

First Progress Report

"Development of Microbial Pesticides to Protect Grain from Harvest Time till
Reaching the Consumer"

DPE-5544-G-SS-8018-00

for period ending December 31, 1988

The objectives of the program are:

- 1) To study pest populations in stored products in the Philippines and establish laboratory colonies of the most important pests.
- 2) Screen for potent microbial pathogens among natural infestation habitats within the silos.
- 3) Develop novel formulations of commercial bacterial pathogens and test them against stored product pests.
- 4) Develop laboratory cultivation procedures for the most potent isolates.
- 5) Carry out small-scale field trials with the new pathogens to reduce post harvest losses of maize and other major staple crop on and off the farm gate.

We have already established laboratory colonies in Israel of the following important storage pests in the Philippines: Sitotroga cerealella the Angoumois grain moth; Ephestia cantella the tropical warehouse moth, Plodia interpunctella the Indian meal moth and Tribolium castaneum the red flour beetle.

We are raising the Angoumois grain moth Sitotroga cerealella on a natural diet based on locally obtained wheat granules, Ephestia cantella the tropical warehouse moth is reared on wheat bran, Plodia interpunctella the

Indian meal moth is also reared on wheat bran, whereas Tribolium castaneum is reared on wheat flour and bran.

We have started to screen for new Bacillus thuringiensis strain from soil samples and insect debris in silos in Israel.

Between September 29/88 and October 12, I visited the Philippines. I met the staff of Dr. L. Padua of the Department of Entomology, University of the Philippines at Los Banos, College Laguna and we discussed various aspects of cooperation on the project. I presented a seminar at the University on "Biological Control of Stored products pests". We carried out field trips under the guidance of Dr. Belen Morallo-Rejesus, Stored Product Entomologist and Professor in the Department of Entomology, I also had discussions with Dr. William S. Padolina, Prof. of Chemistry and Director of the National Institutes of Biotechnology and Applied Microbiology.