

Project Summary

- 1. Project Title** “Monitoring of pesticide residue in black pepper in pepper producing countries” through collection of representative samples from all the member countries of International Pepper Community (IPC) and generating the data base on pesticide residues available on pepper and extend the advises to the member countries to check the use of harmful pesticides and suggest achievable MRLs to the CODEX
- 2. Duration** One year
- 3. Location** Member countries of the IPC (Indonesia, Malaysia, Sri Lanka, India, Brazil, Vietnam etc.)
- 4. Nature of project** Today pepper is the most important spice commodity in the whole world accounting for about 35% share in trade (US \$ 1.00 billion). Pepper is also one of the pesticide consuming crops.
- Altogether 25 pesticides (20 insecticides and five fungicides) are being employed in various countries for pepper cultivation. However only seven are most commonly used in the IPC member countries. They are
- 1) Dimethoate
 - 2) Monocrotophos
 - 3) Quinalphos
 - 4) Chlorpyrifos
 - 5) Phorate Metalaxyl mancozeb and
 - 6) Potassium Phosphonate.

Although it is possible to control pest and disease problems of the plant and increase the yield, there are also drawbacks, such as potential toxicity to humans and other animals. Pesticide residues may cause adverse, acute and delayed health effects in those who are exposed. Thus effects can range from simple irritation of the skin and eyes to more severe effects on nervous system, mimicking hormones, causing reproductive problems and also causing cancer. These health problems can be prevented by limiting pesticide exposures by avoiding indiscriminate use of harmful pesticides.

The first step in this direction is to randomly collect representative samples of pepper from all member countries and get them analyzed for pesticide residues in designated analytical labs maintaining international standards.

The Food Standards Agency (FSA), UK recognizes that consumer preferences is for reducing pesticide further than the current safe levels. In fulfilling this role to act in consumers’ interest, in 2006 the agency has produced pesticide residue minimization guides which could be followed in the present study on pepper.

The guides provide detailed information covering the description of the crop and its production and market, pesticides used and reason for

their use, pesticide residue found on the crop, approaches to reduce pesticide residue, research relevant to reducing residues and knowledge and technology transfer initiatives.

Assistance will be taken from the Quality Evaluation Laboratory of the Spices Board for completing analytical work of the proposed project. For all the first five pesticides enlisted above facilities are available in the Quality Evaluation Laboratory of the Spices Board while for the remaining two the services will be taken from public / private laboratories maintaining international standards.

A total of 30 samples are to be collected from each of the six countries of the IPC. The responsibility of selecting the representative sample and sending them for analysis lies with the liaison office of the IPC in that particular country. From the six member countries the total sample size will be 180. For all the 180 samples, the testing will be done for 7 aforesaid mentioned pesticides. Hence a total of $180 \times 7 = 1260$ tests are to be carried out. Each test costs about Rs.1500 (US \$ 33). To monitor the above works one scientist having experience on Spices is required as a coordinator throughout the project period.

5. Objectives and Scope:

The objective of the project is to make a survey and study for generating data on the levels of pesticide residues in pepper from the samples collected from member countries of IPC. Once higher levels are detected that particular country would be advised to take corrective measures in the right direction. The goal can be fulfilled by establishing a data base of the pesticide residues on pepper from member countries of the IPC. By doing so the safety of the consumers are protected and also possible to increase the overall consumption of Pepper. Ultimately the information generated on pesticide residue on pepper will contribute towards securing better health and also the CODEX can be advised appropriately on achievable MRLs.

6. Project Components

- 1) Detection of pesticide residues in the black pepper samples from the major pepper producing countries.
- 2) Establishment of data base on pesticide residues on pepper in the major pepper producing countries
- 3) Mass campaign in the major pepper producing countries for reducing excess usage of pesticides.
- 4) Creating awareness about GAP (Good Agricultural Practices)
- 5) Initiatives on Research relevant to reducing pesticide residues
- 6) Offer a consolidated source of information on pesticide residue minimization
- 7) Raise awareness of the issues of pesticide residue for those involved in production, Supply and Marketing of the fresh produce and
- 8) Encourage and assist the food industry to deliver the existing pesticide residue minimization initiatives.

7. Estimated total cost:	(a) Sample testing charges	US\$	42,000
	(b) Remuneration to coordinator	US\$	2,500
	(c) Sample collection & Carrier	US\$	5,000
	(d) Miscellaneous expenditure	US\$	500
	Total	US\$	50,000.

The grant required for the project is USD 45, 000. If the project is approved by international agency, the required matching contribution of USD 5,000 can be met from the reserve fund of the IPC.

- 8. Project Executing Agency** International Pepper Community
- 9. Collaborating Institutions**
- a) Ministry of Agriculture, Rural Development, Export
 - b) Promotion Agencies and the Pepper &
 - c) Spice Trade Associations in the IPC member countries
- 10. Estimated Starting Date** During the year 2012.