5. Пасешниченко В.А. Растения – продуценты биологически активных веществ//Сорос. образ. ж.– 2001.– 7, № 8.– С. 13–19.

6.Фитоэргономика /Иванченко В.А., Гродзинский А.М., Черевченко Т.М. и др.; под. ред. Гродзинского А.М. – Киев: Наук. думка, 1989.- 296с.

7. Чекман І.С. Клінічна фітотерапія.– К.: ТОВ «Рада», 2006.– 656 с.

Пономаренко Н.В., викладач-методист іноземної мови вищої категорії,
Білгород-Дністровський коледж природокористування, будівництва та комп'ютерних технологій

ЕКОЛОГІЯ ТА ЗДОРОВ'Я (ECOLOGY AND HEALTH)

Анотація. *We live in a changeable world where it is very difficult to keep up with new ideas and inventions. Our life becomes more comfortable and more interesting. We get to know about the smallest details of a child's birth and space, computers have become the part of everyday life, and we use new devices which make housework much easier. But we seldom think that the majority of inventions, new technologies bring harm to a man. Today the greatest problem for humanity is pollution. Pollution is the contamination of the environment including air, water and land. Another problem of big cities is wastes.*

These are only some of problems of the environment. The list may be endless: greenhouse effect, ozone holes, etc. All of these factors threaten mankind and nature, reduce their life, and even kill them. What can be done to protect them? It is very difficult to answer this question because millions of people all over the world fight against pollution for survival of everything alive on earth. There is a special green movement which calls for nature protection. But it is clear that it is necessary to use purification equipment at the plants and factories, look for wasteless technologies, learn to use natural sources of energy, such as wind, sun, etc., use new recycling technologies. It is very important that every person should be responsible for ecologically clean world and act correspondingly.

Ключові слова: *environment, to pollute, polluting agents, global scale, acid rains, overpopulation, to threaten, to affect, respiratory system, combustions, chemical compounds, dizzy, to emit, disastrous, consequences, greenhouse effect, to breathe, chemical fertilizers, pesticide, plant, insect, extinct, to persuade enterprises, wastes.*

Ecology is a very popular word today. But what does it mean? Ecology is a science which studies the relationship between all forms life on our planet and the environment. This word came from Greek «oikos» which means home. The idea of home includes our whole planet, its population, Nature, animals, insets and all other living beings and even the atmosphere around our planet.

Ecology is a scientific study of the interaction of living beings with each other and their relationship with the environment. Ecology is usually considered the main branch of biology. Nevertheless, ecology has a wider coverage, as it includes both organisms and their environment. Studying the interaction between organisms and the environment can give a general idea of the richness of life on earth and can help us understand how to protect this wealth, which is increasingly threatened by human activity. Regardless of the problems associated with conducting research in the natural environment, environmentalists often carry out field experiments to test their hypotheses.

Ecology is an interdisciplinary science. Because of the emphasis on higher levels of organization of life on Earth and on relationships between organisms and the environment, ecology relies heavily on many other branches of science, especially geology and geography, meteorology, chemistry and physics.

Ecologists study organisms and their environment at different levels. The most inclusive level is the biosphere. The biosphere consists of all organisms on planet Earth and the areas in which they live. It occurs in a very thin layer of the planet, stretching from about 11,000 meters below sea level to 15,000 meters above sea level. An image of the biosphere is shown in Figure 1. Different colors on the map indicate the number of food-producing organisms in different parts of the biosphere. Environmental issues that can be investigated at the biosphere level include ocean pollution, air pollution and global climate change.

Ecologists also study organisms and the environment at the population level. A population consists of organisms of the same species that live in the same area and interact with each other. Important environmental issues at the population level include:

• Rapid population growth, leading to overpopulation and environmental damage;

• The rapid decline in populations of many inhuman species, leading to the extinction of many species.

Another level at which environmentalists study organisms and their environment is the community level. A community consists of populations of different species that live in the same area and interact with each other. For example, coyote and rabbit populations can interact in a pasture community. Coyotes hunt and eat rabbits for food, so these two species have a predator-prey relationship. Environmental problems at the community level include how changes in the size of one population affect other populations.

A community can also be defined as a biotic component of an ecosystem. An ecosystem is a natural unit consisting of all living organisms in an area functioning together with all non-living physical environmental factors. The concept of an ecosystem can be applied to units of different sizes. For example, a large amount of fresh water can be considered an ecosystem, just like a small piece of dead wood. Both contain a community of species that interact with each other and with the

abiotic components of their environment. Another example of an ecosystem is the desert, similar to that shown in Figure 2.

Like most natural systems, ecosystems are not closed, at least in terms of energy. Ecosystems depend on continuous input of energy from outside the system. Most ecosystems derive energy from sunlight. Some get energy from chemical compounds. Unlike energy, matter is recycled in ecosystems. Elements such as carbon and nitrogen, which are necessary for living organisms, are used again and again.

Thus, ecology is viewed by some as a holistic science that goes beyond older disciplines, such as biology, which, from this point of view, become subdisciplines that contribute to environmental knowledge.

Until recently the planet was a large world in which human activities and the nature were in balance. Acid rain, global warming, ozone reduction, widespread desertification and species loss: we have to face them now.

Ecology and economy are very closely connected. First economy influenced the state of our environment. Now we have to face degradation of soils, water, atmosphere and forests. Millions of trees are dying in Germany's Black Forest and thousands of lakes in Sweden are so acidic that nothing can live in them. In Scotland farmers complain that acid rains kill their fish. Forests in Denmark, France, Northern Italy, Greece and Norway are damaged.

Thousands of lakes in Canada and the USA can no longer support fish life. The Mediterranean Sea has one of the dirtiest coastlines in the world. Ten million tons of oil, industrial waste, chemicals are pumped into the sea every year. It causes diseases like typhoid, dysentery, hepatitis and cholera. The Rhone in France, the Po in Italy, the Ebro in Spain and the Nile in Egypt carry pesticides and chemical wastes.

Many industries produce waste products, which can be difficult or dangerous to dispose of. Many countries have no storage facilities for the spent nuclear fuel. The search for ways to dispose of radioactive waste goes on. In 1982 seventeen countries took part in the United Nations environmental program. The World Commission on Environment and Development, headed by the Prime Minister of Norway, was set up in 1983 by the United Nations. Its aim was to examine the environment and development problems on the planet and to formulate realistic proposals to solve them.

Environmental pollution is an adverse change in our environment, completely or largely as a by-product of human actions, through direct or indirect effects of changes in energy structure, radiation levels, as well as chemical and physical structure and abundance of organisms. Environmental pollution is a global problem and is common to both developed and developing countries, which attracts the attention of people with its serious long-term consequences.

Over the past few decades, various sources of pollution have been identified that change the composition of the water, air and soil environment. Substances that cause pollution are known as pollutants. The pollutant can be any chemical (toxic metal, radionuclides, organophosphates, gases) or geochemical (dust, sediment), a

biological organism or a product or physical substance (heat, radiation, sound wave) that is emitted by a person intentionally or unintentionally in environment with actual or potential adverse, harmful, unpleasant or inconvenient consequences. Such undesirable effects can be direct (affecting humans) or indirect, mediated through resource organisms or climate change. There are such types of pollutions:

1. Air pollution;
2. Water pollution;
3. Soil / land pollution;
4. Noise pollution;
5. Thermal pollution;
6. Radioactive pollution.

Air pollution can be defined as a change in air quality that can be characterized by measuring chemical, biological or physical pollutants in the air. Consequently, air pollution means the undesirable presence of impurities or an abnormal increase in the proportion of certain components of the atmosphere. It can be divided into 2 sections: visible and invisible air pollution.

Air pollution is caused by the presence of toxic substances in the atmosphere, which are mainly caused by human activity, although this can sometimes be caused by natural phenomena such as volcanic eruptions, dust storms and forest fires, which also degrade air quality.

Water pollution. Virtually all types of water pollution are harmful to human and animal health. Water pollution may not harm our health immediately, but can be harmful after prolonged exposure. Different types of pollutants affect animal health in different ways: heavy metals from industrial processes, industrial waste and microbial pollutants from wastewater, sulfate particles from acid rain and much more affect the purity of water.

Soil \ Land pollution refers to all forms of pollution affecting any type of soil: rural, forest, urban, etc. Soil pollution is a destructive element for many biological resources and ecosystems. The soil is polluted if it contains an abnormal concentration of chemical compounds potentially hazardous to human, plant or animal health.

Noise pollution is one of the most serious problems of urban life. «Noise is a stimulus for the central nervous system, and this stimulus releases some hormones,» said Dr. David Rojas of the Barcelona Institute for Global Health in Spain. «It increases the risk of hypertension, and hypertension has been associated with many other cardiovascular cerebrovascular diseases, such as heart attack and stroke.»

Many people have never heard of **heat pollution**, and they are not aware of the significant problem it causes. The actual definition of thermal pollution is «a harmful release of heated fluid in the body of water or heat released into the air as an unnecessary product of business.» What is the definition that describes thermal pollution when industries and businesses draw water from nearby lakes, oceans or rivers and then heated or cooled before being sent back to the environment. This process is detrimental to local communities and ecosystems, and the problem

increases over time. One of the common causes of thermal pollution is when a company or a plant takes water and cools it sharply to clean equipment or other products, and then releases it back.

Radioactive pollution is defined as the increase in the natural radiation levels caused by human activities. It is estimated that about 20% of radiation we are exposed to is due to human activities. The human activities that can release radiation involve activities with radioactive materials such as mining, handling and processing of radioactive materials, handling and storage of radioactive waste, as well as the use of radioactive reactions to generate energy (nuclear power plants), along with the use of radiation in medicine and research.

Agriculture and environment are closely connected with each other. Crop fields and animals 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 fields.

At present agriculture is not so 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.

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.

Thus, the farmers have to solve two problems. On the one hand they are to improve and intensify agricultural production and on the other hand they are to minimize the effect of agriculture on the environment.[1, с. 16-17]

We must do everything possible to save the nature, to make our rivers and air clean. There are different ways to save our nature: 1) to lessen pollution of air, land and water; 2) to protect and plant forests and parks; 3) to build close cycle water systems, because the health of every man is the health of our planet the Earth.

Список використаних джерел

1. Г.В. Маслова «Пособие для сельскохозяйственных техникумов»
2. Н.В. Тучина, Т.К. Меркулова, В.С. Кузьміна «Speak English»
3. Guido Ceccolini, Anna Cenerini «Parks and procted areas»

Проців Г.П., вчитель хімії, біології і екології, вчитель-методист; голова Правління ГО «Екологічний клуб «Край»», керівник Тернопільського ОВП НЕЦУ, член Координаційної Ради Міжнародної екологічної асоціації охоронців Дністра «Eco-Tiras»,
Бережанська школа-гімназія ім. Богдана Лепкого, Тернопільське відділення МАН України,