(47)

Agrochemical Usage and Farmers Perception on Selecting Pesticides in Upper Uma Oya Watershed in Sri Lanka

Sumudumali R.G.I.[1], Piyathilake I.D.U.H.[1], Randika J.L.P.C.[1,] Jayawardana, J.M.C.K.[2] Malavipathirana S.[2], Udayakumara E.P.N.[2], Gunatilake S.K.[2]

[1]Faculty of Graduate Studies, Sabaragamuwa University of Sri Lanka, Belihuloya, Sri Lanka
[2]Faculty of Applied Sciences, Sabaragamuwa University of Sri Lanka, Belihuloya, Sri Lanka
**iresha9301@gmail.com*

Abstract

Understanding farmers' behaviour in pesticide usage and selection is critical to enhancing the sustainability and health of the environment. Farmers indiscriminately use pesticides to reduce pest damages and to maximise the economic benefits. Intense application of pesticides subsequently affect the immediate environment. Uma Oya catchment is one of the main vegetables growing areas in Sri Lanka. Thus, this study was carried out to evaluate the farmers' perceptions of pesticide usage and attitudes on the selection of pesticides. 61 respondents among farmers were randomly selected and interviewed using a pre-tested semi-structured questionnaire and key informant interviews covering two main seasons (*Yala* and *Maha*) of 2019/2020. The study has identified 43 commercial brands and 23 active ingredients of insecticides, 47 commercial brands 20 active ingredients of fungicides, 6 commercial brands 3 active ingredients of herbicides. The most frequently used pesticides are insecticides followed by fungicides. More than 50% of farmers used five insecticides (i.e. Abamectin, Carbosulfan, Chlorantraniliprole 20%+Thiamethoxam 20%, Profenofos), three fungicides (i.e. Chlorothalonil, Mancozeb, Propineb). Only three types of weedicides were found in this study (mainly Metribuzin). Most of these active ingredients were belong to the World Health Organisation (WHO) hazard classification class "U" which is unlikely to present an acute hazard. Insecticides Abamectin, Carbosulfan, Profenofos belongs to WHO hazard class II (Moderately hazardous) chemicals while fungicide Chlorothalonil belongs to hazard class III (Slightly hazardous) chemicals. Furthermore, the farmers were incapable of selecting proper pesticide for certain pest and selection of pesticide mainly based on the opinion of the pesticide retail shops or dealers (74%). Meanwhile, 3% of farmers selected pesticides with their-own knowledge. From the total, only 5% of farmers seek advice from agricultural instructors on pest management decisions. Only 28% of respondents had training on the correct use of pesticides and such training was conducted by private sector organisations involved in pesticide marketing. The present study indicates that pesticides application in the study area represents a potential risk for the environment, farmers and consumers. More investigations are needed to quantify pesticide residues on the waterways and need to determine the potential effect of those products on human and environmental health. Development of non-pesticide dependant crop management practices, training and educating farmers and retailers, proper disposal of pesticide waste, and sufficient supervision from authorities should be considered for improving the levels of knowledge and awareness of the dangers of pesticides to human health and environmental pollution.

Keywords: Farmers' perceptions, Pesticide, Uma Oya watershed, Fungicides