WEB OF SCIENTIST: INTERNATIONAL SCIENTIFIC RESEARCH JOURNAL
ISSN: 2776-0979, Volume 3, Issue 2, Feb., 2022

THE EFFECT OF SMALL DOSES OF THE DRUG "EDIL" ON THE PICTUTE OF LEYKOCYTES

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Resume

Pesticides can get into the body not only directly, but also indirectly. The toxic elements contained in pesticides enter our bloodstream along with food. Pesticides and herbicides negatively affect the endocrine, immune and nervous systems.

Резюме

Пестициды могут попасть попадать в организм не только напрямую, но и косвенно. Содержащиеся в пестицидах токсичные элементы поступают к нам в кровь вместе с продуктами питания. Пестициды и гербициды отрицательно влияют на эндокринную, иммунную и нервную системы.

Introduction

The problem of environmental protection is currently not only relevant, but also global. A pesticide is a substance of chemical or biological origin intended for the destruction of harmful insects, rodents, weeds, pathogens of plants and animals, as well as used as a defoliant, desiccant and growth regulator. Avicenna (Abu Ali ibn Sina) suggested using such means as wormwood, myrtle, oleander leaves, cypress cones, etc. in the fight against harmful insects (2,3,4).

Pesticides and herbicides negatively affect the endocrine, immune and nervous systems. These are chemicals that have varying degrees of toxicity, but all without exception are dangerous to human health. The price of such chemicals depends on the type of pesticides and the duration of action. With each application of pesticides, their concentration in nature increases, and this poses a real threat to humanity. They are not only able to accumulate in huge quantities in organs and tissues, but can also remain in the body forever (1 6,7,10).

The National Cancer Institute of the USA has noticed that farmers suffer from some types of cancer more often than the rest of the population. For example, agricultural workers have an increased risk of skin, oral cavity, stomach, brain, prostate and other cancers. Interestingly, these people eat more greens, smoke less and are always physically active. They die less from cardiovascular diseases, lung cancer, esophagus, intestines, which is associated with eating a lot of coarse fibers.

Some studies show that the greatest risk of exposure to pesticides is in the first weeks when the child's nervous system develops. In addition, the powerful toxins contained in pesticides have a strong effect on the human brain. It was found that pesticides especially reduce the level of intelligence in children and students living in close proximity to agricultural fields.

High levels of pesticides in the blood contribute to the resistance of tissues to insulin, which leads to the inability to process glucose, and, accordingly, causes type 2 diabetes mellitus. Pesticides are washed into the water during rains and get on the table not only with vegetables and fruits, but with fish. The body is not able to get rid of high concentrations of pesticides, which leads to a tendency to develop diabetes mellitus.

Some pesticides accumulate in the cells of the body, causing the development of obesity. This is because certain pesticides act as substitutes for natural hormones, disrupting the body's ability to regulate proper hormone production. Which subsequently leads to metabolic syndrome and obesity

The intrauterine effect of some pesticides increases the risk of lung diseases in the child in the future, while the risk of disease in children increased in direct proportion to the concentration of the pesticide in the mother's blood during pregnancy. According to experts, pesticides have a negative impact on the human reproductive system, such as an increase in the number of miscarriages, an increase in infertility, and a decrease in the level of the hormone testosterone in men.

Today it is very difficult to imagine our agriculture without pesticides. The volume of the food market is growing, and the total world consumption is also increasing. The toxic elements contained in pesticides enter our bloodstream together with food. Then they begin to act on our body in the same way as on pests. Pesticides can get into the body not only directly, but also indirectly. So, for example, after drinking milk from a cow that was fed with special feeds grown on pesticides, you willy-nilly become a hostage of strong poisons(8,9,11).

In this regard, the chemicalization of agriculture is currently impossible without a thorough study of the effect of new samples of fertilizers, defoliant pesticides on the human body and animals. In addition, it is necessary to create such chemical means of protecting plants from weeds and pests that have minimal toxicity. Herbicide drug "Edil" (at the same time it is a desiccant) has been transferred to commercial production. When studying the effect of this drug on the functional state of the blood system in a hot climate, it was found that the toxicity of the drug increases at high ambient temperature (5,6). Moreover, the dose value of 4-9 mg/ kg of body weight was equal to the square deviation from the arithmetic mean

However, small doses of the drug occur with a probability (approaching one) of their penetration into the body occurs in different ways: through contaminated hand skin, food, drinking water, through the respiratory tract. In this regard, the study of the effect of this drug on animals and humans in small amounts of pesticides is of scientific and practical interest.

Experiments were conducted on rabbits. Within one month, the drug was injected once and repeatedly into the abdominal cavity (regos). On the 1st, 3rd, 7th, 10th, 14th and 30th days after administration of the drug, blood was taken from the ear vein for analysis. The analysis of hematological parameters allowed us to judge not only the state of the circulating blood, but to some extent also about hematopoiesis.

With a single administration of the drug at a dose of 4 mg / kg of body weight under normal conditions of rabbits, the changes in the blood picture were as follows. Changes in leukocytes (in white blood cells) began after administration of the drug on the third day and it was expressed in an increase in the number of leukocytes in peripheral blood.The leukogram showed an increase in rod-shaped, segmented leukocytes and monocytes, a decrease in the number of lymphocytes, as well as an increase in the number of destroyed cells. Perhaps these changes have arisen as a result of bone marrow damage and they are aimed at increasing the body's strength.

By the thirtieth day of the experiments, the normalization of the studied indicators is noted, which may be due to the excretion of the drug from the body. When animals are overheated in a heat chamber at a temperature of 40 0C for one hour, the toxic effect increases from the first day of the experiment. The leukogram shows an increase in neutrophilic forms of monocytes. At one time, mitotic activity was observed and cells were destroyed.

A single injection of the drug into the abdominal cavity at a dose of 9 mg / kg in all experimental animals in the first days (1,3) causes a change in the car-tin of white blood cells (leukocytes). In leukocytes, leukocytosis with a lymphatic tendency is observed, a noticeable decrease in segmented neutrophils. By the thirtieth day, the changes listed above disappear, the indicators return to the initial level.

Daily administration of the drug in an identical dose causes more pronounced shifts in the studied indicators compared with a single administration. For the first time in the days of the experiment (1,3,7 th), lymphocytosis is detected in the leukocyte formula against the background of neutrophils (a slight shift to the left, an increase in the number of basophils). In the blood lubricant, species-altered cells are detected: vacuolized leukocytes. By the thirtieth day of the experiment, normalization is noted. Daily administration of the drug did not lead to a summation of the effect, on the

contrary, the body's reaction to the drug in the first days of the experiment was greater than the subsequent ones.

After a single oral administration of the drug at a dose of 4 mg / kg, leukopenia was observed in all animals in the first days without significant changes in the leukocyte formula. From the third day of the experiment to the thirtieth, there is a slight leukocytosis with a weak tendency to lymphocytosis. Daily oral administration of the drug in an identical dose, in the first days of the experiment, leads to leukopenia, which is replaced in the following days by minor leukocytosis, without changes in the leukocyte formula.

With a single oral administration of the drug at a dose of 9 mg / kg of body weight, leukocytosis is observed in the first days, a shift to the left in the lecocyte formula, a decrease in segmented neutrophils and an increase in lymphocytes. Starting from the 7th day, the marked changes in the blood picture begin to gradually normalize and by the thirtieth day all the displays return to the original background. Daily oral administration of the drug in an identical dose causes more pronounced shifts in the blood picture. In the first days, leukopenia is noted, which is replaced in the following days by minor leukocytosis with a lymphatic tendency.

It is interesting to note that in all experiments, the drug, when administered orally, has a more sensitive effect on the studied leukocyte counts in the first days of exposure. With its daily administration, there is no summation of the effect of its action. Obviously, the mucous membrane of the stomach and intestines are somehow a protective barrier. The degree of changes in the indicators of white blood cells depends on the dose, method, frequency of administration and ambient temperature. Thus, blood counts are a reliable indicator not only of the physiological state of the rabbit organism, its homeostasis, but also one of the main criteria for the detection of toxicants in nature.

Bibliography

1. Alavanja M.C., Hoppin J.A., Kamel F. Health effects of chronic pesticide exposure: cancer and neurotoxicity. 2004; 25: p.155–97.
2. Baranov A.I., Grinko A.V. The effect of herbicides on weediness and yield of spring barley // News of the Orenburg state agrarian university. - 2014. - No. 6 (50). - p. 35-37.
3. Belan S.R, Grapov A.F., Melnikova G.M. New pesticides. Reference book. - M.: Grail, 2001.
4. Zhemchuzhin S.G. Modern problems of studying herbicides (2006-2008) // Agrochemistry. - 2010. - No. 7. - p. 73-91.

5. Komilova B. O. The effect of pesticides on physiological function Scientist of the XXI century 5-1. 2017. p. 7-9 .
6. Komilova B. O. Effect of herbicidal preparations on blood picture. Galaxy international interdisciplinary research jurnal (GIIRJ)ISSN (E): 2347-6915
7. Vol. 9, Issue 12, Dec. (2021). p.1030-1032.
8. Kuzmina S. S. Morphological picture of the blood of carp fingerlings under the influence of barnon and anthor pesticides. Rostov n/A: Publishing House of Rostizdat, 2005. p. 103-108.
9. Kozhuro Yu.I., Anisovich M.V., Afonin V.Yu. Effect of triazine herbicides simazine and simazine and semerone on leukocyte cells of poikilothermic animals. BSU Bulletin. Ser. 2. 2014. No. 2
10. Gumovskaya Yu.P., Gumovsky A.N., Tsygankov V.Yu., Polevshchikov A.V. Persistent organic pollutants (POPS) in the human body: the experience of Russia and the former Soviet Republics. - Vladivostok: Publishing House of the Far Eastern Federal. un-ta, 2020. - p. 283-316
11. Lipsky S.I., Pantyukhov I.V., Ivchenko V.K. The effectiveness of herbicides of Bayer JSC in the fight against weeds in grain crops // Bulletin of KrasGAU. - 2018. - No. 3. - p. 12-19.
12. Hanke W., Jurewicz J. The risk of adverse reproductive and developmental disorders due to occupational pesticide exposure: an overview of current epidemiological evidence. 2004; 17:p. 223–43.