VARIATION OF EMISSIONS OF HYBRID CARS WITH AGE AND MILEAGE

Manooj R [1], Samarasekara G N [2], Alwis P L A G [1], Bandara K M T S [1], Chaminda G G T [3], Dissanayaka A W [4]

[1]Department of Agricultural Engineering, Faculty of Agriculture, University of Ruhuna

[2]Department of Civil Engineering, Faculty of Engineering, University of Sri Jayawardenapure

[3]Department of Civil and Environmental Engineering, Faculty of Engineering University of Ruhuna

[4]Vehicle Emission Testing Programme Department of Motor Traffic

manoojrengaraj@gmail.com

Abstract

Introduction of hybrid vehicles is a major vehicle emission reduction strategy. Sri Lanka has been encouraging hybrid vehicles through import taxes concessions resulting in a huge inflow of hybrid vehicles. Further these are eternally exempted from the mandatory annual vehicle emission test which is monitoring mechanism for actual emissions from individual vehicles. While new vehicles can be expected to have lower emission levels, it is not known whether hybrid vehicles would exhibit an age dependent emission increase as found out in petrol vehicles. If such increase is present, then these should be subjected to emission tests based on the age dependent emission variation. However, for hybrid vehicles, this variation is not known yet. This research intends to fill such gap by evaluating variation of emission of hybrid cars with age and mileage. Data was collected through road side emission tests done for 120 vehicles in Western province. The average emission level of HC was at 15. 62 v/v % and CO average was 0.0 v/v %. These values are fairly lower than allowable emission standards which remain at 1200 v/v % for HC a 4.5 v/v % for CO. It can be concluded that Sri Lankan hybrid cars under 5 years can be exempted from emission testing.

Key words: Vehicle Emission, Hybrid Vehicles, Sustainability and VET Program