

## ABSTRACT

Pesticides have become inevitable ingredients in vegetable cultivation with green revolution technologies. However indiscriminate use of pesticides causes health hazards to humans and long lasting bad effects to the environment. The cost of pesticides imposed damage has to be borne by the society as a whole. Upcountry vegetable farming is one of the intensive cultivated farming systems which consumes a high volume of pesticides and fertilizers, especially due to short duration of crops and highly favourable humid conditions for rapid spread of pests and diseases.

The major objective of this study is to estimate the level of pesticide (insecticides, fungicides and herbicides) use and to investigate the factors affecting overuse/misuse. Primary data for the study was collected from 240 farmers randomly selected among potato, beans, cabbage and leeks cultivators from selected areas in the Badulla and Nuwara eliya districts.

According to the findings of the study, about five percent of the active ingredients of pesticides used in the upcountry vegetable farming belong to not permitted Class (ib) type, while another 34 percent belong to the category of restricted use (Class (ii)). About 47 percent of the farmers prefer to use Organophosphate (OP) group of insecticides, as they believe these pesticides give quick results and are cheaper despite their toxicity and harmful nature on the environment. Green pesticides and Integrated Pest Management methods are not popular as they do not bring quick results.

About 40 percent of the farmers always apply pesticides prior to the appearance of any symptoms of pest or disease as a precautionary safety measure. The numbers of pesticide overdosing farmers are 38 and 41 percents in the Badulla and Nuwara-Eliya respectively as they believe that recommendations and prescriptions given in the pesticide product labels are insufficient. Nearly 53% of farmers mix two or more chemicals together to make a cocktail mixture as they believe such mixtures save their labour time and are more effective in controlling pests and diseases. In the case of availability of excess amount of pesticides solution after spray, the majority of the farmers do environmentally hazardous activities with surplus solution, such as repeatedly applying the chemical to the same crop (71%) and storing the solution for future use (11%). Nearly 30 percent of farmers do not adhere to the 2-3 weeks pesticide free period that should be allowed before harvesting the final product. About 63% of upcountry vegetable farmers wear protective garments during the pesticide spraying, but use of boots and gloves are limited to 11 and 37 % of the farmers respectively. Non use of boots has risk of exposure to pesticides, especially in fields with stagnated water.

Most of the issues at the user's level are associated with lack of awareness, poor attitudes and behaviours of farmers and weaknesses in the extension system. Thus, there is a need for strong awareness campaigns through all possible means including print and electronic media to educate farmers and change their attitudes and to empower the farmer organizations to tackle the issues at farm level. Green band pesticides should be promoted by reducing the prices through tariff reduction and

through farmer level awareness programmes. Instead of using different trade names for same chemical it is recommended to give common names (Generic names) for the pesticides based on the active ingredient to reduce the misuse of pesticides. Considering the development of new pesticide technologies and the safer products, it is recommended to permit smaller than 50 ml size packs which will take into account the requirement of given pesticide per unit area and small land holdings. As considerable proportion of the farmers had the perception of non existence of specified strength in the pesticide label, it is recommended to carry out regular quality tests for the products available in the market by a recognized organization.