

Study of Effect of Lockdown during Pandemic of COVID-19 on Percentage of Lead in Environmental Samples of Bhandara District

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Abstract: Increasing urbanization, industrialization and over population is one of the leading causes of Environmental degradation and pollution. Heavy metals (HMs) such as Pb, Zn, Cd, As etc. are one of the most toxic pollutants which shows hazardous effects on all living creatures. Lead is one such pollutant which disrupts the flora and fauna found to be lethal even at low concentration. Even emission of heavy metals from traffic activities is an important pollution source to road side farm kind or forest area ecosystems. During the lockdown of pandemic there was tremendous decrease traffic activity on highways of Bhandara district. In this study, investigation was carried out on influence of transportation activities on lead percentage in environment taking plant leaves samples from various locations on highway and state highway passes through Bhandara district. During lockdown period and recently after unlock period in the month of July leaf samples collected along roadsides from prominent spot on national and state highways. Percentage of lead was determined by using diphenylthiocarbazone (Dithizone) colorimetrically. The Double beam spectrophotometer was used to determine the percentage of lead in leaf samples. The results shows that the concentration of lead in the roadside leaves was found to be much lower during lockdown period while it is much higher in plant leaves after unlock period due to tremendous increase in traffic activities on highways specially NH-06 passing through Bhandara. The use of leaded gasoline is thought to be responsible for the high concentration of lead in the roadside leaves of plant.

Keywords: Lead, Colorimetric, Dithizone, traffic activity, Bhandara district

I. INTRODUCTION

Lead is a natural constituent of the environment and most of the naturally occurring lead is found in the soil. Lead is related to the atmosphere from both natural and manmade sources. Natural sources mostly from windblown dust and volcanoes are relatively small compared to manmade source (UNEP and WHO, 1988). The present study reported that the present concern is on lead entitled to the environment by the use of lead-alkyl antiknock compounds in gasoline. Also, petrol consumption globally contributes as estimated 60 % of the total lead emission from human activities. Lead is a non essential element for man and has toxic potential for all biological system. The major source of lead in man is the food chain plants, animals and ultimately man receives most of their lead from that naturally present in environment [1].

In this study investigation was carried out an influence of transportation activities on lead percentage in environment, collecting plant leafs samples from various locations on highway and state highways passes through Bhandara district. During lockdown i. e. after March 2020 and recently after unlock period in the month of July leaf samples collected along roadsides from prominent spots on National and State Highways. The percentage of lead was determined by using diphenylthiocarbazone calorimetrically. The instrumental methods are preferable because they are rapid and do