

Potential treats to ground water in Kalpitiya by the use of highly soluble pesticides in agriculture

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Kalpitiya is a well-mannered vegetable and coconut growing area, which highly consumes pesticides and fertilizers. This study was carried out to understand the crop type patterns, pesticides circulation and pesticides handling knowledge of the farmers in a selected area. Sixty-three farmers were selected from eleven Grama Seva divisions in Kalpitiya peninsula. The farmers were interviewed by crop type wise and Grama Seva divisional wise. Onion was the most common crop cultivated apart from coconut. Onion cultivated area is over 500 ha. In addition chillies, beetroot, cabbage, curry chillies were the most abundant crops, which were cultivated over 4000 ha. Thirty-four chemical types of pesticides were circulated in the selected area during the surveying periods. Profenofos was the most common pesticide among 62% of farmers. Dimethoate, carbofuran, diazinon and imidocloprid were the other abundant pesticides in the selected area. When consider the total usage of pesticides, each farmer used 72% of insecticide but very less amount of weedicides (4%). When considered island wide distribution of weedicides (47%) this figure is very low. An irrigation system was used by 100% of farmers for their crops other than for coconut. Eighty-four percent of farmers used machinery for their daily watering through shallow wells and tube wells. Over 57% of farmers did not know the pesticide that they have used for their farms and 72% of farmers used to mix over doses of pesticides. Farmers didn't have any idea about occupational exposures or adverse effects of pesticides. Forty-three percent of farmers lived in the farm and they use shallow wells and tube wells located in the cropland, for their domestic purposes. High contamination potential of ground water by pesticides and fertilizer exist in Kalpitiya irrigated agricultural area. Farmer's knowledge on pesticide use can be improved so that they can use the right type of pesticide at the right dose to minimize water pollution. Extra care should be used when pesticides that are high in water solubility is used due to the sandy soils with high infiltration rates and soils with very limited organic carbon to adsorb pesticides. Use of extremely high water solubility in dimethoate (2380 mg/L) high solubility in carbofuran (351 mg/L) and other pesticides that are high water solubility read to review and management program should be improved to safe ground water in Kalpitiya.

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