты удовлетворительны.

Объектный инфинитивный оборот переводится на русский язык придаточным дополнительным предложением, вводимым союзами *что, чтобы*.

He wants **me to help** him.	Он хочет, чтобы я помог ему.

Exercise 4. ***Translate the following sentences with Complex Object.***

1. We know all substances to be composed of small particles called molecules.

2. They expect the product to be popular.

3. We know germs to contain fats, minerals and a number of vitamins.

4. The technologists expect the prices for olive oil to rise by the end of the year.

5. Ancient people knew cheese to possess high food value.

6. Louis Pasteur found microorganisms to be destroyed by high temperature.

7. In prehistoric times people found the cereals to preserve their nutritive characteristics for many years.

Формы причастия

Форма причастия	Непереходные глаголы		Переходные глаголы	
	Active Voice	*Passive Voice*	*Active Voice*	*Passive Voice*
Present Participle (Participle I) причастие настоящего времени	going	–	asking	being asked
Past Participle (Participle II) причастие прошедшего времени	–	gone	–	asked
Perfect Participle перфектное причастие	having gone	–	having asked	having been asked

Exercise 5. ***Make Participle II of the following verbs and translate them.***

To write, to process, to make, to bake, to clarify, to separate, to take, to damage, to show, to keep, to separate, to crush, to leave, to construct, to get, to cover.

Функции причастия

Определение	The **boiling** water changes into steam.	Кипящая вода превращается в пар.
Обстоятельство	**Having finished** work I went home.	Закончив работу, я пошел домой.

Exercise 6. ***Translate the following word combinations into Russian.***

Cheese producing plant, milk processing plant, ice-cooked milk, milk-giving animals, a promising method, the growing population, all developed countries, low priced protein, dried products, food pre-serving chemicals, the desired shape, sun-dried fruit, bad smelling liquid, nice tasting wine, laboratory tested equipment, far reaching conclusion.

Exercise 7. ***Translate the following sentences into Russian.***

1. Excess calories consumed are stored as fat.
2. Intaken food while moving around the body is converted into energy.
3. A diet containing the right proportions of the main nutrients is called a balanced diet.
4. When digested and absorbed in the body each nutrient performs a particular function.
5. Chocolate made with milk is milk chocolate.
6. Usually using milk and other products of animal origin man develops strong and healthy body.
7. Having clarified numerous details in the picture of milk composition scientists recognized it as the best natural food.

Комплексы с причастием

Объектный падеж с причастием настоящего времени

личное местоимение в объектном падеже или существительное в общем падеже + Present Participle	
I saw her writing the letter.	Я видел, как она писала письмо.

Объектный падеж с причастием прошедшего времени	
личное местоимение в объектном падеже или существительное в общем падеже + Past Participle	
I consider the article completed.	Я считаю, статья закончена.

Абсолютный причастный оборот	
существительное в общем падеже + Present Participle Past Participle Perfect Participle	
Some new devices having been obtained, the researchers could make more complex experiments.	После того как были получены новые приборы, исследователи смогли делать более сложные опыты.

Exercise 8. ***Translate the following sentences into Russian.***

1. Most products of animal origin require cooking, milk being an exception.

2. With the new technological processes being applied, the dairy increase the output.

3. There are several methods of removing foreign materials from oils, clarification being most efficient.

4. New technological equipment having been installed, the production of cooking oils began to expand.

5. There is no difference in general composition between the fats and oils, the latter name being given to those fats that are liquid at ordinary temperatures.

Формы герундия

	Действительный залог	Страдательный залог
Present	going	being gone
Perfect	having gone	having been gone

Функции герундия в предложении

Подлежащее	Reading is useful. Чтение полезно.
Часть сказуемого	Your job was collecting the material. Твоей работой был сбор материала.
Дополнение	Nobody likes waiting. Никто не любит ждать.
Определение	I don't see any use in going there. Я не вижу необходимости идти туда.
Обстоятельство	He talked without stopping. Он говорил без остановки.

Exercise 9. ***Translate the sentences having defined the functions of Gerund.***

1. For size reduction a distinction can be made between milling and cutting.

2. To create a large surface area is very important in operations of drying, cooling and heating.

3. The material has to be subjected to a combination of cutting and packing.

4. We know of milling having been used as size reduction for a long time.

5. This machine is suitable for meat grinding.

6. Control of mixing can take place by sampling and analysis.

7. Coarse milling is usually best done by pressing or impact.

METHODS OF FRUIT AND VEGETABLES PRESERVATION

Production of juices

The most common process for production of apple juice is shown in the diagram.

Apple	
Fruit mill	
(addition of ascorbic acid)	
Press	
Enzymatic fining	
Protein stabilization	
Clarification fining	Separation
Filtration	
Pasteurization, bottling	

TEXT A

Vocabulary

1) pome fruit	мясистый семечковый фрукт
2) stone fruit	косточковый плод
3) counter-current	противоточный
4) to rinse	ополаскивать
5) spiral conveyor	шнековый конвейер

6) residues	остаточные вещества
7) rotten	гнилой
8) stemming	очистка от черешков
9) stalk	ножка
10) to strip	обдирать
11) comb	гребень
12) mash	пюре, сусло
13) clarification	очистка
14) juice extractor	соковыжималка
15) comminution	распыление
16) pitting machine	машина для удаления косточек
17) ahead of	перед
18) steel	сталь
19) thermobreak	терморазрыв

Word Study

Exercise 1. ***Give the Russian equivalents to the following words.***

Berry, to spray, conveyor, contaminant, to remove, care, unripe, tannins, flavor, grape, solids, to crush, degree, oxidation, browning, to pasteurize, to pump, equipment, commonly, stainless, aggressive, heating.

Exercise 2. ***Translate the following word combinations.***

Washing process, organically and conventionally, via the water, microbial count, to take care, damaged fruit, roller conveyor, to do manually, to contain tannins, to be omitted, disagreeable flavor, fruit crushing, decisive effect, to separate the juice from the solids, ascorbic acid, non-enzymatic browning, fruit mills, to be resistant to smth, thermal processes.

Exercise 3. ***Match the word and its definition.***

1) juice	a) a person or thing that transports or communicates something
2) mash	b) produced or practiced without using of artificial chemicals
3) conveyor	c) a liquid that comes from fruit or vegetables, a drink made from this
4) pit	d) a compound of oxygen and another chemical element
5) tannin	e) any food that has been crushed into a soft mass
6) flavour	f) a yellow or brownish substance found in the bark of some trees and the fruit of many plants, used especially in making leather, ink and wine
7) organic	g) stone
8) oxide	h) how food or drink tastes

Preparing fruit

Sorting and cleaning

After the fruit has been received at the factory it has to be cleaned. In practice, however, only **pome fruit** is washed – this is rarely done with **stone fruit** and berry fruit. Cleaning is completed by respraying the fruit on the elevator or by **counter-current rinsing** with process water in a **spiral conveyor**. In addition to visible contaminants, microorganisms are also removed in the washing

process, so the microbial count is significantly reduced. If both organically and conventionally produced fruit is processed in the factory, care should be taken to ensure that **residues** do not get onto the organic fruit via the water used for washing. Fresh water must therefore always be used for cleaning organic fruit.

It is absolutely essential to remove all **rotten**, damaged and/or unripe fruit. At present this is done manually, on endless conveyors or roller conveyors.

Stemming and stripping

Stemming is very important in the processing of stone fruit (cherries). The green **stalks** contain tannins which can get into the product during processing and cause a disagreeable flavour. Stemming can be omitted in the processing of pome fruit.

Adapted grape processing equipment is generally used for **stripping**. A low proportion of **combs** makes it easier to press out the **mash**. If the proportion is too high, unwanted tannins get into the juice.

Crushing the fruit

The method and degree of fruit crushing have a decisive effect on juice removal. The greater the degree of crushing, the greater is the number of cells damaged. If the fruit is crushed very small it is much more difficult to separate the juice from the solids, and a high suspended solids content in the juice increases **clarification** costs. Care should be taken to ensure that the degree of crushing is as uniform as possible.

During the crushing process, ascorbic acid can be added to protect against oxidation. This prevents non-enzymatic browning until the juice is pasteurized.

In many cases mash pumps are used to pump the crushed fruit to the **juice extractors**, mash heaters or other equipment, resulting in further **comminution**.

In some cases the processes are combined with the use of enzymes (mash fermentation). A **pitting machine** can be inserted in the stone fruit processing line **ahead of** the crusher.

Mechanical processes

Various kinds of fruit mills are now commonly used for crushing fruit. They are usually made from stainless **steel** and plastic, because these materials are resistant to the aggressive acids in the fruit and are easy to clean.

Thermal processes

Thermal processes (heating, **thermobreak** or freezing) are only used in exceptional cases and are generally insignificant.

Exercise 4. ***Choose the correct answer.***

1. After the fruit has been received at the factory it has
a) to be processed
b) to be crushed
c) to be cleaned
2. Fresh water must therefore always be used for … organic fruit.
a) cleaning
b) stemming
c) pitting

3. The green stalks contain … which can get into the product during processing and cause a disagreeable flavour.
a) solids
b) tannins
c) ascorbic acid
4. During the crushing process … can be added.
a) ascorbic acid
b) sulphur dioxide
c) sorbic acid

5. Various kinds of fruit mills are now commonly used … .
a) for heating fruit
b) for crushing fruit
c) for stripping fruit

Exercise 5. ***Find in the text the equivalents to the following word combinations.***

Сортировка и очистка, ягоды, противоточное ополаскивание, шнековый конвейер, значительно уменьшенный, свежая вода, незрелый плод, роликовый конвейер, очистка от черешков и зачистка, зеленые ножки, оборудование для обработки, небольшая часть, нежелательный, оказывать решающее воздействие, отделить сок от твердых компонентов, процесс измельчения, предотвращать, насос для перекачки фруктового пюре, соковыжималка, нагреватель, ферментация, дробилка, нержавеющая сталь, исключительный случай.

Exercise 6. ***Say if it is true or false. Correct the wrong statements.***

1. After the fruit has been received at the factory it has not to be cleaned.
2. Stemming is completed by respraying the fruit on the elevator or by counter-current rinsing with process water in a spiral conveyor.
3. All rotten, damaged and/or unripe fruits should be removed.
4. Stemming must not be omitted in the processing of pome fruit.
5. If the proportion is too high, unwanted tannins come into the juice.
6. The greater the degree of crushing, the greater is the number of cells damaged.
7. Ascorbic acid prevents non-enzymatic browning until the juice is pasteurized.

8. A pitting machine can be inserted in the stone fruit processing line behind of the crusher.

9. Fruit mills are usually made from glass and plastic materials.

10. Thermal processes are never used.

Exercise 7. ***Answer the questions.***

1. Enumerate all steps in the fruit preparing?
2. Why is cleaning important?
3. How is sorting done?
4. What is stemming?
5. What is usually used for stripping?
6. Why is it necessary to care about the degree of crushing?
7. What is added during the crushing process?
8. What equipment for fruit preparation is listed in the text?
9. What material is usually used for production of fruit mills?
10. When are the thermal processes used?

Exercise 8. ***Find in the text A the sentences with Infinitive, Participle, Gerund. Translate them.***

Exercise 9. ***Give a short summary of the text A.***

TEXT B

Vocabulary

1) overriding concern	главная задача
2) rapid	быстрый
3) plant	завод
4) breakdown	перебой
5) aids	вспомогательные средства

6) internal	внутренний
7) cellulose fibres	целлюлозное волокно
8) perlite	перлит
9) rack and frame	каркасно-рамочный
10) hardly	едва, почти не
11) consumption	потребление
12) screw press	винтовой пресс, шнековый
13) breakdown	поломка
14) auxiliary	вспомогательный
15) liquefaction	разжижение

PART I
Juice extraction

Most of the technical procedures employed are based on the same pressing process that has always been used. The **overriding concern** in juice extraction is to avoid oxidation – which makes rapid extraction essential. The juice extraction equipment must therefore satisfy the following criteria.

From the point of view of maintaining quality, the extraction process must be **rapid** and exclude air, so as to prevent changes in quality. To this end the **plant** should be technically efficient, if possible continuously operable, and highly reliable, with few **breakdowns**. It should also require few staff to operate it. The plant should provide a maximum yield, run economically and be easy to clean.

The following factors are determinative in the pressing process:

− pressure
− degree of crushing
− prior extraction of juice
− layer height.

The pressure, degree of crushing, etc., will of course vary from case to case and depend on the quality of the fruit and the experience and skill of the operator.

Pressing **aids** are devices or substances by means of which it is possible to improve the structure of the material to be pressed, the **internal** surface and thus the extraction of juice during the pressing process. The additives needed (principally **cellulose fibres** or **perlite**) are in the range 0.5–1.0% by weight, irrespective of the pressing aid employed. They make it easier to extract the juice from the remaining material. The presses most commonly used in fruit processing are the **rack and frame** press, the hydraulic horizontal **basket press** and the filter belt press.

Different types of fruit presses.

Type of press	*Characteristics*
Vertical basket press	Juice travels a long distance; low yields; high labour requirements; **hardly** used at all nowadays
Mechanical horizontal basket press	Mainly used for berry fruit (wine grapes); high space and labour requirements; little used nowadays
Hydro press	High oxidation; high water **consumption** in spite of small size; only for small quantities
Pneumatic presses	Mainly used for berry fruit (wine grapes)
Screw presses	Continuous operation possible; high output; few **breakdowns**; high tannin and suspended solids content; severe oxidation

For many years mechanical pressing was the only method employed. Alternative and/or **auxiliary** methods were developed, however, because the need to ensure continuous operating cycles, the high labour costs, changes in raw materials, unsatisfactory yields and other factors made it essential to find new approaches in

juice extraction technology. Two methods are also used: juice extraction using water enzymatic **liquefaction** of the raw material.

Exercise 1. ***Match the parts of the sentences.***

1. The plant should provide a maximum yield, run …	a) mechanical pressing was the only method employed.
2. For many years …	b) improve the structure of the material to be pressed, the **internal** surface and thus the extraction of juice during the pressing process.
3. The **overriding concern** in juice extraction is …	c) juice extraction using water enzymatic **liquefaction** of the raw material.
4. The presses most commonly used in fruit processing are …	d) to avoid oxidation.
5. Pressing **aids** are devices or substances by means of which it is possible to …	e) pressure, degree of crushing, prior extraction of juice, layer height.
6. Two methods are also used: …	f) economically and be easy to clean.
7. The following factors are determinative in the pressing process: …	g) the **rack and frame** press, the hydraulic horizontal **basket press** and the filter belt press.

Exercise 2. ***Match the English word combinations with their translation.***

1) pressing process	a) винные сорта винограда
2) juice extraction	b) целлюлозное волокно
3) maximum yield	c) ферментативное разжижение
4) degree of crushing	d) потребность в рабочей силе
5) internal surface	e) процесс прессования
6) cellulose fibres	f) пневматический пресс
7) enzymatic liquefaction	g) экстрагирование сока
8) continuous operation	h) взвешенные твердые вещества
9) labour requirements	i) гидравлический пресс
10) pneumatic press	j) внутренняя поверхность
11) remaining material	k) максимальная производительность
12) auxiliary method	l) непрерывная работа
13) suspended solids	m) остаточный материал
14) wine grapes	n) дополнительный метод
15) hydro press	o) степень измельчения

Exercise 3. ***Replace Russian words with the English ones.***

1. The juice extraction equipment must therefore satisfy the following (критериям).

2. They (облегчают) to extract the juice from the remaining material.

3. The additives needed are (в промежутке) 0.5–1.0% by weight.

4. (Давление), degree of crushing, etc., will of course vary from case to case and depend on the quality of the fruit and the experience and (навыка) of the operator.

5. Mechanical horizontal (корзиночный пресс) is mainly used for berry fruit.

6. The plant should be technically (эффективный), if possible continuously operable, and highly (надежный), with few break-downs.

Vocabulary

1) sedimentation	седиметнация, отстаивание
2) centrifugation	центрифугирование
3) density	плотность
4) fining	оклеивание, осветление
5) viscosity	вязкость
6) hydrolysis	гидролиз, расщепление
7) dissolved	растворенный
8) decrease	уменьшение
9) haze	помутнение
10) beverage	напиток
11) to coagulate	свертывать
12) silica sol	золь кремниевой кислоты
13) phenols	фенолы
14) to precipitate	ускорять
15) aqueous	насыщенный водой
16) opalescent	молочно-белый
17) flocculants	флокулянты
18) casein	казеин
19) thermolabile	неустойчивый к тепловому воздействию
20) bentonite	бентонит
21) swelling	набухший
22) clay	глина
23) lamellar	многослойный
24) cation	катион
25) sodium	натрий

PART II
The clarification of juices

The clarification of juices, i.e. the mechanical removal of suspended solid particles from the juice, is generally carried out by **sedimentation**, **filtration** or **centrifugation**. These processes are very often combined in order to achieve a better result.

Sedimentation

Suspended solids settle in the tank because of differences in **density**. This process can be speeded up by clarification **fining** or by reducing the **viscosity** of the juice (using enzymes).

Enzymatic fining.

Enzymatic **hydrolysis** of pectin. Pectin stabilizes the suspended solids in the juice. Through addition of the enzyme, the pectin is converted to a **dissolved** form and broken down. This is associated with a significant **decrease** in viscosity.

Enzymatic hydrolysis of starch. Starch may be noticed in fruit juice as a milky **haze**. Like pectin, starch has a protective colloid effect on suspended particles and thus makes juice clarification more difficult.

Clarification fining

Fining of juices generally removes not only unwanted substances but also, to a certain extent, desirable substances. For this reason excessive fining is to be avoided. The effect of fining is optimal when the fining agent is added continuously. The more acidic the **beverage**, the better is the clarification effect with a given level of fining agent.

Gelatin fining

Gelatin rapidly **coagulates** with negatively charged particles (suspended solids and/or **silica sol**), and it forms compounds with **phenols** and **precipitates** them as well.

Silica sol-gelatin fining

Silica sol is an **aqueous**, colloidal solution of silicic acid. It has a milky, **opalescent** appearance. Only negatively charged silica sol is used for fining purposes. It is marketed in the form of a 15 % or 30 % solution. Silica sol is never used alone in fining, but essentially only as a reactant with gelatin (or other positively charged **flocculants** such as **casein**).

Tannin-gelatin fining

Tannins are tanning agents which are readily soluble in water, and which have different chemical compositions, depending on their origin. Tannins can be used as an aid in gelatin fining.

Protein stabilization.

Most fruit juices contain **thermolabile** protein which can cause hazes in the final juice. These hazes are undesirable, so the thermolabile protein is removed from the juice during processing. Two methods are commonly used for this purpose.

Bentonite fining.

Bentonite fining is primarily used to stabilize fruit juices against protein hazes. Bentonites are **swelling clays**. They have a **lamellar** structure that, depending on the type of bentonite, can absorb different amounts of water of crystallization and different amounts of exchangeable **cations** (calcium, magnesium or **sodium**) between the layers. Bentonite treatment reduces the levels of heavy metals and any spray residues present.

High-temperature short-time (HTST) method

The HTST method is used for two purposes in fruit juice technology: to sterilize juices for storage and to precipitate thermolabile protein.

Exercise 4. ***Match the parts of the sentences.***

1. Gelatin rapidly coagulates …	a) the suspended solids in the juice.
2. Pectin stabilizes …	b) an aid in gelatin fining.
3. Suspended solids settle in the tank because of …	c) to a certain extent, desirable substances.
4. Bentonite treatment reduces …	d) with negatively charged particles
5. Tannins can be used as …	e) differences in density.
6. Starch may be noticed in fruit juice as …	f) a milky haze.
7. Fining of juices generally removes not only unwanted substances but also …	g) the levels of heavy metals and any spray residues present.

Exercise 5. ***Find English equivalents in the text B Part II.***

Заряженные частицы, чешуйчатая структура, магний, осветляющее вещество, вязкость сока, растворенная форма, кремниевая кислота, уменьшать, растворимый в воде, ферментативный гидролиз, осветление бентонитом, отстаивание, очистка сока, в определенной степени, внешний вид, в зависимости от происхождения, удалять.

Exercise 6. ***Match the word with its definition.***

1) colloid	a) A homogeneous non-crystalline substance consisting of large molecules or ultramicroscopic particles of one substance dispersed through a second substance.
2) gelatin	b) A substance which promotes the clumping of particles, espe-

	cially one used in treating waste water.
3) extraction	c) An odourless, tasteless white substance occurring widely in plant tissue and obtained chiefly from cereals and potatoes.
4) centrifuge	d) A place where an industrial or manufacturing process takes place.
5) starch	e) The action of extracting something, especially using effort or force.
6) flocculant	f) A virtually colourless and tasteless water-soluble protein prepared from collagen and used in food preparation, in photographic processes, and in glue.
7) plant	g) A machine with a rapidly rotating container that applies centrifugal force to its contents, typically to separate fluids of different densities (e.g. cream from milk) or liquids from solids.

Exercise 7. ***Match the word with its synonym.***

1) to reduce	to include
2) to contain	to use
3) to improve	to stop
4) to employ	to supply
5) to crush	to change
6) to provide	to decrease
7) to prevent	to upgrade
8) to convert	to press

TEXT C

Exercise 1.*Translate the following text using the dictionary.*

Pasteurization

Aims of pasteurization:

- To inactivate all the enzymes contained in the juice.
- To kill all the microorganisms contained in the juice.
- To kill all the microorganisms present in the bottle.

Pasteurization is of great importance for juice quality. The recommended bottling temperature for clear apple juices is 78 °C, while naturally cloudy juices should be bottled at a temperature of at least 80 °C. Too high temperatures or too long a holding phase lead to partial conversion of fruit sugars (fructose and/or glucose) into hydroxymethylfurfural (HMF). This process is known as 'caramelization'. An excessively high HMF content is referred to as 'cooked flavour' and is regarded as a fault.

Bottles which immediately after hot-filling are stacked in large storage containers (e.g. pallet boxes) retain the heat for a very long time. Although such juices have a fairly reliable shelf life, there is a significant loss of quality because of the prolonged action of the heat.

Faults in pasteurization are the main reason for deficient keeping quality of fruit juices. Simple thermometers can show divergences of up to 4 °C. If the temperature out of the pasteurizer falls, these thermometers still indicate the higher temperature.

Immediate cooling after bottling is also a problem. Since the cap (and also any air present) has to be pasteurized, it is advisable to turn the bottles over after filling and not to start cooling until after that.

The volume of the juice decreases in the course of cooling, and a partial vacuum is created in the bottle. If the cap is not airtight or if the bottle is chipped, this partial vacuum draws air into the bottle. Microorganisms in the air come into contact with the cold juice and can spoil it. For this reason new caps should always be used and bottles should be checked before use.

Use of protective gases. Apart from pasteurization, there are a few other methods of giving fruit juices a long shelf life. Covering with carbon dioxide is one of them.

This so-called Seitz-Böhi process was in great vogue in the 1930s. The juice was covered with carbon dioxide in pressurized tanks. Carbon dioxide was pumped into the tanks until the pressure was well above atmospheric, thus preventing fermentation. It was not possible to inactivate all microorganisms with the overpressures used. The fruit juices changed, and many of them suffered spoilage as a result. For this reason the Seitz-Böhi process never became very important.

The pressurized vat. The idea underlying the pressurized vat is based on a principle similar to the Seitz-Böhi process. Carbon dioxide produced by fermentation is supposed to build up an overpressure which prevents further fermentation in the tank. Pressure-tolerant yeast strains, however, can survive several bars of overpressure and produce much more than 0.5 % by volume of alcohol before fermentation stops. Prolonged storage is only possible with clarified juices at low temperatures.

The overpressure only inhibits fermentation by yeasts, but does not inactivate enzymes and other microorganisms. These can cause changes in the colour, odour and taste of the juice.

Exercise 2. ***Translate into Russian.***

1. Pressing and bottling the hand-picked olives, they create extra-virgin olive oil.
2. Rising carbon dioxide emissions have already driven ocean acidity up by a third.
3. It was a bottle with a letter sent by German boy 24 years ago in the Baltic Sea.
4. A little bit of olive oil in the frying pan and a slow caramelization of onions began.
5. Fresh vegetables have a short shelf life.

6. Yeasts consume the sugars in grapes, converting those sugars into alcohol.

7. The brain normally produces the amount of glucose it needs to function properly.

Exercise 3. ***Make your own sentences with each of the following words:***

To survive, method, cloudy juice, to protect, volume, air, flavour.

Exercise 4. ***Retell text C in Russian.***

Check yourself

1. Cross out an inappropriate word in each line.

1. Cleaning, stemming, stripping, preventing;
2. To reduce, to crush, to extract, to press;
3. Rotten, damaged, dissolved, unripe;
4. To fine, to clarify, to ensure, to clean;
5. Sodium, starch, calcium, carbon;
6. Purpose, aim, reason, effect.

2. Match the word phrases with their translation.

1) cloudy juices	a) неполный вакуум
2) processing equipment	b) первичный отжим
3) prior extraction	c) шнековый пресс
4) partial vacuum	d) белковое помутнение

5) lamellar structure	e) оборудование для обработки
6) silica sol	f) резервуар под давлением
7) screw press	g) золь кремниевой кислоты
8) suspended solids	h) неосветленный сок
9) pressurized tanks	i) чешуйчатая структура
10) protein hazes	j) взвешенные твердые вещества

3. Answer the questions.

1. What is HTST method?
2. Enumerate 5 types of fruit presses?
3. What are the main purposes of pasteurization?
4. What is stemming?
5. What fining agents may be added for the fining of juice?

4. Translate the following sentences into Russian.

1. The design of horizontal basket presses has major advantages over the earlier vertical basket presses.
2. The suspended particles mainly consist of protein and have a negatively charged surface.
3. For successful fining, the temperature of the juice should not normally be less than 12°C.
4. In practice pasteurization is the only procedure used to give fruit juices a longer shelf life.
5. In the fining of juices with a low tannin content, the silica sol is added before the gelatin, but in the case of juices with a high tannin content the gelatin is added first.

5. Translate the following text into Russian.

Agar agar

This product is a highly effective gelling agent derived from algae (one teaspoonful of agar agar is sufficient to gel half a litre of liquid).

The fruit is crushed small and thoroughly mixed with the sugar (or honey). Lemon juice and agar agar are added to a small portion of the fruit purée, and this mixture is then well stirred.

In the meantime the remaining crushed fruit is heated with the sugar (or honey) and boiled for about 1 min. The gelling mixture is then stirred into the pot. Filling of jars can be started after the mixture has been brought to the boil again.

Speaking

Choose a topic to discuss with your partner. Ask your partner so many questions as you can:

- Crushing the fruit in production of fruit juices;
- Different types of fruit presses;
- Clarification of fruit juices;
- The importance of pasteurization in fruit juices production.

Helpful phrases:

As far as I know...
Don't you know...?
I would like to add...
Well, I totally agree with you...
Don't you think...?
Have you heard...?

ЗАКЛЮЧЕНИЕ

Данное учебное пособие представляет собой взаимосвязанный комплекс материалов, работая с которым обучающиеся должны активизировать англоязычные грамматические структуры, овладеть профессиональной

терминологией по специальности на английском языке, усовершенствовать их реализацию во всех видах речевой деятельности. Логическое построение учебного пособия позволяет осуществить формирование коммуникативной компетенции. Это и умение соотносить языковые средства с определенными конкретными ситуациями, условиями и задачами профессионального общения, и знакомство с практическими и информационными технологиями всего мира, и обмен опытом в сфере профессиональной деятельности и осуществление профессионального взаимодействия.

Разнообразие учебного материала помогает изменять объем заданий и способствует выполнению комплексных задач, связанных с дифференцированным подходом к обучению, степенью подготовки обучающихся и учетом их индивидуальных особенностей.

Методическая структура, организация и характер учебного материала позволяют осуществить взаимосвязанное обучение всем видам речевой деятельности на иностранном языке, получить знания в чтении и переводе англоязычной литературы, способствуют изучению грамматического строя английского языка, а также обеспечивают постепенный переход к работе с аутентичными профессионально ориентированными текстами.

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ПЕРЕРАБОТКА СЕЛЬСКОХОЗЯЙСТВЕННОГО СЫРЬЯ (В КУРСЕ АНГЛИЙСКОГО ЯЗЫКА)

Учебное пособие

В авторской редакции
Макет обложки – Н. П. Лиханская

Подписано в печать 18.01.2019. Формат 60 × 84 $^{1}/_{16}$.
Усл. печ. л. – 5,3. Уч.-изд. л. – 4,2.
Тираж 60 экз. Заказ №

Типография Кубанского государственного
аграрного университета.
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