

Augmenting Agro-Chemical Retailers into Point of Extension for Sustainable Herbicide Usage

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Among various novel technologies adopted in agriculture, agro-chemical usage is very wide. Herbicide is one such agro-chemical used extensively by farmers around the globe. It is believed that herbicides are must for commercial level cultivation in order to eliminate unnecessary competition of weeds. However, recent past there have been many incidences of excess usage of herbicides, causing direct health and environmental issues around the world as well as in Sri Lanka. In light of this, objective of the study is to explore how paddy farmers in Anuradhapura District utilize herbicides, factors affecting herbicide usage and to explore the most effective extension point related to herbicides usage. Four District Secretariats namely: Nochchiyagama (n=68) and Thabuththegama (n=62) representing major irrigation scheme; Galenbidunuwewa (n=60) and Kahatagasdigiliya (n=60) representing minor irrigation scheme was proportionately selected according to farmer number. Multiple linear regression model was deployed to elicit the relationship between selected factors with usage of chemicals. Primary data was collected randomly from a sample of 250 farmers, cultivating during the 2014/15 *Maha* season. Results highlighted, frequency of extension received by the farmer ($p < 0.01$), degree of understanding the label ($p < 0.05$), education level ($p < 0.1$), age of the farmer ($p < 0.05$) and farming know-how ($p < 0.01$) were significant on herbicide usage. Most frequently overused herbicide was Glyphosate (93 %) and the exact amount used was 26.64 g per acre. The overall average exposed time to chemicals for an individual was 3.5 hours per acre and average land extent sprayed with herbicides was 5.5 acres. Only a very few (2 %) adopted safety measures (gloves, masks, caps and boots) during handling and spraying of herbicides. Interestingly study revealed, highest number of farmers (36 %) preferred primary extension source on herbicide as agro-chemical retailers. Most effective extension point was identified as the agro-chemical retailer level. Therefore, formal extension services should augment both agro-chemical retailer and distributors. As a regulatory body government should conduct awareness programmes on agrochemical use with both Provincial and Central extension services.

Keywords: Extension, Herbicides, Paddy, Glyphosate, agro-chemical