

Knowledge, Awareness, and Practice Regarding Pesticide Exposure and Health Symptoms among Farmers

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ABSTRACT

Introduction: Pesticides are widely used to control agricultural insects in Thailand. Farmers have an opportunity to be exposed to high doses of pesticides. The improper pesticide application may also have resulted in adverse health effects.

Objective: This study aimed to investigate the association between farmers' knowledge, awareness, and practices regarding pesticide use and health symptoms related to pesticide exposure.

Methods: A cross-sectional study was conducted among farmers in Chiang Dao district, Chiang Mai province. A validated questionnaire was adapted, and 328 farmers were recruited. Data were analyzed using descriptive statistics, the Chi-Square test, and Fisher's exact test.

Results: About 71.0% of the farmers were males, with a mean age of 53.04 ± 11.72 years old. Farmers had the lowest knowledge of pesticide container disposal (44.5%), pesticide mixing as a label recommendation (50.3%), and the entry route of pesticides (51.8%). The lowest awareness scores were for using personal protective equipment (PPE) while applying pesticides (23.5%), followed by wearing PPE while applying pesticides (64.6%) and washing spray tanks in a river or waterway (82.0%). Changing clothing immediately after pesticide application received the lowest score (6.7%), followed by wearing goggles during pesticide application (14.9%) and showering soon after pesticide application (15.5%). The farmers complained that they had experienced symptoms such as headaches (29.6%), fatigue (20.4%), blurred vision (19.8%), eye irritation (18.3%), and dizziness (14.6%). Farmers who mixed pesticides with their bare hands reported a higher prevalence of headaches (OR = 0.56, 95% CI = 0.33-0.92), itchy (OR = 0.37, 95% CI = 0.19-0.71), and blurred vision (OR = 2.22, 95% CI = 1.11-4.47).

Conclusion: Farmers' health-prevention practices need to be improved, as well as their knowledge and awareness. As a result, farmers must receive continuous pesticide safety education, and also training in the use of PPE during and after pesticide application.

Keywords: *pesticide exposure; pesticide application; adverse health effects*