Determinants of Pesticide Use in Rice Production Systems of Sri Lanka

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Inappropriate practices of pesticide use in agricultural sector has posed serious and costly threats on human health and environment in Sri Lanka. Further, current levels of pesticide usage in Sri Lanka has also been reported as much higher than that of neighbouring countries as well as the other tropical countries with similar agricultural set up. Attempts were made in this study to identify farm-specific and market factors that affect the adoption of pesticides by rice farmers while examining the levels of pesticide used by such paddy farmers across three main agro-ecological zones. A comprehensive data set was collected through administering a household questionnaire survey among randomly selected paddy farmers numbering 240, representing selected areas in the Anuradhapura, Ampara, Matara and Kurunegala districts. The Double Hurdle model, which is more preferable to deal with censored data, is employed for the analysis. Family size, farming experience, type of irrigation, training received related to pest control, extent under cultivation were recorded as significant determinants of the farmers' decision in adopting pesticides use, while factors; age, sex, extent cultivated, farm gate price, tenurial status, type of irrigation and training related to pest control determine the quantity of pesticide use. Findings of the study highlight the complexity of the issue, with different variables influencing farmer's decisions on whether to adopt pesticides at all and if so, how much pesticides to be used. Institutions intervening to regulate the pesticide use and/or to encourage farmers to adopt alternative methods in pest control need to use multiple strategies to address the key variables. Further, the results are potentially relevant in designing policies to reduce excessive use of pesticides and to encourage the adoption of alternatives.

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