



PREVENTION OF ENVIRONMENTAL POLLUTION WITH CHEMICALS

Dr. Suresh Kumar C¹, Dr. Keshamma E^{2*}

Article History: Received: 12.12.2022

Revised: 29.01.2023

Accepted: 15.03.2023

Abstract

The study seeks to explain the effect of harmful chemicals which are responsible for environmental pollution. The study seeks to explain the different types of chemicals present and their impact on human lifestyle and environment. Secondary sources of data are being used as references to extract meaningful information for this research. Sources such as online journals, scholarly articles, government statistics, and statistical records are used as references. Here are different types of pollution available which impacts human life badly and animal life, and sometimes it is the reason of death. Human life faces different type of diseases and the patients are effecting mostly.

Keyword: Chemicals, Harmful, Effects, Environment, Prevention, Types of Pollution.

¹Associate Professor, Department of Botany, Maharani Cluster University, Bangalore – 560001, Karnataka, India.

^{2*}Associate Professor, Department of Biochemistry, Maharani Cluster University, Bangalore -560001, Karnataka, India.

DOI: 10.31838/ecb/2023.12.1.098

Corresponding Author

Dr. Keshamma E^{2*}

^{2*}Associate Professor, Department of Biochemistry, Maharani Cluster University, Bangalore -560001, Karnataka, India.

E-mail Id- keshamma76@gmail.com

1. Introduction

Chemicals have a great impact in environment, and it is very harmful for health not only human but also animals. Pollution is mainly created by human, and sometimes it has effected dangerously [2]. There are different types of pollution which are air pollution, water pollution, soil pollution and noise pollution. Day by day, lots of factories are making and the machines of that factory created different types of pollution. Different types of chemicals are discharged into the air, and it was stared creating pollution with harmful gases.

Burning different types of fuels and other products are another reason for pollution. Wasting those materials through human which are not reusable and not eco-friendly on earth can create soil pollution. Loud noise is the main reason for noise pollution, which is mainly created by human. There are lots of functions are happening and the vehicle noises including industrial noise are the issue for environment. Sometimes it is dangerous for the heart attack patients, and it can be reason for high stress, hearing loss and sleepless life [4].

According to the European Environment Agency, almost 113 million people are affected for noise pollution. Sound pollution is a threat of life, and it is effected social life and misbalanced physical lifestyle also.

Water pollution is another dangerous part of human and animal life. Animals are drinking water from anywhere, as they have no idea from where they may drink water. Sometimes human are drinking water from any place like river, ponds, and it was the reason of their digestive issue and sickness [3].

Mostly industrial sides are wasting the water and that are mixture of chemicals and as a result cholera, typhoid, hepatitis are happening in human life. Soil pollution is a reason for infection of soil, and it is a genuine concern for lifestyle as foods are growing from soil, and it can effect with chemical [1]. Agriculture system effected mostly as it is the main source of vegetables and fruits, which is

important for living life. Toxic life is a reason for presence of heavy metals in soil.

Objectives

1. To effects badly environment with chemical
2. To prevent environments from chemical
3. To an effect in human life and animal life
4. To describe the different types of environmental pollution
5. To site out the chemicals which are harmful for environment

2. Research Methodology

The research methodology used to extract information to conduct this research is mainly extracted from secondary sources of data. Secondary sources such as online articles, scholarly articles, online brochures, statistical data, technical writings, and governmental data are used to extract information to conduct this study. The research could not use primary sources of data because of its own limitations. Information from proper scholarly articles are mentioned, and proper credentials are allotted to respective scholar. Secondary sources of data thus is being used to develop and shaper the research properly.

Effects of Chemical on Environment

Chemical pollution is a type of pollution that effect on our environment heavily and destructively. The presence of chemicals in air, water, dust, or any other environmental elements is described as chemical pollution [1].

The toxic chemicals such as carbon monoxide, oxygen, leas, nitrogen dioxide are come out with the emission of factories that is the cause air pollution. The household chemicals become a pollutant when it is released in environment; the detergents that one uses for home purpose can be cause of environmental pollution. Fertilizer and insecticide are used in agricultural sector excessively for better production. It is another reason of pollution [2]. The toxic elements from factories are mixed with lake, stream, and rivers and contaminate water of it.

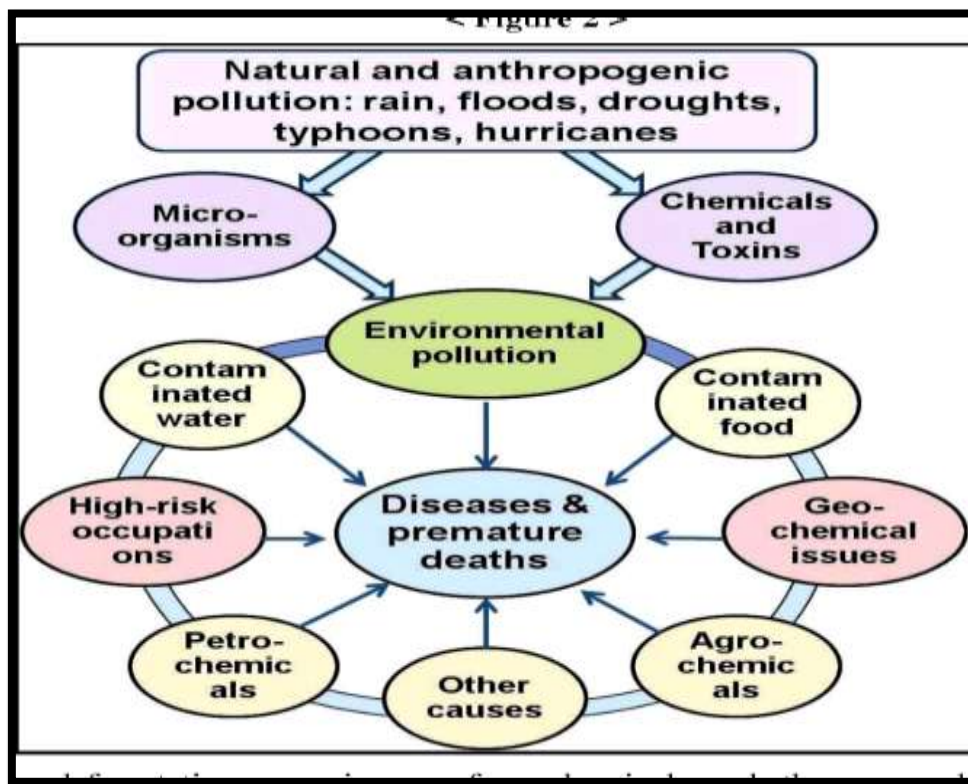


Figure 1: Effect of Environmental Pollution

(Source 1)

Figure 1 indicates the chemical pollutions on environment.

3. Prevention of Environment

The way that can be followed for preventing environmental pollution is modifying manufacturing process by use of natural materials. It is said that nontoxic must be used for preventing the pollution. Water and energy conservation practices must be adopted by the people for a pollution free environment. Using of plastic should be stopped for a healthy environment. The use of paper bags instead of plastic can be taken as a step of preventing environmental pollution.

The way to prevent the chemical pollution is to use green products. A public transport that causes the environmental pollution is replaced by transport having pollution free technology. It is seen that crackers during the festive season contaminate the environment [4]. Avoiding crackers is a necessary step toward preventing pollution. Use of air condition is a cause of environmental pollution. So it is need to use of fan instead of air condition.

Effects of chemical on human life and animal life

The impact of chemical pollution is very dangerous to human health and animal life. The antioxidant defenses are seen in living animals. Cell death, inflammation also occurs for this. The people

suffer from liver disease, kidney disease. It is also harmful for the human because environmental pollution can be cause of cancer [5]. The greenhouse effect occurs the skin diseases. Neurological diseases in human have been increased due to environmental pollution. Animal life has been hampered for the environmental pollution. Many animals become dead for changing of climate. The ecological balanced cannot maintain. Water pollution damages the lives of aquatic animals.

Types of Environmental Pollution

Pollution can be defined as the introduction of a harmful substance into the environment, causing adverse effects. There are different types of pollution. Categorically, we can divide pollution into air, water, sound, and soil pollution [3]. Air pollution can be defined as the introduction of harmful elements into the atmosphere. Poisonous elements such as carbon monoxide, nitrogen dioxide, carbon dioxide, and sulfur dioxide are some of the pollutants, which pollute air. Air pollution are caused by burning of fossil fuels and release from factories [2]. Adverse affect air pollution causes is skin cancer in humans, Acid rain and global warming.

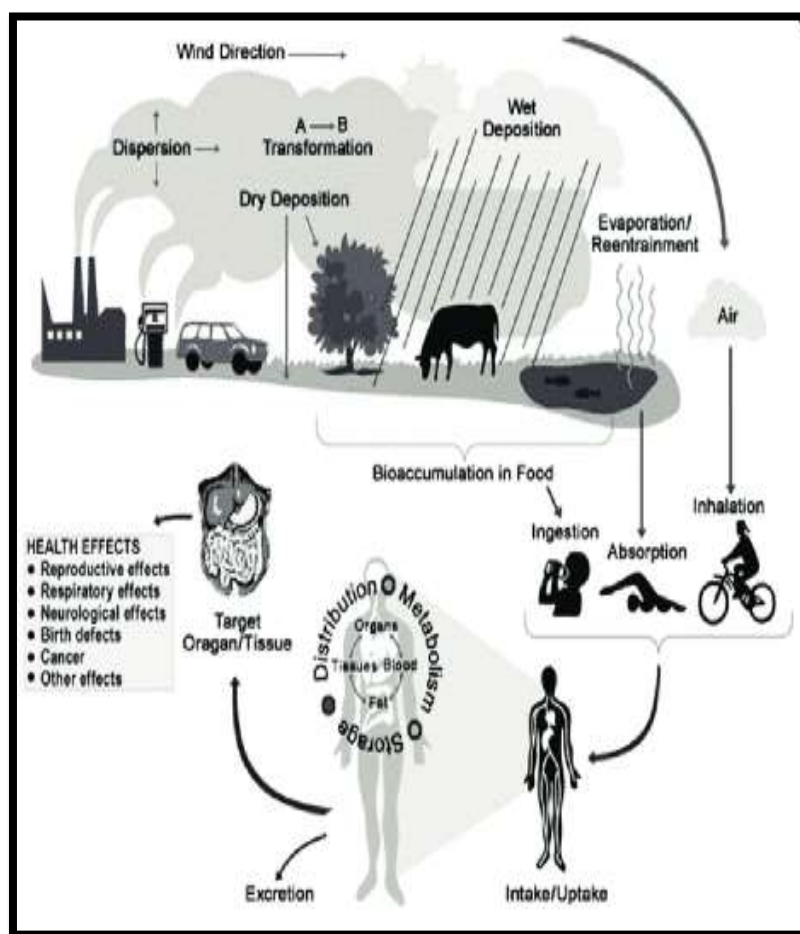


Figure 2: People exposed to chemicals

(Source: 2)

Figure 2 describes how people exposed to chemicals. Water pollution means intoxication of water by poisonous elements such as arsenic and lead. Water from sewage dumps, factory residues are common sources of water pollution. Diseases such as typhoid, hepatitis, and eutrophication in marine life are responsible for water pollution [1].

Noise pollution refers to the excessive amount of noise those results in disruption of social harmony. Noise pollution is caused by unchecked use of music systems, loudspeakers, and unwanted honking by vehicles. Noise pollution can result in permanent loss of hearing and can lead to loss of concentration, patience, and rise in anxiety level [3]. The ultimate type of pollution is soil pollution. Soil pollution refers to degradation of the quality of soil due to the presence of unwanted chemicals such as arsenic and lead. Soil pollution is caused due to oil spills, extensive use of agrochemicals,

mining activities, and acid rain [3]. The plants, thus transferring those elements to its consumers, creating a chain reaction, absorb toxic chemicals from soil.

4. Chemicals Harmful For The Environment

The agency for toxic substances and disease registers 275 chemicals, which are harmful for the environment. Pollutants such as sulfur dioxide, carbon monoxide, as well as nitrogen dioxide are responsible for polluting the air [4]. Industrial wastes, hydrocarbons, pesticides, and agrochemicals used in farms pollute water as well as soil [5]. These toxic releases contain harmful chemicals like mercury, lead, and arsenic, which contaminates its surroundings.



Figure 3: Threats to the environment

(Source:3)

Figure 3 describes threats to the environment by pollution. Chemicals such as acryl amide, benzene, cadmium, benzophenon, biphenyl, chlordane, heptaphor and codnine are just some of the chemical pollutants out of the 275 registered chemicals that pollute the environment [2]. These types of chemicals are discharged into our environment through every day usage of certain products. Products such as detergents, cosmetics, drugs, refrigerant gases cleaning chemicals and degreases release harmful toxic elements into our environment.

5. Conclusion

The chemical pollution has become the threat of the world. Everyone is suffering for it very badly. Use of chemicals is the cause of air, water, soil pollutions. The production of crops is declined. The health diseases of human have been increased day to day. The ecological balance cannot be maintained [6]. A lot of animals become rare for the pollution. The human health becomes unhealthy. The aquatic lives are disrupted. Pollutants contaminate the whole environment and this is very dangerous for human health.

6. References

- Song, H., Zhang, Y., Souza, J. N., & Li, J. (2022). Guest Editorial AI-Driven Synthetic Biology for Human Wellbeing. *IEEE Journal of Biomedical and Health Informatics*, 26(10), 5042-5043. Retrieved from <https://ieeexplore.ieee.org/iel7/6221020/9910251/09910481.pdf> [Retrieved on 27th March 2023]
- Chen, Z. G., Zhan, Z. H., Kwong, S., & Zhang, J. (2022). Evolutionary computation for intelligent transportation in smart cities: A survey. *IEEE Computational Intelligence Magazine*, 17(2), 83-102. Retrieved from <https://ieeexplore.ieee.org/iel7/10207/9756588/09756591.pdf> [Retrieved on 27th March 2023]
- Villalobos, R. J., Moran, L. A., Huenupán, F., Vallejos, F., Moncada, R., & Pesce, C. (2022). A New Current Transducer for On-Line Monitoring of Leakage Current on HV Insulator Strings. *IEEE Access*, 10, 78818-78826. Retrieved from <https://ieeexplore.ieee.org/iel7/6287639/6514899/09830709.pdf> [Retrieved on 27th March 2023]
- Ali, M. F., Jayakody, D. N. K., & Li, Y. (2022). Recent trends in underwater visible light communication (UVLC) systems. *IEEE Access*, 10, 22169-22225. Retrieved from <https://ieeexplore.ieee.org/iel7/6287639/966>

- 8973/09707771.pdf [Retrieved on 27th March 2023]
- Aslay, F., & Ting, N. S. (2022). Machine Learning-Based Estimation of Output Current Ripple in PFC-IBC Used in Battery Charger of Electrical Vehicles: A Comparison of LR, RF and ANN Techniques. *IEEE Access*, *10*, 50078-50086. Retrieved from <https://ieeexplore.ieee.org/iel7/6287639/9668973/09771442.pdf> [Retrieved on 27th March 2023]
- Biswas, P. C., Rani, S., Hossain, M. A., Islam, M. R., & Canning, J. (2021). Recent developments in smartphone spectrometer sample analysis. *IEEE Journal of Selected Topics in Quantum Electronics*, *27*(6), 1-12. Retrieved from <https://ieeexplore.ieee.org/abstract/document/9415173> [Retrieved on 27th march, 2023]
- Tohidi, S., Parhizkar, M., Bidadi, H., & Mohamad-Rezaei, R. (2020). Electrodeposition of polyaniline/three-dimensional reduced graphene oxide hybrid films for detection of ammonia gas at room temperature. *IEEE Sensors Journal*, *20*(17), 9660-9667. Retrieved from <https://ieeexplore.ieee.org/abstract/document/9081894> [Retrieved on 27th march, 2023]
- Sun, J., Sokolovskij, R., Iervolino, E., Liu, Z., Sarro, P. M., & Zhang, G. (2019). Suspended AlGaIn/GaN HEMT NO₂ gas sensor integrated with micro-heater. *Journal of Microelectromechanical Systems*, *28*(6), 997-1004. Retrieved from <https://ieeexplore.ieee.org/iel7/6287639/6514899/08632898.pdf> [Retrieved on 27th march, 2023]
- Guo, X., Zhou, M., Abusorrah, A., Alsokhry, F., & Sedraoui, K. (2020). Disassembly sequence planning: a survey. *IEEE/CAA Journal of Automatica Sinica*, *8*(7), 1308-1324. Retrieved from <https://www.ieee-jas.net/en/article/doi/10.1109/JAS.2020.1003515> [Retrieved on 27th march, 2023]
- Hallil, H., Dejous, C., Hage-Ali, S., Elmazria, O., Rossignol, J., Stuerger, D., ... & Lefevre, E. (2021). Passive resonant sensors: trends and future prospects. *IEEE Sensors Journal*, *21*(11), 12618-12632. Retrieved from <https://hal.science/hal-03170008/document> [Retrieved on 27th march, 2023]
- Song, C., Yin, G., Lu, Z., & Chen, Y. (2022). Industrial ecological efficiency of cities in the Yellow River Basin in the background of China's economic transformation: Spatial-temporal characteristics and influencing factors. *Environmental Science and Pollution Research*, *29*(3), 4334-4349. Retrieved Form <https://www.researchsquare.com/article/rs-544454/latest.pdf>. Retrieved on 27th March 2023.
- Hou, Y., Yin, G., & Chen, Y. (2022). Environmental regulation, financial pressure and industrial ecological efficiency of resource-based cities in China: Spatiotemporal characteristics and impact mechanism. *International Journal of Environmental Research and Public Health*, *19*(17), 11079. Retrieved Form <https://www.mdpi.com/1660-4601/19/17/11079/pdf>. Retrieved on 27th March 2023.
- Bhattarai, R., & Dahal, K. R. (2020). Review of water pollution with special focus on Nepal. *J. Emerg. Tech. Innov. Res*, *7*, 100-101. Retrieved Form https://www.researchgate.net/profile/Raju-Bhattarai/publication/341701213_REVIEW_OF_WATER_POLLUTION_WITH_SPECIAL_FOCUS_ON_NEPAL/links/5ecf5ce7299bf1c67d23d686/REVIEW-OF-WATER-POLLUTION-WITH-SPECIAL-FOCUS-ON-NEPAL.pdf. Retrieved on 27th March 2023.
- Zhou, B., Lei, B., Hou, L., Huang, L., & Lian, X. (2021, July). Research on the harmless and recycling treatment technology of drilling waste mud based on changqing oilfield. In *IOP Conference Series: Earth and Environmental Science* (Vol. 804, No. 2, p. 022106). IOP Publishing. Retrieved Form <https://iopscience.iop.org/article/10.1088/1755-1315/804/2/022106/pdf>. Retrieved on 27th March 2023.
- Kularatne, R. K. A. (2021). An overview of Laws in Sri Lanka relating to marine environmental pollution prevention. Retrieved Form http://dl.nsf.gov.lk/bitstream/handle/1/25511/VIDUE_38_4_6_23.pdf?sequence=2. Retrieved on 27th March 2023.