

## IMPROVING THE ENVIRONMENT THROUGH PROPER ORGANIZATION OF THE UTILIZATION PROCESS IN INDUSTRIAL ENTERPRISES

*Akhmadbek Jalilov*

*Andijan State Technical Institute, Senior Lecturer,*

*Department of Labor Protection*

[ahmadbekhfx555@gmail.com](mailto:ahmadbekhfx555@gmail.com)

**Abstract:** This article analyzes the qualitative and quantitative study of the release of harmful substances in the production process and measures to reduce their impact on the health of workers. The impact of toxic substances, dust, gases, aerosols and other chemical elements released into the atmospheric air at industrial enterprises on the human body, as well as modern technological and environmental approaches to their reduction, is considered. The effectiveness of preventive measures, protective equipment and occupational hygiene measures is analyzed on a scientific basis.

**Keywords:** industrial safety, harmful substances, toxic gases, dust content, medical and preventive measures, ventilation system, environmental safety, worker health, biological monitoring, technological modernization

**Introduction:** With the development of industrial production, environmental hazards are also increasing. Harmful chemicals generated during the production process can negatively affect the health of workers. Dust, toxic gases, heavy metals, radioactive and biological factors found in production workshops are dangerous to human health. Therefore, controlling harmful substances and reducing their negative impact on workers is an urgent issue.

### **Types of harmful substances in production and their effects on health**

Harmful chemicals generated during production can have a negative impact on workers' health in various ways, causing problems with the respiratory, nervous, liver and kidney systems. Therefore, it is necessary to use personal protective equipment, strengthen technical measures, improve ventilation systems and ensure constant medical monitoring to protect workers. These measures are important in protecting workers' health, making production processes safe and protecting the environment from pollution.

The impact of chemicals on humans is felt directly (when preparing mixtures, treating seeds, soil, plants) and indirectly - through plant and food products, fruits and vegetables obtained from fields treated with chemicals, as well as through animal products (meat, cottage cheese, milk, eggs, etc.) and when plant products are used as feed, the content of which in the composition of which exceeds the standard level of nitrates and pesticides is higher than the norm. Pesticides are more dangerous for humans than mineral fertilizers. According to their use, pesticides are divided into

insecticides (for combating insects), acaricides (for ticks), rodenticides (for harmful rodents), fungicides (for fungi), bactericides (for bacteria), herbicides (for weeds), etc. According to hygienic properties, pesticides are classified as follows: - according to toxicity when administered to experimental animals in the stomach (highly toxic, highly toxic, low toxic); - according to toxicity through the skin (acute, moderate and weakly expressed); - according to volatility (highly dangerous, dangerous and low dangerous); - according to the strong effect of toxic substances on the body (highly, significant, moderate, low); 11 - according to their stability in the soil (very stable - poisoning for more than 2 years, stable - from 0.5 to 2 years, medium stable - from 1 to 6 months and low stable - up to 1 month). The main methods of preventing poisoning with pesticides and mineral fertilizers: compliance with the norms, rules and instructions for labor protection when working with them. Workers should use personal and collective protective equipment, strictly observe the rules for agricultural machinery, processing crops and the amount of chemical preparations consumed, carry out chemical treatments at a sufficient distance from residential areas, livestock farms, water bodies, observe the permitted wind speed, the period of the last chemical treatment of crops before harvesting; use only tested and permitted preparations. Persons who do not meet medical requirements and have undergone initial and periodic medical examinations are allowed to work with pesticides and mineral fertilizers.

**Chemicals:** Sulfur dioxide (SO<sub>2</sub>), carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), phenols, formaldehyde, ammonia, and other gases can harm workers' health. Long-term exposure can cause respiratory diseases, allergic reactions, and cancer.

**Dust and aerosols:** Cement, metal, plastic, and coal dust damage human lung tissue and lead to the development of diseases.

**Biological harmful factors:** Bacteria, fungi, and viruses can become airborne in production environments and cause various infectious diseases.

### **1. Methods for qualitative and quantitative study of the distribution of harmful substances**

Qualitative and quantitative study of the distribution of harmful substances is a systematic research process aimed at identifying harmful chemicals present in the production environment or in the environment, studying their quantity and distribution characteristics. These research methods play an important role not only in identifying existing pollutants, but also in determining the level of their impact, and assessing the potential risk to the environment and human health. Below we will consider these methods in detail.

-Air quality monitoring - special gas analyzers and spectrophotometric methods are used to determine the amount of harmful substances.

-Aerosol and dust measurement - laser analyzers are used to measure dust and aerosol levels in production facilities.

-Determining the amount of toxic substances in the body of workers - biological monitoring determines the presence of harmful chemicals in human blood or urine.

### **3. Measures to reduce the impact of harmful substances on the health of workers**

**Improving ventilation systems:** Implementing effective ventilation and air purification systems to eliminate harmful substances in production workshops.

**Use of personal protective equipment:** Reduce exposure to harmful substances by using respirators, protective masks, goggles, gloves, and special clothing.

**Automation and robotics application:** Minimize risks associated with hazardous substances by automating processes that may come into direct contact with workers.

**Introduction of medical and preventive measures:** Ensuring that workers undergo regular medical examinations and monitoring the levels of harmful substances in their bodies.

**Modernization of technological processes:** Reducing toxic waste by introducing environmentally friendly materials and raw materials.

**Conclusion and recommendations:** Harmful substances in the production process can pose a significant health risk. This article discusses the types of harmful substances, their effects and monitoring methods. The introduction of modern environmental technologies in production, the use of protective equipment and regular medical examinations of workers are important in reducing the impact of harmful substances on health. In the future, it is necessary to conduct more extensive research on improving environmental standards and strengthening safety measures at production enterprises. The release of harmful substances in the production process poses a serious threat to the environment and the health of workers. This study is aimed at qualitatively and quantitatively studying harmful substances and developing effective measures to reduce their impact on human health.

The analysis showed that the main types of harmful substances released into the air during production are gases, dust, aerosols and other chemical compounds, the composition of which depends on the type of production. These substances can enter the human body through the respiratory tract, skin and digestive system and cause various diseases. In particular, respiratory diseases, allergic reactions, chronic intoxication and other health problems arise in connection with harmful factors of production.

### **References.**

1. Yo‘ldashev, A., & Jalilov, A. (2022). FAVQULODDA VA EKOLOGIK OFAT HOLATLARIDA KORXONALAR BOSHQARUVI. Eurasian Journal of Social Sciences, Philosophy and Culture, 2(13), 269-275.

2. Jalilov, A. (2022). FAVQULODDA VAZIYATLAR VAZIRLIGINING FAVQULODDA VAZIYATLARDA HARAKAT QILISH VA BOSHQARISH MILLIY MARKAZI MANSABDOR SHAXSLARI FAOLIYATIDAGI MUAMMOLI MASALALARNI ANIQLASH VA TAHLIL QILISH MODEL. *Science and innovation*, 1(C7), 286-294.
3. Jalilov, A. (2023). FVHQ VA BMM TIZIMINI TAKOMILLASHTIRISH MODEL. ООО «МОЯ ПРОФЕССИОНАЛЬНАЯ КАРЬЕРА.
4. Jalilov, A. (2022). MILLIY HARAKAT VA BOSHQARUV MARKAZI MUAMMOLARINING FAOLIYATIDAGI MUAMMOLARNI ANIQLASH VA TAHLIL OLISH NAMUNI. *Fan va innovatsiyalar* , 1 (7), 286-294.
5. Жалилов, А. (2022). Модель для выявления и анализа проблемных вопросов в деятельности должностных лиц национального центра действий и управления чрезвычайными ситуациями министерства по чрезвычайным ситуациям. in *Library*, 22(4), 25-32.
6. Jalilov, A. (2021). O'zbekistonda individual ravishda qurilgan binolarning zilzilabardoshligini oshirish yo'llarini takomillashtirish. *Scienceweb academic papers collection*.
7. Jalilov, A. (2024). TABIIY TUSDAGI FAVQULODDA VAZIYATLARDA TEXNIK TIZIMLAR FAOLIYATINI TAKOMILLASHTIRISH. *Nauchno-texnicheskiy jurnal «Matrostroenie»* , (2), 20-24.
8. Jalilov, A. (2024). METHODS OF PROTECTION FROM ENVIRONMENTAL EMERGENCIES: A COMPREHENSIVE REVIEW. *Web of Discoveries: Journal of Analysis and Inventions*, 2(6), 89-94.
9. Jalilov, A. (2024). CONTRIBUTION OF ARTIFICIAL INTELLIGENCE TECHNOLOGIES TO ACHIEVEMENTS IN SCIENCE. *Web of Discoveries: Journal of Analysis and Inventions*, 2(6), 78-82.
10. Ahmadbek, J. (2024). NEW INNOVATIVE TEACHING METHODS FOR EMERGENCY RESPONSE. *AndMI Xalqaro ilmiy-amaliy konferensiyalari*, 1(1), 428-431.
11. Makhsudov, M., Karimjonov, D., Abdumalikov, A., Jalilov, A., & Yigitaliyev, M. (2024, November). Method of determination current and power factor based on the output signal. In *AIP Conference Proceedings* (Vol. 3244, No. 1). AIP Publishing.
12. Jalilov, A. (2024). INTERNATIONAL EXPERIENCES IN THE FIELD OF LABOR PROTECTION: A COMPARATIVE ANALYSIS. *Web of Discoveries: Journal of Analysis and Inventions*, 2(6), 83-88.