

A Discussion Paper

On

Agro-pesticide Use in Sri Lanka
Major Policy Issues

Submitted to

ITDG-South Asia

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Agro-pesticide use in Sri Lanka

Discussion paper

1. Introduction

Pest damage is a serious problem to many of the major food and industrial crops grown in the world. An estimated 30% to 60% annual yield loss has been observed in the Asia Pacific region. Consequently many developing countries depend heavily on the use of pesticides.

The use of chemicals has become very popular due to its high potential to kill pests and quick action against the pest population in a wide range of ecological conditions. Increased use of pesticides however, has caused considerable concern about their effects on the cost of production, health, natural environment, and the quality of agricultural products.

Sri Lanka is also not an exception from this situation. Pesticide use is popular among the farmers who grow crops such as Rice, Tobacco, Chillie, Potato and exotic vegetables, which give high income whereas it is literally unheard of in low-income generating crops such Maize and Sorghum.

All agro-pesticides used in the country are imported either as finished products or as technical material, which are then formulated locally. With the liberalization policies there has been a definite increase in imports of pesticides over the past two decades.

A pesticide regulatory committee was formed by the government in 1973, which placed restrictions on the use of certain pesticides. In 1980 the Parliament of Sri Lanka passed a bill for control of pesticides (Control of Pesticides Act No.33). Registrar of Pesticides appointed as licensing authority has the following duties: control of imports, designate authorized analysts, set requirements for packaging, labeling, advertising, transport, storage, pre-harvesting intervals and residual limits.

The purpose of registration is to ensure that pesticides, when used in accordance with the label directions will be effective and efficient for the purpose of pest control and will not subject the user, consumer of treated foods, and the natural environment, to unacceptable risks. The ultimate goal of registration is to provide the community with adequate protection from adverse effects not denying access to benefits from the use of pesticides.

Many studies have been conducted to examine the pesticide use in selected crops in different parts of the island. This study was conducted to examine the present situation of pesticide use and the changes and trends over the past ten years with the objective of highlighting the issues that need to be addressed by policies.

2. Methodology

Study was conducted in two phases and information was collected on the use of agro-pesticides, sources of information used by farmers, health hazards of agro-pesticides and use of safety measures, environmental effects of agro-pesticides, and enforcement of the regulatory system.

In the first phase secondary data from published and unpublished sources were collected to get an overall picture of the pesticide use in Sri Lanka. Published data were collected from organizations such as Department of Agriculture, University of Peradeniya, National Science Foundation, Medical Research Institute, journals,

magazines and newspapers. Unpublished data was collected from Census and Statistics Department, Plant Protection Service, and Pesticide Registration Office.

Field level information on pesticides use was gathered by conducting a field survey. 46 predominantly Chillie cultivating farmers from Ipalogama in Anuradhapura District and 46 predominantly upcountry vegetable farmers from Marassana in Kandy District were randomly selected and interviewed to gather information using a structured questionnaire. Information on use of pesticides, sources used to get information on pesticides, health hazards and protective measures in the use of pesticides, and concerns on environmental effects were collected. Interviews were conducted with research officers, extension officials, retail traders and farmer leaders to gather information on the general use of pesticides in the areas.

In the second phase literature related to regulation system and policy issues were gathered. Also key stakeholder discussions were held with government officials, private companies, research officers and extension officials involve pesticides industry to get their ideas on present situation and possible policy implications to solve the problems. Summary of the key stakeholder discussions are in the appendix 1.

Problem analysis based on the information were summarized in a problem tree (Appendix 4)

The number cited in section three below refer to those given in appendix 1.

3. Key Issues

3.1 Importation of pesticides

All agro-pesticides used in the country are imported either as finished products or as technical material, which are then formulated locally. Prior to the import liberalization in 1977 the imports were made on the tender basis of the government. With the liberalization policies there has been definite increase in the quantity of pesticides imported. (Pathirana, 1983) [10]

After licensing there is no limitations on the amounts to be imported except for Phyrothroids. This may be a reason for the increase of the importation of pesticides. In Phyrothroids, only a limited amount is imported, which is decided based on the cultivation area.[2]

Few private and public companies compete in the Sri Lankan pesticides market showing the features of oligopolistic market situation. These companies act as local dealers or agencies of the multinationals. Nearly seventeen companies are engaged in pesticides importation and Hayleys Ltd, Harrisons Chemical (Pvt.) Ltd., Lankem Ltd., CIC and CPC are sharing the major portion of the market.[7,8]

When considering the importation estimates of the past ten years, importation of technical material has reduced and importation of formulated products has increased. This may be because smaller companies too can import formulated products, which do not require any processing.[10]

The idea of the larger companies is that when the number of companies increases the difficulty in regulating and the possibility of adulteration could also increase due to increased number of products in the market.[8]

An analytical study conducted by the GTZ on pesticide products in 21 developing countries from 1989 to 1994 revealed that over one-third of pesticides available in the market in developing countries do not comply with international standards for quality of active ingredients. (Rajapaksa, 1997)

3.2 Sales of pesticides

Total sales volume of pesticides for the year 2001 is nearly 5897 MT.[7] That is an increase of sales more than 100 MT than the previous year. The sales of pesticides have shown a growth for the last five years which reflects that the use of pesticides has increased in the country.[10]

Nearly 75 active ingredients have been registered in Sri Lanka under 570 trade names by private companies. Due to this large number of trade names farmers often get confused and use the same active ingredient thinking that they are different products.[10]

Dealers and retailers engaged in the pesticides industry need to obtain a certificate from the authorized officer of the area, who act as the enforcement officer of the 'Control of Pesticides Act'. This certificate needs to be renewed every 12 months. But, getting involvement of all the pesticide dealers and retailers to this registration process has not been possible in most of the areas. This is mainly due to absence of a proper system to initiate the registration process. Lack of facilities to the authorized officers to exercise the power of the 'Control of Pesticides Act' aggravates the problem.[1,6]

Dealers and retailers ignore the registration because of the extra burden and lack of facilities to maintain the standards required. Sometimes due to seasonality of the sales of pesticides, retailers avoid the registration. To minimize this problem, proper monitoring system needs to be developed. Also companies who are dealing with these traders could convince them to take part in the registration process.[6]

Retail traders most of the time have a strong and influential relationship with the farmers. The degree of influence may vary from place to place but farmers rely on retailers for all the inputs. So they could be easily misled by the retailers. (Dissanayake, 2001) A proper extension service for both farmers and retailers will improve this condition.[3,5,8,9]

3.3 Regulatory control of pesticides

According to the Control of Pesticides Act, all class 1A and many class 1B pesticides are banned in Sri Lanka. Many of the class 2 pesticides are allowed only if there is no suitable replacement. Toxicity and safety concerns are high in Sri Lanka. Focus is high on safer chemicals.[1,5]

Any person or chemical company desirous of importing pesticides should make an application for license and then apply for the importation from the Pesticides registration Office. Licensing process will take minimum of 2 years.[1,7,8,9]

The chemical companies involved in the importation of pesticides are highly satisfied with the efficient work carried out by the Pesticides Registration Office compared to the other government institutions.[7,8,9]

But, the importers complain that rules such as prohibition of applying for the next consignment without clearing the previous shipment and, the requirement of

importing the approved amount in one-shipment cause delays in importation. Therefore, planning of importation has to be very carefully done, especially in deciding with amounts to be imported. Most of the chemicals are seasonal in sales. So, they should be put to the market at the right time or large stocks will remain in the company for six months to one year. Importation of too much or too little will make the company to bear a loss.[8]

In the licensing process except for the efficacy data other information such as toxicology and residual effects are obtained from the manufacturers and international organizations, which will be evaluated by the Registrar of Pesticides.[1,5] Lack of location specific data had led to the reliance on these foreign sources in making decisions to use chemicals to our country.

Banning of a chemical needs to be done based on clear evidence. Because these decisions become international issues and developed countries act strongly against them.[1]

The regulatory scheme clearly states the rules related to storage, transportation and sales of pesticides. The enforcement mechanism of these rules are through authorized officers. But, in practice there are many difficulties due to lack of facilities and impracticability. Number of authorized officers is insufficient to cover the area. Authorized officers are given these tasks apart from their routine work. Legal work in the process takes a long time and difficult to prosecute due to lack of proper technology. Almost all the authorized officers are extension officials and authorized officers need to have a good rapport with the people in the area. Due to these reasons the work of the authorized officers had been limited. Also, the present lack of communication between authorized officers and Pesticides Registration Office has lead to a more diluted work by the authorized officers. [1,6]

The adulteration of pesticides taking place in some of the marketing channel is also a considerable problem. But, testing for adulteration is a very costly process. None of the strategies by the chemical companies seems to have lead to control or to prevent the malpractices.[1,6,7,8]

Implementation of policies in the Control of Pesticides Act is not possible mainly due to Sri Lanka being a third world country. Penalties sated in the Act are not enough to control the violations, because of the changed conditions of today. So Pesticides Registration Office is now engaged in the process of amending the Act to make it more effective.[1]

3.4 Trends in use of pesticides

Application of higher doses, higher number of applications, very short application intervals and use of wide variety of pesticides were observed in many of the crops grown in different locations. In the survey it was revealed that, about one-third of the respondents interviewed were applying pesticides as a routine practice.[4,10]

Pesticide use is very popular in crops such as rice, chillie, potato and exotic vegetables. The cost incurred for pest control has increased for many of the crops. In Chillie this has increased from 22% to 32% over the past ten years. Sometimes the input cost of the pesticides has gone up to 75% of the total input cost.[10]

Although there had been comprehensive IPM program which reduced the use of insecticide in paddy cultivation, the use of weedicides is still considerably high.[4] IPM methods are generally common to many of the crops. But, farmers need to prctise these properly to get effective results. Reasons for these misuses are mainly

easiness, effectiveness of the pesticides and the crop insecurity.[1,4,5] Proper extension and training systems may reduce the above mentioned misuses.[4,5]

3.5 Information sources on pesticides

Informal sources such as fellow farmers and retail traders were the most popular sources of information. Only 16 per cent of the farmers surveyed reported that Agricultural Instructors (AIs) were their main source of information. Agricultural Research and Production Assistants (ARPA) were also not used as a source of information by many of the farmers, mainly due to the farmer's attitude towards ARPAs. It was felt that ARPAs do not have enough experience or training to give recommendations. Difficulty of meeting AIs, since they have to cover a wide area had limited the farmers from getting information from AIs.[10]

The traders were of the view that they could make recommendations because they had the license from the Pesticide Registration Office. But, they are not given any training on how to make such recommendations.[2] Use of mass media as a source of information was also minimal.[10]

There was a positive relationship between using of non-chemical pest control methods and farmers following training programs on IPM. More than 80 per cent farmers expressed that they would like to follow a training program on pesticide use. But, only 33 per cent of the farmer had followed any training program on pest control.[10]

Many government institutions involve in organizing the training programs for farmers and field level extension officials. Lack of coordination between these organizations is also a problem. Safe use of pesticides is not considered as a felt need by these institutes.[3,4] Extension officials should be frequently provided with information on new pesticides available in the market.

Sri Lanka Crop Protection Association, which is an organization of pesticide importers also, assists in farmer training. However they have assisted programs involving only 1980 farmers during the year 2001.[7]

Extension approaches used to disseminate information have shown limited success. Farmer Field School method provides an opportunity for the interaction between farmers and extension officials. The main limitation of this method is high time consuming of extension workers to train less number of farmers. As a result the dissemination of information is very slow. So it is essential to develop an extension approach which can train more farmers within a short period of time and more interactions with the extension officials.[3,4]

The label of the pesticide container is required to produce according to international standards and expected to provide most essential information on pesticides. Almost all the farmers stated that they would read the label information of the pesticide container. The main items they considered were the trade name, dosages and price. The information on precautions, pest to apply, concentrations, and date of expiry were not concerned by the farmers. In training programs emphasis should be made on importance of reading the label information and following the instructions.[1,10]

3.6 Health hazards and protective measures of pesticides

In Sri Lanka one of the major cause of deaths were due to acute poisonings of pesticides. According to the Department of Census and Statistics, in 1999 pesticide poisoning had been the sixth leading cause of death recorded in the government hospitals. It had been ranked as the number one cause of death in Anuradhapura, Polonnaruwa, and Hambanthota districts, which are agriculture-based areas.[10]

Number of people hospitalized for treatments for pesticide poisoning in the year 2000 was more than 20,000. This was an increase of more than 8000 cases when compared to year 1991. Hospitalization for pesticide poisoning had increased in every district in the past ten years. Most number of deaths was due to deliberate ingestion of liquid pesticides. Many of the studies conducted on pesticide poisoning reveal that, poisoning among many farmers who are closely engaged in use may be greater than that shown in hospital records. (Fernando, 1989; Dharmasena, 1994)

Farmers were seriously exposed to the pesticides mostly when mixing and spraying. Free measuring cups given by many liquid pesticides have caused a reduction of contaminations during mixing.[9] But safety measures in application were minimal.[10]

Discomfort of wearing in the field, unavailability, high cost and shyness prevented farmers from using safety devices such as head covers, nose and mouth covers, gloves and foot covers. Farmers' expression was that there is no significant harm in not using safety measures. But, knapsack spraying is considered as the most dangerous method of pesticides application by the Registrar of Pesticides.[1] But fair attempt has not been made by research institutes to develop pesticides application devices suitable for our conditions. Private companies also do not take much interest in introducing a better method, because that could be costlier than the knapsack sprayers.[5]

Lack of labour and the intention of finishing pesticide application within one day, had led to the long hours of application by farmers.[1,9] It was revealed that, nearly 40 per cent of the farmers were applying pesticides more than 8 hours continuously. When considering the health hazards, farmers were having mild poisoning symptoms like faintish feeling, headache, dizziness, and skin and eye irritations during the application of pesticides. This was significantly high with the longer duration of application. What farmers expressed was it is normal to feel the discomforts during pesticide applications.[10]

Proper blood and urine tests would give the actual level of poisoning by the farmers. But a comprehensive study has not been conducted to measure the chronic health effects of using pesticides.

3.7 Environmental effects

Most farmers do not adhere to the pre-harvesting intervals (period between last application of pesticides and harvesting) recommended in the label. Nearly 87 per cent of the Chillie farmers and 79 per cent of the Tomato farmers practiced less than 9 days of pre-harvesting interval when the minimum recommended is 14 days. There is no proper enforcement system even though it is a mandate that farmers should follow the pre-harvesting interval indicated in the label.[10]

Pesticides residue analysis undertaken by Pesticide Registration Office and Industrial Technology Institute (former CISIR) on fruit and vegetable samples had not shown any significant levels of pesticide residues.[1](Vitarana & Gunawardena, 1998)

But, these analyses were not done on regular basis due to the high cost. Possibility of pesticide residues remaining in the harvested products is high. Analysis for pesticides residues is a costly process. So low cost residue analysis methods need to be developed.[1]

There seem to be a very low consideration of farmers regarding the effects of pesticides in water bodies, soil and, the development of resistance among target pests. Awareness of the farmers about the pesticide effects on water macro-organisms was found to be reasonably high. But it was observed that some farmers clean the pesticide spraying equipments in common water bodies. Studies are being conducted at Department of Chemistry, University of Peradeniya to detect Chlorine containing pesticides. Mahaweli river system is also being screened for pesticide residues. National Aquatic Resource Agency (NARA) is conducting a study on pesticide residues in the aquatic environment. Since 1997 the National Water Supply and Drainage board has been monitoring residue levels of pesticide in water from areas such as Nuwara Eliya where there is intensive vegetable cultivation.

Consideration and awareness of the farmers of pesticide effect on the soil was very low. Applications of pesticides directly to soil while spraying to crops and the application of granular pesticides in excess the recommended dosages were commonly observed among farmers. More than half of the farmers expressed that there is a reduction of soil macro-organisms in the cropping area. Not many sites or regions have been identified as highly contaminated by agrochemicals. But comprehensive studies have been conducted in specific field areas where intensive agriculture is practiced. Eg. Kalpitiya area.(British Geological Survey, 1992)

Overuse and misuse of pesticides have a direct effect on development of resistance. The best estimate is that nearly 600 insects and mites species are now known to be resistant to pesticides.(Rajapaksa, 1997)

More than 67% of the farmers interviewed reported that the available pesticides were not effective in controlling the pest population and stronger chemicals were needed.[10] But chemical companies expressed that the bio-efficacy data clearly shows that the existing pesticides are effective in controlling the pests. Most of the time the farmers do not follow the recommendations and get unsatisfactory results.[5,9] The awareness of the farmers was low on pesticides resistant development. So the training programs needs to include more information on these issues.

Research conducted on environmental effects of agro chemicals has been limited due to lack of technical feasibility and high cost. Even the few assessments carried out are conducted as short-term projects. (Vitarana and Gunawardena, 1998) Environmental authorities need to develop action plans to monitor the effects of agro-chemicals and minimize the environmental impact.

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5. Appendices

5.1 Appendix 1- Summary of the key stakeholder discussions

1. Dr. G. K. Manuweera Registrar of Pesticides

Policies are needed to reduce the hazards of pesticides to humans and the natural environment.

Implementation of policies not 100% possible because of Sri Lanka being a 3rd world country.

Communication between institutions like DOA and universities is weak in these matters.

Registration process of pesticides deals with evaluation of pesticides and acceptance to use according to the efficacy and safety data. Only efficacy data is produced locally other information is based on literature by manufactures and international organizations like WHO and FAO.

Banning of a pesticide need to be done based on evidence. Because these decisions become international issues.

Verification for quality of the products is a problem locally because unavailability of lab facilities.

Pesticides Registration Office act on adulteration cases only if there is a complain. There also, limited facilities available to do analysis and it is costly process.

Authorized officers reluctant to take legal actions because of legal procedure take long time and difficult in prosecuting.

Penalties stated in the Control of Pesticides Act is not enough in controlling the violations.

Label information is in accordance with the international standards but little use by the farmers.

Consumer pressure must be increased on traders about quality of products available in the market. So they will force the farmers to reduce the pesticides use.

For residue analysis need to develop simple and low cost methods.

2. Mr. Sumith Research Officer Pesticide Registration Office

After licensing there is no limitations on the amounts of imports except Phyrothroids. Phyrothroids only allowed imports limited amounts.

For every shipment approval from the Pesticides Registration Offices needs to be taken and shipment should be made within three months of application. Products should be not more than three months of manufacturing by the time it was shipped.

Dealer and retailer training schedule is only for one day.

- Content of the training
- Parts relevant to dealers in the act
 - Pesticides transportation and storage
 - Label content and its importance
 - Classification of pesticides

Authorized officers in the AGA office or in the Provincial Council will organize the dealer-training program on the request of the dealers. Program is held when there is a group of about 30 people.

Dealer certificate is given after the training program and inspection of the store by the authorized officer.

3. Mr. G.A.M.S. Imitiyagoda

ADA

Division of Extension and training

Department of Agriculture

Agriculture Extension setup and its components

- Department of Agriculture: Inter-provincial service in high potential areas.
- Provincial councils
- Mahawali Development Authority in Mahawali areas

Extension officials use recommendations by the Department of Agriculture.

There is no special program to proper use of pesticide and promote safety measures in DOA. IPM is also only one part of this training program.

DOA emphasis is more on improving the productivity of cultivations. IPM alone cannot achieve that goal.

Field level extension officials not enough to cover the areas.

Training programs are organized according the request of the district officials. Safe use of pesticides is not brought up as an issue here. Not a felt need.

As dealers have become a source of information they should be tainted to do proper recommendation of pesticides.

Extension officials also do not have proper idea of the new pesticides available due to lack of proper information dissemination.

Extension methods used are not very effective in disseminating information. Especially workshops and training programs because they are short term. Need to have a plan to involve NGOs and other organizations in the area to do extension work.

4. Dr. Laxman Amarasinghe

Assistant Director

Plant Protection Service, DOA

Training programs of the DOA are organized according to the request of the district level officers. Safe use of pesticides is not a felt need of the farmers or officials.

Farmer field school system for IPM is a long process. Facilities are limited and rate of training is slow.

IPM has been developed for rice but not for many of the cash crops.

IPM aim is to achieve productivity with sustainability. But, time taken for achievement is very long. Commercial agriculture cannot always agree with methods like IPM.

Information to farmers still goes as massages. So they have to depend on officials for information. This needs to be changed.

Rule and regulations could not control the misuses of the pesticides in a third world country like Sri Lanka. In some developed countries people need to obtain a license to apply pesticides. So they will be given knowledge and training before using pesticides. And violations of the regulations will be severely punished.

Best practice is to remove all the highly hazardous pesticides from the market.

NGOs can help in the dissemination of information. In the field level there are some programs. But, no proper coordination of government institutions and NGOs in the work. Need to develop a proper plan.

5. Mrs. I. Wahundeniya
Research Officer
Horticultural crops Research and Development Institute

Regulatory procedure of importation of pesticides is satisfactory in Sri Lanka

Toxicity concerns and safety concerns are high in Sri Lanka. Focus is high on safer chemicals.

Literature from international manufactures on toxicity and residue analysis are reliable because they are well-reputed companies.

Farmers complain about chemicals not been effective. But tests have shown that chemicals available are effective in pest controlling. Problem is farmers not using the chemicals properly.

Control of misuses basically could be done by advising farmers. Educating farmers and advices of proper practices will reduce the misuses. Many of the pesticides are freely available to the farmers. But, the health and environmental effects are minimal if these are use correctly.

Integrated pest management methods are developed for some horticultural crops. Few practices will be general for most of the crops. Need to practice these properly.

Compared to other countries Sri Lanka is using less toxic chemicals.

Recommendations of the DOA are done according to the research done by the different research stations. The existing recommendations will be reviewed and publications will be released soon.

6. Mr. Nimal Kurukulaarachchi
ADA, Provincial Directors Office, Central Province
Authorized Officer

In most of the areas all pesticides dealers were not registered. This is due to:

- Some pesticides shops were seasonal
- Shops did not fulfill the standards required
- Information about dealers not available
- Business registration and pesticide registration done by two different institutions
- Dealers find this as a burden

Authorized officers also have other difficulties such as:

- This is an extra work than the workload they have
- All authorized officers were extension officials and they have to keep a good rapport with the people in the area. But these duties will affect that relationship.
- Additional facilities needed in carrying out the duties were not provided
- Number of authorized officers not enough to cover the area.

Discussion among authorized officers and connection between the pesticides registration office and authorized officers is weak.

Legal system of Sri Lanka takes long time. So authorized officers reluctant to involve in the work.

There is no proper system to follow-up the certification and renew it.

7. Mr. Hiran Weerasekara
Chaireman
Sri Lanka Crop Protection Association
Harrisons Chemicals (Pvt.) Ltd.

Sri Lanka is a country with a lot of restriction on Agro-chemicals. As an industry companies have to obey the rules. But the work of the pesticides registration office is very efficient and helpful.

Field officers closely work with the dealers and farmers and try to help them in most of their problems.

Companies have taken many steps to prevent adulterations. But very difficult thing to do.

Authorized officer do not have facilities to control the misuses or adulterations.

Sri Lanka crop protection association is a collective body, which represents the pesticides agents in the country when there is a need for it. Activates of this organization involves:

- Lobbing of regulatory matters with DOA/ Registrar of Pesticides.
 - Disposal of obsolete stocks- survey had found 175Mt is there. Disposal is a very costly process.
 - Monitoring program for pesticide residues
 - Banned Pesticides- association strongly challenges the banning of any chemical
- Safe use projects- Training programs.

But number of farmers trained not enough for a year. Need to develop strategies to reach more people.

**8. Mr. R.S. Dias
Mackwoods Chemicals Ltd**

For a government department, Pesticides Registration Office functions very well and very quick. There is no delay due to the registration activities.

Chemicals imported should not be more than three months of manufacturing by the time it is shipped from there. This is good on the one hand, because product will have more shelf life here.

But, for each consignment we need to get license separately. In one shipment the amount could not be increased later. If the company wants to do so, they have to take separate license for that. But, approval for next consignment will be given after the clearance of previous shipment here and producing the Quality Certificate to the ROP. These regulations cause problems in planning the amount to import.

Pesticide market also acts in different ways. Most of the products are seasonal. So, if not put to the market at the correct time the product will be unmoved for the next six months. Importing too much or too little the companies have to bear the consequences.

Problem of adulteration is there but companies and authorized officers can do very little because they have limited facilities.

Because of many companies involved in the business and number of products available is high and more chances of doing adulterations.

Good extension service would help to overcome most of these problems and farmer level misuses.

Sri Lanka Crop Protection Association is a gathering of leading agro-pesticide companies, which involve in many social activities. Eg. Training of farmers, dealers, officials and school children on safe use of pesticides. The association has also built a good relationship among companies themselves.

**9. Chandima Athukorala
Executive, Plant Protection Department
A.Baur & Co. Ltd.
Secretary, Sri Lanka Crop Protection Association**

Licensing of a pesticide is a long process. But it is important when considering about the end users.

Pesticides Registration Office functions fast and effectively comparing to other government organizations.

Farmers fail to obtain good results most of the time due to incorrect use of the pesticides.

In all the training programs, farmers were told about the importance of reading the label. Because label will give all the information.

Companies engage in training programs to prevent farmers from chemical hazards. But there are field level problems like lack of equipments, lack of labor and discomfort of the safety measure which force them to expose to chemicals.

10. Nandana Mohottige (Summary of the primary survey)

Importation of pesticides has increased for the last five years. Importation of technical material has decreased while the formulated products increased.

Sales of pesticides also has increased for the last five years.

Inputs for pest control has increased more than 10% for Chillie and some times it came up to 75% of the total input cost in both Chillie and upcountry vegetable cultivation.

Deaths due to pesticides poisoning has become the sixth leading cause of death in the government hospitals. This number has increase for the past ten years and very prominent in agricultural areas. Major causes of pesticide poisonings were due to acute poisoning.

Not many sites or regions have been identified as highly contaminated by agro-chemicals. But continuous research has not been conducted in this specific field.

Application of higher dosages, higher number of applications, short periods of application, and use of non-recommended pesticides were evident in both locations. Use of wide verity of pesticides and same pesticides with different trade names due to confusion is also observed. Mixing several pesticides in the spray tank is also very prominent. About 15% of the farmers applied pesticides as a routine application.

Attitudes towards using non-chemical pest control was negative in among the farmers in both localities.

Fellow farmer experiences and retail traders were the main sources of information for farmers. Problems with the AI s as a source of information were difficulty of meeting them on time, impracticability of their advices and favoritisms of them to some farmers. Agricultural Research and Production Assistants were not used as a source of information due to the idea that they do not have proper knowledge or training.

Trade name, dosages and price were the main items used by the farmers in the label. Other information were neglected by the farmers most of the time.

Farmers who used AI s to obtain information and farmer followed training programs on pesticide use were practicing more non chemical methods of pest control.

No proper protective measures were used by farmers especially during application. Mild symptoms of poisoning were experienced by more than 75% of the farmers during application. But most of the time farmers expressed it is as normal.

Nearly 30% of the Chillie farmers and 19% of the Tomato farmers were harvesting their products less than 5 days after application of pesticides. About 87% of the Chillie farmers and 79% of the Tomato farmers practiced 9 days of pre-harvesting interval, which is dangerously low.

Pesticides residue analysis by pesticide registration office and CISIR on fruit and vegetable samples had not shown any significant levels of pesticide residues. But

these analyses were not done in regular basis due to high cost. Possibility of pesticide residues remain in the harvested products is high.

More than 90% of the farmers were aware of the pesticide effects on water macro-organisms and reported taking care not to apply pesticides to surface water bodies. But it was observed some farmers clean the pesticide spraying equipments in common water bodies. Studies are being conducted at chemistry department, university of Peradeniya to detect Chlorine containing pesticides. Also Mahaweli river system is being screened for pesticide residues. National Aquatic Resource Agency (ANRA) is conducting a study on pesticide residues in the aquatic environment. Since 1997 the National water supply and drainage board has been monitoring residue levels of pesticide in water from areas such as Nuwara Eliya where there is intensive vegetable cultivation.

Consideration and awareness of the farmers of pesticide effect on soil was very low. 36% of the farmers said that they would apply pesticides to soil directly while spraying to crops. Nearly 40% of the respondents said that they apply granular pesticides more than the recommended dosages. More than half of the farmers expressed that there is a reduction of soil macro organisms in the cropping area. Not many sites or regions have been identified as highly contaminated by agro chemicals. But comprehensive studies have been conducted in specific field areas where intensive agriculture is practiced. Ex.Kalpitiya area.

More than 67% of the farmers interviewed reported that the available pesticides were not effective in controlling the pest population and stronger chemicals were needed. The awareness of the farmers was low on pesticides resistant development. More studies need to be conducted to find if there is real resistance development.

Continuous research has not been conducted in environmental effects of agro chemicals. This was due to lack of proper monitoring systems to determine the extent of soil or water contamination. Even the few assessments carried out are conducted as short-term projects due to high cost and technical skills needed.

5.2 Appendix 2- Detailed Key Stakeholder discussion

Date: 20th May 2002

**Person: Dr. G.K. Manuweera
Registrar of Pesticides**

Control of Pesticide Act

- Need to have and good to have
- But in implementation government officials have restrictions and limitations (Bureaucracy)
- Policies are necessary for effective mechanism. But 100% implementation not possible. Limitations also due to Sri Lanka being a 3rd world country.
- Communication failure between institutions also a problem. Eg. University and DOA.

Objectives of the Control of Pesticide Act

- Ensure safety of health and environment
- Quality assurance of the pesticides used.
- Ensure efficient use of pesticides.

Achieve these objectives by registration of pesticides.

Procedure or strategies used in registration:

1. Literature review- chemical, biological, toxicity data of the pesticides (from manufacturer also)
2. Independent reports of organizations - eg. WHO- Health effects, FAO- Other regulatory Authorities
USEPA, EU
Country of origin and countries of same climatic region
3. Own experiences and reports- TRI, CRI, RRI

Criteria for recommendation

- i. Bio efficacy- If not good not recommended
- ii. Other factors- eg. health, environmental effects
- iii. Risk benefit analysis- If benefits override risk, can approve.

Final decision taken according to all these. It should be clearly based on evidence and highly technical. Because this could be an international issue.

Decisions are time bound and country specific. Prevailing situation may change due to social, economic, and political reasons.

Technical advisory committee for making decisions which includes 15 members.

Chairman- Director General of DOA
Secretary- Registrar of Pesticide
Members from- SLSI, University, Customs, Attorney General

This decision could be challenged by appealing to the Secretary of the Ministry of Agriculture. His decision could not be challenged.

Verification for quality

- Problem is the lab facilities are not available in Sri Lanka. USEPA is simple and implemented easily due to good lab facilities.
 - Do pre-shipment testing and send independent officials to do inspections if doubtful
 - Need to obtain license from customs to import
- quality assurance of imports efficiently.**

Control of Pesticides Act includes industrial chemicals, agro-pesticides, and chemicals involved in sanitation and domestic hygiene.

Adulterations of pesticides

-Act only when there are complaints

Farmers → Extension Officials → Registrar of Pesticides

-Time to time checking is limited due to lack of facilities.

-125 Authorized officials discharge the duties of checking. (AD, ADA)

-400 Enforcement officers support them. This includes PHI, AI, and SSD

Dealer certification scheme

-One day training for the dealers on safe storing and handling

-Examination to pass to qualify

-Inspection of Authorized officials

-Certificate given for one year

Authorized officers have the power to take legal action. But they are reluctant to go to courts and bring it to the pesticides registration office.

Legal procedure takes a long time. Penalty for violation of the act is not enough. Need to change the act, so penalty could be given without going to the courts.

Label

-All the information is included

-Label information is not used by farmers

Policy and Act should be changed to suit the farmer level or practical use.

Application of high rates are mainly due to economic insecurity. Extension service needs to be sound to prevent these. But, problems experienced being a 3rd world country.

Consumer pressure must be increased on traders about the quality of the products available in the market. Change their attitudes.

Traders could influence the farmers to reduce the use of pesticides.

For residual analysis, need to develop simple methods to do at least crude analysis.

Control of Pesticide Act enacted in 1980 and amended in 1994.

Pesticide is a massive industry.

-Value of imports- \$ 15M/ year.

-Value of sales- \$ 40M/ year.

Detailed key stakeholder discussion

Date: 29th May 2002

**Person: Mr. Sumith
Mr. Subash
Pesticide Registration Office
Gatambe**

Determination of amounts to be imported

No limitations on approved pesticides except Phyrathroids

Phyrathroids, only limited amount is allowed pre year.

(Only about 11000 l per year).

Divide this amount between the companies who wants to import

The amount is the minimum needed and calculated according to the acreage

Phyrathroids only recommended to few crops

Other pesticides can be imported according to the desire of the importer

Regulations in the Pesticide Registration Office for importers (Not included in the act)

- o Approval for every shipment of pesticide needs to be taken.
- o Importing of the product needs to be done within 3 months of approval
- o Can only import products formulated within 3 months before shipping. If it is more than 3 months after formulation, can only import with special permission
- o Exact amount stated in the application for approval is the maximum that could be imported in that consignment and that should come in one shipment
- o Can't apply for the next consignment of a particular pesticide until previous shipment is cleared (Need to provide clearance and quality certificates)

Training and certification of dealers

According to the act there should be a trained person employed in the dealer outlet all the time

Trainee certificate is valid for only one year

To get a new certificate, need to make a request to the Authorized officer in the AGA office or in the Provincial Counsel

When there is a group of about 30, the officer will organize the training program

Authorized officers or the officers from the Pesticide Registration Office will conduct the training program

Training program is for one day

Content:

- Parts relevant to dealers in the act
- Pesticide transportation and storage
- Label content and its importance
- Classification of pesticides

Then there will be a written examination of about 30 minutes

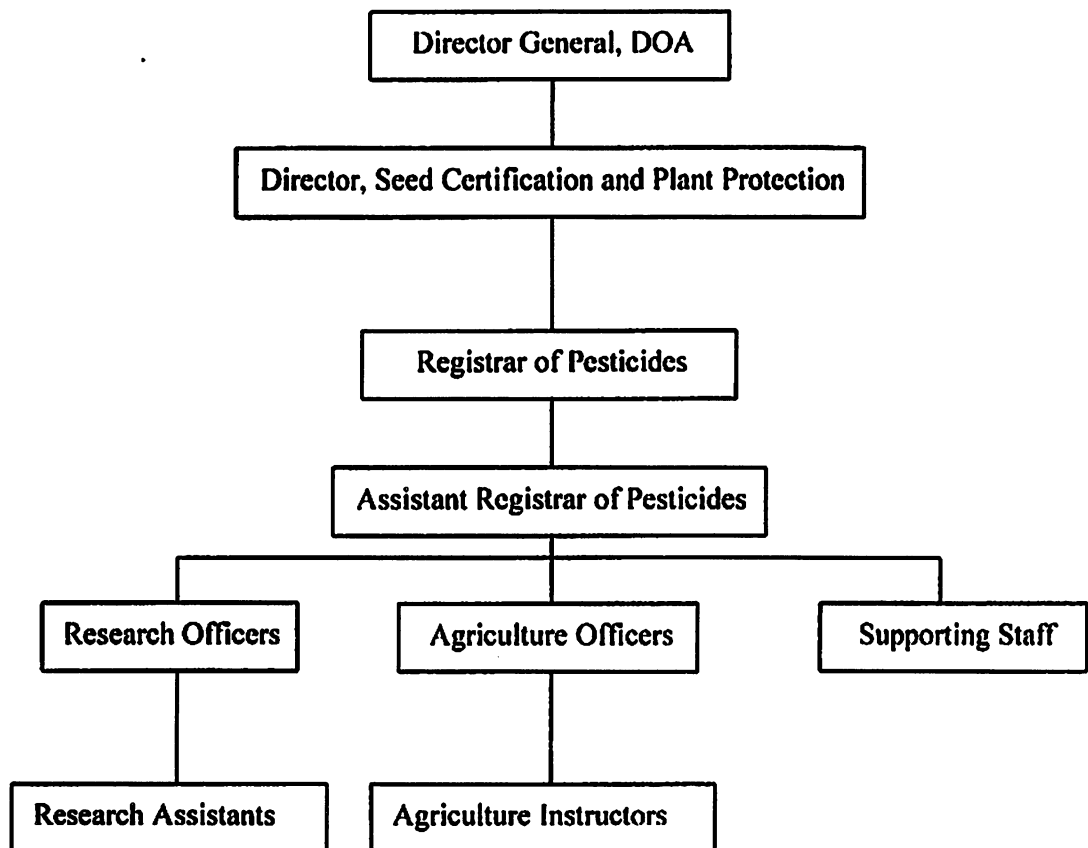
Those people get through will get a certificate from the Pesticide Registration Office

When getting the dealer certificate the Authorized officers will look for the

- Trainee certificate
- Check for the condition of the store

Then the dealer certificate will be issued

Structure of the Pesticide Registration Office



Detailed key stakeholder discussion

Date: 22nd May 2002

Person: Mr. G.A.M.S. Imitiyagoda
ADA
Davison of Extension and Training
Department of Agriculture

Agricultural extension setup and its components

- Department of Agriculture: Inter-provincial service in high potential areas.**
- Provincial councils**
- Mahawali Development Authority in Mahawali areas**

Extension officials use the recommendation guidelines by the Department of Agriculture. These recommendations come with the high effective, low toxicity compounds. Annually this list changes. Modifications and upgrading done by a committee appointed by the DOA.

Problem is that people only come to the officials if it a big out break.

There is on training programme specially to promote safety measures and safe use of pesticide in the DOA. The existing training programs, are oriented to improve or increase the productivity of cultivations. So, it comes as a package of different programs.

IPM is only one component of the program. And pesticide use is only a small component of it. So, emphasis on the pesticide use is very small in the training program when compared to the total program.

DOA cannot emphasise only on IPM because package is for improvement of productivity. IPM alone could not achieve that goal.

There are training programs for field level extension officials and farmers. But this is not enough to cover all the people.

Training programs are done as:

- District training programs**
- In-service training programs**
- FMTC training programs**

For farmer training programs, good support has been given by the Pesticide Association of Sri Lanka. Between the private sector and government, good compromising on the issues of pesticide.

Private sector commitment is high to maintain good quality service at company level.

People go to dealers for information because it is the easiest method. Dealers also have some training on safety. But, they do not have the training to do recommendation. They do it most of the time by experience. So, it is better to give a training to the to do proper recommendation.

Extension officials are not enough in number. One person for three thousand farmers.

about the new chemicals available, even the officials do not have a good idea. Because dissemination of information is not done properly or efficiently.

Most of the time farmers are aware of the safety measures. Only they do not practise these.

Farmer training programs and methods are not developed to give ideas quickly and efficiently. Even the farmer field school method takes a long time and need certain level of knowledge by the farmer.

Farmer-to-farmer extension is not properly developed and it is stuck in the process of doing.

IPM needs to have long-term involvement with one group of farmers. But, not enough resources for that. IPM only developed properly for paddy. For other crops and vegetables no proper IPM programs.

Extension service is weak at the moment. Coordination between the different organizations involved in the training within the department and outside is also not enough.

Eg. Plant protection service, and division of extension and training

Safe use of pesticide is not a felt need by the farmer. So this should be imposed by the authorities and should be given in a manner that it is important.

TV and radio programs on safe use of pesticides have been very effective.

NGOs can directly involve in matters like this. Because they have the goal of sustainability, safety of environment and health. They have the resources. But, no national level plan to involve NGOs to the programs of the government. At field level there are some joint programs with NGOs. But need to develop links more.

Detailed key stakeholder discussion

Date: 23rd May 2002

**Person: Dr. Laxman Amarasinghe
Assistant Director
Plant Protection Service, DOA**

Plant protection service involved in training of people on pesticide use and IPM. But, these are only few programs. Most of the time acts as resource persons for the training programs organized by the Extension Division of DOA or In-service Training Institutes.

Most of the time Plant Protection Service trains officers.

Most of the time training programs of the DOA are organized by the district level officers. The type of training program depends on their requirement. Safe use of pesticide is not a felt need by the farmers or officials.

General Work of Plant Protection Service:

- Prevention and eradication of alien plant species from entry and distribution in the country.
- Organize and coordinate programs when there is major outbreak of pest attacks.
- Conduct field level research on pesticides, for bio-efficacy
- Link research and extension work
- Promotion of rice IPM through training programs

Farmer field school system for IPM is a season long process. For this officers are selected from all around the country and trained

For a training program a group of 25 officers will be selected. Average of 7 groups will be trained every year. But this coverage is not enough.

Now conducting a new program to train farmers to become trainers of other farmers (Community IPM). They will get the support of the trained officials as facilitators. This has shown some improvement.

IPM has been developed for rice but not for many other cash crops.

Apart from IPM in rice other training programs are organized according to request.

For farmers, information still goes as messages. So, they need to depend on officials. This needs to be changed. Farmers need to realize the situations and be experts on it. This is happening very slowly.

One season in the field means lot of time for officials to work with only one group. Practically not possible.

IPM is very successful in down south areas and Mahawali areas in paddy cultivation. But, not very successful in Pollonmaruwa, Ampara, and in other areas where commercial agriculture practised.

IPM aim is to achieve productivity with sustainability. But, time taken for achievement is very long. Commercial agriculture cannot always agree with methods like IPM.

Pesticide residues in some products can affect the export market. Eg. Tea

When setting standards for residues between countries, always the developing country will be affected.

- **Cannot export most of the products**
- **Cannot ensure the quality of the products imported due to lack of facilities**

In some developed countries people need to obtain a license to apply pesticides. So they will be given knowledge and training before using pesticides. And violations of the regulations will be severely punished.

But, in Sri Lanka all these things are not there. Existing legal system is not enough to control the misuses. Even if we have the legal background, implementation of this will have practical difficulties.

Awareness programs most of the time failed to change the attitude of the farmers.

Best thing is to remove the highly hazard causing pesticides out from the market.

In IPM, result will be slow. Not compatible with commercial agriculture.

NGOs can help in the dissemination of information. In the field level there are some programs. But, generally their interest is low. No proper coordination of government and NGOs in the work.

Now plant protection service has programs to train NGOs on IPM. But, in their training to farmers they use only part of this.

In Sri Lanka overall agriculture is commercialized. But, no real benefit to poor farmers. Due to commercialization sustainability issues have low priority.

Detailed key stakeholder discussion

Date: 24th May 2002

**Person: Mrs. I. Wahundeniya
Research Officer
Horticultural crops Research and
Development Institute**

Procedure of recommending a pesticide to a crop from a research station

- When industry people want to introduce a chemical they will come to the research institute and contact the research officers. They will discuss the chemical they hope to introduce or what chemicals needed to overcome current problems.
- Then they will produce the literature on these products. Basically on toxicity and use in other countries. In Sri Lanka class 1 pesticides are not allowed and use class 2 pesticides if class 3 pesticides are not there to replace that.
- Industry people have to produce literature to Registrar of Pesticides too.
- A form has to be filed to import samples of pesticides for testing in a research station. Research officer also has to approve that he will take the full responsibility.
- After Registrar's approval only, can import these materials.

These will be tested in labs (Bio assess) and in field for minimum of two seasons.

Samples will be sent to Plant Protection Service to test as pilot test in the field.

Residue data is not taken in the field. Literature will give the pre-harvesting intervals. That value is reliable. If that is practised, minimum of problems.

The literature will be taken from very reputed companies. So can rely on them. Also information will be collected from other countries.

In Sri Lanka problems might come when the farmers are not using the proper pre-harvesting intervals

Control of misuses basically could be done by advising farmers. Educating farmers and advices of proper practices will reduce the misuses. Many of the pesticides are freely available to the farmers. But, the health and environmental effects are minimal if these are use correctly.

Highly hazardous pesticides are either restricted or banned in the country. So, they are not freely available. By this, some protection is there.

Apart from that trying to act against misuses will have many practical problems.

Best thing is to educate farmers. We need to change the attitudes of the farmers. If not, no use of the education even.

Now industry is moving to low toxic more effective pesticides. But, the prices of these are very high. Generally pesticide prices are high. So, the affordability will be reduced. Subsidy will lead to more misuse.

Research on safety has been done very minimally. Knapsack sprayers are not dangerous if they are used properly. There are better sprayers developed in other countries. But, they are very expensive. Farmers cannot afford them. So companies do not try to introduce them to the market.

Farmers do not care about the safety measures mainly due to high cost of this equipment.

Integrated pest management methods are developed for some horticultural crops. This depends on the requirement. Horticultural crops include many crops. Also, developing IPM systems takes long time of research. Few practices will be general for most of the crops. Most of the time this information will be disseminated to the farmers every possible time.

Research institute disseminates information to farmers by:

- Field days (Minimum of 5 field days)
- Farmer visits.
- Resource persons of training programs of other institutions
- Farmers come to the research institute

A team of researchers will go to the place if requested by farmers and do inspections and recommendations.

In general pesticide use in Sri Lanka is relatively low when compared to other countries in the region. Eg. Bangladesh, Thailand

Toxicity concerns and safety concerns are high in Sri Lanka. Focus is high on safer chemicals. Now promoting insect growth regulators. (4 types commercially available). Only problem is that pre-harvesting intervals are not practised. That needs to be changed.

Recommendations of the DOA are done according to the research done by the different research stations. The existing recommendations will be reviewed and publications will be released soon.

Detailed key stakeholder discussion

Date 30th May 2002

**Person: Mr. Nimal Kurukulaarachchi
Assistant Director of Agriculture
Provincial Director's Office
Central Province (Authorized Officer)**

Now involve in more administrative work. So, less concentration on the activities of an authorized officer. However, started working as an authorised officer in the early days of the enactment of the Control of Pesticide Act.

At that time, the concentration was more on the registration of dealers and educating them to involve in registration process. It was done by collecting the list of addresses of the people involved in the pesticide sales through Agriculture Instructors of the area and informing them to be registered in the provincial council. Only part of the dealers got registered in this phase.

Many practical problems came up with this:

- Authorized Officers had other duties when they were assigned to do this activity. Therefore, it was an additional burden to them.
- All the authorized officers were extension officials. So, they need to have a good rapport with the people in the area. But, these duties involved arresting people and court cases, which will affect the good relationship. Most of the time, authorized officers try to avoid conflicts and try to advise dealers.
- In some shops, pesticide sales are seasonal. So, the dealers may not care about registration.
- Shop business registration and registration for sales of pesticides are done in two different organizations. This is also a confusion.
- Most of the time dealers' shops do not have the conditions required according to the act. This is being a third world country.
- Sometimes cannot take any actions because those dealers may be the only people in the area where farmers can buy all the essential things.
- When arresting, every pesticide in the store should be taken in to custody and taken to the court. But, to do this, authorized officers were not given any facilities.
- Number of authorized offices to cover an area is not enough. Even the stationeries to do the additional work were not given.
- Annual registration process is not working in most of the areas because in many of the areas the process is in the initial registration stage.

Due to all these reasons, the work of the authorized officers is more like a diluted work or part-time work.

Only in Kurunagala area they have a separate person to carryout these duties. But, need to have separate person for every place.

Discussion among the authorized officers is not done frequently. The connection with the pesticide registration office is very weak.

Legal procedure in Sri Lanka takes long time. So, involving in that is a waste of time and money.

There is no proper system to do the follow-up of registration of dealers and renewal of the registration.

In a court case also it is very difficult to prove incidents of adulterations, because of the lack of facilities.

Enforcement officers also not involved in the process properly. Coordination between enforcement officers in this is very weak.

Detailed key stakeholder discussion

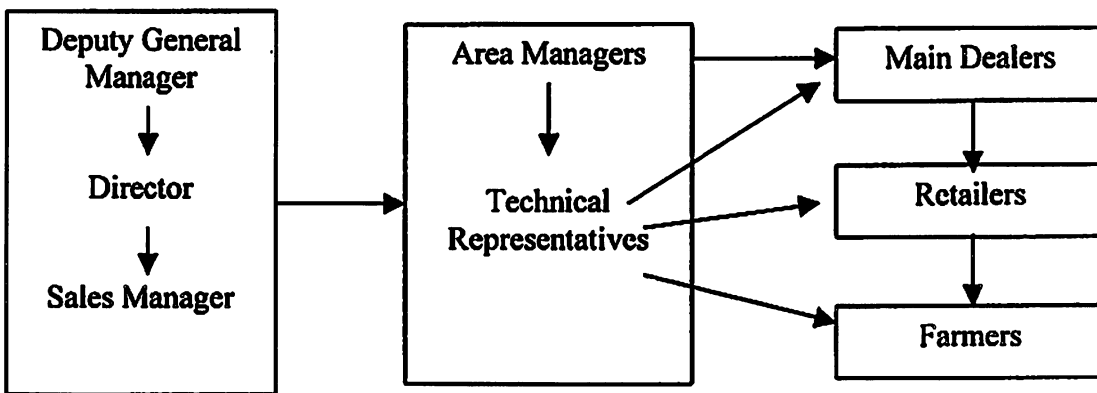
Date: 7th June 2002

Person: **Mr. Hiran Weerasekara**
Chairman
Sri Lanka Crop Protection
Association
Director-Agro
Harrisons Chemical (Pvt) Ltd.

Sri Lanka is a country with a lot of restrictions on agro-chemicals, especially pesticides. But, these restrictions are important when considering about the end user. Because the end user is not aware of the danger of the chemical, he uses.

As an industry, companies have to obey the rules to function in the market according to some instructions. So, don't think of regulations as a problem. Registrar of Pesticides is also helpful most of the time. Pesticide registration office is also very active and there is no delay most of the time.

Marketing channel



Main dealers have to have the transport facility and storage of the products. He distributes the products to the retail stores. Technical representatives go in the field and monitor the distribution of the products, collect money, report problems and organize the field activities.

Main field activities will be the promotion of products and training of the farmers. Promotion activities conducted are:

- Demonstration plots in the farmer fields
- Farmer meetings and Agriculture Instructor meetings
- Film shows

These activities are planned every year before the cropping season.

Considering about the adulterations, company has taken the steps to prevent these. Eg. Sync rap products, label information

But, still the adulterations takes place, especially in large estates. Farmers buy these products because of low price and large quantity. It is very difficult to control these activities by the company or the government.

Authorized officers don't have enough facilities to control or take legal actions on this. Also, the political influence is high in most of the cases.

In the pesticides marketing, few companies are there and they perform at different levels.

According to their market share:

First level: Harrisons, Lanchem, Haychem, CIC, CPC

Second level: Finchem, Macwoods, A. Bours, Agro ceer

Third level: Unipower, Oasis

Pesticides Association was formed 20 years ago. This is an association of all the pesticides agents in the country. Now the name has changed as the Sri Lanka Crop Protection Association. This is a member of the Crop life International which is an association of international chemical companies.

Mission statement

To promote the safe, effective and environmentally responsible handling of crop protection products with the view of increasing the agricultural productivity while protecting the user, environment and consumer.

Act as a body to fight against the problems that come in the way of the pesticides industry. Strongly challenge the banning of pesticides because it is an international issue.

Activities of Sri Lanka Crop Protection Association (SLCPA)

Lobbying of regulatory matters with ROP/ DOA

Disposal of obsolete stocks- survey has found 175MT sitting in stores. This is a costly process

Monitoring program for pesticide residues.

Banned pesticides- 29th June 2001 gazetted the banned pesticides

Safe use project

Training programs in the year 2001:

Students- 354 (Universities, Agricultural schools, Schools)

Dealers- 154

Officials- 115

Farmers- 1980

Number of farmers trained was not enough. So to have a wider coverage now produce programs to be broadcast in mass media.

Training the younger generation is very important. So, association has separate programs for school children.

Summary of the pesticides market 2001

Total sales volume-5897MT (KL/ MT)

Total sales value- Rs. Million 2468/=

Detailed key stakeholder discussion

Date: 10th June 2002

Person: **Mr. R.S. Dias**
Mackwoods Chemicals Ltd.

Importation procedure and regulations

To import a chemical to the country, first it should be registered in the country. If it is a registered chemical an application to the Pesticide Registration Office (PRO) should be made. The quantity of the consignment should be clearly indicated.

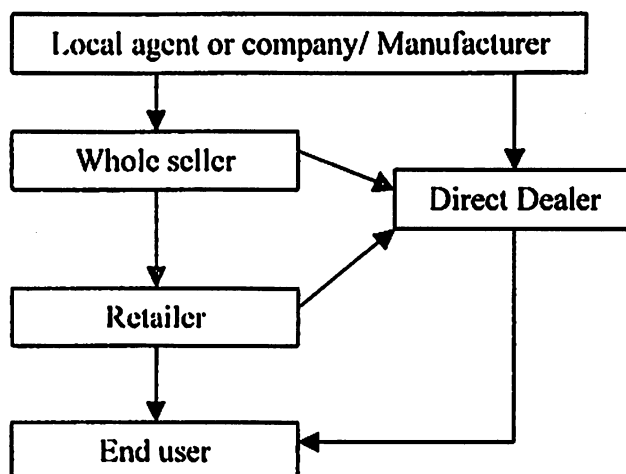
Registrar of Pesticides (ROP) will send copies of the approval to the company and department of Import and Export Control. With this approval and performance invoice of the supplier, company should apply for the license to import the chemicals. Once the license is obtained, importation should be done within three months.

There are some rules in importing. Chemicals imported should not be more than three months of manufacturing by the time it is shipped from there. This is good in one hand, because shelf life of a chemical is most of the time one year. So product will have more shelf life here. But, for each consignment need to get license separately. In one shipment the amount could not be increased later. If the company wants to do so, they have to take separate license for that. But, approval for next consignment will be given after the clearance of previous shipment here and producing the Quality Certificate to the ROP. These regulations cause problems in planning the amount to import. Pesticide market also acts in different ways. Most of the products are seasonal. So if not put to the market at the correct time the product will be unmoved for the next six months. Importing of too much or too less the company have to bear the

As a government department PRO functions very well and very quick. There is no delay due to the activities. All these might take maximum of three weeks. Companies also try to function within the limitations of the restrictions. Registrar also very cooperative and understanding in some of the problems. Current regulatory procedure is strict and good.

Amount to be imported is estimated by a team of managers who has an experience of the market.

Marketing channel



Wholesaler should have the facilities to store the products and transportation. Company also keeps close contacts with the retail stores and farmers through field level officials. In this way, easy to identify problems in the field level.

Problem of adoration is there and it is not good to the company reputation and sales. So companies have taken many precautions. Eg. Special foil packaging, Sync rapping, Print batch number and license number.

But, still adulteration occurs. Authorized officers also can do very little because they have limited facilities. This is also difficult because of many companies involve in the business and number of products available is high.

Good extension service would help to overcome most of these problems and farmer level misuses. Practically this does not happen now. Extension service will disseminate the information quickly and efficiently. Private organization cannot have an extension service through out the island. Can support the government to establish extension service.

Sri Lanka Crop Protection Association is a gathering of leading agro-pesticides companies, which involves in many social activates. Eg. Training of farmers, d ealers, officials and school children on safe use of pesticides. The association has also built a good relationship among companies themselves.

Most of the misuses are due to economic insecurity of the farmers and uncertainty of what to practise. This needs to be answered to reduce the misuses.

Leading companies in the market are the Harrisons, Haychem, CIC, and CPC
Most of the time nearly 35% is added to the product to cover the import and other expenses.

High price will reduce the use.

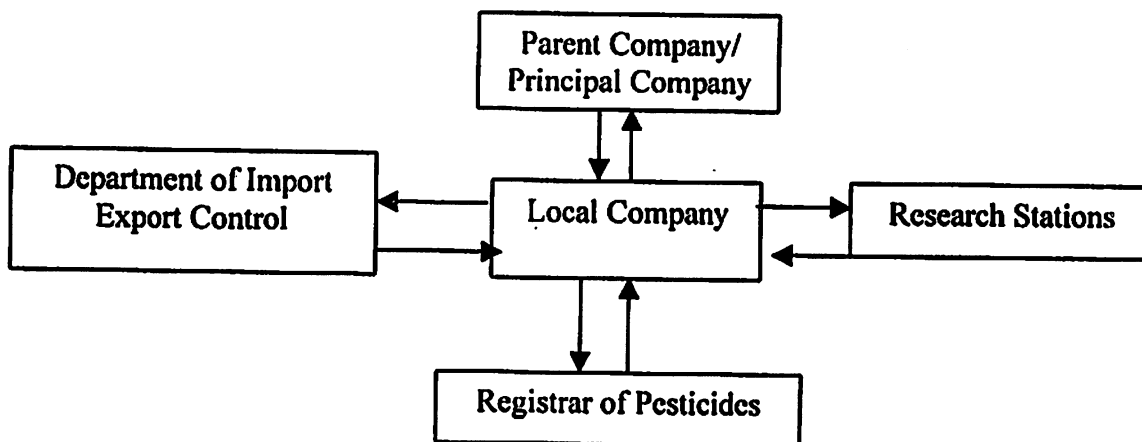
Pesticides have a definite market in the country. It is stagnant most of the time. When introduced a new product, sales of that will increase but, market will be the same.

Detailed key stakeholder discussion

Date: 10th June 2002

Person: **Chandima Athukorala**
Executive, Plant Protection
Department
A.Baur & Co. Ltd.
Secretary, SLCPA

Registration procedure of a pesticide



Pesticides are imported from a mother company or a principal company. If the local company wants to introduce a new chemical, first they have to send a report to the principal company on need, current situation and potential of market for the new chemical.

Then they will send the technical literature to the local company. This is a very confidential document. With this the company contacts the research stations and relevant research officers for the testing of the material. If the material is acceptable the research officer will give the approval to test the material and send a copy to the ROP.

The company will have to apply to the ROP to import the material for testing. ROP will decide on the need, approval of the research officer and technical literature available on importation.

Approval of the ROP and performance invoice from the supplier will be sent to the Department of Import and Export Control to get the licence to import non-commercial quantities of the new chemical.

Compound will be given to the research officers to do the efficacy tests in the research station. This is done for at least two cropping seasons. If the compound is effective then it is sent to the Plant Protection Service of DOA to conduct the pilot tests in the actual farmer conditions. If the results are good local company can apply for the registration of the compound

In this application company has to provide all the technical and research details of the chemicals. For that a registration brochure will be sent by the principal company and manufacturer of the chemical.

Then only the registration of the chemical will take place. This will take minimum of two years. So, the chemical imported to the country will have a detailed record of it.

Importation procedure of pesticides

Application should be sent to the ROP about the importation consignment. He will send two copies of the approval to the local company, Department of Import and Export Control and keeps one copy.

Then the local company has to apply for the licence to import material with the approval of the ROP and a performance invoice from the supplier from the Department of Import and Export Control. Here they will charge a fee of 0.5% value of the importation in Sri Lankan rupees.

With the licence, the company can import the product. For each consignment, have to take licence separately. In this the quality certificate of the previous shipment of the manufacturer needs to be provided. To get the licence, it will only take about two weeks. Pesticides Registration Office functions fast and effectively comparing to other government organizations.

Most of the time farmers failing to obtain good results is due to incorrect use of the pesticides. In all the training programs, farmers were told about the importance of reading the label. Because label will give all the information.

Compared to most of the Asian countries, Sri Lanka has a good regulatory mechanism and high restrictions on imports of pesticides.

In pricing minimum of 18.5% is added to cover the costs and margin of profit.

5.3 Appendix 3- List of key stakeholders

Government Officials (Regulatory Control)

1. Dr. G.K. Manuweera
Registrar of pesticides,
Pesticides Registration Office,
Gatambe, Peradeniya.

2. Mr. Sumith
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5.4 Appendix 4 – Problem Tree (Pesticides use in Sri Lanka)

