

Cambodia Trip Report, H. Reissig, Cornell University

Country(s) Visited: Cambodia

Dates of Travel: Nov. 27-Dec. 10, 2016

Travelers' Names and Affiliations; Harvey Reissig, Professor Emeritus, Cornell University

Purpose of Trip: Attend annual meeting of EPIC Project, and interact with CEDAC and the National Integrated Pest Management Programme of Cambodia on the future development of training materials for farmers' safe use of pesticides and rice IPM.

Sites Visited: Phnom Penh, Cambodia

Description of Activities/Observations

On Dec 1-2, I attended the annual meeting for the Development of Ecologically-based Participatory IPM Package for Rice in Cambodia (EPIC). During this meeting, I presented a paper summarizing the Pesticide KAP survey, which was conducted by Sidney Jackson, a graduate student working with Dr. George Norton. I also participated in a Breakout Session II Training Materials for IPM and Pesticide Safety and Dissemination of Information.

From Dec. 5-8, I met with CEDAC and the Cambodian National IPM Programme to discuss the future development of training materials for Cambodian rice farmers in Pesticide Safety and Rice IPM in the next 2 years of the EPIC project.

Monday Morning, Dec. 5, 2016

I met with Keam Makarady and his staff to set up a schedule to discuss the proposed activities of CEDAC in developing farmer training materials during year 2 of the project. The proposed schedule was developed as follows: Monday, Dec. 5, Discussion of Posters; Tuesday, Dec. 7: Discussion of Leaflets; Wednesday Dec. 07, Discussion of Video Clips; Thursday Dec, 08, Meeting with Chou CheyThyryth to discuss next year's activity of the National IPM Programme in the project.

People Present: Keam Makarady, Program Manager of Field Operation Program; makarady@cedac.org.kh

Chantheang Tong Ms, Program Manager Technical Support Program, e-mail chantheang@gmail.com

Sin Angkeasath, Ms Technical Support officer, e-mail angkeasath@gmail.com

General information

Rice general practices, apply glyphosate then 2, 4-D. after planting. Rice farmers apply much more pesticides during the dry season than the rainy season. CEDAC has sponsored a program of SRI for farmers that allows them to grow and sell organic rice that is sold to the Lotus General Store in Pittsburgh, Pennsylvania.

Regular rice (paddy) sells for \$200/ton and organic rice sells for \$400/ton. Cambodians eat some brown rice, which is more perishable than white rice.

Budget for publications is \$4,000 from EPIC. The project wants to produce a booklet in Year 3, and for year 2 are interested in Posters, leaflets, and a video clip.

Posters

Currently, CEDAC has two posters related to the impacts of pesticides: one on pesticide poisoning and the other is : Impact of Pesticides on Environment, Health and Households (economic and principals of safety and principles).

The present poster on impacts of pesticides focuses on vegetables, but could be also developed for rice: the poster outlines pesticide problems and solutions, and pictures are better than drawings: The process is to develop key words, then the title, and think of pictures. Rice pictures would be during the dry season because that's when most pesticides are applied. Key words: pesticide problems and solutions. Solutions, plant resistant varieties, proper PPE, safer pesticides, How to choose proper pesticides, proper land preparation. Ask key farmers about spraying, be able to identify target pests. Problems:

Another poster subject identified would be how to read a pesticide label. This is basic and Makarady already has a template prototype

Another topic introduced by Tong was a making a list of active ingredients and trade names, we decided that rather than using printed materials this information could be presented on the web at their website or perhaps delivered as cell phone apps because some of the farmers have cell phones, but not many have computers. It is difficult to put such information out as printed materials because these lists change rapidly and frequent revisions of printed materials would be necessary.

CEDAC, Tuesday, Dec. 6, Leaflets

Leaflet 1: Problems and Solution of pesticide use on rice

Problems of Pesticides

- Negative impacts on the environment
- Negative impacts on human health

The current bulletin just describes problems of pesticides on health. Leaflets should be limited to four sections, front and back.

Design, we agreed that a single leaflet with 4 panels, front and back was the best overall design. In this case we discussed two options: Put the negative impacts on one side and solutions on the other side or divide into subject matter such as putting negative impacts on the environment on one side and negative impact on human health on the backside. We also agreed that it would be better to take color pictures and put them on glossy paper rather than using black and white line drawings because line drawings are more expensive than pictures.

We also discussed pricing. For example, they may charge NGO's and other government or private agencies, but give them to farmers. Also, we talked about quantities and prices, for example printing more copies at once lowers the price. They may give bulletins such as the pesticides safety free to farmers or they may sell to farmers for less than they sell to NGO's.

Sections of proposed leaflet.

Problems

- Negative impacts on the environment
- Negative impacts on human health and non-target organisms (fish, birds, livestock, cows, water buffalo, chickens, ducks)

Solutions

- Use PPE (however we talked about the fact that farmers in the tropics don't want to use PPE because it is expensive and hard to use because of the heat and mud)
- Do not use HHP (Highly Hazardous Pesticides) but use LHP (less hazardous pesticides). We also talked about how in the US we have a special "fast track" registration for reduced-risk pesticides and perhaps this would be a good policy for Cambodia.
- Education of farmers in pesticide application and safety
- Education of farmers about pesticide storage and disposal

PESTICIDE VIDEO CLIP

We had originally talked about making a video about Problems and Solutions of Pesticide Overuse. However, with respect to this project, I would suggest an alternate title: Use of IPM to Solve Farmer's Pesticide Problems

Problems (6-7 Minutes)

- Farmers commonly apply pesticides in rice without wearing PPE (video showing farmer spraying rice not wearing PPE).

- Farmers do not use PPE when mixing pesticides and often mix together many different pesticides, and often may even inadvertently mix together insecticides that have the same common name, but different trade names
- Because of these practices farmers often become ill from using pesticides. (show symptoms, show farmer being tired, maybe sweating, stomach pains etc).
- Farmers often don't store pesticides properly, and dispose of used pesticide containers improperly (pictures of pesticide containers in houses, pictures of empty pesticide containers lying in the fields, pesticide containers floating in an irrigation canal, children playing with water stored in a pesticide container).

Solutions

- Recent studies have shown that farmers can grow rice in Cambodia without using pesticides or only using LHP or BCA (Biocontrol agents)
- Planting resistant varieties.
- Farmers can also use IPM techniques to reduce pesticide use (Proper pest identification, biological control of insect pests by natural enemies is much more efficient if farmers eliminate pesticide sprays or use only LHP or BCA insecticides.
- Weeds can be controlled with hand weeding or machines without using herbicides or less herbicides.
- Rats can be controlled with barriers and traps instead of using rodenticides.
- Ending of video could be a shot of a happy family standing in a nice rice field.

Thursday, Dec. 8, 2016

Chou Cheythyrieth, Project coordinator of the National Integrated Pest Management Programme, CDA

Keam Makarady, makarady@cedac.org.kh

Chantheang Tong Ms, Program Manager Technical Support Program, e-mail chantheang@gmail.com

Sin Angkeasath, Ms Technical Support officer, e-mail angkeasath@gmail.com

Chhit Mak, IPM officer, FAO mak.faoipm@online.com.kh

Eventually, we decided to meet at CEDAC headquarters and only Chhit Mak and Mr. Chou Cheythyrieth was present from the GDA to meet with us initially. The meeting began with a discussion in Khmer explaining to Mr. Mak our previous discussions for a booklet, posters, leaflet, and video clips. According to our discussions in year 2; CEDAC will be preparing materials that we talked about and GDA will be dealing primarily with developing programs for farmer IPM training.

In year 3, CEDAC will be preparing a combined booklet perhaps that shows both pesticide training for farmers and IPM techniques. The pesticide safety portion will be made up of the current bulletin from CEDAC, Pesticides and Their Problems. Currently, it is somewhat unclear what the IPM portion will contain. I expressed an opinion that it would be ideal if it contained some of the major areas of investigation of the EPIC project such as: Growing resistant varieties, using either no pesticides or LHP (less hazardous pesticides) or BCA (biological control agents). Also such things as not treating during the first 40 days after planting for leaf-folders and other pests, conserving indigenous natural enemies, applying biological pesticides such as *Trichoderma*, and *Trichogramma*, and hand weeding, mechanical weeding etc.

GDA is currently being or has been advised by Helen Murphy who is associated with FAO. See below for contact information.

www.ipmnetorg.tim.chem_app.H

A Farmer Self-Surveillance System of Pesticide Poisoning, Helen Murphy
www.pic.int Portals download

Helen Murphy, FNP-MHS Pacific Northwest Agricultural Safety and Health Center,
Univ of Washington

Rice Varieties Released by the Varietal Recommendation Committee of Cambodia
(1990-2000) Cambodian Agricultural Research and Development Institute CARDI.

We also discussed some miscellaneous information such as resistant varieties, planting programs, pest pressure during the dry and rainy season, etc., described below.

According to Thyrinth 70-80% of traditional varieties may be resistant to some insects and diseases in the dry season they grow IR varieties because of the potential Vietnamese Market.

In the area where we visited on our Friday field tour the first rice crop would be planted in December and they commonly plant IRRI developed varieties, the second crop would be planted in February or March, and the third crop would be planted in June or July with traditional varieties, many of which are resistant to pests or IR-66. Rice milling practices can affect flavor, and also storage time affects flavor (younger rice tastes better).

This last meeting ended my interactions with the Cambodian cooperators, and they promised to keep in touch and send me some English translations of the posters and brochures as they were developed.

Training Activities Conducted: None

Program type (workshop, seminar, field day, short course, etc.)	Date	Audience	Number of Participants		Training Provider (US university, host country institution, etc.)	Training Objective
			Men	Women		

Suggestions, Recommendations, and/or Follow-up Items:

CEDAC was very interested in the Rice Doctor on-line application. The follow-up question about this application is does the project have the budget and resources to modify this application to be appropriate for Cambodian rice farmers participating in the project. This would require input from both scientists and programmers. The other major follow-up items are keeping the project informed about progress and any problems in the development of CEDAC training materials. CEDAC personnel agreed to keep me informed of their progress on the proposed training materials by sending me some partial English translations so we could discuss any needed changes and modifications.

List of Contacts Made:

Name	Title/Organization	Contact Info (address, phone, email)
Keam Makarady	Program Manager Field Operations, CEDAC	makarady@cedac.org.kh
Ms. Chanthaeang Tong	Program Manager Technical Support Program	chantheang@gmail.com
Ms. Sin Angkeasath	Technical Support Officer	angkeasath@gmail.com
Chou Cheythyrieth	Project Coordinator of the National IPM Program, CDA	Thyrieth72@gmail.com
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