IMPACT: International Journal of Research in Applied, Natural and Social Sciences (IMPACT: IJRANSS)
ISSN(E): 2321-8851; ISSN(P): 2347-4580
Vol. 3, Issue 2, Feb 2015, 59-68

ASSESSMENT OF OCCUPATIONAL EXPOSURE TOVOLATILE ORGANIC COMPOUNDS IN POULTRY WORKERS

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ARSTRACT

This study evaluated occupational exposures among poultry workers to five volatile organic compounds released from the extensive use of solvents and proteinaceous waste decomposition in the poultry farms. Concentrations of five volatile organic compounds VOCs (acetone, benzene, naphthalene, phenanthrene and pyrene) were measured in blood samples of 49 poultry workers from Pakistan to assess the occupational exposure. All of the concerned VOCs could be detected in more than 95% of blood samples. Levels of VOCs were higher in smokers compared to non-smoking workers i.e., acetone (p=0.015), benzene (p=0.017), naphthalene (p=0.000) and phenanthrene (p=0.005) except pyrene (p=0.631). Levels of VOCs also seemed to increase with the job duration of the workers (p=0.001). The prevailing hygiene conditions of farms surveyed seemed directly related with the frequency of safety equipment use during work. It is concluded that poultry workers are at a risk of occupational exposure to VOCs due to their work environment. It is highlighted from the findings that there is need for more complete studies to evaluate the exposures related to poultry industry in Pakistan and setting environment standards for these and other VOCs.

KEYWORDS: VOCs, Poultry Workers, Occupational Exposure, Smoking, Indoor Air