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Environmental levels of Polybrominated diphenyl ethers**Mary Vagula***Gannon University, USA*

Polybrominated diphenyl ethers (PBDEs) are a class of flame retardants that are added to many commercial and household products such as computers, TVs, foam mattresses, carpets, and so on to inhibit combustion and to prevent fire accidents. Due to their persistent nature, they have become widespread environmental contaminants and about 97% of the American adult population has detectable levels of PBDEs.¹ They are reported to be present in sediments, soil, outdoor and indoor air, household dust, foods, birds, fish, and terrestrial organisms.² Despite their ban in many countries, vast amounts of these compounds are found to persist in existing consumer products, potentially contributing to environmental and human burdens for years to come. Humans are exposed to PBDEs through inhalation of household and workplace dust³ and eating PBDE-contaminated foods.⁴ Commercial PBDE mixtures are available in 3 forms, namely, penta-BDEs, octa-BDEs, and deca-BDEs. PBDEs enter soil through several pathways such as direct deposition, waste disposal, atmospheric disposal. PBDEs can enter aquatic systems through runoff rainwater, industrial discharges into water bodies, and sedimentation. Lastly PBDEs can enter the air through volatilization and industrial emissions. This presentation reports the environmental levels of PBDEs and their toxic effects.

Biography

Mary Vagula has her expertise in toxicology of heavy metals and flame retardants on mammal models. She has published many research papers on the biochemical toxicity of polybrominated diphenyl ethers and heavy metal lead. She teaches human physiology and related courses to undergraduate students.