

**МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
ЖИТОМИРСЬКИЙ НАЦІОНАЛЬНИЙ
АГРОЕКОЛОГІЧНИЙ УНІВЕРСИТЕТ**

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**АНГЛІЙСЬКА МОВА
НАВЧАЛЬНИЙ ПОСІБНИК
ДЛЯ СТУДЕНТІВ АГРАРНИХ
СПЕЦІАЛЬНОСТЕЙ
ВИЩИХ АГРАРНИХ НАВЧАЛЬНИХ
ЗАКЛАДІВ**

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Посібник «Англійська мова» створений відповідно до нормативної
програми з дисципліни «Іноземна мова за професійним спрямуванням» та до
вимог підготовки спеціалістів вищих аграрних навчальних закладів та змін, що
відбулися в лінгвістичних та соціально-психологічних концепціях, які лежать
в основі неспеціалізованої методики навчання іноземних мов. Вивчення
іноземної мови студентами аграрних вузів базується на знанні
загальноосвітніх, спеціальних і профільних дисциплін. Особлива увага
приділяється формуванню навичок та вмінь практичного володіння іноземною
мовою для вирішення комунікативних завдань в загальноосвітній, діловій та
професійній сферах спілкування.

Посібник «Англійська мова» передбачає опанування таким обсягом
знань, навичок і вмінь, який забезпечує необхідний рівень сформованості
комунікативної компетенції та комунікативної спроможності у різних сферах
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ВСТУП

Оновлення змісту навчання іноземних мов у вищих навчальних закладах пов'язується з деякими змінами в стратегічних напрямках розвитку сучасної вищої освіти – спрямуванням навчальної діяльності на вироблення у студентів необхідних життєвих компетентностей, що в майбутньому давали б можливість випускникам коледжу комфортно почуватися в сучасному світовому мультинаціональному просторі. Це об'єктивно зумовлено низкою чинників, пріоритетними серед яких є тенденція на постійну глобалізацію та інтенсифікацію розвитку міжнародних контактів у різноманітних сферах життєдіяльності, а також активна переорієнтація викладання іноземної мови на комунікативно-цілісне, особистісно орієнтоване та культурологічне спрямування навчального процесу. Важливе місце цих трансформаційних процесах належить підручнику як основному засобу реалізації оновленого змісту навчання.

Запропонований посібник з англійської мови можна розглядати в якості носія змісту іншомовної освіти та засобу навчання іншомовного спілкування. Його мета відобразити певну модель діяльності студентів, яка забезпечується дидактично і методично доцільно дібраними засобами навчання, що узгоджуються з комунікативно-діялісним підходом і сприяють успішному виконанню цілей, визначених чинною програмою. Випускник коледжу повинен отримати достатній рівень підготовленості з дисципліни «Іноземна мова за професійним спрямуванням» і здатність удосконалювати його упродовж життя відповідно до власних намірів і потреб.

У межах чинної навчальної програми студент має оволодіти комплексом знань, умінь і навичок, які дають йому можливість адекватно реагувати в нескладних соціально-комунікативних ситуаціях, знати професійні терміни і поняття; стійкі словосполучення, які зустрічаються в технічних текстах; особливості перекладу професійно спрямованих текстів, норми ділового етикету; правила вербальної та невербальної поведінки в типових ситуаціях спілкування; уміти аргументовано пояснити

значення іноземної мови для організації практичної діяльності спеціаліста, вільно спілкуватись на теми, пов'язані з сільським господарством України та інших країн; здобувати необхідну інформацію з нових текстів спеціальної та загальної тематики для подальшого застосування в мовленнєвій діяльності; оформляти ділові листи; складати резюме, заяву на роботу, заповнювати анкети; керувати мовленням та обирати стратегії спілкування для здійснення комунікативних намірів у конкретних ситуаціях.

Це зумовлюється наявністю у студента:

а) основних знань про систему мови і навичок адекватного оперування мовними засобами під час спілкування;

б) комунікативних умінь, які забезпечують здатність розуміти (рецептивний рівень) і породжувати (продуктивний рівень) висловлювання в усній та письмовій формах відповідно до певної сфери, теми, ситуації спілкування, мовленнєвого завдання, комунікативного наміру, а також з урахуванням національно-культурних особливостей країни, мова якої вивчається.

Набуті знання, навички й уміння мають забезпечити студентам можливість:

- установлювати та підтримувати контакт в усній та письмовій формах з партнером по спілкуванню, повідомляти й запитувати інформацію різного змісту та обсягу, логічно висловлюватись і адекватно реагувати на мовлення партнера; інтерпретувати й узагальнювати отриману інформацію, висловлювати своє ставлення до предмета спілкування, аргументуючи та емоційно оцінюючи судження партнера по соціальній взаємодії;

- організовувати свою діяльність з мовними засобами, доцільно здійснюючи їх добір для реалізації власних іншомовних комунікативних намірів, оптимізуючи процеси засвоєння мовного матеріалу, удосконалюючи роботу пам'яті;

- раціонально планувати свою діяльність, застосовувати оптимальні стратегії здобування інформації з аудіо- та письмових джерел відповідно до визначених завдань (розуміння основного змісту, повне розуміння змісту, пошук необхідної

інформації) та інтерпретувати її, творчо адаптуючи до потреб спілкування;

- здійснювати об'єктивний самоконтроль результатів свого навчання, критично їх оцінюючи, і знаходити конструктивні шляхи усунення недоліків.

Забезпечити успішне виконання зазначених завдань належить підручнику як основному засобу і моделі реалізації прийнятої парадигми навчання.

В змісті поданого посібника передбачена ефективна система засобів, зокрема вправ і завдань, які сприяють формуванню комунікативної компетентності як пріоритетної мети оволодіння студентами іншомовним спілкуванням за професійним спрямуванням, велика увага приділяється формуванню навичок роботи з текстовим матеріалом аграрного спрямування.

Посібник рекомендується для використання викладачами та студентами вищих аграрних навчальних закладів.

UNIT 1. GIVING INFORMATION ABOUT YOUR QUALIFICATIONS, EXPERIENCE, PERSONAL CHARACTERISTICS

Exercise 1. Read and translate the text:



Where and how to hire an employee?

An employer has several options to consider when he wants to hire a new employee. First of all, he may look within his own company.

But if he can't find anybody suitable for the position, he will have to look

outside the company. The employer can also use other valuable sources, for example, employment agencies, consulting firms, placement offices and professional societies, he can ask them to help him to find qualified applicant. He can also advertise in a newspaper or in a magazine and request candidates to send in resumes.

The employer has two sets of qualifications to consider if he wants to choose from among the applicants. He must consider both professional qualifications and personal characteristics. A candidate's education, experience and skills are included in his professional qualifications. These can be listed on a resume. Personal characteristics or personality traits must be evaluated through interviews.

Exercise 2. Answer the comprehension questions:

1. Which options should an employer first consider when he wants to hire a new employee?
2. What service does a personnel department provide?
3. In what way can the new employees be found outside one's company?

4. What qualifications does the employer consider in choosing an employee?
5. What is meant by “professional qualification” for a job?
6. What personnel characteristics does the administrator consider when choosing an employee?

Exercise 3. Choose the necessary word and put it into the sentence:

(to advertise, resume, employee, applicant, personnel office, qualification, agency, personal).

1. We are going to interview threeon the position.
2. If you need applications for this position , in a special section of the local newspaper.
3. Personnel office will help you to find a new
4. All the information about the staff of the firm can be found in
5. She has a good for the position: a college degree, good work experience.
6. I want to find a new secretary, so I'll call an employment
7. If you are an applicant for the position, you have to write your
8. Don't ask him questions. It will be impolite.

Exercise 4. Read and translate the recommendations which may be useful for everybody who looks for a job:

DOs and DON'Ts For Job Seekers

- DO learn ahead of time about the company and its product. Do your homework.
- DO apply for a job in person.
- DO let as many people as possible know you are “job hunting.”
- DO stress your qualification for the job opening.
- DO recount experience you have had which would fit you for the job.

- DO talk and think as far as possible about the future rather than the past.
- DO indicate, where possible, your stability, attendance record and good safety experience.
- DO assume an air of confidence.
- DO approach the employer with respectful dignity.
- DO try to be optimistic in your attitude.
- DO maintain your poise and self-control.
- DO try to overcome nervousness and shortness of breath.
- DO hold yourself erect.
- DO answer questions honestly and with staitforwardness.
- DO have a good resume.
- DO know the importance of getting along with people.
- DO recognize your limitations.
- DO make plenty of applications.
- DO indicate your flexibility and readiness to learn.
- DO be well-groomed and appropriately dressed.
- DON'T keep stressing your need for a job.
- DON'T discuss past experience which has no application to the job situation.
- DON'T apologize for your age.
- DON'T be untidy in appearance.
- DON'T display "cocksuredness."
- DON'T cringe or beg for consideration.
- DON'T speak with muffled voice or indistinctly.
- DON'T be one of those who can do anything.
- DON'T hedge in answering questions.
- DON'T express your ideas on compensation, hours, etc. early in the interview.
- DON'T hesitate to fill out applications, give references, take physical examination or tests on request.
- DON'T hang around, prolonging the interview, when it should be over.
- DON'T go to an interview without a record of your former work connection.
- DON'T arrive late and breathless for an interview.

- DON'T be a "know it all" or a person who can't take instructions.
- DON'T isolate yourself from contacts that might help you find a job.
- DON'T feel that the world owes you for a living.
- DON'T make claims if you cannot "deliver" on the job.
- DON'T display a feeling of inferiority.

Exercise 5. Choose the correct items to complete the following dialogue:

(are not ready, work experience, a job application form, can suggest)

Filling out a Job Application Form

- Good morning.
- Good morning. What can I do for you?
- I wonder if you could explain how to fill out...(1)
- Willingly. Have you completed your personal data sheet? If not you ... (2) yet to fill out a job application form.
- Why so?
- In the job application form you are to state about your education and ... (3) and all this is written in your personal data sheet.
- Clear. Thank you very much.
- I ... (4) much more but it will be next time.

Exercise 6. Fill in a Sample of the Application Form:

Photo Size 2 x 2 Passport style	APPLICATION FOR EMPLOYMENT
	POSITIONS APPLIED FOR :
	1) _____
	2) _____
	3) _____

PERSONAL DETAILS

Family

Name: _____

First

Name: _____

Middle

Name: _____

Address: _____

Tel №: _____ Fax № _____ E-mail: _____

NEXT TO KIN (Person to be informed in the case of an emergency)

Family Name: _____

First Name: _____

Relationship: _____

Address: _____

Tel №: _____ Fax № _____ E-mail: _____

ADDITIONAL INFORMATION(required for Administrative purposes only)

Date of Birth: _____ Age: _____ Gender: _____

Male/Female _____

Marital Status: _____ Religion: _____ Blood Group/Type: _____

Allergies: _____ Place of Birth: _____

Passport №: _____ Date of Expiry: _____

Place of Issue: _____

Social Security №: _____

EDUCATION:

	MM/YY to MM/YY	School/ College	Course/Programme	Result
High School				
Vocational				
University				

LANGUAGES: Excellent/Good/Fair/Poor (Insert your rating for each language under each heading)

Language	Speaking Rating	Reading Rating	Writing Rating

OTHER

QUALIFICATIONS/ABILITIES: _____

DRIVING LICENCE: Type: _____ Expire Date: _____

Issued by (Country): _____

WORK HISTORY(EXPERIENCE):

You must give every Job. Start with most recent. Leave NO time gaps. Include periods of unemployment.

MM/YY to MM/YY	Position Held (Give Details)	Employer/Company(Give Details)	Why Terminated

The above information is correct and accurate, to the best of my knowledge. Deliberately incorrect information, I understand , may lead to dismissal and / or cancellation of my contract.

Signed: _____ Date: _____

Name: _____ (Please Print)

Exercise 7. In the United States a lot of people are out of work. They go to the state employment office and have to fill out a questionnaire. Here is part of it. Fill it out:

- Do you want (check one)
 - full time employment _____
 - part-time employment _____
- What is most important for you?

(Number these from 1 to 5 in order of importance – 1= most, 5 = least)

 - money _____
 - people _____
 - job security _____

- (d) job satisfaction _____
- (e) interesting job _____
3. Do you like (check “yes” or “no”)
- (a) meeting people? _____
- (b) working alone? _____
- (c) working with other people? _____
- (d) working with your hands? _____
- (e) travelling? _____
- (d) working outdoors? _____
4. What do you do in your free time?
(check “often”, “sometimes” or “never”) _____

Exercise 8. Arrange the sentences in a logical order to make a dialogue. Then read and dramatize it.

A Student Looks For a Temporary Job

- It is pretty well paid.
- Of course. What I can do for you?
- Good morning, sir. May I speak to you?
- And what about my payment?
- It suits me well.
- I am looking for a temporary job during my summer holidays.
- Very well. We will need some temporary workers in our packing department.
- Tomorrow morning you are to see you the head of the department about a vacant job.

Exercise 9. If you decide to apply for a job you will probably need to go through interview. Answer the following questions:

1.What's the correct way of spelling /pronouncing your name (surname, family name)? _____	Як правильно пишеться (вимовляється) ваше прізвище?
2. Where and when were you born? _____	Де і коли ви народилися?

3. What's your marital status? (Are you married or single? Have you got a family? What is your family like? How do your parents earn their living?) _____	Яке ваше сімейне становище? (Ви одружені? У вас є сім'я? Яка у вас сім'я? Де працюють ваші батьки (Як ваші батьки заробляють на життя?)
4. You got a bachelor's degree, didn't you? _____	У вас ступінь бакалавра, так?
5. You didn't get a master's degree, did you? _____	Ви не маєте ступеня магістра, так?
6. What did you major in at college? _____	З якої навчальної дисципліни ви спеціалізувалися в коледжі?
7. Will you tell me about education and any special training you have had? _____	Розкажіть, будь ласка, про свою освіту та отримані кваліфікації.
8. Are you working now? _____	Ви зараз де-небудь працюєте?
9. What do you do? (What is your occupation?) _____	Чим ви займаєтесь?
10. What kind of work experience have you had? _____	Який практичний досвід ви маєте?
11. What companies did you work for? _____	Де ви працювали?
12. Have you worked in foreign countries? _____	Ви працювали закордоном?

13. How did you find out about this position? _____	Як ви дізналися про цю посаду?
14. What kind of job are you looking for? Why would you like this job? _____	Яку роботу ви шукаєте? Чому вам подобається ця робота?
15. What other skills do you have? _____	Яку ще кваліфікацію ви маєте?
16. Do you enjoy working with others? _____	Вам подобається робота з людьми?
17. Are you willing to work overtime? What hours can you work? _____	Ви готові працювати понаднормово? В якому режимі ви можете працювати?
18. Do you have any questions about the job? ____	У вас є питання щодо (майбутньої) роботи?
19. What kind of salary do you expect? _____	Яку зарплату ви очікуєте?
20. What are your spare-time interests? What do you (don't) like doing and why? _____	Чим ви займаєтесь у вільний час? Що ви любите і чого не любите робити і чому?
21. What are your good / weak points? _____	Які ваші сильні / слабкі сторони?
22. Why did you choose the school where you received your training? _____	Чому ви вибрали саме той навчальний заклад, де ви навчалися?

23. Are you looking for part time or full time work? Temporary or permanent?_____	Ви хочете роботу з неповним та повним робочим днем ? Тимчасову або постійну?
24. How do you get along with other people? Any trouble with communicating before?_____	Як ви ладнаєте з людьми? Чи були у вас раніше труднощі у спілкуванні?
25. What do you plan to be doing five years from now? Ten years from now? _____	Які ваші плани на найближчі п'ять років? На десятиліття?

Exercise 10. Read and translate some recommendations how to write a resume

Recommendations and advice

Resumes and prior preparation play an important role in getting the job you dreamed about as the job can be lost on the basis of an interview only. The interviewer usually sees the resume before he sees the applicant. The resume gives the first impression of the applicant to the employer. It should be neat and well organized.

It starts with the applicant's name, date of birth, marital status, address and telephone number, then it gives an employment objective, educational and training data, as well as previous work experience. The resume should clearly reflect the applicant's qualifications for the works(s) he wants now.

First you should decide what to stress and what to leave out. All confusing, secondary information, facts and details which don't count must be left out.

In your resume you should stress facts that describe your professional experience, advanced knowledge, you should tell about your strengths which will let you do the job you are applying for.

Usually some references are requested to confirm the information you give in your resume (or CV – Curriculum Vitae). It is recommended to attach them or write “References available on request” which means that you are ready to produce them any time you are asked to do that.

Here are the summarized points of what has been written here.

1. Personal data: name (family name, other names/ = first name and second name(s) /), age (date of birth), marital status (single, married, separated, divorced), number of children, address, phone number.

2. Objective / Position applied for: kind of position and professional responsibilities you are looking for.

3. Experience: names of jobs, places, dates, and descriptions of what exactly you did and were responsible for.

4. Education: list of educational institutions you attended (specifying the dates); subject areas you studied and degrees you got.

5. Other: any information which could be helpful (computer skills, special skills, languages you speak, driver’s license, hobbies, etc.)

6. References: names and addresses of two or three references (people who can recommend you for the position and confirm your characteristics). Or, you can write “references available on request”

7. Date, signature

Exercise 11. Read and dramatize the following dialogue:

After a Job Interview

- You know, I’ve just had a job interview with an employer.
- Was it a successful interview?
- I don’t know. I’ve prepared well for the interview and tried to convey the message I am just the man for the job.
- Have you shown your records to support your statements? I mean references, personal data sheet etc.
- No, I have sent my (business) resume in advance.

- How did you behave during the interview? Were you too tense or too aggressive?

- In this respect I think everything was just right, but I was not prepared to discuss my salary.

- Has the employer offered you the job or asked you to call for another interview?

- He asked me to call to learn his decision.

- I think everything will be O.K. Don't forget only to send him a thank-you letter. If you wish I can give you a sample of a letter, which they send in the USA in such situations.

- Yes, please. This letter will give me another opportunity to state my qualifications.

- Here is a sample of the letter.

Mr. P. Brown, President

P. Brown and Co Ltd

5 Avenue

New York, 7717

The USA

Date

Dear sir,

Thank you for the attention during my interview with you last week. I hope that all questions were answered to your satisfaction. I'd be happy to supply any further information you may need. I am very interested in the position we discussed, and I hope you will consider me as a serious candidate.

I am looking forward to hearing from you soon.

Sincerely yours...

Name, surname

Address

Telephone

UNIT 2. INTRODUCTION TO AGRICULTURE

Exercise 1. Complete the text with the verbs in brackets in the correct form.

ORIGIN OF AGRICULTURE



It is known that the primitive man (to live) by gathering plants and by hunting animals. Later on people (to begin) to exploit plant resources.

The earliest implements for land cultivation (to be) the stick and the hoe. The implements people (to begin) to use later on were

the mattock the spade, the fork and the plow.

It is supposed that the plow first (to originate) in the Mediterranean region as early as 3000 B.C. It is said that the plow (to be) the first implement which (to give) start not only to a more complex form of agriculture but also to a system of land tenure.

Exercise 2. Read and translate the text.

WHAT IS AGRICULTURE?

Agriculture is a human activity in which people use land to produce food, clothing and other necessary materials.

The word «ager» is a Latin word. It means a field. The word «agriculture» means the cultivation of fields and growing crops. But this is the old meaning of this word. Now it also means the using of land for breeding animals. At present there are two main branches of agriculture. They are crop growing and animal breeding.

We do not know when people began to grow crops. It was many thousand years ago. Now crop growing is a highly developed branch of agriculture.

The soil is the basis of agriculture. Enough food for all the people can be grown if there is sufficient good soil for crops to produce high yields. There are two ways to grow enough food. They are the increase in area of arable land and the intensification of agricultural production in the areas already used for cropping. At present the second way is more important because there is not enough experience to reclaim tropical and subtropical lands.

The intensification of production in the traditional agricultural areas is based on the knowledge of climate, soils and their use, and on a large collection of high-yielding varieties and hybrids of agricultural crops. All intensification factors, such as full mechanization, high application of fertilizers and extensive use of herbicides must be used in such a way as not to disturb the biological equilibrium of the soil. Animal husbandry is fully dependent on crop growing and it is very important in a country's economic, too.

Thus, it may be said that the development of agriculture is an important factor in the development of national economy and it will result in the rise of living standard of people.



Exercise 3. Find out and read the answers to the questions.

1. What kind of human activity is agriculture?
2. What is the origin of the word “ager”?
3. What does it mean?
4. What is the old and the new meaning of the word “agriculture”?
5. What branches of agriculture do you know?
6. What is the basis of agriculture?
7. When did people begin to grow crops?
8. When can enough food be grown?
9. What are the ways to grow enough food?

Exercise 4. Fill in the gaps with necessary words.

1. The is the basis of agriculture.
2. People use areas of to produce food and clothing.
3. Agriculture means the use of land to animals.
4. Crop ... is one of the agricultural branches.
5. There must be a large collection of high-yielding and hybrids of agricultural crops.

Exercise 5. Make up sentences.

1. is, branch, agriculture, important, of economy, an.
2. word, the word, Latin, is, "agre", a.
3. agriculture, the use of, farm animals, also, to breed, includes, land.
4. when, crops, do not know, we, began, to grow, people.
5. animal husbandry, and, are highly developed, agriculture, crop production, of, branches.
6. plants, impossible, life, without, is.
7. farm crops, that, plants, are known as, by farmers, are grown.

Exercise 6. Arrange the sentences in logical order according to the text. Then use them as a plan to retell it.

1. Agriculture provides people with different kinds of food.
2. The increase in crop yields can be done by applying fertilizers.
3. Agriculture is an important sector of economics.
4. The aim of agriculture is to produce much food
5. When the crop does not grow well, it means that the conditions are bad for its growth.

Exercise 7. Answer the questions.

1. Why is agriculture very important?
2. What are the two branches of agriculture?
3. What does the Latin word "agre" mean?
4. Is life possible without plants?
5. Where are farm crops used?
6. How do people increase crop yields?

Exercise 8. Order the paragraphs (A-D) to build a text. Then read and translate it.

SOME WORDS ABOUT AGRONOMY

(A) It may be said that the development of agriculture has become an important factor in the development of national economy.

(B) It is known that regular study of the chemical composition of soils and the developments of means for the reproduction of their fertility have become a fundamental part of agricultural science.

(C) Agronomy deals with the cultivation of fields for regular production of crops: food crops, feed crops, and industrial crops. Cultivation means the preparation of the ground for planting seeds, tubers, etc. Cultivation is done by means of various kinds of agricultural machines and implements: gang plows, harrows, sweepers, etc.

(D) As the climate and the soils greatly differ in different regions of our large country, agronomists regularly exchange experience. This regular exchange of experience between agronomists has increased the range of plants which may be grown in different regions and has given start to the development of various means for the improvement of crops.

1_____. 2_____. 3_____. 4_____.

Exercise 9. Read and translate the text.

TWO BRANCHES OF AGRICULTURE



There are two main branches of agricultural production — crop production and animal husbandry.

Crop production is the practice of growing and harvesting crops. The most important crops grown by man are grain crops, vegetables and

grasses. In order to obtain high yields crops are grown under favourable soil and climatic conditions.

Animal husbandry is a branch of agriculture including the breeding of farm animals and their use. Dairy and beef cattle, hogs, sheep, and poultry are widely bred throughout the world. Farm animals are highly important sources of food for man. They are kept for the production of such nutritious products as meat, milk and eggs.

Many crops grown by man are used in feeding livestock. At the same time manure produced by farm animals is an important source for the maintenance of soil fertility. Most of the nutrients taken by plants from the soil are thus returned. Applying manure, farmers improve the physical condition of the soil.

Thus, crop production and animal husbandry are closely connected with each other.

Exercise 10. Translate the following words into Ukrainian and remember them:

Beef cattle –
Dairy cattle –
Grain –
Grass –
Hog –
(to) improve –
(to) keep –
Manure –
Meat –
Nutrient –
Nutritious –
Poultry –
Sheep –
Soil fertility –

Exercise 11. Choose the correct items to complete the sentences. Translate the following sentences into Ukrainian:

1. production is the practice of growing and harvesting crops. (milk, crop, soil)

2. Animal husbandry is a branch of including the breeding of farm animals and their use. (agriculture, husbandry, crops)

3. Farm are highly important sources of food for man.(animals, soil, grain crops)

4. In order to obtain high yields crops are grown under favourable soil and climatic (production, conditions, sources)

5. Most of the taken by plants from the soil are thus returned. (manure, nutrients, favourable)

Exercise 12. Answer the questions.

1. What are the two branches of agriculture?
2. What is crop production?
3. What are the main farm crops?
4. What does animal husbandry include?
5. What products do farm animals produce?
6. What is manure used for?
6. How do farmers improve the physical condition of the soil?

Exercise 13. Scan the text and answer the questions after it.

MAIN SOURCES OF FOOD

There are three main sources of food for man. They are crops, livestock and fish. Of these, crops make up about 75% of the world's food production, 23% is contributed by livestock and only 2% of food comes from fish.

Many foods are obtained from farm animals. They are meat, milk and eggs. Milk is often called (называть) the nature's most important food.

Meats from farm animals are highly important as food for people. The animals most often used for this purpose are beef cattle, hogs, sheep, and poultry. Meat from mature (взрослый) sheep is known as mutton.



1. What are main sources of food for man?
2. What foodstuffs do people obtain from farm animals?

After-reading Activity
Activity 1.

Activity 2. Project

work.

UNIT 3. FARMING IN UKRAINE AND OTHER COUNTRIES

Exercise 1. Fill in the gaps in the text below with one of the words given in the box and read about the agrarian sector of Ukraine.

(component, cultivation, production, raw, favourable, role, types, zones, crops, occupy, farming, zones, plots)



Ukraine has very _____(1) conditions for the development of agricultural _____(2): fertile soils, temperately warm climate, a well-developed industry processing agricultural _____(3) materials.

All the principal areas of plant cultivation are grain and industrial _____(4), meadow crops, fruit and vegetable raising. Almost half of the cropping area is occupied by cereals such as winter wheat, maize and legume, rye, oats, barley. The principal grain crop, winter wheat, is sown mainly in the Steppe and Forest-Steppe zones. Maize is grown mostly in Transcarpathia and Steppe _____(5). Buckwheat, millet, rice play an important _____(6).

Among the industrial crops such as sugar beet, sunflower, flax, the leading position is occupied by sugar beet.

Close to 40 _____(7) of vegetable crops, are growing in Ukraine: cabbage, tomatoes, cucumbers, red beet, carrot, onion, garlic, etc. Melon growing is practiced mainly in the south. Potatoes _____(8) 6% of total area under cultivation.

Animal husbandry is the second largest _____(9) of agriculture. Like plant _____(10), livestock production is divided into branches. The most widespread branch is cattle breeding. Pig raising is another important area. Sheep _____(11) is also practiced. The poultry is spread in all the provinces. Birds farmed include chickens, ducks, geese, turkeys. There are large mechanize poultry factories to produce eggs and meat. Fish farming is growing

in importance, with carp being the common fish. Trout, which is to be found in the mountain rivers, is of commercial interest. Bee keeping is spread through all _____(12). It is extensively practiced on private _____(13). Fur animals being farmed include the silver and blue fox, mink and nutria.

Exercise 2. Match the following words in the left-hand column with their definitions in the right-hand column.

A:

1.poultry	a)a farm animal reared for wool and meat;
2.breed	b)the meat of an animal of the cow family;
3.calf	c)domesticated birds used for food or egg production;
4.beef	d)animals raised on a farm;
5.sheep	e)the young of cattle;
6.livestock	f)the classification of a type of animal;

B:

1.hybrid	a)a type of crop which is planted in the fall (autumn);
2.crop rotation	b) temporary grassland;
3.straw	c)organic material used as fertilizer;
4.lea	d)growing various crops at different times on the same land in a planned series;
5.winter crop	e)a plant that results from the crossing of different varieties;
6.dung	f)a variety, especially obtained by cross fertilizing (перехресне запліднення)

Exercise 3. Find the main word in each line:

1. corn, cereal, barley, oats, rye
2. root crops, sugar beet, carrot, turnip
3. cucumber, tomatoes, vegetables, red beet, cabbage
4. sheep, pigs, livestock, cows
5. wheat, barley, crops, potato

Exercise 4. Answer the questions:

1. What are the conditions for the development of Ukrainian agriculture?
2. What are its principal areas of plant cultivation?

3. Where is winter wheat sown?
4. Which crop occupies the leading position among the industrial crops?
5. What vegetables do they grow in Ukraine?
6. What area under cultivation is occupied by potatoes?
7. How is livestock production divided?
8. What is the most widespread branch of animal breeding?
9. What birds are farmed in Ukraine?
10. How is agricultural production organized in Ukraine?
11. What is per capita land supply in our country?
12. How many hectares of lands are watered and dried in Ukraine?

Exercise 5. Seven sentences have been removed from the article below. Put them in the right places and read about the farming in Ukraine and English-speaking countries.

AGRICULTURE IN UKRAINE AND ENGLISH-SPEAKING COUNTRIES

Owing partly to rich soil and a favourable climate, Ukraine's crop production is highly developed. Its grain and potato output almost rivals that of France, and our country is the world's largest producer of sugar beets. _____(1).

The chernozem (black) soils of the forest-steppe zone are among the world's more productive farmlands and are exceptionally good for wheat and sugar beet. Besides wheat, Ukraine produced such grains as barley (mostly for animal feed), buckwheat and rice. Other crops include potatoes, vegetables, melons, berries, fruit, nuts and grapes. _____(2). Truck farming or market gardening is particularly developed on the outskirts of large cities like Kyiv, Kharkov, and others.

Cattle and pigs are raised throughout Ukraine, while chicken, geese and turkey are kept for meat and egg production. There are many large-scale broiler and egg-laying farms close to big cities. _____(3). Though the collective and state farms remain in the country, the declared intent of the Ukrainian government is to

bring about a gradual privatization of farming, but it is a difficult and costly process. The main fishing grounds are the Black Sea estuaries and the Sea of Azov, though the latter is heavily by chemical fertilizers and pesticides. _____(4).

_____(5). It employs about 2.1% of the workforce, and Britain is self-sufficient in 58% of all types of food and animal feed. Britain is a major exporter of agriculture produce, machinery and agrochemicals. _____(6). Two-thirds of agricultural land is owner-occupied. The fishing industry provides 59% of British fish supplied and employs nearly 17,000 full-time fishermen.

Agricultural, the USA is the first in the production of meat, cheese, corn, soybeans and tobacco; second in cattle, hogs, cow's milk, butter, cotton lint, oats and wheat; third in barley; and fourth in sugar. _____(7) and is second in the export of wheat.

Australia is also one of the world's largest wheat exporters and the world's largest wool producer.

A – All the main rivers are full of fish but they suffer from pollution, too.

B – Ukraine's most important industrial crop, sugar beet, is concentrated in the forest-steppe zone.

C – As for other English-speaking countries it is necessary to say that Canada is among the world's leading wheat producers.

D – Bees are kept in all parts of Ukraine for honey and wax.

E – British agriculture is famous for its efficiency and productivity

F – Ukraine's livestock sector lags behind the crop sector, but its total output is still considerably larger than those of most European countries

G – Today Britain imports about 42% of its food

Exercise 6. Scan the article and answer the following questions:

1. What is a family farm?
2. What types of farms are popular in England?
3. What tendency in agricultural development of England now?

FARMS IN ENGLAND



There are about 53,500 farms in this country. Most of the farms are small. These small farms are family farms. All the work on the farm is done by the farmer and his family.

The types of farms are different in different regions of this country. In the

East most farmers grow different farm crops. In the West climate is good for the production of farm animals. There are many farms where farmers grow some crops and breed some farm animals. These farms are known as mixed farms.

Now the work on the farms is highly mechanized. Different machines are used by the farmers. The tendency in agricultural development of the country is the disappearance of small traditional farms as they cannot compete with big industrial farms.

Exercise 7. Order the paragraphs (A - E) to build a text then read and discuss the article about mixed and intensive farming in England.

MIXED AND INTENSIVE FARMING

(A) Mixed farms vary greatly. In a typical mixed holding in south-east England you may find a herd of 30 dairy cows, 100 pigs and 500-1000 chickens. Only a part of the 200 acres or so would be permanent grassland – perhaps three or four fields. An equal number of fields may be devoted to temporary grasslands, called leas, which are also used for grazing or making hay. The rest may be growing barley, wheat, potatoes, kale or cabbage. On such a farm six or seven

men may be employed, including a cowman, a pig man, a poultry man and a tractor driver.

(B) A mixed farm in East England would be quite different. There over two-thirds of the land would be arable with only a few pigs or cattle. The crops grown in each field change from year to year. It was the Romans who first introduced into Britain a rotation of crops. Even today, with fertilizers and other chemical aids, it is still necessary to practice some forms of crop rotation.

(C) Among some farmers mixed is still popular because if bad weather ruins the farmer's harvest he has a chance to make –up his loss with the profits from his animals. Moreover, the grain and vegetables provide food for the animals while the animals provide dung for the land to grow good crops.

(D) On a mixed farm crops and livestock are both important. Several kinds of animal (such as cattle, poultry, pigs and sheep) are usually kept and various kinds of crops (such as grain, potatoes, turnip or kale) are grown.

(E) Intensive farming is practiced on some very small farms. There farms are sometimes no more than an acre or two in size and usually specialize in growing one variety of crop or rearing one kind of animal. Thus we find special pig farms, chicken farms and fruit farms. About 35 000 small farms are horticultural, producing nothing but vegetables, flowers or fruit.

1 _____ 2 _____ 3 _____ 4 _____ 5 _____

Extensive Reading

Text 1. AGRICULTURE IN DENMARK

Agriculture is the most important branch of economy in this country. It is highly developed. Big farms are predominant in Denmark. The country has very favourable climate, soils and topography for farming. These factors stimulate crop growing and animal breeding.

Most farm operations are highly mechanized, from preparation of the soil to harvesting crops and feeding animals. The use of fertilizers and other chemicals increase crop yields and animal products.

England is the main importer of Denmark farm products. Animal products make up about 80% of the total agricultural export of the country.

Text 2. CORN IN THE USA

Corn production in the USA makes up more than half of the total world production. The United States export most of the corn produced. The main importers are Western Europe and Japan. They use corn mainly for livestock feed.

Corn production is concentrated in the region named Corn Belt, where 80 % of corn is grown. The increases in yields are obtained by the development of new high-yielding hybrids, by improved cultural practices and by application of proper amount of fertilizers.

Most corn, about 85%, is used as livestock feed and only about 10% is used as food for people. Corn is also used as an industrial crop.

Text 3. CROP GROWING IN JAPAN

Most of Japan's land cannot be used for growing crops because it is mountainous. The land that can be used for crop cultivation is used intensively in order to provide people with food. The best farm land is around Yokohama and Tokyo. The climate and soil here are good for growing crops.

Rice is the most important food for the Japanese people. They grow much rice. It is grown in standing water in fields. When rice is mature (зрілий, дозрілий) the water is drained and the plants are harvested with special machines.

Another very important crop in this country is sweet potato (батат, солодка картопля). It is widely grown on the higher lands.

There are also fields of other crops such as wheat, barley and corn.

Text 4. AGRICULTURE IN NEW ZEALAND

Although fewer than 1% of New Zealand people are farmers, agricultural productions has generated most of the nation's wealth. New Zealand is the world's third largest producer and second exporter of wool and producers approximately 50% of the word's lamb and mutton exports. Sheep in New Zealand outnumber people by nearly 20 to 1.

There are also more than 8 million cattle, and the country is the world's largest and most efficient exporter of dairy products. New Zealand is also a major exporter of fresh fruit, beef, and fish. The government is funding research to make farming more efficient and adaptable to world market trends. The strategy is to grow, make, and market anything the climate will support and a world market will buy. Thus, the emphasis is on marketing food specialized markets rather than on bulk exporting.



After-reading Activity

Activity 1. Discuss the information about farming in different countries.

Activity 2. Project work. Aim: To choose a country and presentation about farming in it.

UNIT 4. CROP PRODUCTION

Exercise 1. Fill in the gaps in the text below with one of the words giving in the box and read about plants in everyday life of people.

PLANTS AND MAN

Plants are highly _____ (1) in everyday life of people. _____ (2) required little in addition to food and shelter. The man of today wants to have better and _____ (3) crops which can produce more food of good quality. He also wants to have _____ (4) materials which can be made into many useful things and _____ (5). Many animals grown by man feed on plants and produce food and raw materials used by _____ (6).

Some _____ (7) are used by man directly for food such as grain crops and vegetables. Some are grown for industry, and cotton is a typical _____ (8) crop. Some are used in medicine.

So, plants may be classified into three main _____ (9): food plants, industrial plants and medical plants.

(Primitive man, higher – yielding, raw, groups, important, products, man, plants, industrial)

Exercise 2. Match the following words in the left-hand column with their definitions in the right- hand column:

1) fertilizer	a) Plants growing where they are not wanted
2) manure	b) Materials absorbed by plants and used by them for growth and development
3) weeds	c) Inorganic material
4) nutrients	d) grain crop
5) wheat	e) Organic material

Exercise 3. Read and translate the text into Ukrainian:

PLANT, ITS PARTS AND THEIR FUNCTIONS



Plants are highly important sources of food for man and farm animals. They also supply people with clothing, shelter and many other things as well.

To obtain high yields of farm crops it is necessary to study the principal parts of the

plant and their functions.

The principal parts of a plant are the root system and the above ground portion consisting of stems, leaves, flowers and seeds.

The root performs two main functions. It absorbs plant nutrients as well as water from the soil and anchors the plant. There are two types of roots: fibrous roots and tap roots. All grain crops have fibrous roots, while tap roots are typical of legumes and root crops. Alfalfa and sugar beets are examples of crops having tap roots.

As to stems and leaves they are usually above the ground. To support leaves and to conduct water and nutrients from the roots to the leaves are the main functions of the stem. The food used by green plants is produced in the leaves through the process known as photosynthesis.

A flower is the part of the plant where seeds are produced. Thus, to produce seeds the plant must have flowers.

All parts of a plant must be developed well in order to function properly. If conditions for plant growth are not favorable the plant will be weak to develop its parts well.

Exercise 4. Answer the questions:

1. What do roots absorb from the soil?
2. Which crops have fibrous roots?
3. Have legumes fibrous roots?

4. What are the functions of the stem?
5. Where are seeds produced?
6. Why must all parts of a plant be developed well?

Exercise 5. Scan the article and say what conditions need for starting to germinate of seed.

FROM SEED TO PLANT

Seed starts to germinate only under certain conditions. The optimum temperature at which seeds germinate best varies with different kinds of seed. The optimum temperature for the germination of wheat, for instance, is about 27°C. cotton and corn germinate best at about 35°C.



Seeds of all crops need enough air for germination as oxygen is necessary for certain chemical reactions which take place in the plant food in the seed.

These reactions take place only when water is present. So, moisture is also necessary for the germination of seeds. Thus, a seed does not germinate: 1) if the temperature is not proper, 2) if there is not enough moisture and air in the soil.

Exercise 6. Read and complete the text. Fill in the parts (A – E)

PHOTOSYNTHESIS

The most important difference between plants and animals is that _____ (1). The process by which _____ (2) is known as photosynthesis.

The conditions necessary for photosynthesis are light, CO₂ (carbon dioxide), water, some essential nutrients and _____ (3). Water and nutrients required for photosynthesis come from _____

(4). So, leaves function well if the plant has a highly-developed root system.

The word "photosynthesis" consists of two parts. "Photo" which is light and "synthesis" which is building. So, photosynthesis is _____ (5).

- A – the soil through the roots
- B – plants produce their food
- C – building with light
- D – plants can produce food in the leaves.
- E – proper temperature

Exercise 7. Order the paragraphs (A - D) to build a text then read and translate it.

CLASSIFICATIONS OF FIELD CROPS

(A) According to their use field crops may be classified into many groups. The most important of them are:

(B) Crops are variously grouped and classified. They may be classified as cultivated crops such as potatoes and corn or non-cultivated crops such as wheat or barley.

(C) 1. Cereal and grain crops. A cereal is a grass grown for its edible grain. Wheat, corn, rye, barley, oats and rice are to be mentioned as the most important grain crops.

2. Legumes for seed. The principal legumes grown for seed are field peas, field beans and soybeans. Sometimes the aim of growing them is to improve soil fertility because they are able to fix atmospheric nitrogen through the bacteria living on their roots.

3. Forage crops. There are the crops used as feed for farm animals in the form of pasture, hay or silage. Most of them are perennials.

4. Root crops. Unlike cereals root crops are grown because of the food value of their roots. There are many root crops grown by man. They are sugar beets, carrots, radishes and others. They are biennials.

5. Tuber crops. The most important tuber crop cultivated throughout the world is potatoes. Like root crops they are biennials but people grow them as annuals.

(D) Crops may also be grouped according to the duration of their growth. Annual crops complete their life cycle in one growing season. Biennials require two seasons to produce seed. Perennials grow for more than two seasons, producing seed each year.

1 _____ 2 _____ 3 _____ 4 _____

Exercise 8. Find the sentences where the verb to be is used as a model verb. Translate the sentences into Ukrainian:

1. Our task is to classify crops according to their use.
2. We are to grow carrots for two years to obtain seed.
3. His aim is to use the pasture grass for making hay.
4. The yield of rice is to be high this year.
5. Soil fertility is to be improved by growing legumes.

Exercise 9. Read and complete.

1. Some crops are grown during one season. They are
2. Crops providing grain are known as
3. Soil fertility is increased by growing.....
4. Winter feeds for cattle are hay and.....
5. In summer cattle should be kept on.....
6. Forage crops grow for many seasons; they are.....

Exercise 10. Answer the questions:

1. Is wheat a cultivated crop?
2. What is a biennial crop?
3. For how many years does alfalfa grow?
4. Do perennial crops produce seed each season?
5. Why do legumes increase soil fertility?
6. What root crops do you know?
7. Is potato a biennial crop?

Exercise 11. Find the meaning of the words given in bold print in the dictionary and translate the following sentences:

1. There are some **plants** that are used only in medicine.
2. In our country there are some plants producing chemical **fertilizers**.
3. Many people go to the **country** in summer.
4. **Grain crops** are widely grown by farmers.
5. That bird has a large **crop**.

Exercise 12. Translate the following sentences paying attention to the using of modal verbs and their equivalents:

1. Different grasses are to be grown for feeding livestock.
2. Manure has to be applied for the crop.
3. The feed for young farm animals must be nutritious.
4. Favourable conditions may be provided for poultry on our farm.
5. Weeds can be controlled with special cultural practices.

Exercise 13. Scan the article and answer the questions given after it.

FACTORS AFFECTING THE DEVELOPMENT OF PLANTS

All plants require certain conditions of the environment for their best growth and development. The most important of them are water, soil, sunlight and temperature.

Man cannot regulate the amount of rainfall but he can prevent the loss of moisture from the soil by proper cultivation or by irrigation.

Proper temperature is also essential for crop production. The optimum temperature for germination and growth varies with different kinds of crops. Grain crops such as wheat and barley, for instance, grow at a lower temperature than cotton or corn. Many crops are more adapted to the temperate conditions than to colder or warmer environment.

Without sunlight many important processes in plants do not take place. One of them is photosynthesis by which plants produce food from inorganic materials.

Besides water the soil in which crops are grown is to be provided with air and all the necessary nutrients. The most important plant nutrients are nitrogen, phosphorus and potassium. There are at least 14 elements that are essential for proper plant growth. Farmers have to apply the nutrients taken by growing crops from the soil.

In order to produce highest yields crops should not only be provided with enough water, proper soil and necessary nutrients but they should be well adapted to both soil and climatic conditions.



1. What factors of the environment are most important for plants?

2. Can man regulate the amount of moisture in the soil?

3. How can man regulate soil moisture?

4. What crops require higher temperature for growth

than corn?

5. Why is sunlight important for plants?

6. What are the most important nutrients for plants?

7. How many elements are essential for plant development?

Exercise 14. Five sentences have been removed from the article below. Put them in the right places and read about grain crops (A – E)

CEREAL OR GRAIN CROPS

Cereals are those members of the grass family which produce edible seed. _____ (1). The cereals grown in the temperature zone are known as small grains. They are wheat, barley, rye and oats. _____ (2). Corn and rice are warm season crops. They are to be seeded in spring or early summer and mature in the fall.

Of the cereals raised wheat, rice and corn are the world's three most important grain crops. Although rice is the main food of more people, wheat is the first in importance as to the area sown and the total annual production. There are some reasons why cereals are considered to be the man's leading food source. _____ (3). In addition, they are adapted well to different soil and climatic conditions. Cultural practices required in growing grain crops are quite similar. _____ (4). All these operations are known to be highly mechanized.

For cereals to grow well they are to be grown on moderately fine and mellow seedbed supplied with enough moisture. _____ (5).

A – They may be spring or winter annuals.

B – Though cereals do not supply much protein and vitamins, they are believed to remain a major source of food for people.

C – Wheat, barley, rye, oats, corn and rice are known to be most common and most valuable cereals.

D – They produce food in a relatively short period of time, for they are annuals.

E – Grain is easily drilled, harvested, cleaned and stored.

Exercise 15. Read and discuss the article.

CULTURAL PRACTICES

Before planting a grower has to perform some tillage operations that insure proper environment for germination. The first tillage operation is plowing. It may be done either in the fall or in spring, depending on the crop and the region. Harrowing and rolling are the operations that are known to insure a level and firm seedbed.

Nowadays the traditional tillage practices are increasingly replaced by minimum tillage. Under minimum tillage the number of operations is reduced. Farm machines can prepare the soil, apply fertilizers, and plant the seed in one operation. Main advantages of this method are lower soil compaction and lower labour and energy costs.

Planting the seed is usually done when the soil and the air are warm enough. For cereals to germinate well two factors must be controlled during planting: depth and rate. Everybody knows the depth of planting the seed to depend largely on the type of the soil and the size of the seed. The coarse seeds of corn and peas are to be planted much deeper than fine seeds of clover or alfalfa. The establishment of high-quality stand is also favoured by a proper seeding rate. Too thick or too thin sowing lowers grain production.

Harvesting is the last cultural practice. Mechanical harvesting helps farmers obtain highest yields of good quality.

Exercise 16. Answer the questions:

1. What is the first tillage operation?
2. What other tillage operations are necessary before planting?
What is minimum tillage?
3. What are the advantages of minimum tillage?

4. What factors are important during planting?
5. What is the last cultural practice?

Extensive Reading.

Text 1. LAND AND SOIL

It is known that the rate of natural soil-formation process is very slow. The formation of a soil layer 2 centimeters deep requires a hundred years. If land is not preserved, the fertile layer of soil is destroyed.



The famous Russian agronomist V. Dokuchayev estimated that the loss of one millimeter of the fertile layer of soil results in the loss of 76 kg of nitrogen, 24 kg of phosphorus and 800 kg of potassium per hectare. It was estimated that the cultivation of one metric ton of grain requires about 33 kg of nitrogen, 13 kg of phosphorus and 800 kg of potassium per hectare.

It is known that in Ukraine land is public property. It is under the protection of the law. This is the law on the use of land, its preservation, improvement and reproduction.

Text 2. WHEAT

Wheat is widely cultivated throughout the world. It is one of the most valuable crop plants. The countries leading in wheat production are the United States, China, Canada, India, Ukraine, France and Italy.

Wheat is known to be adapted to different soil and climatic conditions. Only rye, barley, potatoes and some other crops are grown under colder conditions than wheat.

The wheat plant is an annual. There are spring wheat varieties sown early in spring and harvested in the late summer. There are also winter wheat varieties sown in the fall and maturing early the following summer.

Wheat grows best when it is sown in a well-prepared, fine and mellow seedbed. Sufficient moisture should be present for wheat seed to germinate quickly and for young plants to grow well.

Most of the wheat grown is sown with a drill. The rate and depth of sowing are more accurate and uniform with this method of sowing and less seed is required.

To obtain more and higher-quality grain and to reduce labour costs farmers harvest wheat with combines. Wheat is considered to be ready for combine harvesting when moisture content of the grain is 14% or less.



Text 3. POTATOES



Potato is a highly important food crop. In addition it is used as livestock feed and as an industrial crop. Now it is grown in most countries of the world.

Good yields are obtained where growing season temperature is between 16 to 21°C and where the rainfall is 12 to 18 inches (дюйм=2.5 см) per year. So, commercial production is largely limited to the areas where the climate is cool and moist. Potatoes are known to produce better yields when they are grown

after alfalfa and are planted in the same field only once (один раз) in six or seven years.

Text 4. BEETS

Beet crop is one of the most widely grown root crops. There are two main kinds of beets, sugar beets and table beets. Both of them are best adapted to growing in the temperate climate.

Table beets are used by people for food when roots are young. At this time they are rich in protein and minerals.



Sugar beet is an industrial crop. It is high in sugar, up to 20 per cent. There are some factors which favour the accumulation of sugar in the roots. They are soil fertility, enough moisture, and low temperature. Most of the sugar beets are grown in Europe including Ukraine.

Text 5. ALFALFA

Alfalfa is a perennial plant. It may grow for many years producing nutritious forage for farm animals and increasing nitrogen in the soil.

Alfalfa is used in many different ways. About 80 per cent of the crop is made into hay. Alfalfa hay is high in protein and is a good winter feed for different classes of cattle. Alfalfa is also used for pasture but it should not be used for this purpose alone as it may cause disease in cattle. To obtain good pasture alfalfa is to be grown with grasses. In addition alfalfa is a good crop for making silage.

After-reading Activity

Activity 1.

Activity 2. Project work.

UNIT 5. ANIMAL HUSBANDRY

Exercise 1. Fill in the gaps in the text below with one of the words given in the box and read about farm animals.

(breeding, sources, husbandry, products, animals, cattle, raw, milk,

machinery, purposes, food, farm, supplying, cycle, fattened, meat)

Animal _____ (1), a branch of agricultural production, includes the _____ (2) of farm animals and their use. Farm animals are highly important _____ (3) of food for man. They are known to produce highly nutritious _____ (4) such as milk, meat and eggs. In addition, the skin of _____ (5), down and feather of poultry and wool of sheep are used as _____ (6) materials to produce clothing and for many other purposes.

The most important group of farm animals is _____ (7). There are four types of cattle. They are dairy cattle, beef cattle, draft cattle and dual-purpose cattle. Dairy cattle, that is, dairy cows provide _____ (8) that may be used in making various dairy products. Beef cattle are the producer of _____ (9). One can raise dual-purpose cattle producing both milk and meat. Draft cattle and horses are almost everywhere replaced by agricultural _____ (10).

Important sources in producing human _____ (11) are sheep and hogs. Sheep are raised for two _____ (12): wool and mutton production. The production _____ (13) of hogs is much shorter than that of cattle or sheep. In other words, unlike the other _____ (14) animals hogs are rapid growing ones. They may be _____ (15) in less than six months. That is why hog breeding is one of the most important and economic ways of solving the problem of _____ (16) the population with meat.

Exercise 2. Answer the questions.



1. Why are farm animals so important for man?

2. What raw materials do farm animals supply industry with?

3. What are the four types of cattle?

4. What are sheep rise for?

5. Why is hog breeding the most economical way of producing meat?

Exercise 3. Four sentences have been removed from the article below. Put them in the right places and read about livestock breeding.

Much is to be done to enlarge the fodder resources for livestock breeding. _____(1). It is planned to increase the output of mixed feeds, which are of special interest for animal breeders.

For the production of feeds provision is made for the large – scale use of improved lands and for enlarging the area sown to protein-rich crops. _____(2). Another major orientation in the promotion of livestock breeding is its transfer to a new technical base and the introduction of industrial technology for the output of livestock breeding products at new enterprises and at existing livestock breeding farms through their reconstruction

. _____ (3)

The livestock productivity has sharply fallen lately resulting in decrease of the average annual milking per cow, the average weight per one cattle head to the state procurement system, the average weight per one pig and the average annual egg production per one poultry head.

_____ (4)

A – Moreover, attention must be paid to enhancing the productivity of natural hayfields, which can be doubled or even trebled with relatively small outlays.

B – The aim of our agrarian policy is to turn livestock breeding into a highly efficient and highly productive branch of the national economy and to make considerable headway in further reducing the difference between the conditions of life in town and countryside.

C – Livestock production in Ukraine has a meat and dairy orientation of which the main subdirectories are cattle and pig raising.

D – Feeds are very important for effective development of the branch.

Exercise 4. Answer the questions.

1. What is planned to increase?
2. What provision is made for the production of feeds?
3. What kinds of lands will be used for the production of feeds?
4. How will the productivity of natural hayfields enhance?
5. What is another major orientation in the promotion of livestock breeding?
6. What is the aim of our agrarian policy?
7. What must be reduced as far as town and countryside are concerned?

Exercise 5. Fill in the gaps with necessary words and translate the following sentences.

1. We must enlarge the _____ resources for livestock breeding.
2. The output of mixed _____ will be increased in future.
3. Farmers pay attention to enhancing the productivity of natural _____.
4. Provision is made for using _____ crops for the production of feeds.
5. Relatively small _____ are needed to enhance the productivity of natural hayfields.

Exercise 6. Translate the following sentences from Ukrainian into English.

1. Тваринництво буде високопродуктивною галуззю сільського господарства.
2. Нові підприємства та реконструйовані тваринницькі ферми збільшать виробництво тваринницької продукції.
3. Багаті на білки культури є цінним кормом для тваринництва.
4. Виробництво змішаних кормів буде збільшено.

Exercise 7. Order the paragraphs (A – C) to build the text then discuss the information from it using the questions below

CARE AND MANAGEMENT OF FARM MAMMALS

(A) At present separate buildings are usually provided for each kind of livestock such as cattle, hogs, sheep, and poultry. Cowsheds, sheep-pens, pigsties and poultry houses should be comfortable for livestock and workers who take care of the animals. Much attention isn't paid to lighting, ventilation, temperature, and humidity in animal buildings. Very often farmers keep bulls in separate barns.

(B) Probably no farm animal is more responsive to good care than is the dairy cow. Regularity in feeding and milking and kindness result in more milk and greater profits. Dairy cows are to be provided with plenty of bedding, such as clean, dry straw in the barns where they are kept. When not on pasture cows should take exercise to be in stood breeding condition.

(C) A lot of work has to be done by a farmer in caring for his livestock and their products. Barns and other buildings are to be provided in order to protect the animals from unfavourable weather conditions. Young animals - lambs, calves and pigs are known to require special care and protection. During the first days after birth animals are weak and may die if proper care is not provided.

1 _____ 2 _____ 3 _____

1. Should farmers care for animal products?
2. Why are animals kept in buildings?
3. Why do farmers provide special care for young animals?
4. What farm buildings do you know?
5. What conditions are provided in animal buildings?
6. When should cows take much exercise?

Exercise 8. Read and complete the text with the missing parts (A - E).

FEEDS FOR LIVESTOCK

Feeds are classified into three groups, _____ (1). They are roughages, concentrates and protein supplements.

The primary characteristic of roughage is its high fiber content. Roughages may contain from 25 to 40 per cent fiber. For this reason they are not suitable for hogs but one can give large quantities of roughages to cattle and sheep.

Roughages may be classified according to ____ (2). They may be succulent or dry. Succulent roughages include silage or pasture grasses, the latter being the most economical source of forage.

____ (3) are hay and straw. Good hay is the one that contains much green leaf. Hay being made from grass in the early flowering stage, its feeding value is higher than that from mature grass.

Oats straw is known to be a valuable feed for beef cattle and low-yielding dairy cows. Barley straw is sometimes fed ____ (4). It is more digestible than wheat straw. The latter is high in indigestible fiber. That is why it is used for bedding.

Concentrates being high in energy, all classes of farm animals are fed with such feeds. The main concentrated feeds are different kinds of cereals.

Feed containing protein of about 20 per cent or higher is known as a protein feed. Animals require from 10 to 20 per cent protein in their ration, ____ (5).

All these feeds supply farm animals with enough protein, carbohydrates and fats.

- A** – The most common forms of dry roughage
- B** – depending on their fiber content and nutritive value
- C** – depending on their age and productivity
- D** – the method they are fed
- E** – to beef animals

Exercise 9. Answer the questions.

1. What is the basis of feed classification?
2. What kinds of feeds are there?
3. Which feed is high in fiber?
4. Are roughages good for hogs?
5. How are roughages classified?
6. Why is wheat straw used for bedding?
7. What does the amount of protein in the ration depend on?

Exercise 10. Scan the article and say how livestock can be improved.

The most important task of livestock breeders is to improve their herds and flocks according to the purposes for which the animals are to be kept. Thus, dairy farmers want to have high milk yields per cow. Beef cattle raisers would like to produce calves that gain in weight rapidly and economically. A high average egg production per hen is one of the tasks of the poultry farmers. Hog and sheep producers have other aims such as to obtain more pigs per litter per sow and to have a higher lamb production per ewe.

To reach these aims farmers should first of all select animals capable of high production. Best animals should be selected regardless of the breed.

It is highly important for the livestock breeders to use proper methods for improving their herds and flocks. One method used by the breeders is to have purebred sires and purebred dams. They will transmit best characteristics to their offspring. This system is known as pure breeding.

Some breeders use inbreeding, some — crossbreeding, the latter system being widely practiced now with different kinds of farm animals, including hogs, beef and dairy cattle and meat types of chickens.

To obtain good results from the methods mentioned above the farmers should use only good parents capable of transmitting high production to their offspring.

Exercise 11. Complete the sentences with the missing words.

(litters, gain in weight, yield, herds, flocks, pure breeding, crossbreeding, offspring)

1. Dairy cows should be fed with proper feeds in order to produce high milk _____
2. Calves provided with good pasture _____ well.
3. Sows are known to produce two _____ per year.
4. The improvement of _____ and _____ are important to obtain more and higher-quality products.

5. There are many systems of breeding livestock _____ and _____ being most common.

6. To obtain high-quality _____ only purebred parents should be used.

Exercise 12. Answer the questions.

1. What is the task of dairy farmers?
2. What calves do beef cattle raisers want to have?
3. What animals should farmers select to improve their herds and flocks?
4. What methods of improving animals are mentioned in the text?

Extensive Reading

Text 1. MODERN COW

If you want to be successful in dairy cattle breeding you must know each cow intimately: how much milk she gives, when she is going to have her next calf, and whether she is bossy or obedient. You are to manage your herd to get the most of milk you can while keeping your cows healthy.



Cows are milked twice a day with an electric milker that produces that produces suction just like a vacuum cleaner. The milk never touches the air in the barn-it is drawn through glass piper into a

large refrigerated tank in the milk house.

A farmers needs to know when a cow will give birth because that affects milk production. A cow produces the most of the milk

about four months after giving birth. Then she produces less and less until the milk stops six weeks or so before her next calf is born. A cow can live to be ten years old and may have seven or eight calves in her lifetime.

Besides sanitary surroundings, it takes good, clean feed to make good, clean milk. You may raise corn and alfalfa hay for your herd to eat. But clean, healthful crop won't do your cows much good if they don't eat in the proper amounts. Cows that give lots of milk need additional high-protein grain, such as corn and soybean meal. You should test the cows' feed to be sure it contains the right nutrients. If doesn't, more vitamins and minerals are added.

Some farmers use computers to help them work more efficiently. In such cases each cow wears an electronic device called transponder on a chain around her neck. You program into the computer how much pounds of grain each cow needs. In the feeding stall, an identifier (also controlled by the computer) can tell from the transponder which cow is approaching the feeder. Then it releases the exact amount of grain that cow is supposed to have. Once a day the computer gives you how much feed each cow ate. This is important to know because if a cow is getting sick, she doesn't much. Then you sure she gets the treatment she needs.

Text 2. FEEDING DAIRY COWS

In preparing rations for milking cows many factors should be considered. Rations are to provide carbohydrates in a readily available form, have proper amount of good quality protein, provide sufficient fat and mineral substances and contain the necessary vitamins. To obtain much milk is the aim of every cattleman. That is why the farmers are to supply their cows with nutritious feeds.

Cows being on good pastures in summer, little or no additional feed are required. If pastures are of low quality, additional roughages and some grain should be fed to most cows.

During winter legume hay is known to be good roughage for dairy cows. Many dairy farmers provide corn silage or grass silage in addition to hay. High-yielding cows need some concentrated feeds to produce much milk. One can include high-protein feed in the grain

mixture for such cows. Roughages of low quality being fed, the proportion of high-protein feed should be increased.

A dairy cow is known to require much water, for milk is about 87 per cent water. Three to four gallons of water are required for each gallon of milk produced by a cow.

Thus, cows being fed properly, all the necessary nutrients will be provided: carbohydrates and fats from grains, proteins from legume hay or protein supplements, minerals from good pasture, and vitamins from a good mixture of feeds.

Text 3. DAIRY FARMING



Dairy farming is one of the most important branches of animal husbandry. One reason for the importance of dairying is high nutritive value of milk and dairy products.

Milk is one of the best sources of calcium, the mineral which is highly important for the growth of skeleton of people and animals. High-quality milk also contains a large amount of phosphorus and iron. Milk is also a good source of vitamins A, D, and B. Different dairy products are obtained by man from milk.

To have high-quality milk farmers should not only feed their cows properly both in spring and in winter but they should care for the milk properly. Two factors should be controlled when keeping milk: 1) milk should be kept clean and 2) it should be kept cool.

Text 4. FATTENING CATTLE

The fattening of cattle is a common practice on farms where beef cattle are bred and corn is raised.

The length of the fattening period may vary from two to twelve months, depending on the age and condition of the animals. The cattle that are more than two years old may be fattened in four or eight months. Some farmers fatten calves in nine months or longer.

Cattle should not be given too much grain at the beginning of the fattening period. Late in summer when grass is poor it is recommended to provide cattle with some legume hay or protein concentrate.

A mineral supplement should be provided if cattle are fed with crops grown on the soil deficient in calcium, phosphorus or other necessary minerals.

Animals should have water and salt all the time.

Text 5. LIVESTOCK REARING

There are many different breeds of beef cattle. For its size, the Aberdeen Angus produces the greatest amount of meat. It is reared in the north-east of Scotland. Like the Galloway, which comes from the southern uplands of Scotland, it is a polled animal that is one without horns. Another important breed is the white-faced Hereford, bred on hill farms along the Welsh border. In the last ten years many new breeds of cattle have been introduced into British farms.

Most dairy farms are found in Lancashire, West Yorkshire, South-west Scotland, but the dairy herd is also kept on many mixed farms in other parts of the country. The largest quantity of milk is given by the Friesians, but their milk contains the least amount of butter-fat, from which butter is made. The creamiest milk comes from the smaller, Channel Island cows, the Jersey and the Guernsey.

Some cows live for twelve or thirteen years and have as many as ten calves, but most live less than half that time and produce only two or three calves. Heifers are young cows which have not yet produced milk. A heifer starts to give milk as it has its first calf at the age of eighteen to twenty months, and it will go on doing so for nine or ten months. The heifer is called a cow only when it has its second calf. After the second calf is born, the mother will give milk for another nine months.

Although there are more than a dozen different breeds of pigs, the two most popular in this country are the Landrace and the Large White. In 1967 a new British breed, the Saddlebacks, was bred.

Sheep still play a most important part in British farming, and there is a large quantity of sheep in Britain. Sheep farms are the largest in the country.

After-reading activity

Project work: “Livestock production in Ukraine”



UNIT 6. MECHANIZATION OF AGRICULTURE

Exercise 1. Read and translate the text:

MACHINES IN MODERN AGRICULTURE



In modern agriculture machines are used to reduce the hours of labour required to produce agricultural products. Machines have been developed that they operate.

Agricultural producers use tractors to operate the equipment that is used to till, plant, fertilize and harvest crops. Modern tractors range in size from 10 to 15 horsepower (7,5 to 11 kilowatts) to over 400 hp. (over 300 kw). Grain combines with headers up to 30 feet (9, 1 meter) in width are used to harvest grain and seed crops. Hay and other forage crops can be harvested and stored with modern equipment without any manual handling. Cotton, peanuts, fruit, vegetables and nut crops are harvested by specialize harvesting equipment.

There is a great demand for persons to manufacture and service the machines used in agricultural production. It includes the equipment and tractor companies, the farm repair and maintenance shops, the research and development centers and all others services that are necessary to support production agriculture needs for machines and equipment.

Exercise 2. Complete the following sentences with necessary words:

1. Agricultural producers use tractors to operate the equipment that is used to , , and ... crops. (fertilize, harvest, plant, till, make, grow)

2. Modern tractors range in size from to horsepower to over 400 hp. (15, 10, 12, 30)

3. Cotton, peanuts, fruit, vegetables and nut crops are harvested by specialize harvesting (car, machines, equipment)

4. Hay and other can be harvested and stored with modern equipment without any manual handling. (labium required, forage crops, modern tractors)

Exercise 3. Decide whether the following statements are true (T) or false (F):

1. Cotton, peanuts, fruit, vegetables and nut crops are harvested by specialize harvesting tractors.

2. There is a great demand for persons to manufacture and service the machines used in agricultural production.

3. Agricultural people use tractors to operate the equipment that is used to till, plant, fertilize and harvest crops.

4. There is a great demand for persons to manufacture and service the machines used in agricultural production.

5. Hay and other forage crops can be harvested and stored only with manual handing.

Exercise 4. Answer the following questions:

1. What has the development of the machines brought on farmers and agricultural workers?

2. What do agricultural producers use to operate the equipment?

3. Is there a great demand for persons to manufacture and service the machines used in agricultural production?

Exercise 5. Order the paragraphs (A - F) to build a text then read and translate it.

IMPORTANCE OF MACHINERY AND ENERGY IN AGRICULTURE

(A) Many machines are known to be powered by tractors. Implements such as plows, cultivators and planters may be mounted on a tractor or they may be pulled by a tractor.

(B) Machines that do not require mobility are usually powered with electric motors. Such machines include silage unloads, livestock feeding equipment and milking machines.

(C) More and more machines are used on farms today replacing hand labour and increasing labour productivity. With machines and power available farmers not only can do more work and do it more economically, but they can do higher-quality work and the work may be finished in a shorter and more favourable time.

(D) Farm machines we use today are quite different from those the farmers used two or even one decade ago. The tractors, tractor-drawn planters and drills were smaller and less productive. They could plant less acres per day than the machines do now.

(E) Machines that are used for crop production include those that till the soil, plant the crops, perform various cultural practices during the growing season and harvest the crops.

(F) However, an increasing number of farm machines are now self-propelled. These machines are grain combine harvesters, cotton pickers, forage harvesters, and many other specialized farm machines.

1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____

Exercise 6. Match the words with their Ukrainian equivalents

a) combine harvester	1) посадочна машина, комбайн, саджалка
b) planter	2) зернозбиральний комбайн
c) power	3) машина для збирання бавовни
d) cotton picker	4) енергія, приводить в рух
e) cultivator	5) рядкова сіялка
f) drill	6) культиватор
g) equipment	7) тягнути
h) pull	8) обладнання
i) hand labour	9) розвантажувальна машина для силосу
j) self-propelled	10) знаряддя
k) implement	11) самохідний
l) silage unloaded	12) ручна праця

m) till	13) на тракторній тязі
n) milking machine	14) доїльний апарат
o) tractor-drawn	15) обробляти ґрунт
p) mount	16) навішувати

Exercise 7. Match the beginnings and the end of the sentences.

1. Plows and various cultivators are used	a. are not powered by tractors.
2. Self-propelled machines are those that	b. with tractor-drawn drills.
3. Silage unloaded and milking machines are powered	c. to till the soil.
4. Cereals are planted	d. with electricity.

Exercise 8. Answer the following questions:

1. Do machines make labour more productive?
2. Can machines do work in a shorter time?
3. What machines are mounted on a tractor?
4. What self-propelled machines do you know?
5. Are milking machines powered with electricity?
6. What do modern machines differ in?

Exercise 9. Fill in the gaps in the text below with one of the words given in the box and read about *TILLAGE AND TILLAGE IMPLEMENTS*.

(Primary tillage, tractor-drawn, devices, plows, weed growth, lifting mechanism, tractor-mounted plow, ground, hydraulic controls, harrowing, physical condition of soil, two levers)

Tillage is used to prepare _____(1) for seeding or planting, to retard _____(2) and to improve the physical condition of soil. Tillage includes various operations: plowing (primary tillage), harrowing (secondary tillage), deep tillage, cultivation fertilizing, etc.

_____(3) or plowing may be done by various kinds of plows, such as two-way plows, disc plows, rotary plows, etc. The plows may be both tractor-mounted and _____(4).

Tractor-drawn plows are attached to the tractor by an adjustable hitch which permits horizontal adjustment of the plow and prevents “nosing” of plow points. The hitch incorporates a spring release or some other _____(5) which disconnects the plow when it strikes an obstacle. In some _____(6) each bottom is held in working position by a heavy spring which permits the bottom to raise and pass over the obstacle.

Tractor-drawn plows are provided with a _____(7) which raises them from or lowers them to their working position. The lifting mechanism which raises them from or lowers them to their working position. The lifting mechanism may be either mechanical or hydraulic. There are also two levers – one for regulating the depth of plowing, the leveling the plow.

A _____(8) is a compact unit of high maneuverability which is adjusted by means of hydraulic controls. Due to _____(9) the tractor operator can quickly connect and disconnect the implements without leaving the cabin. Tractor-mounted plows like tractor-drawn plows have _____(10) – one is used for regulating the depth, the other – for leveling the plow.

Secondary tillage, or _____(11), is done to refine the ground after plowing. Depending on the _____(12) and other factors various kinds of harrows must be used, such as disc harrow, spike-tooth harrow, spring-tooth harrow, etc.

It goes without saying that all types of harrows, like plows, are either tractor-mounted or tractor-drawn.

There are other implements intended for retarding weed growth, such as row-crop cultivators, field cultivators, field cultivators, spring-tooth welders, etc.

Exercise 10. Read and translate the text. Fill in the parts (A - H).

MECHANIZATION IN CROP PRODUCTION

Tillage practices vary with soil and climatic conditions and _____(1). Tillage includes plowing, harrowing and rolling the soil. There are some purposes of tilling the soil. They are to improve the aeration _____(2), to produce a firm soil and to control weeds. Different types of plows, harrows and rollers are _____(3)

Seed should be sown in a firm, moist soil and covered at a proper depth to germinate rapidly and uniformly. Many various types of _____(4) have been developed to suit varying farm requirements. Some modern drills are equipped with attachments for seeding legume and grass seed and for spreading fertilizers. So, seed can be sown and _____(5). Fertilizers can also be broadcast before planting. Recently attachments have been added to planters for applying insecticides and herbicides to the soil.

Harvesting crops is the _____(6). Combines that harvest and thresh small grains and some other crops have displaced most threshing machines or threshers. For harvesting to be successful, one should grow a variety that is adapted to _____(7). The plants should be of uniform height and should mature uniformly. Root crops and potatoes are _____(8)

A – now available to till the soil.

B – fertilizer spread in one operation

C – final field operation

D – the crop that is to be grown.

E – mechanical harvesting

F – and temperature conditions

G – harvested with root lifters and potato diggers respectively.

H – grain drills and planters

Exercise 11. Put the words in the correct order to make sentences.

1. tillage practices; by applying; proper; can be; improved; soils.
2. a fine soil; are used; harrows; to produce.
3. seed; in; a moist soil; rapidly; germinates.
4. in one operation; harvest; thresh; and; combines.

Exercise 12. Answer the following questions:

1. What operations does tillage include?
2. What machines are used in tilling the soil?
3. What are some drills equipped with?
4. What is the final field operation?
5. What machines are used in root crop and potato harvesting?

Exercise 13. Read and discuss the article.

MECHANIZATION IN LIVESTOCK RAISING

Further increase in animal productivity is achieved both by the introduction of new machinery and by wider electrification and automation of different processes on livestock farms.

Some kinds of livestock equipment are almost completely automatic, thus eliminating most of the hand labour. Many farms are using now automatic waterers which provide water to livestock at all times. At the press of the button silage unloaders remove silage from the silo and drop it into the conveyer that carries the silage to the feed troughs. The feeding of grain and hay to dairy cattle has also been almost completely mechanized on some farms. On most farms manure is collected and transported automatically.

Different machines are now being used which permit a better digestion of various feeds by livestock. For instance, grain grinders, feed mixers, forage cutters increase the feeding value of grain, roughages and other feeds.

Milk pipelines connected to milking machines carry the milk to milk tanks where it is automatically cooled to the proper temperature.

In some poultry houses time clock devices are installed so that chickens can be fed automatically at the desired time of the day. On many poultry farms eggs are cleaned, graded and packed primarily by automation.



Exercise 14. Answer the questions:

1. How is higher productivity achieved?
2. Does mechanization eliminate hand labour?
3. What do silage unloaders do?
4. Is manure collected automatically?
5. What machines increase the feeding value of feeds?
6. What processes are mechanized in poultry breeding?

Extensive Reading**Text 1. IMPROVEMENTS IN FARM MACHINES**

Improvements in farm machines are continually being made to increase their efficiency and to reduce hand labour. These changes are coming so rapidly that new developments may become common practice in a short time.

The main type of improvement, now seen on many farms, is the combining of various operations in one machine. This has been done in the combine for harvesting and threshing wheat and other grains and in the grain drill that in one trip over the field does the work of preparing the seedbed, planting seed and applying fertilizers.

Text 2. HARVESTING MACHINERY

Harvesting is the final stage in agricultural production. Therefore particular attention is devoted to mechanizing harvesting operations. There are many kinds of harvesting machinery- grain harvesters, forage harvesters, cotton, corn, potato harvesters, haymaking machines, hillside combines, etc.

As grain harvesting is the most important among other farming processes, let's first consider grain harvesters or combines. The combine is a machine that harvests, threshes and cleans the grain, as it moves along the field. Combines may be both power-driven and self-propelled.

On self-propelled models the cut grain is gathered by a large auger behind the cutter bar, from which a conveyer carries the grain to the threshing cylinder. There is a means for regulating the speed of the threshing cylinder to suit the various crops to be

harvested. Self-propelled machines are also equipped with means for fine adjustment of the travel speed to suit field and crop conditions.

The minimum cutting height of the knife on both models is 50 mm. Depending on the crop condition, the combine speed is automatically controlled, thus ensuring continuous feed of the crop. The feed drive is also independently controlled from the cab.

Text 3. MODERN TRACTORS

Modern farm tractor can do various jobs very effectively.



Modern farm tractor can: 1) pull or push machines; 2) operate implements mounted upon it by means of the three-point

linkage; 3) transmit power by means of its PTO - shaft; 4) drive machines by belt power; 5) transmit power by means of shafts; 6) supply power for different operations; 7) generate electricity.

There are various types of farm tractors: wheeled tractors and track laying tractors or crawlers, general-purpose tractors, large field tractors and garden tractors.

Most farmers use the general-purpose tractors. These tractors have hydraulics and are able to pull heavy loads at the drawbar. They also may be used for different operations, because their types can be placed closer or farther apart according to the distance between the rows that must be cultivated.

Crawlers are also necessary in agriculture; they are usually used for heavy operations such as road marking and dam building. All the crawlers have tracks which must increase the grip of the crawler on

the ground .They have low operating speeds but they can pull or push heavy loads and machines.

Most of the tractors produced have diesel engines.

Text 4. POSSIBLE IMPROVEMENTS OF TRACTORS

The tractors of today and their future development may be considered fewer than three aspects:

- information monitoring and power transfer to give low soil compaction and operating costs;
- the possibilities of versatile application and convenient implement coupling systems;
- increased driver comfort and improved protection.

To improve the economy of field production, better information on the tractor and implement operating system is required. The sensing and evaluation of information will become a helpful procedure for tractor operators.

The total weight of field machines should be as low as possible in order to reduce soil compaction and operating costs.

The most universal application of tractors will be achieved by improving front and rear implement coupling systems. The convenience of hydraulic power transfer will lead to an extended application of hydraulic and electro- hydraulic control circuits.

Driver's comfort requires further improvement for all vehicles. These improvements will be concerned mainly with reducing vibration on agricultural tractors designed for higher speeds, particularly for transport purpose. Total cab suspension systems and front axle suspension will provide increased comfort and safety. Complete solutions for replacing the driver are not expected in the near future.

After-reading Activity

Activity 1. Make up sentences about possible improvements of tractors, using next words and word-combinations:

1. Future development, three aspects, tractors of today, monitoring, power transfer.

2. To improve, field production, information, implement, operating system, is required.

3. The total weighs, field machines, as low as possible, operating costs, in order, soil compaction, to reduce.

4. Universal application, the most, will be achieved, by improving, rear implement, coupling system.

5. Driver's comfort, further improvement, requires, all vehicles, for

Activity 2. Match two parts of the sentences:

1) The most universal application of tractors	a) that is used to till, plant, fertilize and harvest crops.
2) Driver's comfort requires	b) are coming so rapidly that new developments may become common practice in a short time.
3) Improvements in farm machines are continually being made	c) as low as possible in order to reduce soil compaction and operating costs.
4) The main type of improvement, now seen on many farms,	d) better information on the tractor and implement operating system is required.
5) The tractors of today and their future development may be considered	e) under three aspects
6) To improve the economy of field production,	f) is the combining of various operations in one machine.
7) The total weight of field machines should be	g) to increase their efficiency and to reduce hand labour.
8) Improvements in farm machines	h) further improvement for all vehicles.
9) Agricultural producers use tractors to operate the equipment that	i) will be achieved by improving front and rear implement coupling systems.
10) In modern agriculture machines are used to reduce the hours of labium required	to produce agricultural products.

Activity 3. Answer the following questions:

1. What special terms from the text will you use if you speak about possible improvements of tractors? Make a list of terms:

2. Name three aspects of agricultural vehicles future development (use the text 3 «Possible improvements of tractors»):

3. What do you know about the future development of agricultural vehicles?



Activity 4. Project work. Aim: to design a poster, make a brochure or presentation about farm mechanization.

UNIT 7. MODERN PROBLEMS OF ENVIRONMENT



Exercise 1. Match the following English words with their Ukrainian equivalents:

- 1) pollution
- 2) environment
- 3) heritage
- 4) source
- 5) diversity
- 6) forestry
- 7) charity
- 8) property
- 9) waste
- 10) generation
- 11) ancestors

- 12) soil
- 13) discharge
- 14) acid rains
- 15) ozone layer
- 16) greenhouse effect
- 17) species
- 18) extinction
- 19) fertilizers

Part I

- a) предки
- b) спадщина
- c) покоління
- d) власність
- e) відходи
- f) забруднення середовища
- g) навколишнє середовище, довкілля
- h) джерело
- i) охорона лісів
- j) різноманітність
- k) добродійність

Part II

- l) зникнення
- m) види тварин
- n) шкода
- o) загроза
- p) речовини
- q) пестициди
- r) викиди
- s) ґрунт

- | | |
|----------------|---------------------|
| 20) pesticides | t) кислотні дощі |
| 21) threat | u) парниковий ефект |
| 22) substances | v) озоновий шар |
| 23) damage | w) добриша |

Exercise 2. Read and translate the text:

OUR PLANET NEEDS HELP

We live on a beautiful planet. Our planet-the Earth-is rather small and old. It is very unprotected and fragile. Our planet is unique in the Solar system. It is the only planet with life on it.

Our planet has taken care of us for thousands of years. We've got food, clothes, water, light, etc. It is very rich in natural resources. The Earth provides people with mineral resources, resources, rivers and forests. The resources demand rational use. But very often a man cannot cope with this task. As a result nature and people suffer. Such vital sources of life as air, water, minerals, fauna and flora are being wasted and destroyed. Some animal species and plants have become extinct. When this happens the Red Fish die in the lakes, rivers and seas, while trees die in the forests. Water, forests, minerals resources make people's life possible. That is why people must save it for future generation.

But look at what we've done! People have damaged to our planet for ages. They exploited its resources incorrectly. They littered its air and water; they blotted out its forests and animals. We have polluted many rivers, seas and lakes. We have thrown rubbish from our cities into the oceans. This has killed millions of fish. We have cut down thousands of trees, most of them in tropical rainforests. This has killed animals and plants, and they have disappeared forever.

We have polluted the air with our cars and factories. Now we've got serious health problems for thousands of people all over the world! More and more people fight against nuclear tests and nuclear weapons. But will they win? The Chernobyl tragedy in 1986 showed the whole world how dangerous atomic power can be.

The ecological problems are difficult to solve. People worry about the environment. Newspapers and magazines write about water pollution, air pollution and land pollution. Much of our waste, especially industry and heavy industry are very dangerous. Fish dies in the rivers and seas, forests trees die, too.

The Earth is our home. Our generation must not be egoistic. We must take care of our home. We must think of our children and grandchildren. The protection of nature has become one of the real problems of the 20th century. More and more people in all countries are raising their voices in defense of nature.

Concern about the preservation of the environment and its protection from pollution as well as concern about our limited natural resources has given rise to a powerful movement throughout the world. This movement is called environmentalism from the English word environment.

What each of us can personally do to help protect the environment? We would glad to work out the ideas together.

Exercise 3. Complete the sentences according to the text “Our planet needs help”

1. Our planet has given us
2. People have polluted
3. People have thrown
4. Water pollution has killed
5. People have cut down
6. Cutting down the trees has killed
7. People have polluted the air with
8. Now people have serious
9. More people fight against
10. Each of us has to do something to

Exercise 4. Translate the following words into Ukrainian and make up sentences with them:

Environment -
Protection –
Waste –
Pollution -
Damage –
Threat –
(to) depend –
(to) use filter –
Purifying installations –

Defense of nature -
Defense of land (fields) –

Exercise 5. Choose the necessary word and put it in the sentences:

1. Ecology is a common for all mankind. (problem, question, point, object)

2. All people actively in international cooperation on the protection of the natural habitat. (participate, take part, concern)

3. Environmental problems their relatively short history, have already been object of a number of international discussions (despite, in spite of, notwithstanding)

4. They have done a great deal of two man and they are still doing so for profit and gain (harm, hurt, damage)

5. They about mineral resources, flowing rivers, forests, meadows and fields. (have a talk, speak, say, tell)

Exercise 6. Complete the following sentences:

1. Environmental protection occupies
2. All people would raise their voice
3. What are people doing in defense
4. We must move chemical enterprises beyond
5. Industrial waste influences people's

Exercise 7. Read and discuss the article.

“Local road was washed away and damaged. The highway of national route ‘Kyiv-Chop’ was blocked because of mud sliding in the Skole district in the Lviv region. Railroad Lviv-Uzhhorod was blocked because of fall of the tree.”

“A private dwelling house was destroyed because of sliding in the Ivano-Frankivsk region. The master of the house, born in 1965, died. 963 houses were under flooded by flood water.”

“On July, 24 in the evening 27-year-old resident of the Vyzhnytsya district died in the basement that that was flooded as a result of bad weather in Bukovyna”

These lines are from Ukrayinski Novyny report about the natural Disaster that occurred in Western Ukraine in July 2008. As a result of heavy showers the level of water had been raised in the rivers, and dwelling houses, farmlands and agricultural holdings were underflooded. Some crops were destroyed.

Natural disasters have begun to occur in Ukraine with increasing frequency. After dangerous floods in Zakarpattya storms and tornados have also come their way. Information about the number of people killed by lightning is more frequent in different parts of Ukraine. Until recently, we only heard of such disasters occurring on the other side of the Atlantic.

And what are the causes of natural disasters which are becoming more frequent in our country? Not waiting for the scientists' explanations, people say this is our fault. During the last 50 years a great deal of forests in the Carpathians has been cut down. Deforestation has led to changes in local climate. That's why we have so much trouble with floods in this region. The scientists remind us that all elements and systems are interconnected in nature. Irresponsible attitude to it might lead to terrible results.

The conducted research work has confirmed the idea about not only natural but man-made causes of these floods.

What is a natural disaster? The definition is: it is the effect of a natural hazard that affects the environment and leads to financial, environmental and/or human losses. A natural hazard is a threat of a natural occurring event that will have a negative effect on people or the environment. Many natural hazards are interrelated. For example, earthquake can cause tsunami and drought that can lead directly to famine.

The costs of natural disasters-lives lost, homes destroyed, economies disrupted... But there is reason for hope. By understanding how and where these natural events occur, we can build and live safely on the Earth, and by providing real-time information about floods, earthquakes, and other hazards, we can respond effectively when disaster strikes. We should build stronger, safer communities that are resistant to natural disaster.



Exercise 8. Read the article again and choose the best answer (a-c)

1. What natural disaster did occur in Western Ukraine in 2008?
a) drought b) earthquake c) flood
2. What happened to the national route 'Kyiv-Chop' in 2008?
a) It was under flooded.
b) It was blocked with mud sliding.
c) It was ruined by volcano eruption.
3. What natural disasters are becoming more frequent in Ukraine?
a) floods and storms b) floods and earthquakes c) tsunamis and floods
4. What are the causes of frequent floods in Zakarpattya?
a) heavy showers
b) natural and man-made causes
c) deforestation
5. What is a natural disaster?
a) It is a natural hazard.
b) It is a weather event.
c) It is the effect of a natural hazard.
6. What is a natural hazard?
a) It is a threat of a natural event that might have negative effect.
b) It is a natural catastrophe.
c) It is a natural disaster.
7. What is the relationship between natural hazards?

- a) They all result into natural disasters.
- b) They are interrelated, one can lead to another.
- c) They never influence each other.

8. What does “to respond to natural disasters effectively” mean?

- a) It means we shouldn’t pay any attention to difficulties.
- b) It means that we must remember that all elements and systems are interconnected in nature.
- c) It means we should learn more about disasters and build safer communities with real-time information provided.

Exercise 9. Make up a dialogue using the following word-combination:

Our home, take care, to continue pollution, the Earth provides, vital sources, waste water, electric filters, environmental protection, to influence people’s health, protection from pollution, an international organization Greenpeace.

Exercise 10. Rank the following problems facing the world's environment according to your understanding of their importance. Give reasons you why think so:

..... the rate at which we are using up our natural resources, that is supplies of raw materials, e.g. gas, oil, coal, etc.;

..... the growing amount of waste;

..... the «greenhouse effect», i.e. the gradual warming of the Earth's atmosphere which could mean changes in the world's climate;

..... the thinning of the ozone layer, i.e. a layer of gas high above the Earth's surface which helps to protect the Earth from the Sun's ultraviolet rays;

..... air pollution;

..... water pollution;

..... soil pollution;

..... local environmental problems such as noise and litter.

Note: The climate of the Earth started to get warmer in 1976. Every decade the temperature rises approximately 0, 2 degrees Celsius. It doesn't seem much but it leads to the growth of the number and the strength of hurricanes and other natural calamities.

Exercise 11. Read and complete the text with the missing parts (A – F):

ENVIRONMENTAL POLLUTION

Environmental pollution is _____.(1). People dirty the air with gases and smoke, poison the water with chemicals and other substances, and damage the soil with too many fertilizers and pesticides. People also pollute _____.(2). They ruin natural beauty by scattering rubbish and litter on the land and in the water. They operate motor vehicles that fill the air with the noise.

Environmental pollution is one of the most serious problems facing humanity today. It causes global warming, destruction of the ozone layer, and other disastrous processes. Air, water, and soil — all harmed by pollution — are necessary to the survival of all living things. Badly polluted air can _____.(3). Polluted water kills fish and other marine life. Pollution of soil reduces the amount of land available for growing crops. Environmental pollution also brings ugliness to our naturally beautiful world.

The pollution problem is as complicated as it is serious. It is complicated because much pollution is caused by things that benefit people. Exhaust from cars causes a large percentage of all air pollution, but the car _____.(4). Factories discharge much of the material that pollutes air and water, but factories provide jobs for people and produce goods that people want. Too many fertilizers or pesticides can _____.(5). Thus, to end or greatly reduce pollution immediately, people would have to stop using many things that benefit them. But pollution can be gradually reduced. Scientists and engineers should work hard _____.(6). Governments should enforce laws that require enterprises or individuals to stop or to reduce certain polluting activities.



A – provides transportation for millions of people.

B - cause illness, and even death.

C – a term that refers to all the ways by which people pollute their surroundings.

D – to find the ways to lessen the amount of pollution that

such things as cars and factories cause.

E – their surroundings in various other ways.

F – ruin soil, but they are important aids for the growing of crops.

Exercise 12. Read the sentences and guess the meaning of the words in bold.

1) **to pollute, environmental pollution.** Environmental pollution is a term that refers to all the ways by which people pollute their surroundings.

2) **smoke.** People dirty the air with gasses and smoke.

3) **to poison.** People poison the water with chemicals and other substances.

4) **to damage.** People damage the soil.

5) **fertilizer, pesticide.** People damage the soil with too many fertilizers and pesticides.

6) **to scatter rubbish and litter.** People ruin natural beauty by scattering rubbish and litter on the land and in the water.

7) **a vehicle, a motor vehicle.** They operate motor vehicles.

8) **noise.** Motor vehicles fill the air with the noise.

9) **to cause.** It causes global warming.

10) **disastrous.** It causes global warming, destruction of the ozone layer, and other disastrous processes.

11) **to harm.** Air, water, and soil are harmed by pollution.

12) **the survival.** Air, wafer, and soil are necessary to the sur-

vival of all living things.

13) **an illness**. Badly polluted air can cause illness, and even death.

14) **to reduce**. Pollution of soil reduces the amount of land available for growing crops.

15) **ugliness**. Environmental pollution also brings ugliness to our naturally beautiful world.

16) **to benefit**. The pollution problem is complicated because much pollution is caused by things that benefit people.

17) **exhaust** Exhaust from cars pollutes the car.

18) **a percentage**. Exhaust from cars causes a large percentage of all air pollution.

19) **to discharge**. Factories discharge much of the material that pollutes air and water.

20) **a crop**, Fertilizers are important aids for the growing of crops.

21) **immediately**. People can't reduce the pollution immediately.

22) **gradually**. People can gradually reduce the pollution.

23) **to lessen**. Scientists and engineers should work to find the ways to lessen the amount of pollution.

24) **to enforce**. Governments should enforce laws that require enterprises and individuals to stop or to reduce certain polluting activities.

25) **invisible**. Radiation is an invisible pollutant.

26) **waste**. Nuclear radiation comes from nuclear power plants, including waste from nuclear weapons testing.

27) **weapons, nuclear weapons**. Nuclear radiation comes from nuclear weapons testing.

28) **X-ray machines**. Small amounts of electromagnetic radiation are produced by a variety of electronic devices, including computers, lasers, microwave ovens, TV sets, and X-ray machines.

29) **to determine, to influence**. Scientists have not determined exactly what effect small amounts of radiation influence people,

30) **cancer**. Radiation can cause cancer.

31) **exposure**. Exposure to large amounts of radiation can cause cancer.

32) **a cell**. Exposure to large amounts of radiation can cause harmful changes in reproductive cells.

33) **to ban.** International agreements ban most testing of nuclear weapons in the atmosphere.

Exercise 13. a) Try to match up the adjectives in column A with the nouns in column B to form meaningful phrases:

A

1. various
2. environmental
3. serious
4. radioactive
5. disastrous
6. nuclear
7. natural
8. global
9. dangerous
10. beautiful

B

- a) ways
- b) beauty
- c) warming
- d) world
- e) processes
- f) pollutant
- g) pollution
- h) weapons
- i) substance
- j) problem

b) Decide which of the verbs on the left collocate with the nouns on the right:

to pollute ...	the soil
to poison ...	the vehicle
to damage ...	pollution
to kill...	the air
to ruin ...	the water
to cause ...	crops
to grow ...	the destruction
to operate ...	fish
to provide ...	jobs
to reduce ...	the beauty

Exercise 14. a) Translate the following word combinations. Pay attention to the prepositions:

dirty the air with gases –
to poison the water with chemicals –

in various ways –
on the land –
in the water –
to fill the air with noise –
one of the problems –
destruction of the ozone layer –
harmed by pollution –
pollution of soil –
for growing crops –
brings ugliness to our naturally beautiful world –
from cars, for millions of people –
job for people –
for the growing of crops –
the amount of pollution –
from radioactive substances –
from nuclear weapons –
are produced by a variety of electronic devices –
exposure to large amounts –
in reproductive cells –
in the atmosphere -

b) Fill in the gaps with the proper preposition

Spring is green spring nature awakens its long winter sleep. The trees are filled new life, the earth is warmed the rays..... the sun. The weather becomes gradually milder. The fields are covered fresh green grass. The forests are filled the songs the birds. The sky is blue and cloudless. It sometimes rains, but the rain is warm and pleasant. Spring is a hard time farmers.

Exercise 15. Divide the following words and word combinations into three groups, those which describe: a) *environmental pollution*, b) *radiation*, c) *drugs addiction*:

gases, smoke, chemicals, X-ray machines, nuclear, drug, dependence, drug user, pleasurable change, computers, reproductive cells, lasers, fertilizers, pesticides, rubbish, litter.

Exercise 16. a) Decide which word is the odd one out in each of the following groups of words

1. to pollute, to dirty, to damage, to cause;
2. air, pollution, water, soil;
3. to reduce, to increase, to lessen, to decrease;
4. rubbish, weapons, litter, waste;
5. to ban, to ruin, to eliminate, to destruct

b) Find the names for the groups of words. Fill in each of the spaces:

1. the soil, the water, the air —
2. fertilizers, pesticides, chemicals —
3. fish, animals, birds —
4. a car, a bicycle, a bus —
5. scientist, engineers, teachers —

Exercise 17. a) Translate the following definitions of the words:

1) **a vehicle** is something in or on which people or goods can ' be carried from one place to another, such as a car, bicycle, bus, etc.

2) **a fertilizer** is a natural or chemical substance that is put into the soil to make crops grow better.

3) **a pesticide** is a chemical substance used to kill small animals or insects that harm the crops.

4) **a cancer** is an illness which may cause death.

5) **to scatter** means to spread widely in all directions by throwing.

b) The following words also appear in the texts and dialogues. Match each one with its correct definition: waste, noise, illness, smoke, unemployment

- 1) the number of people without work in a group or society.
- 2) used, damaged, or unwanted substance.
- 3) sound, especially unwanted or meaningless unmusical sound.
- 4) unhealthy state of the body or mind.
- 5) usually white, grey, or black gas produced by things burning.

Exercise 18. Read and discuss the following text.

ENVIRONMENTAL PROTECTION IN UKRAINE



For many centuries the people who lived on our planet before us had been trying to make their life easier and more comfortable. They thought that resources of the Earth were endless. They used those resources without thinking about the generations that would come

after them. Our ancestors chopped down the forests, killed animals that lived there and invented machines and instruments that polluted the water, the air and the soil.

In the 19th century the word «ecology» was born, but the idea of environmental protection was not clear yet, and did not seem urgent for either the majority of the governments or common people. People still considered themselves «lords and kings of nature» and used its riches only as consumers.

In the 20th century, the rapid growth of science and technology resulted in an increasing negative effect on the biosphere of the Earth. Huge industrial enterprises pollute the air we breathe, the water we drink and the land which gives us bread, vegetables and fruit. Their discharge of dust and gas into the atmosphere returns to the Earth in the form of acid rains. It also destroys the ozone layer of the Earth and causes «greenhouse effect». It affects forests, rivers, crops and people's health. This leads to the reduction of the life-span of man. People die younger because of cancer, AIDS and other diseases which are directly connected with the polluted environment they live in. Many species of animals and birds face extinction due to the pollution of the biosphere.

The world's oceans are in danger too. They are filled with poisonous industrial and nuclear waste, chemical fertilizers and

pesticides. The Aral Sea in Russia is already dead, the Mediterranean and the North Sea are slowly dying.

The worst situation with air pollution is in big overpopulated cities. In Cairo and Mexico City, for example, breathing is equivalent to smoking 2 packs of cigarettes a day. The big industrial cities in Ukraine like Zaporizhiya, Donetsk, Kharkiv and some others have the same situation.

Another threat for the environment is nuclear power stations like Chernobyl. In April 1986 that nuclear power plant just north-west of Kyiv suffered the worst nuclear accident in history: dozens died immediately, tens of thousands were evacuated, while the long-term effects to human life are difficult to calculate. A large part of Ukraine, Russia and Byelorussia was polluted by radioactive substances. Great damage was done to their economy, nature and people's health. The problem of Chernobyl has not been solved yet because of the economic difficulties that Ukraine is having now. The power plant was closed on December 15, 2000.

Nowadays people of Ukraine, like most people in developed countries, realize that without solving environmental problems, the life of the future generations will be in real danger. Many people join the Green Party of Ukraine to unite their efforts to save the planet where we live, to make our world healthier and more beautiful.

Exercise 19. Read the article again and decide whether the statements are True (T) or False (F).

1. People thought that resources of the Earth were endless.
2. In the 19th century the word «ecology» was born, but the idea of environmental protection was clear.
3. The world's oceans are not in danger.
4. In Cairo and Mexico City breathing is equivalent to smoking 4 packs of cigarettes a day.
5. Nowadays people of Ukraine realize that without solving environmental problems, the life of the future generations will be in real danger.

Exercise 20. Order the paragraphs (A – D) to build the text.

AGRICULTURE AND ENVIRONMENT

(A) At present agriculture is not as dependent on the environment as in the past. Man can improve the conditions under which crops are grown. The conditions can be improved by using irrigation and drainage, by applying fertilizers and different chemicals such as herbicides and insecticides and by some other practices.

(B) Agriculture and environment are closely connected with each other. Crop yields and animal productivity depend on soil and climatic conditions of the region in which they are grown. When environmental conditions are favorable, crops grow and develop well and produce high yields.

(C) Thus, the farmers have to solve two problems. On the one hand they are to improve and in thankful agricultural production and on the other hand they are to minimize the effect of agriculture on the environment.

(D) The environmental factors do not only affect agriculture, but they are also affected by the agricultural activity. Mineral fertilizers and chemicals used by farmers accumulate in the soil and in plants and may become harmful for people.

1_____ 2_____ 3_____ 4_____

Exercise 21. Read the text again and decide whether the statements are True (T) or False (F)

1. Agricultural engineers have long been identified with improving the quality of the environment.

2. Agricultural engineers have done many environmental problems.

3. Today agricultural engineers are even more specifically identified with agricultural application.

4. The farmers have to solve five problems.

5. On the one hand the farmers are to improve and in tanksful agricultural production and on the other hand they are to minimize the effect of agriculture on the environment.

Exercise 22. Answer the questions:

1. Does environment affect agriculture?
2. When do crops grow well?
3. How can man improve the environment for good plant growth?
4. Is the environment affected by agriculture?
5. How does agriculture affect the environment?
6. What are the two problems that farmers have to solve?

Extensive Reading

Text 1. LAND, AIR AND WATER POLLUTION – ITS FUTURE IMPLICATIONS IN AGRICULTURAL ENGINEERING



Agricultural engineers have long been identified with improving the quality of the environment. Indeed, the engineer's creed calls for the application of his knowledge and skill to the betterment of human life. Agricultural engineers have done many environmental improvements.

The draining of swamps has eliminated insects. Irrigation has made lands more productive. Soil conservation measures have reduced sediment in streams and loss of farmland. Agricultural buildings overcome hostile climates.

Today agricultural engineers are even more specifically identified with pollution abatement. They work with sediment, animals' wastes, agricultural processing wastes, plant nutrients, forest and crop residues, inorganic salts and minerals and air pollution.

The role of agricultural engineers in the future is great. They will be designing special ecological systems where the wastes will be collected and processed. Solid components of waste will be referred

to the animals directly or through a conversion process using lower life forms such as insects or bacteria.

Crops will be planted, raised and harvested under a protective canopy. Insects, disease organisms and other will be destroyed and then physically excluded. Nutrients will be metered to requirements for crop growth. Rainfall will be diverted to storage application.

All this will seem «far out» to some. But it's time for agricultural engineers to play their great their great role in the future.

Text 2. AGRICULTURE AND THE QUALITY OF OUR ENVIRONMENT

There are four main ways in which agriculture affects our environment. The first way is soil erosion. It is a natural process but it can be greatly increased when improper methods of farming are used. The second way is wastes (відходи) of intensive keeping of livestock and poultry. These wastes pollute waterways. The third way is improper use of fertilizers. And the last way of agricultural pollution of the environment is the use of different chemicals such as insecticides, herbicides and others. These chemicals affect both the soil and air.

After reading activity

Project work: “Agriculture and Environment”

UNIT 8. AGRICULTURAL ECONOMICS

Exercise 1. Fill in the gaps in the text below with one of the words given in the box and read about Agricultural economics:

(Production, problems, production, a field, market, value, management, enterprises, accounting, involves, productions cost)



Agricultural economics is _____ (1) of economics dealing with the economic _____ (2) associated with agriculture, the efficiency of farm production being one of them and the

most important. Some other economic problems are intensification and specialization of agricultural _____ (3), farm planning and management, labour productivity, prices for farm produce, etc.

_____ (4) cost is the main indication of the efficiency of a farm. It includes the _____ (5) of the means of production to be used in the production process, the remuneration to be paid to the farm labourers and the cost of farm _____ (6).

In order to obtain high _____ (7) any agricultural enterprise is to decrease the production cost of farm produce by proper use of land, labour and machinery, by increasing the total marketable output and by improving the quality of farm produce, since high-quality products are known to be sold at the _____ (8) at higher prices.

For farm _____ (9) to be more profitable and efficient the cost accounting principle is widely applied now in our farms. It _____ (10) operational independence, that is, the head of an enterprise may take independent decisions as to the activities of his enterprise. Due to the introduction of cost _____ (11) system all the farmers have become interested in finding new potentialities for making their

enterprises more profitable. Thus, the _____ (12) being low, the profit of the enterprise increases.

Exercise 2. Translate the following word-combinations and make up sentences with them.

Ефективність сільськогосподарського виробництва –
Продуктивність праці –
Ціни на сільськогосподарську продукцію –
Зменшити собівартість –
Засоби виробництва –
Високі прибутки –
Пошук нових можливостей –

Exercise 3. Correct the following statements according to the plot of the text.

1. The production cost being high, the profit of the enterprises.
2. Some farmers are interested in the introduction of cost accounting system.
3. Labour productivity does not depend on farm planning and management.
4. Price is the main indication of the efficiency of a farm.
5. Production cost does not include the cost of farm management.
6. High-quality products are known to be not profitable.
7. The cost accounting system is not welcomed at many agricultural enterprises.

Exercise 4. Answer the questions:

1. What is the most important economic problem in agriculture?
2. What is agricultural economics?
3. What is the main indication of the efficiency of a farm?
4. What does production cost include?
5. How can an enterprise obtain high incomes?
6. How can the production cost of farm produce be decreased?
7. How are high quality and higher prices related?

8. Why is the cost accounting principle widely applied?
9. What does it involve?
10. What is the connection between the production cost and the profit of the enterprise?

Exercise 5. Seven sentences have been removed from the article below. Put them in the right places (1 – 7) and read about agricultural economics in Ukraine.

ECONOMY IN UKRAINE

(A) Close to 40 types of vegetable crop are grown in Ukraine: cabbage, tomato, cucumber, red beet, carrot, onion, garlic, etc. Melon-growing is practiced mainly in the south. Potatoes occupy 6% of total area under cultivation.

(B) Ukraine has very favourable conditions for the development of agricultural production: fertile soils temperately warm climate, a well-developed industry processing agricultural raw materials. Ukraine can be divided into three economic areas: Southwestern, Donets-Dnieper and Southern.

(C) Present-day independent Ukraine has a considerable potential to quickly develop its economy- and is explained not only by the favourable natural conditions, but also by the convenient geographical position in terms of international trade exchanges.

(D) Bee-keeping is spread through all zones. It is extensively practiced on private plots. Fur animals being farmed include the silver and blue fox, mink and nutria.

(E) All the principle areas of plant cultivation are: grain and industrial crops, meadow culture, fruit and vegetable raising. Almost half the cropping area is occupied by cereals such as winter wheat, maize and legumes, rye, oats, barley. The principal grain crop, winter wheat, is sown mainly in the Steppe and Forest-Steppe zones. Maize is grown mostly in Transcarpathia and Steppe zones. Buckwheat, millet, rice play important role.

Among the industrial crops such as sugar, beet, sunflower, flax the leading position is occupied by sugar beet.

(G) Animal husbandry is the second-largest component of agriculture. Like plant cultivation, livestock production is divided

into branches. The most widespread branch is cattle breeding, pig raising is another important area. Sheep farming is also practiced.

(H) Fish farming is growing in importance, with carp, being the most common fish. Trout, which is to be found in the Mountain Rivers, is of commercial interest.

The poultry industry is spread through all the provinces. Birds farmed include chicken, duck, goose, turkey. There are large mechanized poultry factories to produce eggs and meat.

1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7 _____

Exercise 6. Order the paragraphs (A – D) to build the text

ECONOMICS OF CROP PRODUCTION

(A) Since seed germination and crop growth are greatly affected by weather conditions it is highly important to begin planting, cultivating and harvesting at a proper time. This requires thorough planning of time and manpower in order to obtain good profit from the farm business.

(B) Each crop-growing farm will be profitable if the farming system used provides the utilization of the land to its maximum capacity, the completion of all farm work in optimal time, the use of proper cultural practices, the crops best adapted to local conditions and all-round mechanization of all farm operations. Proper application of all these economic factors requires big capital investments.

(C) Crop growing depends directly on the land which is known to be the main means of agricultural production. Yields vary not only with soil fertility but also with climatic conditions such as temperature, light and rainfall. That is why for farmers to obtain high yields they have to maintain and raise the fertility of the soil and to take into consideration the adaptability of the crops to be grown to their climatic conditions.

(D) The production cost in raising crops includes many components, the costs of seed and fertilizers making up the largest share. It also includes the costs of the depreciation of the fixed production assets, the costs of current repairs, the remuneration to farm labourers and management costs.

1 _____ 2 _____ 3 _____ 4 _____

Exercise 7. Answer the questions.

1. What do yields vary with?
2. Why do farmers raise soil fertility?
3. Why is it important to begin planting at a proper time?
4. What are the main components of the production cost in raising crops?
5. Should the farming system provide the utilization of the land to its maximum capacity?

Exercise 8. Read and discuss the article using the questions after it.

ECONOMICS OF ANIMAL BREEDING

For profitable rising of livestock one should select a breed which is adapted to the purpose for which the animals are to be kept. For milk production a dairy breed should be chosen, not a beef breed. Regardless of the breed the livestock farmers choose, they would be most successful if they kept only the best animals. It is known that there are good and poor animals in every breed.

Feeds are known to make up the largest share of the costs in raising livestock. In the production of meat animals, such as hogs, beef cattle and sheep, feed costs amount to about 80 per cent or more of the total expenses. In egg and milk production they amount to half or more of the total costs. Underfeeding, overfeeding, improper combination of feeds, abrupt changes in feeding and irregular feeding are some of the mistakes that may prove to be costly to livestock raisers.

Great changes have occurred in the cattle feeding industry with the arrival of large commercial feedlots³ which use industrial methods of management, financing and marketing. The aim of feeding in commercial feed-lots is to simplify the feeding process, thus reducing production costs and labour.

1. What breed should farmers select?
2. What breed should be chosen for milk production?
3. Are there good and poor animals in every breed?

4. Do feeds make up the largest share of the costs in raising livestock?
5. What are the feed costs in the production of meat animals?
6. Do feed costs amount to half of the total costs in milk production?
7. Is overfeeding a proper method of feeding animals?
8. What is the aim of feeding in commercial feedlots?

Exercise 9. Scan the article and call the Factors affecting the development of animal husbandry

There are many factors affecting the development of animal husbandry. Some of them are growth and productivity of different kinds of animals.

Livestock farms are known to require large amounts of feeds. They should be adapted to areas where the necessary feeds can be produced. So, soil and climate are also highly important factors for good development of farm animals. For example, dairy cattle develop best in cool areas. Under such conditions grasses grow well and hay, silage and pastures are produced most economically.

On some livestock and poultry farms automatic machines regulate the microclimate, distribute feed and clean farm buildings. That is one more factor affecting the development of animal husbandry.

Extensive Reading

Text 1. SPECIALIZATION OF FARM ENTERPRISES

Specialization means growing those crops or breeding those farm animals which produce higher economic effect under given conditions.

Farms located near big industrial cities specialize in producing those agricultural products which are mostly needed by the population in these cities. Such products are known to be milk, meat, vegetables and fruits.

Specialization of farm enterprises is known to increase production and decrease the production cost of farm produce, for it

makes possible to use labour and means of production much more efficiently. The leading branch in which a farm specializes provides the largest amount of marketable produce and requires the greatest investment.

Text 2. FARM INTENSIFICATION

There are three main lines of intensification in agriculture. One of them is to mechanize, electrify and automate agricultural production. Another line is chemization. Many million tons of mineral fertilizers have been produced to be used on our farms. One more line is land improvement that is irrigation and drainage, depending on its condition.

Text 3. PRODUCTION EFFICIENCY

It is important to pay much attention to the efficiency of agricultural production, to the role of economic methods in the farm management. In increasing the production efficiency the labour productivity is of great importance. Higher labour productivity is very important because it results in higher output.

The increase in labour productivity is based on the improvement of technical equipment of agriculture, its intensification, and better labour organization.

On the farm enterprises where production and labour are organized well, there are no losses in working time and yields per hectare are high.

Text 4. MEANS OF PRODUCTION

In agriculture as in any other sphere of material production people work with the help of means of production in order to produce the products they need.

In the production process means of production are classed into means of labour and objects of labour. Means of labour are the material elements of production such as farm, machines, implements

and various equipment. Machinery is the most active part of the fixed production assets.

Objects of labour are the material elements of production on which the labour of the workers is directed such as seeds, fertilizers, feeds for farm animals, etc.

Text 5. LOSSES OF FARM ANIMALS

Every animal that dies represents a loss in feed and labour. For example, every young pig that dies soon after birth represents a loss of about 140 pounds (фунт = 450 грам.) of feed that has been fed to its mother before its birth.

To avoid much of this loss farmers are to provide proper care and management of their animals. At present usually separate buildings are provided for every kind of livestock such as cattle, hogs, sheep, and poultry. Buildings for livestock should be planned so as to provide comfort both for the animals kept and for the farmer's work. They should also provide economy of costs, economy of labour and durability

Text 6. FACTORS AFFECTING THE DEVELOPMENT OF ANIMAL HUSBANDRY

There are many factors affecting the development of animal husbandry. Some of them are growth and productivity of different kinds of animals.

Livestock farms are known to require large amounts of feeds. They should be adapted to areas where the necessary feeds can be produced. So, soil and climate are also highly important factors for good development of farm animals. For example, dairy cattle develop best in cool areas. Under such conditions grasses grow well and hay, silage and pastures are produced most economically.

On some livestock and poultry farms automatic machines regulate the microclimate, distribute feed and clean farm buildings. That is one more factor affecting the development of animal husbandry.

Text 7. ADVANTAGES AND DISADVANTAGES OF FARM MECHANIZATION

Hard hand labour has been reduced. Production and income per person engaged in farming have been markedly increased. Land that was needed to produce feed for horses is now used for the production of food for people. Farm work can be done more rapidly when weather and soil conditions are most favourable. Crops can be planted, cultivated and harvested in a shorter time than in the past.

Farmers must have more capital to be engaged in farming because of large investments in farm machines and other equipment. Farmers must have a larger and more stable income to have money for electricity and tractor fuel. Farms have to be larger in size. So, small farms are disappearing and many farmers cannot be engaged in farming. Farmers must have better knowledge and skill in operating modern farm equipment efficiently.

After-reading activity

Project work: Comparison of agricultural Economics in Ukraine and English-speaking Countries

UNIT 9. PROGRESS IN AGRICULTURE

Exercise 1. Five sentences have been removed from the article below. Put them in the right places and read about *PROGRESS IN AGRICULTURE*



The scientific and technological progress means the development and improvement of agriculture on the basis of wide application of highly effective implements and other means of production, the progressive technology and science-based management with the use of modern achievements of science and engineering, the cultural and technical rise of the people in agriculture.

_____(1). Biologists, breeders, physiologists, geneticists, soil scientist, chemists, farm machinery designers, livestock experts and economists have already done and still to do a great deal of research and to achieve important results.

_____(2):

- Technical rearmament of this branch of the national economy, large-scale mechanization of agricultural operations;
- Electrification and automation of agricultural operations;
- _____ (3);
- Chemicalization of agriculture;
- Development of new crop varieties and hybrids.

Among these factors mechanization occupies the most important place, providing the basis for the growth of agricultural produce. The introduction of what is called the machine system

for the mechanization of agricultural production processes is a big step forward. _____(4)

Another problem is an increase in the production of grain. Much of the success in solving the tasks facing the farmer comes from the introduction of research into the plant growing.

The acreage of trial plots in our country is rather significant. To make the work of plant breeders more productive steps are to be taken to mechanize all laboratory and field jobs in selective-breeding centers. _____(5)

The practical application of new scientific ideas is today as important as their development.

A - The main roads of the scientific and technological revolution in agriculture are the following

B - The notable features of all selective breeding and seed production machines must be reliability, operational simplicity and high maneuverability.

C - It provides a scientific solution of the problems of farm machinery development and production.

D - Further development of basic agricultural science

E - Science is more and more becoming a productive force

Exercise 2. Answer the questions:

1. What does scientific and technological progress mean?
2. What becomes a productive force?
3. Who has already done a great deal of research?
4. What are the main roads of scientific and technological revolution in agriculture?
5. What does mechanization provide?
6. What is the greatest problem in the forthcoming years?
7. Why is the introduction of research into the plant growing so important?
8. What are the features of all selective-breeding and seed production machines?

Exercise 3. Complete the sentences:

1. Mechanization provides ...
2. Much depends upon the introduction of ... into the plant growing.
3. Science becomes a ... force.
4. ... occupies the most important place among the factors of scientific and technological revolution in agriculture.

Exercise 4. Correct the following statements:

1. Science does not become a productive force in agriculture.
2. Geneticists do not take part in research work in agriculture.
3. The greatest problem in the years to come is to enlarge the quality of agricultural machinery.
4. Plant growing does not need research work.

Exercise 5. Find English equivalent of Ukrainian words:

Технічний прогрес –
розвиток і удосконалення сільського господарства –
широке застосування високоефективних знарядь –
прогресивна технологія –
наукове обґрунтування управління –
нові різновиди сільськогосподарських культур –
конструктори сільськогосподарської техніки –
технічне переозброєння галузі -
широкомасштабна механізація –
автоматизація сільськогосподарських операцій –
наукове вирішення проблеми -

Exercise 6. Find Ukrainian equivalents of English words:

Scientific progress –
means of production –
productive force –
soil scientists –
livestock experts –
to achieve important results –
practical application –

the acreage of trial plots –
plant breeders –
selective-breeding and seed production machines –
the growth of agricultural produce –
farm machinery development –

Exercise 7. Order the paragraphs (A – D) to build a text than read it and answer the questions after it.

INTENSIVE TECHNOLOGIES IN AGRICULTURE

A - Intensification is based on mechanization, electrification and chemization which are the main sources of progress in agriculture. Most of agricultural processes in crop production and animal husbandry are mechanized now. They are the preparation of "the soil, planting and harvesting crops, feeding farm animals and cleaning livestock buildings. Chemization of agriculture is increased by higher production and use mineral fertilizers and other chemicals. They increase crop yields and quality.

B - All intensification factors must be used in such a way as not to damage the land which is the basis of agriculture.

C - There are two ways of increasing the yield of farm crops. They are the cultivation of new lands and the increase in yields per hectare. In the recent past the first way was more popular. At present more agricultural products are obtained by intensification of agricultural production.

D - Some other important intensive technologies are the development of better high-yielding varieties of crops, the application of most effective cultural practices, the breeding of better farm animals, the control of weeds, insects and diseases.

1 _____ 2 _____ 3 _____ 4 _____

Answer the questions:

1. How can crop yields be increased?
2. What is intensification based on?
3. Is harvesting of most crops mechanized?
4. What is the basis of agriculture?

Exercise 8. Fill in the gaps in the text below with one of the words given in the box and read about agricultural engineering

AGRICULTURAL ENGINEERING

Agricultural engineering means the _____(1) of engineering knowledge to agriculture. The agricultural engineer must understand that there are basic differences between agriculture and other industries. The biological factor is an _____(2) one in engineering applications, and the engineer must know well the basic principles and practice of agriculture.

Changes in cultural practices often need to make a _____(3) adaptable or to increase its effectiveness. Processing equipment may also need changes to harvest crops mechanically, for quality of yield of a crop may sometimes be reduced by the use of an improper machine.

Most field operations are seasonable in nature often with only a short period of time in which to do the _____(4). Therefore field machinery in many cases has a low annual duty. It must be able to work in rain and in snow as well. It must operate over any kinds of _____(5). Farm machines must also be designed to handle wide variations in crop and soil conditions.

As it is known, electric power has become the main source of energy in agricultural production and its sphere of application is ever increasing. All kinds of _____(6) for handling milk, such as milking machines, milk coolers, water heaters and others are also operated by electricity.

The great effects of various types of radiation on seeds, plants, insects and animals have been studied and are well known today. Those are but a few examples of electric power _____(7) on the farm which a modern agricultural engineer must work with.

(job, important, source, machine, application, land, equipment, application)

Exercise 9. Read and discuss the article.

TOMORROW'S FARM

Agricultural research aims not only at increased quantity but at efficient production. Here are the most important changes that will take place on tomorrow's farm.

It will be a "factory farm" – very large with still fewer workers than today. It will be even more highly automated than at present. The farmer will be able to produce food and other products with the quality wanted by consumers, at time these products are needed, more or less independent of weather.

Plant height, rate of growth and date of ripeness will be almost completely controllable. Crops will be changed in size and in other ways to make them easier to cultivate and harvest by machine.

Soil will be given uniform, required properties – physical, chemical and biological.

If the farmer lives in a dry area improved water management will increase his production. For instance, he will line irrigation canals to prevent seepage, cover ponds with chemical film to prevent evaporation. Improvements in the animals' food will result in producing better meat.

When the farmer's produce is ready for market, light absorption instruments will carry out control on its quality.

Exercise 10. Scan the article and answer the questions after it.

ROBOTS TODAY AND TOMORROW



Robots are ideal workers not only for industry but for agriculture as well. In Ukraine robotization is a young branch of agricultural mechanization. It is highly important

because of both certain lack of working hands in the country and the necessity to eliminate hand labour, which is one of the main social and economic problems of the day.

If robots were widely used in agriculture, labour productivity would be raised greatly, crop, meat and milk yields would be increased and the product quality would be improved due to timelier performing of farm operations.

Robot-type agriculture is used now in irrigation systems where people are no longer needed to apply and control water or move irrigation pipelines.

Intensive work has been started on the development of various types of robots designed especially for agriculture. New robots are likely to appear for doing work on fields. Such electronic farmers will be able to till the soil, to sow seeds and to harvest crops. They will be able even to see weeds and control them. The farmer will only press the necessary buttons on the control panel and then leave the machine which will work unattended. Time is not very far when many labour-consuming operations on farms will be performed by robots.

Answer the questions:

1. Will robotization in agriculture eliminate hand labour?
2. Where are robots used now?
3. What will robots do on fields?
4. What will farmers do to make robots work?
5. Do robots work unattended?

Exercise 11. Match the following parts to complete the sentences.

1. Robots are machines that	a. when robots are used.
2. All operations in crop growing would be timely performed	b. specially developed for agriculture,
3. There are few robots	c. can perform work unattended.
4. No hand labour is required	d. if different robots were used in this branch of agriculture.

Exercise 12. Read and discuss the article. The following questions can help you.

1. What are mini-computers provided with?
2. Why are mini-computers good in use?
3. What does the cost of a mini-computer system include?
4. What is the problem with agricultural programs?
5. What kinds of information can farmers obtain from using mini-computer agricultural programs?
6. Why is it easier for farmers to use computers than farm books?

MINI-COMPUTERS IN AGRICULTURE

Mini-computers are now being rapidly developed in Great Britain. They are provided with different programs, many of them being suitable for farm use. New technology has made the computers compact, easily handled and relatively inexpensive.



The cost of any mini-computer system includes the cost of the equipment itself and the cost of the programs. The cost of the equipment is about 7000 to 9000 pounds, while one program may cost from 2000 to 3000 pounds, depending on the complexity of the program.

Although many computers are now available which can solve agricultural problems, there is only a limited number of agricultural programs. The latter are, as a rule, general purpose mini-computer programs and are usually not satisfactory for farmers. That is why many farmers have to make their own computer programs suitable for their farms.

Famers need the programs which can show:

1. Production Information for cattle, hogs and other farm animals. 2. Labour and Machinery Information. 3. Field Information. 4. Statistical Information which is to show costs and profits on the farm, etc.

It is easier for farmers to use computers than to use different kinds of farm books. The farmer does not need to spend much time on writing and calculating, he is only to press a button and the necessary information appears.

Extensive Reading

Text 1. AGRICULTURAL ENGINEERS IN THE FUTURE

Agricultural engineers will be working on satellites circling the earth, monitoring movements of water air masses and directing them in areas of the world where they are needed the most.

Thousands of agricultural engineers will be designing system to grow crops and trees on saline soils and saline waters. Many will be working in the design of farming complexes in the deserts using nuclear plants to pump water miles away.

Thousands of agricultural engineers will continue to work in environmental pollution control and particularly in reuse of polluted air, soil and water.

Hundreds of agricultural engineers will be among the first thousands to be sent off from the Earth to establish food production complexes on Earth II.



Text 2. COMPUTERS IN THE HELD

Future planters will have computers that will determine the proper rate and depth for the seed to be provided with optimum moisture for germination.

Future grain combines will be equipped with computers that will determine the moisture content in the grain. They will also automatically maintain the necessary height of cutting the plants. They will show the amount of grain harvested and where it was harvested. The farmer will use this information. He will know which parts of the field are more productive and where additional fertilizers or herbicides are needed.

Text 3. SOME MODERN AND FUTURE DEVELOPMENTS IN FARMING



One of the developments of modern times is the application of the airplane to farming. Although its use is still limited, its possibilities are large. It may be used in spraying crops to control insects,

weeds and diseases, in broadcasting fertilizers and controlling cattle on the range.

Only time will show what use will be made of atomic and sun energy. New developments will undoubtedly be used in farming and displace much of the mechanical and power equipment now used.

After-reading Activity

Activity 1. Write right Ukrainian translations of English sentences:

1. This is the most effective cultural practice.
2. Application of fertilizers is one of the best methods of increasing crop yields.
3. Man obtains more food by growing better crop varieties.
4. Intensification is a most popular way of increasing food products now.

5. Higher-quality crops are obtained by our farm now than in the past.
6. Different farm crops are used in feeding farm animals.
7. Applying fertilizers increases crop yields.
8. More food is obtained by growing new crop varieties.
9. The breeding of better farm animals also increases food for people.
10. Cleaning livestock buildings is done with special machines.

Activity 2. Project work.



ACTIVE VOCABULARY

UNIT 1. GIVING INFORMATION ABOUT YOUR QUALIFICATIONS, EXPERIENCE, PERSONAL CHARACTERISTICS

an option	вибір
an employer	роботодавець
an employee	службовець; той, що працює за наймом
to consider	розглядати, брати до уваги
to be suitable for the position	відповідати посаді
personnel office	відділ кадрів
an applicant	кандидат на посаду
valuable source	важливе джерело
employment agency	агентство по найму
consulting firm	консультаційна фірма
to advertise	подавати оголошення, рекламувати
resume	резюме
two sets of qualifications	два види характеристик
experience	досвід, враження
evaluate through interviews	оцінювати через інтерв'ю

UNIT 2. INTRODUCTION TO AGRICULTURE

agriculture	сільське господарство
arable	орний, придатний
arable land	рілля, орна земля
apply	застосовувати
application	застосування
animal breeding	тваринництво
animal husbandry	тваринництво
breed (bred)	розводити, вирощувати
branch	галузь, гілка

crop	с/г культура
crop growing	рослинництво
crop production	рослинництво, обробіток с/г культур
cultivation	обробіток, культивація
develop	розвивати
development	розвиток
depends on	залежить від
disturb	порушувати
extensive	екстенсивний
herbicide	гербіцид
highly developed	високо розвинутий
hybrid	гібрид
in order	щоб, для того, щоб
increase	збільшувати
farm	господарство, ферма
fertilizer	добриво
field	поле
food	їжа
grow (grew, grown)	виросити, рости
growth	ріст
increase	збільшувати
intensification	інтенсифікація
mechanization	механізація
most of	більшість
plant	рослина
reclaim	освоювати
supply	поставляти, постачати
variety	сорт, вид
use	використовувати
yield	врожай
soil	грунт

UNIT 3. FARMING IN UKRAINE AND OTHER COUNTRIES

Fertile soil	родючий ґрунт
Grain crops	зернові культури
Industrial crops	технічні культури
Fruit raising	плодівництво
Vegetable raising	овочівництво
Cereals	хлібні злаки
Wheat	пшениця
Rye	жито
Oats	овес
Barley	ячмінь
Maize	кукурудза
Legumes	зернобобові
Buckwheat	гречка
Millet	просо
Rice	рис
Sugar beet	цукровий буряк
Sunflower	соняшник
Flax	льон
Cabbage	капуста
Tomato	помідор
Cucumber	огірок
Onion	цибуля
Carrot	морква
Garlic	часник
Potato	картопля
Cattle breeding	розведення великої рогатої худоби, скотарство
Pig raising	свинарство
Sheep farming	вівчарство
Poultry	свійська птиця
Chicken	курка, курча
Duck	качка
Goose	гуска, гусак

Turkey	індик
Livestock	худоба
Fish farming	рибництво
Bee keeping	бджільництво
Fur animals	хутрові звірі
Hectare	гектар
Arable lands	орні землі, рілля
Watered lands	зрошувані землі
Dried lands	осушені землі

UNIT4. CROP PRODUCTION

according to	відповідно до
alfalfa	люцерна
annual	однорічний, однорічна рослина
as well	так
as well as	так, як, а так
as to	що стосується, щодо
absorb	поглинати
alfalfa	люцерна
because	тому що
because of	завдяки, з
biennial	дворічний, дворічна рослина
cereal crop	зернова культура
cultivate	обробляти
cultivated crops	просапні культури
hay	сіно
fibrous	мичкуватий
flower	квітка
forage crop	фуражна (кормова) культура
ground	земля, поверхня
growing season	вегетативний період
leaf	лист
legume	бобові культури
like	схоже на
oats	овес

pasture	пасовище
perennial	багаторічний, багаторічна культура
potatoes	картопля
rice	рис
rye	жито
root	корінь
root crop	коренеплід
seed	насіння
silage	силос
source	джерело
stem	стебло
sugar beets	цукровий буряк
tap	стрижневе
unlike	на відміну від

UNIT 5. ANIMAL HUSBANDRY

Alfalfa	люцерна
Barn	корівник
Bossy	норовистий
Branch	галузь
Calf	теля
Carbohydrate	вуглець
Corn	кукурудза
Device	пристрій
Digestible	той що засвоюється
Down	пух
Draft cattle	робоча худоба
Dry	сухий
Dual-purpose cattle	м'ясо-молочна худоба
To enhance	збільшувати, підвищувати
Enterprise	підприємство
Electric milkier	електродоїльний апарат
Exact	точний
Headway	рух вперед, успіх

Highly productive	високопродуктивний
High-protein grain	зерно з високим вмістом білка
Hay	сіно
Herd	стадо
Fat	жир
Fatten	відгодовувати
Fiber	клітковина
Feed	корм, фураж
Feeding stall	стіло
Feeding value	поживна цінність
Feather	пір'я
Fodder	фураж, корм
For this reason	по тій причині
Livestock	худоба
Low - yielding dairy cows	корови низьких надоїв
To make provisions	передбачати
To milk	доїти, давати молоко
Milking	надій
Mixed feeds	змішані корми
Mutton	баранина, вівці
Natural hayfield	природний сінокіс
Nutrient	поживна речовина
Obedient	покірний, слухняний
Outlay	витрати, затрати
Output	випуск, виробництво
Productivity	продуктивність
Promotion	підвищення; просування
Protein rich	багатий на протеїн (білок)
To raise	вирощувати
Ration	раціон
Roughage	грубий корм
Soybean	соя
To sow	сіяти
Suction	всмоктування
Succulent	соковитий
Supplement	добавка

Tank	цистерна
Transponder	датчик
Treatment	лікування
Weight	вага

UNIT6. MECHANIZATION OF AGRICULTURE

another	інший, ще
at least	принаймні
(to) be necessary	бути необхідним
to bring about	викликати
to close	закривати
to control	контролювати
cooling system	система охолодження
cooling process	процес охолодження
cylinder	циліндр
dam	дамба
demand	потреба, запит
different operations	різноманітні операції
do effectively	робити ефективно
drawbar	причіпний пристрій
drive machines	керувати, управляти машиною
draft animals	тваринна тяга
engine	двигун
equally – sized	однакового розміру
equipment	обладнання
heavy loads	великі вантажні машини
heavy operations	двигун
implement	знаряддя (праці)
in this way	таким чином
to increase	збільшувати, піднімати
it amounts to	це становить
job	робота, служба
forage crops	кормові культури
four-wheel tractors	чотирьох-колісні трактори
four - wheel – drive	з приводом на чотири колеса

hydraulics	гідравлічна система
horsepower	кінські сили
the gear-box	коробка передач
to keep	тримати, зберігати
livestock production enterprises	тваринницькі господарства
to meet the needs	задовольняти потреби
modern farm tractors	сучасні фермерські трактори
movement	рух
power farming	сільське господарство на промисловій основі
shop	майстерня
there is a cut in the electricity supply	трапляються перебої в постачанні електроенергії
use	використовувати
operate	обробляти, керувати, управляти
pipe	труба, патрубок
radiator	радіатор
speed	швидкість
to transmit	передавати
various jobs	різноманітні види робіт
volume	об'єм
to use	використовувати
without any manual handling	без застосування ручної праці
without leaving his seat	не залишаючи кабіну
water pump	водяний насос
weight	зважувати, вага

UNIT 7. MODERN PROBLEMS OF ENVIRONMENTAL

abatement	знищення
acid rains	кислотні дощі
canopy	накриття, дах
creed	переконання
damage	шкода

defense	захист
deforestation	вирубання лісів
disrupted	зруйнований
(to) eliminate	знищувати
(to) identify	порівнювати, визначати
environment	навколишнє середовище
greenhouse effect	парниковий ефект
hailstorm	гроза з градом, злива, сильний град
implication	значення
loss	втрати
natural resources	природні ресурси
nuclear weapons	ядерна зброя
on the one hand	з одного боку
on the other hand	з іншого боку
pollution	забруднення
property	власність, надбання
(to) provide	забезпечувати
(to) save	рятувати
sediment	осад
(to) take care	турбуватися
waste	відходи
unprotected	беззахисна
disaster	лихо, біда, катастрофа
frequency	частота, часте повторення
hazard	ризик, небезпека
(to) damage	завдавати збитків, пошкоджувати
(to) occur	траплятися, відбуватися
(to) respond	відповідати
(to) under flood	підтоплювати
frequent	частий, часто повторюваний
resistant	стійкий

UNIT 8. AGRICULTURAL ECONOMICS

all-round mechanization	комплексна механізація
production cost	собівартість
capacity	здатність, віддача
capital investment	капіталовкладення
cost	вартість
cost accounting	госпрозрахунок
costly	дорогий, високої вартості
commercial feedlots	відгодівельні площадки на промисловій основі
depreciation	амортизація
economics	економіка
enterprise	підприємство
farming	ведення господарства, землеробство
farm management	управління сільськогосподарським підприємством
farm produce	сільськогосподарська продукція
finance	фінансувати
fixed production assets	основні виробничі фонди
income	прибуток
make up	складати
market	ринок
manpower	робоча сила
may prove (to)	можуть виявитися
marketable	товарний
means of production	засоби виробництва
output	продукція, випуск продукції
overfeed	перегодовувати
underfeed	недогодовувати
planning	планування
price	ціна
profit	прибуток
profitable	рентабельний, прибутковий

repairs	ремонт
share	доля, частина
take into consideration	брати до уваги
value	вартість
remuneration	винагорода, оплата
marketing	реалізація, збут

UNIT 9. PROGRESS IN AGRICULTURE

application	застосування
achievements	досягнення
as not to damage	щоб не нашкодити
breeding center	центр розведення
clean	чистити
control	контроль, боротьба
control panel	панель управління
cultural practices	агротехнічні прийоми, агротехніка
dependent on	залежати від
disease	хвороба
designer	конструктор
due to	завдяки
feed	годувати
harvest	збирати (врожай)
high-yielding	високоврожайний
expert	спеціаліст, експерт
engineering	техніка
enough	достатньо
implement	знаряддя праці
insect	комаха
in such a way	таким чином
knowledge	знання
large-scale	широке застосування, широкомасштабний
livestock	худоба, свійські тварини
labour-consuming	трудомісткий

management	управління, керівництво
maneuverability	маневреність, рух
to monitor	управляти, направляти
national economy	національна економіка
no longer	більше не
obtain	отримувати
plant	сіяти, садити
per hectare	з гектара, на гектар
to produce	виробляти, продукція
productive force	продуктивна сила
production	виробництво
to provide	забезпечувати, передбачати
research	дослідження, досягнення, відкриття
re-armament	переозброєння
quality	якість
science	наука
seed production	виробництво зерна
selective	селекційний
soil	грунт
solution	рішення
success	успіх
to solve	вирішувати
variety	різновид, сорт
weed	бур'ян
wide application	широке застосування
working hands	робітники

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