



CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusion

This study found about the association between among Cholinesterase level in blood and knowledge, attitude, and practice was conducted in Nang Ler sub-district, Mueang district, Chainart province, Thailand. This study was cross-sectional study to develop questionnaire in the part of activities pesticide use (organophosphate and carbamate) and prevention themselves related to cholinesterase level in blood (association between Knowledge, Attitude, and Practice (KAP) of pesticide use and prevention related to cholinesterase level in blood in rice farmers). The objectives of this study were: to assess the KAP of farmers on usage pesticides, to assess association between knowledge attitude and practice and the level of cholinesterase in farmer's blood, and to provide guidelines to reduce the exposure of pesticide in farmers. There were separated 98 cases of participants for 2 groups: direct exposed farmers (n=51) and indirect exposed farmers (n=47). We used questionnaires (face to face) for complete the information and used the EQM Test-mate Cholinesterase Test System, Model 400 for complete the cholinesterase level. The results shown the majority of participants were male 44.9% and female 55.1%. The approximately of the respondents were in the range of 51-60(31.6%). The result of education status showed that 90.8% had studied and 55.1% had graduated from primary school. Subjects surveyed performed transporting pesticides 48%, mixing pesticide 27.6% and spaying pesticide 24.5%. The most of participants were 39.8% had duration time be farmer in range from 1 – 10. Mostly problems experienced of rice farmers while they were growing there were insect (99%), weed (94.9%), plant disease (77.6%), and animal disease (55.1%). Popular chemicals used during rice growing were abamectin, organophosphate, and carbamate. Pesticide application practices were self-spraying (24.5%) and employing other workers to spray (75.5%). They were provided their health by health center 77.4%. They received the information of pesticide from

agriculture officer. 81.6% of them known that they use cover mask and glove, closed dressing, and wearing boot before using pesticides and they have to keep the pesticides in locker or room after finished. Less than 10% of participants known about the long term pesticide exposed of symptom. 60.2% had agreed that pesticide can residues in agricultural product and its harm to consumer. 42.9% had strongly disagree on should not wear clothes when spraying pesticides. Knowledge, attitude and practice were test the relationship with Spearman's rank correlation coefficients. The most of respondents had "Moderate levels", "Neutral Attitude" and "Fair Practice". The direct exposed farmers had the risk on AChE level more than indirect exposed farmers and there are significant ($p\text{-value} = 0.001$). The PChE levels in direct exposed farmers were no significantly lower than indirect exposed farmers. The direct exposed farmers are at risk more than indirect exposed farmers. In direct exposed farmers and indirect exposed farmers, the association between knowledge and practice was significantly correlation. The AChE level, both types of farmers was not significantly associated with KAP. The PChE level, indirectly exposed farmers was significantly associated with knowledge.

6.2 Benefit from the study

1. To access the KAP of farmers at Nang Ler sub-district in Chainart province on usage pesticides.
2. To understand association between Knowledge attitude and practice and the level of cholinesterase in farmer's blood.
3. To understand the risk of Ops and carbamate pesticides exposure among direct exposed farmers and indirect exposed farmers.
4. The researcher can help suggest appropriate ways to direct exposed farmers and indirect exposed farmers who participation to protect themselves from pesticides exposure such as reducing concentration of pesticides usage and wearing personal protective equipment.

6.3 Recommendation and suggestion

1. The intervention tools should be developed for enhancing suitable practice for PPE usage and to improve the accuracy in the information given. Farmers should be trained in the proper usage of personal protective devices.
2. Farmers should be informed in order to increase the knowledge regarding the harmful effects of pesticides and the appropriated of using PPE in farm.

6.3 Limitation

Limitation of this study is the farmers may not truly answer with understand the questionnaires regarding knowledge attitude and practice for example, some farmers may think that in appropriated use of PPE is correct practices. Those answers may result in the interpreted between KAP and cholinesterase level.

The design of this study was a cross sectional study; only Nang ler sub - district in Chai Nat province was conducted. Moreover, it is better to recruit more subjects in several rice farming areas in the country.