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Ecotoxicants and Pathologies Occurring in Productive Animals Body under their Influence

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ABSTRACT
The article provides information on the ecotoxicants composition formed by industrial production and pathological processes occurring in the productive animal bodies from their harmful effects.

KEYWORDS: *man-made, industrial waste, pesticide, dyspepsia, bronchopneumonia, fluorosis, lung cancer, neurotoxic, hematotoxic, hepatotoxic, nephratoxic*

INTRODUCTION

Today, the ecology and food issue remains one of the global concerns in the whole world.

Man-made factors are also caused by human impact on nature and have a detrimental effect on the environment, wildlife and the food products quality.

As a result of chemical and technological processes introduction in various economy sectors in order to develop industrial production, conditions are being created for real environmental pollution.

In recent years, in the regions, as a result of extraction processes and industrial raw materials processing expansion, a large amount of harmful toxic wastes are released into the atmosphere, causing its pollution. A number of toxins accumulate in the feed, and eventually such products are used for animal and human consumption.

Industrial wastes are wastes from factories, industrial enterprises and mines that are generated as a result of industrial activities, including any means that are unusable in the production process. Hazardous wastes can be toxic, flammable, reactive or radioactive. Industrial wastes can fall into the sea basin as a result of polluting the air, soil, or nearby water sources. [10].

The United States produces 7,6 billion tons of waste annually. [11].The World Health Organization states that air pollution is the most dangerous in terms of its impact on human health. [13].

Scientific research

The research was conducted using existing livestock belonging to farms in Sariosiya and Uzun districts of Surkhandarya region and Karmana and Kyzyltepa districts of Navoi region, which are affected by industrial waste. In monitoring the hydrocarbon oxides, nitrogen oxides, nitrogen dioxide, gas temperature, differential pressure, technological parameters and emissions calculation from industrial enterprises, using special photometric equipment multigas "OPTIMA-7" gas analyzer and drinking, natural and wastewater and soil composition determination "Expert-003".

In determining the ecotoxicants toxicity level based on the of L.I. Medved and etc. classification (1986), on the basis of G.F. Karomoslov and etc. classification (1986) in animals immune status assessment, effects on animals' reproductive activity on the basis of I.V. Sanotsky and etc. classification was determined using similarly accepted clinical diagnostic methods.

Research data

According to the World Health Organization, the cancer incidence in the world has increased fourfold in the last 25 years. [5].

Millions of tons of mineral fertilizers and pesticides are applied to crops every year. According to the data, the pesticides production exceeds 3,000 tons per year. [6].

The number of chemical compounds produced in the chemical industry today is more than 500,000, from which about 40,000 are harmful to humans and animals. Unfortunately, about 12,000 of these chemical compounds contain hereditary toxins. [1].

Ammonia, which is released from the air, causes many respiratory problems. Diseases caused by air pollution can extend to the eyes, skin, nose, and throat, eventually leading to pneumonia or bronchitis. There have also been reports of numerous headaches, nausea and dizziness occurring in people in the area. [12].

About 20-24 water tons is used to extract each coal ton from the mines. During the year, 2.5 billion m^3 of contaminated wastewater from coal mines is pumped to the surface. Excessive levels of various harmful substances in the water increase the underwater animals sensitivity to it and cause various levels of poisoning among them, which has a negative impact on environmental processes. [8;9].

Water pollution can have dangerous effects on the human body. The main ones are diseases transmitted by bacteria, parasites and chemicals. Because by drinking safe water, people are protected from diseases (plague or typhoid) that they can suffer from. [14].

As a result of the Aral Sea drying up, the land salinity has increased 10 times. As a result, this condition accelerated soil erosion. Currently, about 2 billion land hectares are lost due to erosion. [2].

The total atmosphere pollution with harmful modern man-made factors is 4 billion tons, of which the main pollutants are aerosols and gases, and 300-500 million tons are harmful dust. [7].

The main sources of anthropogenic emissions into the atmosphere are thermal energy and industrial producers, oil and gas refineries and vehicles.

Sulfur and nitrogen oxides, which are industrial wastes, can be stored in the atmosphere for up to 15 days, during which time they can be blown away by winds up to 1,000 km. In this case, one state can become a constant pollution source for another state.

At present, air pollution is caused by fuel emissions from vehicles. There are 1 billion cars in the world, and their exhaust gases contain about 500 organic, toxic compounds, 40 of which have carcinogenic and mutagenic effects on the body. [1].

Heavy metals are also one of the most polluting factors in the atmosphere. The damage is mainly caused by cadmium, zinc, cuprum and various wastes burning in furnaces. The plant, which has a capacity of 1 million thermal energy kilowatts, emits 1 kg of mercury and 0.1 kg of arsenium lead to the atmosphere from burning about 1,000 tons of coal per day. [3].

In the end, all these harmful substances accumulate in the biosphere, and then they enter the humans and animals' body through food, drinking water and air, causing various diseases. Because these substances have neurotoxic, hematotoxic, hepatotoxic, nephratoxic and respiratory traumatic effects that are harmful to the body.

A number of harmful wastes emitted from industrial enterprises and their effects on the body, as well as toxicity and danger level.

Table 1

	Name of harmful waste	The norm	Manipulation
1	Nitrogen ammonia	0,39 mg/l	Causes acute and chronic poisoning in the body. As a result, the hemoglobin amount in the blood decreases, leading to an increase in the methemoglobin amount. Oxygen deficiency occurs in the animal's body. It also reduces fetal growth and development in pregnant animals. It belongs to III class in toxicity and danger terms.
2	Nitrogen nitrates	9,1 mg/l	
3	Nitrogen nitrite	0,02 mg/l	
4	Ammonia	0,046 g/s	Induces acute poisoning. The eyes and respiratory system are injured. Pain, swelling and burning of the skin are observed. It belongs to IV class in toxicity and danger terms.
5	Fluorine	In water 0,7-1,5 mg/l 20 mg/kg in coarse feed	Fluorosis in the body (disrupts the minerals, carbohydrates and proteins metabolism in the body's enzyme system) leads to disease, as well as osteomyelitis, infertility, lung tumors, skin burns, necrosis, and disrupts calcium metabolism. I class
6	Hydrogen fluoride	In the air 0,1 mg/m^3	It has strong poisons and dangerous effects. It has reproductive activity, ganadotoxic and embryotoxic effects, cumulative properties and mutagenic effects. It belongs to the I class on toxicity and danger level.
7	Sulfur dioxide	0,1 mg/l	Disrupts the central nervous system and blood-producing organs activity in the body. Causes swelling and asphyxia in the lungs. It belongs to II class in toxicity and danger terms.
8	Nitric oxide	0,005 mg/l	Causes acute and chronic poisoning. Causes an increase in the methemoglobin amount in the blood. Pain, nephrosis, and liver dysfunction are observed. It belongs to II class in toxicity and danger terms.
9	Carbon monoxide	In the air 0.01-0.9 mg/m^3	Causes acute poisoning in the body. As a result, the central nervous system disorders occur. It has an embrotoxic, toxic effect on the fetus. It belongs to IV class in toxicity and danger terms.
10	Inorganic dusts	0,062 g/s	It carries and spreads germs and worms' eggs. As a result of exposure causes bronchitis, conjunctivitis, dermatitis, allergies, poisoning, oncological diseases in the body. It belongs to III class in terms of toxicity and danger.

Mineralization processes caused by water pollution and its impact on the body.

Table 2

	Harmful substances in water	The norm	Manipulation
1	Cuprum ions	0,001 mg/l	After ingestion, severe abdominal pain occurs, manifesting cases of tachycardia, asphyxia, paralysis, hemolysis in the blood, renal failure, jaundice and allergies. It belongs to II class in terms of toxicity and danger.
2	Cuprum	1,0 mkg/l	
3	The process of mineralization of water	1000 mg/l	It leads to metabolic processes disruption in the body.
4	Phenol	in 0.001 mg/l water	Disrupts the central nervous system activity in the body. Causes allergies and cancer. Deficiencies occur in the kidneys. It belongs to III class in terms of toxicity and danger.
5	Sulfate	in 100 mg/l water	Disrupts metabolism and liver function. Reduces sexual activity (ganodotoxic). It belongs to IV class in toxicity and danger terms.

Conclusions and conclusions.

Most of the chemical toxicants enter the body through the respiratory tract, gastrointestinal tract, skin and mucous membranes. In high amounts, these chemical wastes and harmful dusts can have negative effects on the livestock and poultry bodies, such as carcinogenic, teratogenic, embryotoxic and allergic.

As a result, it causes various pathological processes in the body. In particular:

1. The nervous system diseases (neurosis)
2. The digestive system diseases (dyspepsia, atony, tympani, gastroenteritis)
3. The respiratory system diseases (lung cancer, bronchitis, pneumonia, bronchopneumonia, pleurisy, laryngitis)
4. Metabolic disorders (Fluorosis, hypovitaminosis A, liver and kidney disease, allergies, osteomalacia, dermatitis, oncological diseases, mastitis, conjunctivitis)
5. Genital diseases (infertility, fetal developmental pathology, testicular hernia)
6. Poisoning (pesticides, chemical fertilizers)
7. Parasitic diseases (coccidiosis, hemosporidiosis, fasciolosis)
8. Hereditary diseases (disability)

As an exposure result to chemical toxicants, various pathological processes occur in the animals' immune system and reproductive activity. In particular, their immunodepressive effect on the immune system leads to a decrease in overall resistance in the body and an increase in local animals susceptibility to infectious diseases. [4].

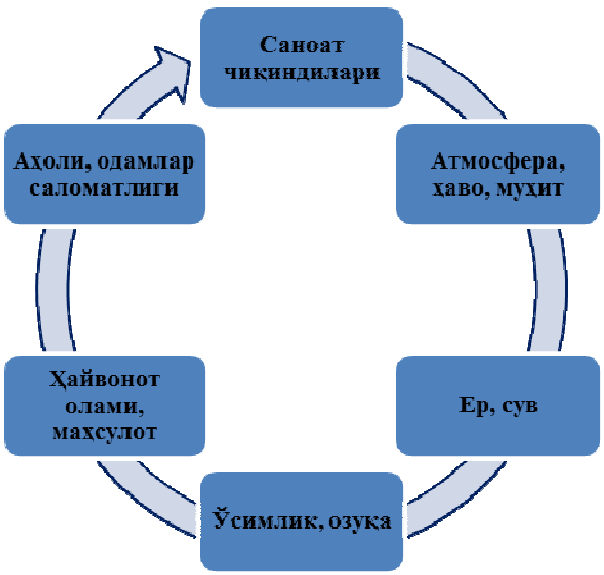
In animal reproductive activity, a decrease in fertility leads to the offspring death in the next developmental period, barnyard and infertility among females, and diseases such as testicular hernia in males. [6].

Chemical toxicants are the main organs that accumulate in the animals body: liver, spleen, heart muscle, kidneys, lungs, adipose tissue, muscle tissue, tooth and bone tissue, blood, mammary glands and stomach mass. [4].

Decreases in the protein, carotene, phosphorus, reserves of alkalis and calcium amount required for the animal body due to the harmful industrial wastes impact, naturally have a negative impact on animal productivity and the products quality derived from them.

Conclusions

1. The continuous movement interdependence of hazardous industrial wastes in the external environment can be described as follows:



2. Harmful waste leads to fluorosis, osteomalacia, hereditary diseases, nervous system, respiratory system, digestive diseases and metabolic disorders, the reproductive organs diseases and poisoning among livestock.
3. Harmful chemical toxicants increase the animals susceptibility to infectious diseases, as a result of which the immune system, from the immunodepressive effect, decreases the overall resistance in the body.
4. Decreased fertility in the animals reproductive activity leads to infertility and infertility among females, and to the diseases occurrence such as testicular hernia in males.
5. As a result of water contamination with various wastes, its high mineralization level leads to metabolic disruption processes in the animals' body. To eliminate such cases, it is advisable to use EWTU (electrochemical water treatment unit) water electrochemical treatment equipment.
6. The treatment system creation based on modern technologies, which recycles industrial waste and gases, will create the basis for the harmful effects elimination on the environment and its inhabitants organism.
7. Conducting regular, veterinary and sanitary control quality analysis of consumer goods produced in agriculture and animal breeding ensures the various diseases prevention that occur among the population.

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