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Practices and Use of Pesticides by Smallholder Potato Farmers in Uganda: A Cross Sectional Survey

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Abstract

Potato (*Solanum tuberosum* L.) is a major food and cash crop in Uganda with an annual production of 0.8 million tonnes. In response to increased pest and disease problems, potato farmers use pesticides which could rise environmental and health concerns. This study sought to promote proper and safe pesticide handling practices as part of an Integrated Pest Management (IPM) programme by providing data needed to guide pesticide regulation policy and training for extension staff and farmers. Therefore, a household baseline survey was conducted in 2013 in six major potato growing districts of Uganda (Kabale, Kisoro, Kapchorwa, Mbale, Mubende and Kyegegwa). Farmers were interviewed about the type and source of pesticides used in potato, the frequency of application, the use of protective clothes and cases of pesticide poisoning. The types of pesticides used in potato were fungicides (72 %), insecticides (62 %) and herbicides (3 %). Also highly hazardous (Class 1b) insecticides such as dichlorvos 100 % were used but use of moderately hazardous (Class II) insecticides was more common (77 %). Insecticides and fungicides were routinely applied by 35 % of the farmers. On average, insecticides, fungicides and herbicides were applied 4.5±0.2, 3.8±0.2 and 1.0±0.0 times per cropping season, respectively. However, some farmers applied insecticides, and fungicides up to 12 and 18 times per cropping season, respectively. Use of personal protective equipment was low, i.e. gumboots (73 %), gloves (7 %), face masks (16 %) and long sleeve shirts (42 %). Forty three percent of farmers who applied pesticides reported having experienced skin itching, 25 % skin burning sensation, 43 % coughing, 60 % a runny nose, 27 % teary eyes or eye irritation and 42 % dizziness or headache. Sixty two percent were illiterate and not able to read the pesticide labelling; almost all respondents (91 %) were not able to explain the toxicity label. An IPM approach only involving moderately to slightly hazardous pesticides considering all safety measures during application and storage only when pests and disease pressure has reached economic injury levels would be environmentally friendly and result in reduced health risks.

Keywords: Fungicides, insecticides, integrated pest management, occupational health, protective equipment

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