FPE - Funded Researches

[2012] Pesticide Residues in Surface Waters and Groundwater Supplies in Large Scale Agricultural Areas in T'boli, South Cotabato: A Health Concern

T'boli is an agricultural municipality in South Cotabato that has an estimated population of 76,000. Owing to an ideal climate and fertile soil, T'boli has been the target of some multinational companies for large-scale production, making it prone to extensive pesticide use.

Project Proponent/Partner: OND HESED Foundation, Inc.
Project Duration: December 2011-November 2012

T'boli is an agricultural municipality in South Cotabato that has an estimated population of 76,000. Owing to an ideal climate and fertile soil, T'boli has been the target of some multinational companies for large-scale agricultural production.

However, the use of pesticides to maximize harvests in the interest of meeting high economic demands is speculated to have become a major environmental and health problem in the municipality.

Spurred by the lack of efforts to monitor pesticide use and the levels of its resultant residues in the area, the OND HESED Foundation, Inc. initiated this research project in order to determine the actual levels of pesticide residue in surface and ground water supplies in T'boli; to identify water supplies in the area with the highest level of pesticide contamination; to compare the levels of pesticide contamination in surface and ground water supplies to the standard or tolerable limit set by DENR for water resources; and to determine the incidence of pesticide-related diseases for the past 12 months in T'boli from the medical records of patients available in the municipal and barangay health centers. The knowledge gathered from the effort is viewed to serve as a framework for management and protection policies and ordinances in favor of the overall health conditions of the human and ecological constituents within the municipality.

Through gas-liquid partition chromatography of surface water and groundwater samples collected from a total of 12 sampling stations, thee project producedlaboratory results of the analysis for agrochemical pesticides used in target sites. From these, it was concluded that (a) T'boli's surface and groundwater supplies have non-detectable pesticide residues, particularly organochlorines and organophosphates; (b) there is no difference in the amount of residues both on the surface and in groundwater; and (c) surface and groundwater supplies remain free from pesticide contamination at the time of the conduct of study.

While further and longer-term research methods were suggested following the completion of the project, the proponents also stressed increased vigilance and responsible monitoring of pesticide use as recommended actions among the citizens of the concerned vicinities.

Reference: Terminal Report submitted by Project Proponent to FPE.

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