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**Evaluation of Pesticide Safety Measures Adopted by Potato  
Farmers in Chebiemit Division, Elgeyo/Marakwet County**

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## ABSTRACT

Potato (*Solanum tuberosum*) is the second most important food crop after maize in Kenya. It is popular among smallholder farmers because it has short cropping cycles and large production volumes per area which fulfill both households' food demands as well as generating income. In order to increase productivity, farmers practice better farming methods which include the use of pesticides. The objective of the study was to evaluate the pesticide safety measures adopted by potato farmers in Chebiemit Division of Elgeyo/Marakwet County. Data was collected through stratified random sampling where 323 potato farmers were administered with structured questionnaires. The data was analyzed using SPSS software. The study found out that 96% of the farmers were aware of pesticide safety labels and the level of awareness was influenced positively by education ( $\chi^2 = 4.08, p < 0.05, df = 2$ ) and training ( $\chi^2 = 3.05, p < 0.05, df = 1$ ). The study shows that 64.7% of the farmers had cultivated the crop for more than ten years and had been using pesticides for the entire period least thrice in every cropping cycle. The commonly used pesticides were the fungicides Ridomil and Tatamaster which have mancozeb and metalaxyl as the active ingredients. Most farmers rarely practiced safety precautions when handling, mixing and spraying chemicals and none of them wore the recommended Personal protective clothing. Most of the mixing was done either in knapsacks or in basins that were also used to bathe and wash clothes and all these increased exposure. The current study has shown that 58.5% of the pesticide applicators were fathers. However, in those households where the applicator was the mother (16.1%), children who in most cases were under the 14 years of age were involved in

pesticide application. The study further shows that post-spraying practices among the farmers were poor since only 36.2% of the applicators reported that they bathed after spraying as compared to 69% who washed hands and face only after this operation. Mothers practiced better hygiene practices than fathers ( $\chi^2 = 31.5$ ,  $p < 0.05$ ,  $df = 6$ ). Additionally, most farmers stored pesticides either in stores together with cereals or in living rooms. This study also found out that 35% of the farmers disposed empty pesticide containers by discarding them on the farm as compared to only 6% who disposed them by burying. The mode of disposal was influenced positively by training ( $\chi^2 = 70.2$ ,  $p < 0.05$ ,  $df = 3$ ). The study further found out that 85.8% of the farmers who had handled pesticides had experienced pesticide poisoning but only 7.4% of them visited a health facility but the majority took milk, rested or had pain relievers after spraying. The study results indicated that most potato farmers and their families were highly exposed to pesticide contamination and poisoning due to poor pesticide safety measures. Since there is a lot of gap in terms of training and education on pesticide safety measures, there is an urgent need to implement training programmes to improve the knowledge, perceptions and practices of potato farmers in the study area with regard to safe handling, storage and use of pesticides.