

4. Statistical aspects of occupational injuries in the production of chemical products and chemicals

Vika Konovalova, Olha Yevtushenko, Alina Siryk
National University of Food Technologies, Kyiv, Ukraine

Introduction. Unlike other branches of production at chemical industry enterprises, dangerous situations are accompanied not only by injuries to employees, but can also cause chemical contamination of the area and surface layer of air, which poses a real threat to the life and health of the population living in the territory adjacent to the enterprise, and lead to environmental pollution.

Materials and methods. The study was conducted on the basis of the nominal-statistical method in the study of many random divisions in systematic works, according to statistical data on occupational injuries in the production of chemicals and chemical products for the period from 2010 to 2019. The study of trends in time series of occupational injuries is based on data from the State Statistics Service of Ukraine.

Results and discussion. Based on the results of statistical analysis in the production of chemical products and chemicals from 2010 to 2019, industrial injuries were received by 778 employees. Of these, men account for 76.3% of injuries. 23.7% were received by females, which is almost 3 times less than the level of male injuries. The influence of various factors on the indicators of occupational injuries was also analyzed: length of service in the specialty, profession, total length of service, age of victims. Workers between the ages of 30 and 50 account for more than half of all accidents, which is of particular concern. Most of the injuries are experienced workers with more than 20 years of experience and workers with up to 5 years of professional experience. Fatal accidents have been analyzed separately. According to the results of statistical analysis, 109 workers died in the production of chemicals and chemical products from 2013 to 2019. As a rule, each such injury is due to several reasons. Among the main reasons are: violation of safety requirements during operation of equipment, machinery, mechanisms, violation of labor and production discipline, violation of traffic rules, non-compliance with labor protection instructions, shortcomings during training in safe work, failure to use personal protective equipment, if available. The most common organizational reasons were: violation of traffic safety rules; non-compliance with the requirements of labor protection instructions; violation of safety requirements during operation of equipment, machinery, mechanisms; non-performance of official duties, lack of proper control by officials. The analysis of statistical data shows that for the types of events that lead to accidents, traffic accidents on public roads and on the territory of the enterprise are decisive. The most common psychophysiological causes were: trauma due to personal carelessness and alcohol intoxication.

Conclusion. The influence of various factors on the indicators of industrial injuries was analyzed. Statistical researches of industrial injuries at production of chemical products and chemicals were carried out.