

## **CHAPTER 4**

### **DISCUSSION AND CONCLUSION**

#### **4.1 Discussion**

The main objectives for operation of this project were for the participants to gain correct knowledge about pesticides and be able to use them properly for the safety of themselves, of others, of the environment. The participatory learning process was adopted in the training program for them to develop correct knowledge and attitudes, which would lead to correct practices. The participatory training program comprised of 3 sessions each with 2-day duration and a fieldtrip for the participants to see and learn from real experiences. The data collection process involved collection of baseline data before the participatory training (Pre-test) and collection of post-training data after completion of the training program (Post-test). The two data were compared to evaluate changes in the participants' knowledge, attitudes, and pesticide practices after training.

### **Training program by participatory learning process**

Evaluation of the program indicated that a participatory learning process was effectively applicable for the studied group. The learning process was found to be fun and interesting. The participants were able to learn at their maximum capacity possibly because participatory learning was learning from their past-experiences, the training contents were of their interest, and they could practically apply the knowledge in their work for their health benefits. There were a variety of activities in the training program. The participants were, therefore, not bored as they would be in a lecture session. The farmers were able to express their opinions and practically experiment and convert their ideas into concrete things. The participants of this project were of working age groups; therefore were willing and cooperated well in joining the activities. This observation corresponds to the outcome of the study on the effects of health education programs on pesticide and herbicide practices in 2 groups of farmers (study and control group) each of 64 people. It was found that by providing education, the farmers' knowledge, attitudes, and practices regarding uses of pesticides and herbicides were improved. However, there was no relationship between operation of the health education program with social factors, demographic factors such as age, gender and educational level, and duration of chemical handling and uses.

### **Follow up visits**

The follow up visits found that the participants become more aware of applications of pesticides and herbal plants for pest control as they widely responded to the raising issues about knowledge, attitudes, and pesticide practices. There were also extensive discussion and expression of opinions and recommendation on the issues.

Regarding the aspects of knowledge and attitudes towards uses of pesticides, the participants were able to identify the means by which the chemicals could enter the body and were aware of the pesticide hazards. The information provided was consistent with that in the Handbook for Research and Monitoring of Occupational Diseases, the Office of Occupational Health, by MD. Rapeepat Chakatprakat. The Handbook detailed the study of organophosphate toxicity, which found that 71 % of the substances could enter the body through skin absorption, 11 % through ingestion, 8 % through inhalation, and 10% through other means. In addition, the Handbook of Occupational Health Work Procedure for Public Health Officers by M.D. Narongsak Aungkasuwapala had summarised toxicity of pesticide chemicals, which could cause fatigue, headache, confusion, vomiting, diarrhoea, tongue and mouth paralysis, and contraction of facial muscles.

Regarding pesticide handling and practices, the participants were able to better identify the correct procedure in using and handling pesticide chemicals. Observation of the participants during practicing found that they could practice more correctly. This is in corresponding to the study of the factors related to pesticide practices (Dithisawatvate S, 1986), which found that knowledge, attitudes, experiences of pesticide allergies, and past training had an effect on pesticide practices of farmers

#### **Post-intervention (at 6 months after training)**

The participatory training program was organised for the participants during August 2000. Seven months after the training, that is, at the beginning of April 2001, knowledge, attitudes, and pesticide practices of the participants were reevaluated and another set of blood test was conducted on the participants. It was found that the

quantity percentage of the chemicals on the blood samples had decreased with significant difference by statistical analysis ( $p$ -value  $< 0.05$ ). There was also significant difference between the mean scores of knowledge, attitudes, and pesticide practices at pre- and post-training by statistical analysis ( $p$ -value  $< 0.05$ ). That is, the participants had relatively better knowledge, better attitudes, and better practices regarding uses of pesticides after the participatory training.

## 4.2 Conclusion

1. Participatory learning allowed participation of every person and encouraged learning process.
2. Participatory learning was appropriate for this training program.
3. The application of participatory learning with the pesticide education program was appropriate. However, the group of the participants was considerably large; therefore required large numbers of speakers for each group and participation of the group members declined if not being encouraged by the speakers.
4. Participatory learning helped the participants to have better and more proper knowledge, attitudes, and practices about uses of pesticides.
5. Participatory learning could be adopted in various other projects if speakers could understand the principles of the PL approach, for example, application of participatory learning in public health work such as in providing knowledge and changing healthcare behaviours of people.

6. The follow up visits constituted a repeat application of participatory learning to pick up any incorrect knowledge, attitudes, and practices of the participants missed in the first application. This demonstrated that the participants had better knowledge, attitudes, and practices about uses of pesticides after the training by participatory learning.

### **Limitation**

1. The studied populations were from the same group through out this project. The evaluation duration was 7 months and 1 year; therefore, the participants might possibly gain their knowledge about pesticides from other media such as radio, television, or various other printed media.

2. Exposure to pesticide chemicals might be from ingestion. That is, the chemicals accumulated in the participants' body might not be resulted from incorrect handling and uses of pesticides. however, might be resulted from consumption of contaminated fruits and vegetables purchased from other sources.