Pesticides and Toxic Chemicals Control Board

ANNUAL REPORT 2007

Executive Summary

This report contains information on the objectives, accomplishments, constraints and activities of the Pesticides and Toxic Chemicals Control Board for 2007. The proposed achievements for 2008 are also included. An organisational chart was developed proposing four divisions with total staffing of twenty-three persons headed by the Registrar. The Board is currently staffed with nine persons.

The Pesticides and Toxic Chemicals Control (Amendment) Act 2007 was passed allowing Guyana to accede to the Rotterdam Convention in August 2007. The Board was named as the focal point and satisfied all obligations required under the Convention. The Pesticides and Toxic Chemicals Control (Amendment) Regulations 2007 was signed into law in March allowing the Board to commence charging fees for the administration of pesticides and toxic chemicals in Guyana from the 1st April 2007. The fees collected for 2007 was approximately $13 M and the Board's activities continue to be subvented by the Government of Guyana. It is estimated that the Board shall be self sustainable by 2011. The Board's proposed budget for 2008 reflects an expenditure of $ 41 M and provides for the establishment and functioning of the pesticide laboratory in 2008.

The Auditor General's Office completed their examination of the Board's financial statement for 2006 and validated that the financial statements were in conformity with generally accepted accounting practice.

No chemical was added to the list of prohibited chemicals established in 2006. A total of thirty-two entities made registration submissions for two hundred and fifty-four pesticides comprising one hundred and twenty-three insecticides, seventy-four herbicides, thirty-five fungicides, thirteen rodenticides and nine others. Two hundred chemicals by trade names were imported for the year by thirty-two importers. Total imports for the year was approximately $ 616 M which reflected a 43% drop in import compared to 2006 and the overall importation is significantly lower than 2004 and 2005.

There were ninety-two vending premises certified for the year. Inspectors of the Board and Enforcement Officers of the Guyana Revenue Authority (GRA) inspected three premises in Georgetown and seized a large quantity of illegal mosquito coils and aerosol insecticides.

Most of the equipment for the pesticides laboratory was received with the notable exception being the Gas Chromatograph. All the equipment was housed in the laboratory building and covered the requirement for qualitative analysis. The Board intends to further expand its capability in 2008 by procuring through the Agricultural Diversification Programme equipment for residual analysis.

The Board was represented at a number of national meetings on matters concerning pesticides and toxic chemicals management. Regionally, the Board was represented at a seminar on the sound management of chemicals in the Caribbean in St. Lucia and internationally, the Registrar participated in a training programme, "Crop Diseases and Pest Control Training Course 2007 for developing countries hosted by China International Centre for Agricultural Training (CICAT).

Public Awareness activities by the Board included participation in a number of exhibitions across Guyana. A website address was registered and construction commenced and the site should be operational in 2008. A training manual for farmers and farm workers entitled "Bains and Boodhoo" was developed and launched during agriculture month. An agricultural database for chemicals registered by the Board was constructed with financial support from the Pan-American Health Organisation (PAHO). The Board intends to continue its public awareness activities in 2008 with the observation of Pesticides Awareness Day, Week and Month along with participation in national agricultural activities.

The Board provided training to farmers and participated in the Farmers Field School activities coordinated by the Guyana Rice Development Board (GRDB) at a number of locations in Regions 2, 3, 4, 5 and 6, and intends to continue training

in these areas in 2008. Other proposed training activities include development of another manual and other associated training material along with the inputting of information in the database for distribution to vendors, schools and extension agents.

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1 Introduction

This Report chronicles the Board's activities for the year 2007. It highlights the accomplishments and discusses constraints of the Pesticides and Toxic Chemicals Control Board objectives and activities initiated for the year 2007**.**

The Report also encompasses the Board's objectives and proposed achievements for 2008.

1.1 Administration

The staffing establishments for the Board were as follows:

(i) Basudeo Dwarka, Registrar, Pesticides and Toxic Chemicals;

(ii) Usha Homenauth, Administrative Secretary;

(iii) Trecia David, Inspector, Licensing and Registration;

(iv) Vivek Joshi, Inspector, Inspection and Enforcement;

(v) Suresh Amichand, Inspector, Training and Enforcement - employed in December 2007;

(vi) Lucina Singh, Inspector; re-designated as Assistant Analyst;

(vii) Moonmattie Singh, Accountant;

(viii) Ann Mohamed, Office Assistant / Data Input Clerk resigned August 2007

(ix) Shivannaha Persaud - Office Assistant / Data Input Clerk, employed in October 2007; and

(x) Lolita Abrams, Cleaner /Charwoman.

The Board hired a new Inspector, Mr. Suresh Amichand to replace Ms. Lucina Singh who was re-designated as Assistant Analyst to better utilize her training - Masters in Biology with specialization in Chemical and Environmental Toxicology - received in the Pesticide and Toxic Chemicals Laboratory. The vacancy for Inspector was publicly advertised and there were eight applicants. The top ranked candidate was Mr. Amichand. The Office Assistant / Data Input Clerk, Ms. Ann Mohamed, resigned her position with the Board because she was migrating and was replaced with Ms. Shivannaha Persaud.

1.2 Board of Directors

The Directorate of the Board appointed for 2006 continued until June 2007. A new Board was appointed from the 1st August 2007 and was appointed to serve until the 31st December 2008. The members of the Board are as follows:

1. **Dr. Leslie Munroe** – Chairman;
2. **Mr. Ramesh Lilwah** – Deputy Chairman - Representative Environmental Protection Agency; Resigned November 2007;
3. **Ms.Karen Alleyne** - Representative of the Environmental Protection Agency; replaced Mr. Lilwah;
4. **Mr. Kuldip Ragnauth** – Deputy Chairman and Ex Officio Member;
5. **Dr. Dindyal Permaul** – Representative of the Ministry of Agriculture;
6. **Dr. Rudolph Cummings** – Representative of the Ministry of Health; Resigned June 2007;
7. **Dr. Shamdeo Persaud** – Representative of the Ministry of Health; replaced Dr. Cummings;
8. **Dr. Dalgleish Joseph** – Member;
9. **Dr. Harold Davis** – Member; and
10. **Mr. Khame Sharma** – Member.

Mr. Basudeo Dwarka, the Registrar of Pesticides and Toxic Chemicals functioned as Secretary of the Board as required by the Pesticides and Toxic Chemicals Control Act (No. 13 of 2000).

1.3 Meetings

Statutory meetings of the Board were held on the third Wednesday of every month and as required for technical meetings. There were no technical meetings during the period under review. There were eight statutory meetings for the year and the attendance by Directors at the meetings had been excellent throughout the year.

1.4 Signatories of the Board

The signatories of the Board for the year under review were:

(1) Chairman of the Board – Dr. Leslie Munroe;

(2) Secretary of the Board – Mr. Basudeo Dwarka;

(3) Deputy Chairman – Mr. Ramesh Lilwah, who resigned in November and was replaced with Mr. Kuldip Ragnauth; and

(4) Dr. Dindyal Permaul.

The order of signatories of the Board remains the same – Chairman and/or Secretary with any other director.
Following the resignation of Mr. Lilwah from the Board, Mr. Ragnauth was subsequently appointed Deputy Chairman.

1.5 Responsibility of the Board

The Board is charged with the responsibility for making arrangements and providing facilities for controlling the manufacturing, importing, transporting, storing, selling, using and advertising of pesticides and toxic chemicals.

1.6 Objectives of the Board

The foremost objective of the Board is to introduce a national pesticide and toxic chemical control scheme. In this respect consideration is given to the current and future ability of the country to operate the scheme with respect to the legal framework and the degree of support that the Government of Guyana is able to provide.

It is also the Board's objective to develop criteria and protocols that are effective and workable to achieve goals with the minimum dislocation of production or trade and to collaborate with the various stakeholders and other individuals to achieve economic goals.

The objectives of the Board for the year under review were as follows:

(i) Establishment of a pesticides laboratory;

(ii) Publishing a list of chemicals prohibited in Guyana;

(iii) Publishing a list of chemicals registered for use in Guyana;

(iv) Licensing of vendors of agrochemicals and toxic chemicals;

(v) Training and certifying pesticides control operators; and

(vi) Continued implementation of the Regulations.

2 The Pesticides and Toxic Chemicals Control Board's Achievements for the period under review were as follow:

2.1 Pesticides Registration

The Board received applications requesting registration of two hundred and fifty-four (254) pesticides from a total of thirty two (32) entities. These were made up of one hundred and twenty-three (123) insecticides, seventy-four (74) herbicides, four (4) plant growth regulators, thirteen (13) rodenticides, four (4) biological insecticides, thirty-five (35) fungicides and one (1) fumigant. The following is a summary of the registration requested:

(a) **Syngenta** - registration requested of seventeen products;

(b) **Biesterfeld** - request made for three products;

(c) **Proyefa** - request made for the registration of one product;

(d) **Insecticidas Internationales** - registration requested for eleven products;

(e) **F.C.T. Technologies (Americas) Inc** - requested the registration for thirty five products.

(f) **Atul Limited** - request made for the registration of one product;

(g) **Certis USA** - request made for the registration of one product;

(h) **Novartis** - request made for the registration of one product;

(i) **Bayer Crop Science** - request made for the registration of one products;

(j) **S.C Johnson & Sons Inc** - request made for the registration of twenty four products;

(k) **Agro Care Chemical Industry Group Limited** - request made for the registration of sixteen products;

(l) **Guangzhou Hesenta Chemicals Co, Ltd** - request made for the registration of four products;

(m) **Katwaroo Maniram** - request made for the registration of eighteen products;

(n) **Marketing Arm International** - request made for the registration of twelve products;

(o) **Caribbean Chemicals & Agencies Ltd** - request made for the registration of forty-nine products;

(p) **Research & Development Rentokil Initial PLC** - request made for the registration of four products;

(q) **Superior Angran** - request made for the registration of two products;

(r) **Excel Ag. Corp** - request made for the registration of one products;

(s) **Roma Manufacturing Company Limited** - request made for the registration of two products;

(t) **Shanghai Agrochina International Trade Cooperation limited** - request made for the registration of sixteen products;

(u) **Dupont de Colombia** - request made for the registration of eight products;

(v) **Patsan Trading** - request made for the registration of one product;

(w) **Mc Bride Caribbean Limited** - request made for the registration of four products;

(x) **Sulphur Mills Limited** - request made for the registration of two products;

(y) **Carasol Ltd** - request made for the registration of two product;

(z) **Sinochem Ningbo Ltd** - request made for the registration of six products;

(aa) **Ivorychem PTE Ltd** - request made for the registration of four products;

(bb) **Nanjing Chivalry Chemicals Limited –** request made for the registration of thirty-five chemicals;

(cc) **Drexel Chemicals Company –** request made for the registration of ten chemicals;

(dd) **FCT Technologies –** request made for the registration of two chemicals;

(ee) **Excel Ag Corp –** request made for the registration of one chemical;

(ff) **Excel Ag. / Huntington** - request made for the registration of three products; and

(gg) **Degesh de Chile** - request made for the registration of one product.

The list of the chemicals received by the Board to date along with the companies seeking their registration is shown as **(Appendix I)**.

2.2 Pesticide Laboratory

The laboratory building was completed in December 2006 at a final cost of seventeen million, five hundred and eighty-eight thousand dollars ($ 17,588,000.00).

The list of equipment and supplies for the laboratory was approved by the Inter-American Development Bank. This was tendered and was awarded to the following companies:

(i) **Western Scientific Company Limited – US $ 242,249.61**; and

(ii) **Scientific Supplies and Technology International Inc, - US 15,000.37**.

The list of equipment and supplies are shown as **(APPENDIX II)**. All of the equipment and supplies was received with the exception of the Gas Chromatograph (GC). The

suppliers are expected to provide installation, training and familiarization on all the equipment.

2.3 Meetings & Training

2.3.1 Meetings

The Board was represented by Ms. Trecia David, Inspector, Registration and Training, at a meeting of the National Committee on Conformity Assessment (NCCA) of the Guyana National Bureau of Standards (GNBS). The meeting examined standards management, conformity assessment activities, metrology, information dissemination, training and metrication.

The Pesticides and Toxic Chemicals Control Board was represented by Lucina Singh at National Capacity of Assessment Workshop held on the 22nd March 2007. The purpose of the workshop was to examine the recommended actions proposed in Draft 1 of the Guyana Strategy and Action Plan for Synergistic Environmental Capacity Development in Relation to the Thematic Areas of Biodiversity, Climate Change and Land Degradation.

The Pesticides and Toxic Chemicals Control Board was represented by Mr. Vivek Joshi and the Registrar at two meetings in East Berbice. The meetings were to discuss agricultural matters. One of the discussions was the illegal use of chemicals from Surinam. The farmers were of the belief that the Board is stopping the importation from Surinam. The Registrar informed the meeting that all pesticides must be registered in Guyana and the importers are failing to supply the required registration documents after two and a half years leading to the refusal of license for importation.

The Board was represented by Inspectors also at the following meeting:

(a) National Committee on Conformity Assessment;

(b) Public Sector Management Modernisation Meeting - which examined the matrix of the programme such as missions and visions; financial management and human resource management;

(c) Malaria Committee – which examined the malaria situation in Guyana and the options available for the control of the vector and the disease;
(d) Heads of Department Meeting – an examination of the progress and status of the agricultural sector; and
(e) Sanitary and Phytosanitary Meeting to review the functions of the Committee.

The Pesticides Board was represented at a seminar on the sound management of chemicals in the Caribbean in St.Lucia by Ms Trecia David. The report submitted for this seminar is shown as **(Appendix XVI).**

2.3.2 Training

The Board provided training to farmers at a number of locations throughout the country. The Farmers Field School (FFS) held by the Guyana Rice Development Board (GRDB) made available one day in their programme for discussions on the use and management of pesticides. These were held in **Region 2, 3, 4, 5 and 6**.

The Board jointly had training sessions with the National Agricultural Research Institute (NARI) at **Gordon's Table, Mahaicony River and Parika Backdam.**

The Board also provided general training to farmers from **Bath Settlement** on the use and management of pesticides. This meeting was well attended and received intense participation by the farmers in attendance numbering over fifty.

The Board also provided baits and training on the methods of baiting for rats at Little Biaboo, Mahaicony. The training also covered the types of baits and the advantages and disadvantages of each type.

The Registrar participated in a training programme, "Crop Diseases and Pest Control Training Course 2007 for developing countries hosted by China International Centre for Agricultural Training (CICAT). The duration of the programme was seven weeks and was held in Guangzhou, China. The Final report of the Course is shown as **(Appendix XV).**

2.4 Pesticides Importation

The list of chemicals imported for the year in review is shown as **(Appendix III).** There were two hundred chemicals by Trade Names imported for the year with thirty-two (32) importers **(Appendix IV)**. The total imports for the year was approximately six hundred and sixteen million dollars.

Pesticide Category	Value ('000)
Insecticides	232,783
Herbicides	310,192
Fungicide	6,436
Rodenticides	29,765
Toxic Chemicals	37,041
TOTAL	***616,216***

Table 1: Pesticides and Respective Value by Category

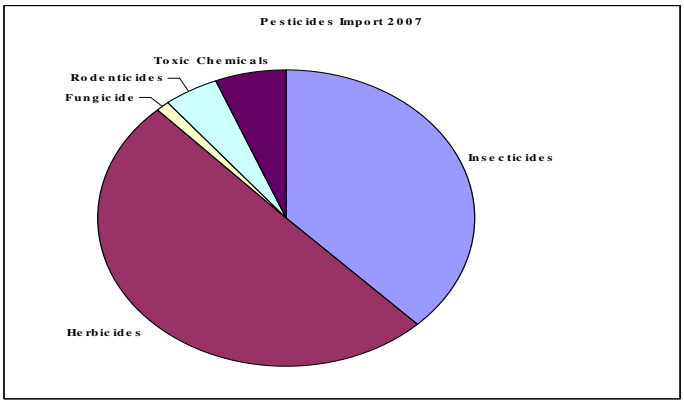


Figure 1: Constitution of Chemical Imports

The largest category of chemical imported for the year was herbicides, accounting for three hundred and ten million dollars ($ 310 M) or fifty percent (50%) of the total imports.

This was followed by insecticides, with two hundred and thirty-two ($ 232 M) or thirty-eight percent (38%), toxic chemicals six percent (6%), rodenticides five percent (5%) and fungicides, one percent (1%).

There was a forty-three percent drop in value of importation for the year in comparison with total importation for 2006 and the overall importation is lower than 2005 and 2004. The decrease is uniform for all the categories of chemicals. For the year under review there were twenty-eight categories of insecticides imported with allethrin being the highest value insecticide followed by

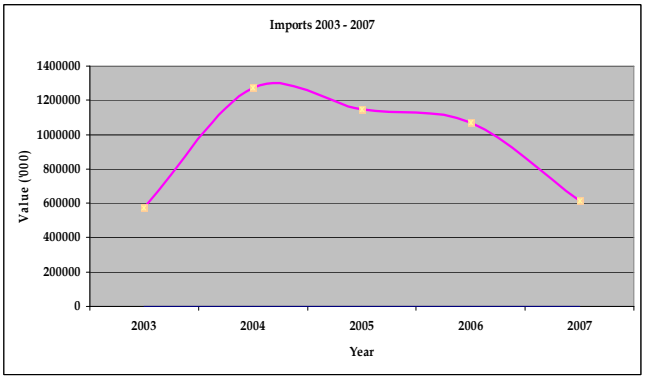
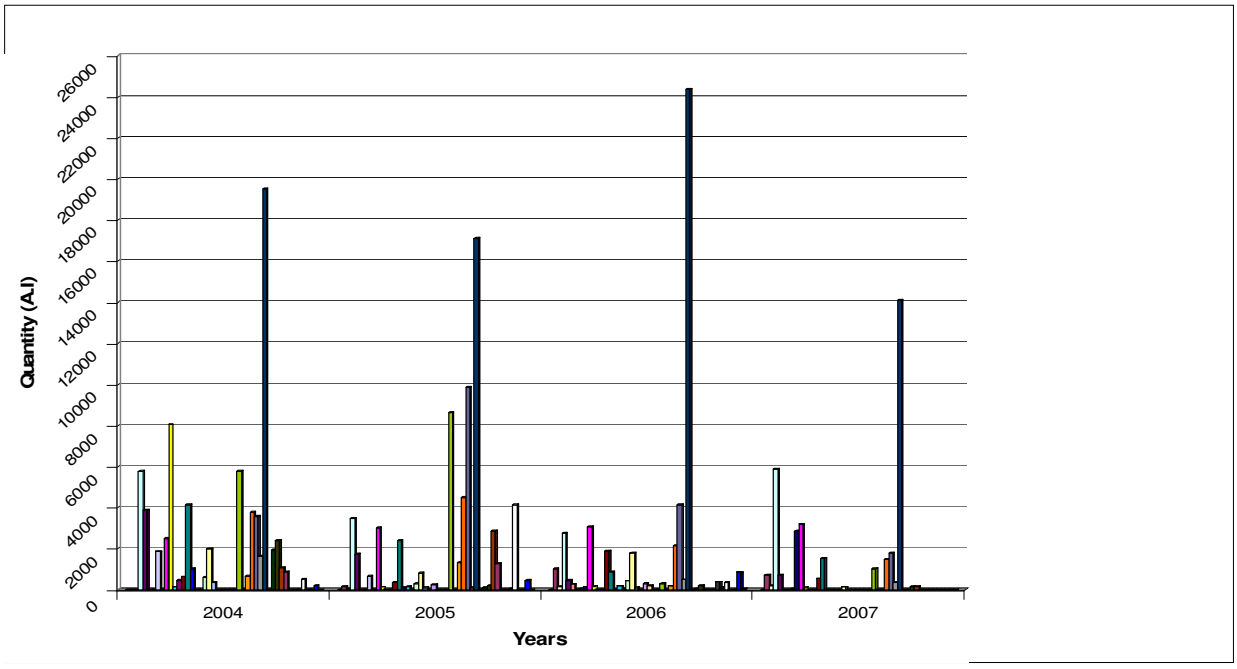


Figure 2: Trend in Chemical Imports for Past Five Years


Quantity (A.I)
26000
24000
22000
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
2004
2005
2006
2007
Years

headed by the broad leaf systemic herbicide 2, 4-D Amine with approximately sixty million ($ 60 M) dollars followed by paraquat with forty-eight million ($ 48 M), terbutryn with forty-seven million ($ 47 M) and glyphosate with forty-six million ($ 46 M). Overall importation covered twenty-one categories. There was no new category imported for the year in review.

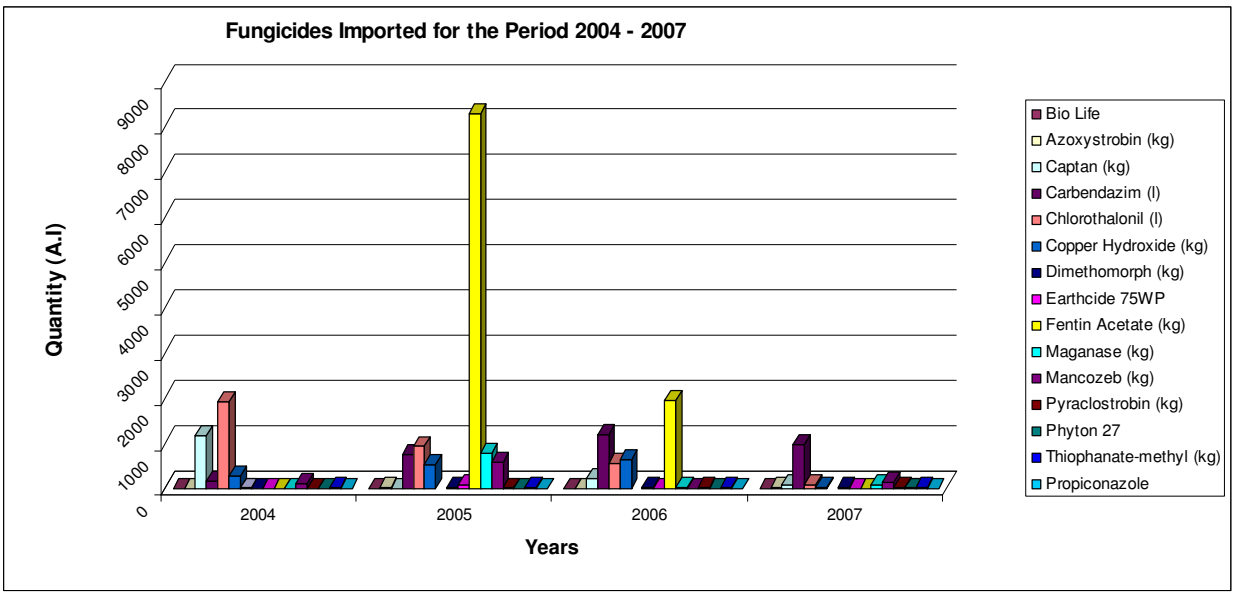


Figure 5: Fungicides Imported for the Period 2004-2007

The total import of fungicides for the year was approximately six million (6 M) for fifteen (15) categories with azoxystrobin the largest followed by carbendazim. Both were just over one million ($ 1 M). The largest chemical imported in the previous year, 2006, fentin acetate, was not imported for the year under review. This product is chiefly used for the control of snails in the rice industry.

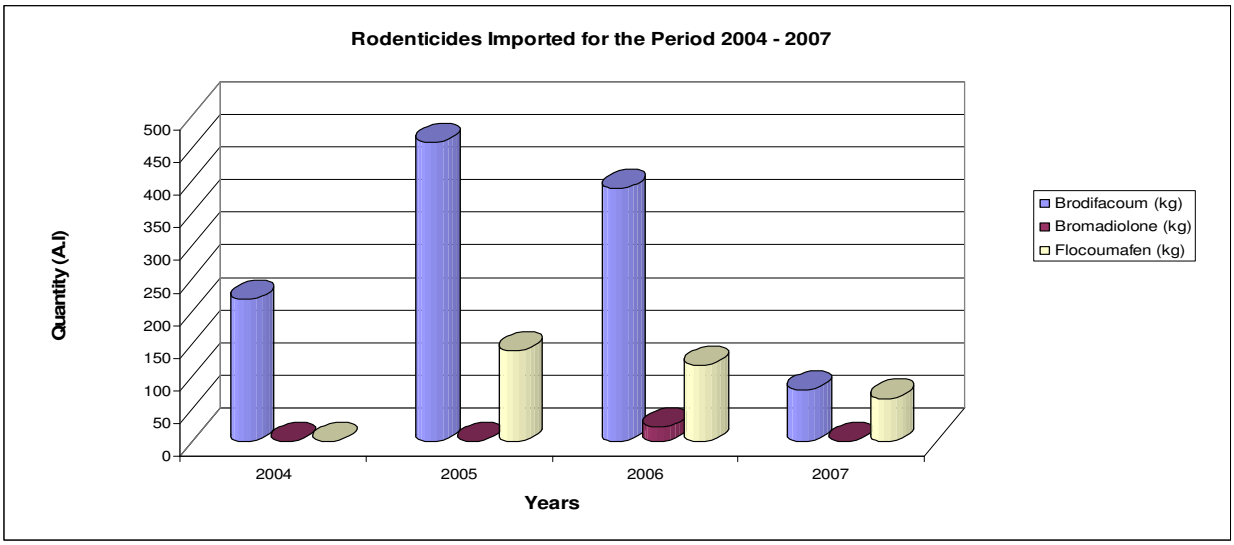


Figure 6: Rodenticides Imported for the Period 2004-2007

The total import of rodenticide for the year was approximately thirty million ($ 30 M) in two categories, floucomafen and brodifacoum. The largest user of rodenticide in Guyana is GuySuCo.

Imports for the year under review, classified as Toxic Chemicals are made up mostly of products such as disinfectants, chlorine used for the production of bleaches and mineral and white spirits used for paint production.

2.5 Agricultural Diversification Program

The Board contributed and participated in the preparation of the program and budget of the Agricultural Diversification Program as required by the Ministry of Agriculture and the Inter American Development Bank. The Board's submission was for the requirement of the Pesticides and Toxic Chemicals Laboratory Phase II and contained the equipment for residual analysis. The two equipment proposed are a Gas Chromatograph (GC) and High Performance Liquid Chromatograph (HPLC).

2.6 Vending of Pesticides and Toxic Chemicals

The Board certified ninety two vending premises for the year. The list of vendors is shown as **(Appendix VI)**.

There was no seizure for the year since vendors was given a grace period of up until 31st December 2007 to have all illegal and unlicensed chemicals removed from vending sites. At the end of the year all products that would be offered for sale must be properly registered.

2.7 Training Manual

Figure 7: Launching Ceremony of the Pesticides Manual

A training programme was developed for the training of farmers, farm workers and vendors under the theme "Management and use of agrochemical in Agricultural Production". This programme commenced in 2007 and is ongoing. As required in the programme a training manual for farmers and farm workers entitled "Bains and Boodhoo" was developed and launched in October. The manual was developed in a cartooned form to facilitate easy understanding. Mr. Barrington Braithwaite was contracted by the Board to provide the art work for the manual. The Guyana Rice Project Management Unit provided financial support for the printing of this manual

2.8 Accounts 2006

The Auditor General's Office completed their examination of the Board's financial statement for 2006 as required under Section 41 of the Pesticides and Toxic Chemicals Control Act and the Financial Management Act and validated that the financial statements present fairly, in all materials respects, the financial position of the Board as at 31 December 2006 and its deficit for the year then ended, in conformity with generally accepted accounting practice.

The audited expenditure for the Board for 2006 was twenty three million, four hundred and fifty eight thousand, eight hundred and fifty nine dollars ($ 23,458,859.00) **(Appendix VII)**.

2.9 Expenditure & Accounts 2007

The Board's proposed budget for 2007 was sixteen million, seven hundred and sixty thousand dollars **(Appendix IX)**. The unqualified account for the year under review is shown as **(Appendix VIII)**. The accounts reflect an expenditure of twenty-nine million, eight hundred and forty nine thousand, and eight hundred and twenty five dollars ($ 29,849,825.00). The accounts represent an over expenditure of thirteen million and eighty nine thousand eight hundred and twenty five dollars ($ 13,089,825.00). This over expenditure was mainly due to the employment of an Accountant and an Assistant Analyst coupled with the retroactive payment for the nine percent wages increase in 2007, rental and maintenance of building ($ 3,451,030.00) and utility charges ($2,365,640.00). The major expenditure for the period under review was salaries and wages followed by office building maintenance and meetings and other events which include the cost for inspection of premises, training and awareness.

In a move towards self sustainability, the Board implemented charges in the form of administrative fee on all imports from the 1st April 2007. This fee is charged on all imports covered by the Board and is calculated at three percent of Coast Insurance and Freight of the chemicals. The fees collected for the year in review was thirteen million, nine hundred and seven thousand, one hundred and ninety nine dollars ($13,907,199.00).

2.10 Budget 2008

The Proposed budget for the Board for 2008 reflects a total expenditure of forty one million, two hundred and seventy seven thousand, two hundred and forty dollars ($

41,277,240.00). **(Appendix IX)**. This increase in cost is for the establishment and functioning of the pesticide laboratory in 2008.

2.11 Public Awareness

Figure 8: Public Awareness Display Booth

The Board participated in GuyExPo 2007 from 27th September – 2nd October 2007 under the theme "Increasing the Competitiveness of Agricultural Exports through Improved Pesticide Management". The Board participated in Agricultural Month activities in October in Georgetown, Linden, Essequibo, and Berbice. The Board also participated in West Demerara Nite at the Uitvlugt Community Center Ground and Guyana Nite at the Providence Stadium.

2.12 Website Development

Figure 9: Outline of the Board's Proposed Webpage

The Board has registered the website's address http://ptccb.org.gy. The development of the website has commenced and it will be operational in 2008. The website construction was awarded to GuyEnterprise Limited, who was also responsible for hosting the site. After some problems with GuyEnterprise, the Board contracted Mr. Clarrence Garraway from Resonant Technologies, to complete the website. The website should be up and operational early 2008.

2.13 Agricultural Database

The Board agreed on the development of an agricultural database and the advertisement inviting individuals to construct the database was placed in the media. The closing date for the receipt of application was the 27th November 2006. The database will contain the chemicals registered by the Board, the pests and the crops. The database is anticipated for use by farmers, vendors, students, extension agents and scientists. The Board also approached the Pan American Health Organisation (PAHO), who agreed to fund the development of the database. PAHO contracted Resonant Technologies to develop the database. The database has been completed and information will be inputted in 2008. The database would also be accessed through the Board's website.

2.14 Prohibited Pesticides

The Order for the declaration of the list of prohibited chemicals was signed by the Minister of Agriculture and *Gazetted* on the 18th November 2006. There are no chemicals currently used in Guyana listed as prohibited. No chemical was added to the list in 2007. The list of chemicals is shown as **(Appendix X)**.

2.15 Experimental Pesticides

No new pesticide was declared to the Board for experimental purposes during the year in review.

2.16 Sectoral Coordination

The Directors of the Board agreed that any committee formed under the Board will be task oriented, established on an ad hoc basis and will report directly to the Board. No committee was convened for the year in review.

2.17 Enforcement

Inspectors of the Pesticides and Toxic Chemicals Control Board and Enforcement Officers of the Guyana Revenue Authority inspected three premises in Georgetown:

Najab Trading, Bacchus Trading and A. Wahab Imports. This led to a the seizure of the following items: **169 cases of Goldeer Insect Killer**, **42 cases LIZI PAI Mosquito Coils**, **33 cases Lion Brand Mosquito Coils** and **10 bottles of Raid Aerosol**. The Board chose not to prosecute since this was a first offence; however, warning letters were issued to each of the owners in keeping with the Pesticides and Toxic Chemicals Regulations 876

2.18 Organisational Chart

The Organisational Chart of the Pesticides and Toxic Chemicals Control Board was developed and shown as **(Appendix XI)**. The organization of the Board contains four divisions: Licensing and Registration, Enforcement and Training, Administration and Analytical. Each division will be headed by senior personnel. The total staff under the Board will be twenty-three (23) persons headed by the Registrar.

2.19 Industrial Development

The Guyana Sugar Corporation has introduced a new requirement in keeping with the requirements of the Pesticides and Toxic Chemicals Control Regulation 2000 (No. 8 of 2000) whereby all suppliers of pesticides to the corporation must provide a letter from the Board stating that the pesticide supplied to the corporation is registered or approved for use in Guyana. Approving and issuing of contract by the corporation is based on the submission of this letter.

2.20 Regulatory Developments

The Pesticides and Toxic Chemicals Control (Amendment) Act 2007 (No. 13 of 2007) was assented to by the President of the Republic of Guyana on the 23rd March 2007 is shown as **(Appendix XII)**. These amendments to the Act facilitated the Board's control of exports of pesticides and toxic chemicals. This was a pre-requisite for Guyana's accession to the Rotterdam Convention.

The Pesticides and Toxic Chemicals Control (Amendment) Regulations 2007 (No. 5 of 2007) was made by the Honourable Minister of Agriculture on the 13th of March 2007 and is shown as **(Appendix XIII).** This allowed the Board to commence charging fees which was established at 3% of the Cost Insurance and Freight of all pesticides and toxic chemicals imported into Guyana. This fee is used for the improvement of the inspectorate in inspection and enforcement and for the better management of pesticides and toxic chemicals in Guyana. It was estimated that this fee would allow the Board activities to be sustainable in five years time.

2.21 International Development

The Amendment to the Pesticides and Toxic Chemicals Act allowed Guyana to accede to the Rotterdam Convention in August 2007. Guyana also fulfilled all of its obligations under the Convention. Response for all the chemicals listed by the Convention was provided in September 2007. The focal point for the Convention is the Pesticides and Toxic Chemical Control Board with the Designated National Authority (DNA), the Registrar, Pesticides and Toxic Chemicals. The Government also named the Board as the focal point for the Strategic Approach for International Chemical Management (SAICM).

2.22 Funding

The Government of Guyana is funding the current activities of the Board through subvention as reflected in the annual accounts. The Board's move towards sustainability commenced during the year in review. The Board commenced charging fees for the administration of pesticides and toxic chemicals in Guyana on the 1st April 2007. It is estimated that the Board shall be fully self sustainable by 2011.

2.23 Proposal 2008

The proposed activities for the Board for 2008 include the following:

(a) Public Relation and Awareness

(i) Completion of the Website (February 2008);
(ii) Observance of Pesticides Awareness Week in September 2008; and
(iii) Printing and distribution of Quarterly Pesticides Newsletter.

(b) Analytical Framework

(iv) Procurement of Equipment for the Laboratory (Phase II) (October 2008);
(v) Installation of Equipment (April 2008);
(vi) Training on the major Laboratory Equipment (Gas Chromatograph-Mass Spectrometer) (April 2008);
(vii) Commence quality evaluation of pesticides imported in Guyana (May 2008);

(c) Enforcement

(viii) Develop timeframe and audit of vending facilities to facilitate selling off of all pesticides not proposed for registration (August 2008);
(ix) List of pesticides approved for use in Guyana published (April 2008); and
(x) Evaluation of 75 pesticides registered for quality in Guyana (November 2008).

(d) Training

(xi) Printing of Training Manual and other associated training material;
(xii) Completion of Database structure and testing of database (May 2008)
(xiii) Insert data in database and distribution to vendors, schools and extension agents (October 2008);

(xiv) Commencing training of farmers in Region 2, 3, 4, 5 and 6 in conjunction with GRDB and FFS. Proposed to train approximately 100 farmers per region (Training to commence in April 2008 with completion by November 2008

2.24 Key Issues and Challenges

The key issue facing the Board continues to be the implementation of the Pesticides and Toxic Chemicals Regulations with the key challenge being monitoring of the regulations throughout Guyana. The Ministry of Agriculture would continue to fund the Board's activities through subvention currently and in the near future.

3 Future Plans: 2008 Onwards

The Board future remains in establishing a comprehensive registration scheme and being able to provide the necessary infrastructure required for the establishment of appropriate educational, advisory, health-care and extension services for enabling and exercising adequate control over quality, sale and usage of pesticides. The establishment of the Pesticide Laboratory would enhance the Board's monitoring and enforcement capabilities.

4 Conclusion

In conclusion, the Board's objectives, achievements and proposed activities should be seen as an attempt to establish a comprehensive registration scheme and to provide the necessary infrastructures required for the establishment of appropriate educational, advisory, health-care and extension services for enabling and exercising adequate control over quality, sale and usage of pesticides while ensuring that the interest of end-users and importers' rights are well protected.

APPENDIX I: List of Pesticides submitted for Registration along with Applicant and Manufacturer

Name of Company	Agent Designate	Registration Document Submitted
Agro-Care Chemical Industry Group Limited	Caribbean Chemicals Guyana Limited	Carbaryl 85%
		2, 4 D Amine Salts 72%
		Imidiacloprid 70%
		Paraquat 27.6 %
		Chlorpyrifos 48%
		Diazinon 60%
		Imidiacloprid 24%
		Cyromazine 75%
		Abamectin 1.8%
		Lambda Cyhalothrin 5%
		Aluminium Phosphide 57%
		Alpha Cypermethrin 5%
		Metamidophos 600g/l
		Ethephon 40%
		Triazophos 40%
		Monocrotophos 400g/l, 500g/l, 600g/l
Atul Limited, Agrochemicals Division	Caribbean Chemicals Ltd	2,4 D Dimethyl Amine Salt
Insecticidas Internatcionales (INICA)	Associated Industries Limited	Inimectin (Avermectin)
		Propanil 360EC
		Danol 60E (Diazinon)
		Thionil 35-E (Endosulfan)
		Batazo 80PM (Diuron)
		Amidor (Metamidophos)
		Inithion 57 (Malathion)
		Cyper 25 (Cypermethrin)
		Torpedo 350CE (Cypermethrin & Chlorpyrifos)
		Inisan 60 (Monocrotophos)
		Aminex 720 (2,4 D)
Biesterfeld	Associated Industries Limited	Paraquat
		2,4 D Amine
		Alpha Cypermethrin 5EC
Certis USA	Associated Industries Limited	Agree 50WP (B. Thuringiensis)
Novartis	Associated Industries Limited	Agil 100EC
Proyefa	Associated Industries Limited	Glifosan LS (Glyphosate)

S.C Johnson & Son, Inc.	Associated Industries Limited	Raid House & Garden Bug Killer Formula 7
		Raid Concentration Deep Reach Fogger
		Raid with Germfighter Ant & Roach Killer
		Raid Flea Killer
		Raid Yard Guard Outdoor Fogger Formula
		Raid Outdoor Ant & Roach Killer
		Raid Ant & Roach Killer
		Raid Ant Killer
		Raid Flying Insect Killer Formula 6
		Raid Earth Options Ant & Roach Killer
		Raid Earth Options Flying Insect Killer
		Raid Earth Options Wasp & Hornet Killer
		Raid Outdoor Ant Spikes
		Off! Deep Woods Insect Repellant V
		Off! Skintastic IV
		Off! Skintastic VIII
		Off! Skintastic VII
		Off! Power Pad Lamp
		Off! Skintastic X Insect Repellant
		Off! Active Insect Repellant I
		Off! Active Insect Repellant IV
		Off! Deep Woods Insect Repellant Towelletes
		Off! Deep Woods Sportsmen Insect Repellant III
		Off! Deep Woods Sportsmen Insect Repellant II
Bayer Crop Science	Associated Industries Limited	Sevin 85 WP
		Merlin 75 WG
Syngenta	Trading & Distribution / Geddes Grant	Gramoxone Super
		Engeo
		Klerat Wax Blocks
		Ninja 5 EC
		Trigard 75 WP
		Actara 25 WG
		Vertimec 1.8 EC
		Amistar 50 WG
		Reglone 200 SL
		Fusilade 2000

		Match 50 EC
		Krismat
		Dual Gold 960 EC
		Touchdown IQ
		Demand 2.5 CS
		Ingran 500SC
		Demon Max
Nanjing Chivalry Chemical. Co	FCT Technologies (Guyana)	Imidacloprid 70% WS
		Imidacloprid 35% SC
		Brodifacoum 0.005%
		Diuron 80% WP
		Diuron 80% WDG
		Terbutryn 500g/l FW
		S-Metolachlor 960g/l Ec
		Carbaryl 80% WP
		Brodifacoum 0.005% Wax Blocks
		Glyphosate 41% SL
		2,4 D Amine 720g/l SL
		Bispyribac-Sodium 10% SC
		Fentin Acetate 60% Wp
		Brodifacoum 0.005% Pellets
		Hexaconazole 40g/l SC
		Metalaxy + Mancozeb 72% WP
		Ethephon 480g/l SL
		Paraquat Dichloride 24% SL
		Abamectin 1.8% EC
		Fenitrothion 50% EC
		Metsulfuron-Methyl 60% WDG
		Lambda-Cyhalothrin 5% EC
		Monocrotophos 60% WSC
		Carbemdazim 500g/l SC
		Cypermethrin 40% EC
Drexel Chemical	FCT Technologies	Malathion 57 EC
		Surf-Ac 910
		Diuron 80% DF
		Ametryn plus Atrazine 500
		Ametryn 500SC
		Diazinon 60EC
		Terbutryn 500 SC
		Glyphosate 480 EC
		Dimethoate 40 EC
		Methamidophos 60% EC
Guangzhou Hesenta Chemicals Co, Ltd.	Agri Quality Inc.	Diuron 80% WP
		Paraquat Dichloride 240g/l SL
		2,4 D Amine salts 720g/l SL
		Imidiacloprid 70%WP
Katwaroo Maniram	Gubas Ramrup	Mancozeb 89% WP

		Pyribaden 20% EC
		Malathion 57% EC
		Fusirore (Fenoxprop-p-ethyl)
		2,4 D Amine Salts 720g/l SL
		Super-Maxzone (Paraquat 20% SL)
		Glyphosate 41% SL
		Aluminium Phosphide
		Admajor (Imidiacloprid 20% SL)
		Niclosamide 83% WP
		Isoprothiolane 40% EC
		Chlorpyrifos 20%EC
		Lambda Cyhalothrin 2.5 % EC
		Now-me 25% WDG
		Kronto 70% WDG
		Bestac 10% EC (Alpha Cypermethrin)
		Kristan 60% WP (Fentin Acetate)
		Metsulfuron Methyl 60% WDG
Marketing Arm International	Marketing Arm International	IsoProMap 40Ec (Fungicide)
		Mapclorax 25Sc (Herbicide)
		Agro IBA 98SP (Plant Growth Regulator)
		New Cyper-M 10EC
		PH-Plus
		Newmectin 1.8EC (Insecticide)
		Biolife 20SL (Fungicide)
		Tryclam 50SP (Insecticide)
		Bio Neem OL (Insecticide)
		Phyton 27 Bactericide-Fungicide
		Xenic
		Mapcid 12.5EC
Caribbean Chemicals & Agencies Ltd.	Caribbean Chemicals Guyana	Control Flowable 500gr
		Monitor 60% Ec
		Rogor Blue 40% Ec
		Pirate 24
		Karmex 80% DF
		Velpar 75% DF
		Carbendazim 50% Sc
		Pronto 35 Sc
		Banrot 40% WP
		Malathion 96% ULV
		Supona 20% Ec
		Pronto 70 WDG
		Propanil 36%
		Lannate WP
		Bellis 38 WG
		Herbadox 40 EC

		Arsenal 24 SL
		Kocide 101
		Sempra
		M-Pede
		Cypro 440 Ec
		Padan 50% SP
		Fendona Sc
		Roundup EZ
		Broadtril Ec
		Captan 50% WP
		Roundup Ultra
		Acrobat MZ
		Malathion 57%
		Azadirect
		Chloropyrifos 48% Ec
		Mankocide DF
		Lannate LV
		Dipel DF
		Fastac 5% W/V Ec
		Manzate 75% DF
		Carzone 75% DF
		Rizolex 50% WP
		Caratax 5 Ec
		Cure 1.8 Ec
		Admiral 10 Ec
		Xenthari
		Storm 0.005 BB
		Caprid 20 SL
		Carminee 400 Sc
		Chemquat Super
		Vydate Blue
		Diafenthiuron 50 Ec
		Diazinon 60 Ec
Research & Development Rentokil Initial PLC	Rentokil Initail Guyana	Fentrol Concentrate
		Bromatrol Concentrate
		Difenard
		Bromard
Superior Angran	Rentokil Initail Guyana	AgresZor 75WSP
		Final Rodenticide
Excel Ag. Corp	Trading & Distribution	Flip 800 DF
Roma Manufacturing Company Limited	Roma Manufacturing Company Limited	Fish Brand Vapour Mats
		Fish Mosquito Coils
Shanghai Agrochina International Trade Cooperation Limited	Mr. Sheik Sattaur	Abamectin 1.8% EC
		2, 4 D Amine 720g/l SL
		2, 4 D Amine 860g/l SL

		Alpha Cypermethrin
		Quizalofop-p-ethyl EC 5%
		Cypermethrin 25% EC
		Fenoxaprop-p-ethyl 7.5% EW
		Lambda Cyhalothrin 2.5% EC
		Fentin Acetate 60% WP
		Lambda Cyhalothrin 5% EC
		Byspyribac Sodium 25% WP
		Paraquate 27.6% SL
		Imidiacloprid 70% WDG
		Imidiacloprid 20% SL
		Glyphosate 480g/l SL
		Imidiacloprid 20% SC
Dupont de Colombia	Caribbean Chemicals Guyana	Vydate L(Oxamyl 24%)
		Velpar DF (Hexazinone 75%)
		Lannate L(Methomyl 24%)
		Karmex DF(Diuron 80%)
		Manzate 75DF (Mancozeb 75%)
		Kocide 101(Hidroxido de Cobre 77%)
		Velpar DF(Hexazinone 25%)
		Lannate L(Methomyl 29%)
Patsan Trading Services	Patsan Trading Services	Sprigone
McBride Caribbean Limied	Pharmagen Enterprises	Go!! Insect Repellant
		Citronella BOP Insect Spray
		Evergreen BOP Insect Spray
		BOP Insecticide Spray
Sulphur Mills Ltd		Imidiacloprid 35Sc
		Imidiacloprid 70WG
Carasol Ltd	Trading &Distribution	Det Aerosol (permethrin)
Sinochem Ningbo Ltd	Caribbean Chemicals Ltd. Guyana	Asulam 80%WG
		Diuron 80%WG
		Flazifop-p-butyl 150g/l Ec
		Paraquat Dichloride 276g/l SL
		2,4 D Amine 720g/l SL
Sinochem Ningbo Ltd	Associated Ltd	Imidiacloprid 70%WG
Excel Ag.	Geddes Grant	Fifa 20%Sc
Ivorychem PTE Ltd	Ainlim	Viking 48Sc - Glyphosate 480g/l
		Plunge 85Wp - Carbaryl 85% Wp
		Zantan 72Sl - 2,4 D Amine
		Raze 20Sl - Paraquat 276g/l
Excel Ag. / Huntington	Geddes Grant	Flip 800Df
		Swift Gel
		Aval - Acetamiprid
Degesh De Chile	Degesh De Chile	Phostoxin RT333
FCT Technologies	Fct Technologies Inc.	Brodifacoum 0.005% Wax Blocks
		Flocoumafen 0.005% Wax Blocks
Excel Ag. Corp	Ainlim	Asulam/Assex 40%

APPENDIX II
List of Approved Equipment and Supplies for the Pesticide Laboratory

1. High Resolution Gas Chromatograph (HRGC)
2. Flame Ionization Detector (FID)
3. Electron Capture Detector (ECD)
4. Autosampler Tower
5. Autosampler Tray Module

Fumehoods - Mechanical

6. 60" by-pass hood
7. Exhaust fan (two hood capacity)
8. Thermonplastic Duct (12" dia., 10ft.)
9. Manual Duct Damper
10. 90-degree Elbow Coupling
11. Weather Cap
12. Fume Hood
13. Flexible Duct Connection

Water System - Mechanical

14. Water Distiller

Gas Systems - Mechanical

15. Air Compressor
16. Hydrogen Generator

Miscellaneous Equipment

17. Balance - Four Place (0.0001g)
18. Balance – Three Place (0.001 g)
19. Solid Phase Extractor Manifold (Column Format)
20. Solid Phase Extractor Manifold (Disk Format)
21. Solvent Reduction System (Rotovap)
22. Automatic Pipeter
23. Blender/Homogenizer
24. Centrifuge (12 - 60 mL capacity)
25. Dessicator
26. Muffle Furnace
27. Oven (50 to 180 C)
28. Recirculating Chiller (for Rotovap)

29. Solvent Blowdown System
30. Soxlet Extraction System
31. Stirplate (6 to 9 place)
32. Stirplate / Hotplate
33. Tumbler extractor (24 -250 mL capacity)
34. Ultra-sonic bath
35. Vacuum pump
36. Vortex Mixer

Glassware

37. Autosamplers Vials (1 ml)
38. Beakers, glass (50 ml)
39. Beakers, glass (100 ml)
40. Beakers, glass (250 ml)
41. Beakers, glass (600 ml)
42. Beakers, glass (1000 ml)
43. Boiling flask (100 ml)
44. Boiling flask (250 ml)
45. Burette (0.1 graduation) (50 ml)
46. Centrifuge Tubes (50 ml)
47. Erlenymer Flask (125 ml)
48. Erlenymer Flask (250 ml)
49. Erlenymer Flask (500 ml)
50. Erlenymer Flask (1000 ml)
51. Erlenymer Flask, Vacuum (1000 ml)
52. Erlenymer Flask, Vacuum (500 ml)
53. Filtering Funnels (short stem)
54. Flasks, Volumetric (5 ml)
55. Flasks, Volumetric (10 ml)
56. Flasks, Volumetric (25 ml)
57. Flasks, Volumetric (50 ml)
58. Flasks, Volumetric (100 ml)
59. Flasks, Volumetric (250 ml)
60. Flasks, Volumetric (500 ml)
61. Flasks, Volumetric (1000 ml)

62. Glass Volumetric Syringes (0.025)
63. Glass Volumetric Syringes (0.05)
64. Glass Volumetric Syringes (0.1)
65. Glass Volumetric Syringes (0.25)
66. Glass Volumetric Syringes (1.0)
67. Graduated Centrifuge tubes (15 ml)
68. Graduated Cylinders (10 ml)
69. Graduated Cylinders (50 ml)
70. Graduated Cylinders (100 ml)
71. Graduated Cylinders (250 ml)
72. Graduated Cylinders (500 ml)
73. Graduated Cylinders (1000 ml)
74. Pipettes, Volumetric (5 ml)
75. Pipettes, Volumetric (10 ml)
76. Pipettes, Volumetric (250 ml)
77. Separatory Funnel (500 ml)
78. Separatory Funnel (1000 ml)
79. Separatory Funnel
80. Solvents
81. Acetone
82. Acetonitrile
83. Chloroform
84. Dichloromethane
85. Diethyl Ether
86. Ethyl Acetate
87. Hexane
88. Iso-octane
89. Methanol
90. Toluene
91. Chemicals
92. 1-Imidazole
93. Ammonium Acetate
94. Disodium Tetraborate (anhydrous)
95. Florisil (100/200 mesh)

96. Glacial Acetic Acid
97. Hydrochloric Acid
98. Magnesium Sulphate (anhydrous)
99. o-Phthaladehyde
100. Phosphoric Acid
101. Silica Gel (70/230 mesh)
102. Sodium Acetate
103. Sodium Carbonate
104. Sodium Hydroxide
105. Sodium Sulphate (anhydrous)
106. Sodium Sulphite
107. Sulphuric Acid
108. Thioflour
109. Sodium Chloride

Reagents

110. Hydrolysis reagent
111. o-Phthaladehyde Diluent

Miscellaneous Consumables

112. Forceps
113. Autosampler Cap Crimper
114. Autosamplers Caps (1 ml)
115. Buret Holder (double)
116. Centrifuge Tubes (50 ml) Teflon, round
117. Centrifuge Tubes (50 ml) Glass, round
118. Centrifuge Tubes (50 ml) Plastic, round
119. Centrifuge Tubes (15 ml) Plastic, tapered
120. Clamp Holder (cast alloy)
121. Cork Rings (various sizes)
122. Detergent (non toxic & phosphate free)
123. Disposable Filters (45 um)
124. Extension Clamps (three prong)
125. Filter Paper
126. Glass Jars, Telon lined lids (125 ml)
127. Glass Jars, Telon lined lids (250 ml)

128. Indicator Strips (pH range 0 -14)
129. Laboratory Gloves (disposable)
130. Mason Jars (500 ml)
131. Mortar and Pestle (250 ml) Glass
132. Pasteur Pipettes (14 cm) glass, disposable
133. Pasteur Pipettes (23 cm) glass, disposable
134. Pipette Bulbs (various sizes)
135. Pipettet Tips (0 – 200 ul)
136. Pipettet Tips (250 – 1000 ul)
137. Scoopulas (6")
138. Solid Phase extraction Cartridges (47mm)
139. Solid Phase Extraction Disks (6 ml)
140. Solvent Bottle Dispensers (adjustable 2 – 10 ml)
141. Spill Kit
142. Support Stand (6" x 9") base
143. Teflon Coated Magnetic Stir Bars
144. Utility Cart (acid & solvent resistant)

APPENDIX III
Pesticides Board Imported Chemicals (2007) - Trade Names

1. 2,4 D Amine 720g/l
2. Abamectin
3. Acetamiprid
4. Acrobat
5. Actara 25WG
6. Actellic 50
7. Agil 10Ec
8. Algaecide
9. Alpha Cypermethrin
10. Aluminium Phosphine
11. Amidor 60
12. Angel Disinfectant
13. Angel Fabric Softener
14. Aqua Ammonia
15. Arsenal
16. Asulam 80WDG
17. B & J Dish Det.
18. Bait Traps
19. Banrot
20. Baygon Mosquito Coil
21. Baygon Spray
22. Bellis
23. Better Value Bleach
24. Bio-guard Quaternary Ammonium cmpd.
25. Black Disinfectant
26. Bleach
27. Bounce
28. Bowltrol
29. Brodifacoum
30. Brodifacoum Wax Block
31. Caprid
32. Captan
33. Carbaryl
34. Carbendazim
35. Carzone
36. Cascade
37. CHC Chlorine Granular
38. Chem Fog
39. Chemical latrine cleaner
40. Chemquat
41. Chlorine Gas
42. Chlorine Granular
43. Chlorine Liquid 99%
44. Chlorine Powder Trichlor
45. Chlorine Tablets
46. Chlorox Anywhere
47. Chlorox Handiwipes
48. Chlorpyrifos
49. Chlorpyrifos
50. Cleaning Solution
51. Clorox Bleach
52. Clorox Handiwipes
53. Clorox Liquid
54. Control Flowables
55. Controlflowable
56. Cresolex
57. Crude Linseed Oil
58. Crustacel - G
59. Cuprosan
60. Cure
61. Cypercal
62. Cypro
63. Cyromazine
64. Danol 60
65. Defoamer
66. Demand CS
67. Demon Max
68. Descaler
69. Detia Fumex Bags/ Aluminuim Phosphide
70. Dettol
71. Diafenthiuron
72. Diazinon
73. Dipel 2x
74. Diphacinone
75. Disinfectant Floral
76. Disinfectant Lavender
77. Disinfectant Ocean Breeze
78. Disinfectant Wild Flower
79. Diuron
80. Diuron 80WP
81. Downy
82. Downy

83. Drift
84. Dryel Refill
85. Dual Gold 96 Ec
86. Era
87. Fabuloso
88. Febreeze Fabric
89. Fendona
90. Fenitrothion 500g/l EC
91. Fentil
92. Fentin Acetate 60%WP
93. Fish Aerosol
94. Flocoumafen
95. Floral
96. Fluazifop-P-Butyl
97. Fresh Scent 24x410ml
98. Fusilade 2000BD
99. Gain
100. Glyfosan 48SL
101. Glyphos-AG41
102. Glyphosate
103. Gramoxone
104. Hydrocloric acid
105. Hydroxide Solution
106. Hyperkill 25Ec
107. Igran 500FW
108. Imidiacloprid 70%WP
109. Indufaom (Callaway)
110. Inimectin 1.8Ec
111. Inisan 60Sl
112. Inithion 57
113. Insect Repellent
114. Insectojet Fogging Bottles
115. Jeyes Fluid
116. Joy Liquid
117. Karate Zeon
118. Karmex
119. Ketone
120. Klerat Pellets
121. Kocide 101
122. Lambda Cyhalothrin
123. Lannate 500ml
124. Laundry Detergent (Streetex)
125. Linseed Stand Oil
126. Lysol
127. M.Pede
128. Maki Mini Blocks
129. Malathion 57%EC
130. Manzate
131. Match 50EC
132. Maximo 50%
133. Merlin 75WDG
134. Merlin WG-SB
135. Metamidophos 60SL
136. Metsulfuron Methyl
137. Mineral Spirits
138. Monitor
139. Monocrotophos 60WSC
140. M-Pede
141. Mr. Clean
142. Ninja 5EC
143. Off Bug Spray
144. Oxiclean Active Stain
145. Padan
146. Palmolive
147. Palmolive Dish Ultra 64oz
148. Palmolive Oxy
149. Paraquat Dichloride 24%SL
150. Pegasus
151. Phosphoric Acid
152. Phostoxin Pellets
153. Pinesol
154. Piperonyl Butoxide
155. Pirate
156. PLC 400(Testrasol 2000)
157. Pluronic
158. Pool Cleaning Tabs
159. Propanil 36EC
160. Protox Aerosol
161. Protox Mosquito Coils
162. Pynaying D'Allethrin
163. Quaternary Ammonium
164. Rizolex
165. Rogor
166. Round-Up Ultra
167. Snuggle
168. Sodium Metabisulphite
169. Sodium Triploy phosphate
170. Soft Scrub
171. Solvent Propylene

172. Spray N Wash
173. Starane 26.2%
174. Storm 0.005 BB
175. Super Adit
176. Supona
177. Surfactron
178. Suspend
179. Swiffer
180. Tempo SC Ultra
181. Terbutryn 500 FW
182. Tergitol
183. Termidor
184. Terro Antkiller
185. Thionil 35EC
186. Tide
187. Torpedo
188. Touchdown 33SL
189. Triazophos
190. VAP-Dichlorvos Dimethyl Phosphate
191. Vape Aerosol
192. Velpar 75 Df
193. Vydate
194. White Spirits
195. Windex
196. Wipes Clorox
197. Wisk
198. Woolite
199. Xentari
200. Xylene

APPENDIX IV
List of Importers

1. Agri Quality Inc.
2. Associated Industries Limited
3. American Construction
4. Anderson Chemicals
5. Ansa McAl
6. Bacchus Drug Store
7. Bahadur Bhadwandass
8. Banks DIH Ltd.
9. Bryden & Fernandes
10. Caribbean Chemicals Guyana Limited
11. Demerara Distillers Limited
12. Didco Trading Company
13. FCT Technologies Guyana Inc.
14. Friendship Oxygen Company
15. Geddes Grant / Trading & Distribution Inc.
16. Globe Manufacturing
17. Guy A Plus Imports
18. Guyana Sugar Corporation
19. Guyana Water Authority
20. Hamlets Overseas Chem.
21. International Pharmaceutical Agency
22. MACORP
23. Mines Services Ltd
24. National Milling Company (NAMILCO)
25. Nobel House Seafood
26. Pestex
27. Rentokil Initial
28. Roma Manufacturing
29. The Outdoor Store
30. Torginol Paints Inc.
31. Una Adams

APPENDIX V
Total Imports of Pesticides by Common Names and Value 2007

Insecticides	Value ('000)
Abamectin	$1,714,788.12
Acephate	$2,251,437.50
Acetamiprid	$2,033,143.75
Allethrin	$80,088,181.50
B. Thuringiensis	$1,050,154.08
Bio Neem	$81.30
Carbaryl	$3,947,395.58
Cartap	$973,901.25
Chlorfenapyr	$1,159,879.50
Chlorfenvinphos	$160,124.93
Chlorpyrifos	$738,766.25
Cyfluthrin	$71,255,582.80
Cypermethrin	$6,931,699.56
Alpha Cypermethrin	$10,980,138.30
Deltamethrin	$81.30
Diazinon	$851,037.00
Enamectin	$40,091.46
Imidacloprid	$13,132,599.00
Lambda Cyhalothrin	$489,625.85
Malathion	$2,284,699.33
Methamidophos	$2,736,000.00
Methomyl	$4,266,533.70
Monocrotophos	$21,132,480.00
Newmectin	$65.04
Oleic Acid	$14,761.44
Oxamyl	$1,779,259.50
Permethrin	$1,466,259.39
Tryclam	$643.14
Thiamethoxam	$1,303,185.00
Herbicides	**Value ('000)**
2,4 D Amine	$61,551,610.70
Asulam	$10,989,000.00
Bispyribac Sodium	$2,284,328.00
Diuron	$39,626,144.19
Fluazifop-p-butyl	$539,937.50

Fluroxypyr	$1,189,116.00
Glyphosate	$46,812,943.46
Hexazinone	$338,563.22
Isoxaflutole	$1,313,392.50
Lufenuron	$306,089.55
Mapcid	$81.30
Metribuzin	$293,767.24
Metsulfuron Methyl	$679,283.75
Paraquat	$48,939,572.64
Paraquat Dichloride	$16,794,250.54
Propanil	$713,538.00
Propaquizafop	$3,598,704.00
S - Metolachlor	$22,710,116.70
Terbutryn	$47,994,655.00
Triazine	$39,878.40
Imazapyr	$3,476,748.66
Fungicides	
Banrot	$299,612.34
Bio Life	$81.30
Captan	$145,403.90
Carbendazim	$1,217,769.75
Chlorothalonil	$454,527.60
Copper Hydroxide	$102,632.40
Dimethomorph	$230,541.75
Mancozeb	$248,084.36
Manganese	$135,300.99
Phyton 27	$81.30
Pyraclostrobin	$718,827.26
Thiophanate Methyl	$589,931.10
Tolclofos Methyl	$848,886.00
Azoxystrobin	$1,303,185.00
Propiconazole	$140,743.50
Rodenticide	
Brodifacoum	$16,026,735.00
Flocoumafen	$13,737,765.75
Toxic Chemicals/Others	$37,041,443.38
Total Cost of Import	$616,215,869.60

APPENDIX VI
Licensed Vending Premises

East Coast Demerara and WCB

No.	Name	Address
1	Abdool Zaleem Gaffar	9 Cotton Tree WCB
2	Deoanand Dass	Mahaica Market Stalls 26-27 ECD
3	J. Persaud	Lot 6 Beehive, ECD
4	Kharaj and Sons	43-44 Supply Mahaica, ECD
5	Kumar	54 Virginia Village Canegrove ECD
6	Madray Rathanam	Lot 8 Quakes Hall West Mahaicony, ECD
7	Michael Williams	Lot 7 Clonbrook, ECD
8	Nalini Devi Prettipaul	Lot D9 Wellington Bath Settlement, ECD
9	Parasram Seepersaud	1 Public Road Belmonte, Mahaica ECD
10	Ramdehol Bissoondat	Lot B1 Bath Settlement, ECD
11	Ramdeo Basdeo	Lot 8 Riverview Lancester Unity, ECD
12	Y.K. Sahib and Sons	Lot 1 Section A Clonbrook ECD

Georgetown

No.	Name	Address
1	Agri Quality Incorporated	Lot 151 Thomas Street Kitty Georgetown
2	AINLIM	R6 Ruimveldt Georgetown
3	Colin Worrel	104 Regent Road Bourda Georgetown
4	Deonarine Ramgobin	34 North Road and King Streets Georgetown
5	Geddes Grant	R6 Ruimveldt Georgetown
6	National Hardware Guyana LTD	17-19A Water Street Georgetown
7	National Hardware Guyana LTD	Lot 1-2 Industrial Site Ruimveldt Georgetown
8	Sanjay Kumar	9 America and Longden Street Georgetown
9	Caribbean Chemicals	South Road Georgetown

EBD, WCD, EBE and Linden

No.	Name	Address
1	Boodhoo's General Store	299 N1/2 parika Highway EBE
2	Faizul Ally	Plot #7 Parika Backdam EBE
3	Joy Marques (Marques' Animal Health)	32 Crescenr Plaza Coop Crescent Linden

4	Lalldeo Bulkhan	118 Tuschen New Scheme EBE
5	Lalldeo Bulkhan	252-254 Parika Highway EBE
6	Lalldeo Bulkhan	214 Parika Old Road EBE
7	**Lalta Digamber**	**40 New Road WCD**
8	Lalta Digamber	40 N-Sec Canal #2 WBD
9	Meena Kuar	18 Belle Street Poulderoyen
10	Rajesh Ganesh	Lot 32 Parika Backdam EBE
12	Suresh Sanchara	Lot 2 Soesdyke EBD
13	Venkad Seeandan (Hope Feed Center)	28-29 New Hope EBD

East Berbice

No.	Name	Address
1	Abdool Jameel Uddin	#57 Village Corentyne Berbice
2	Abdool Jameel Uddin	
3	AINLIM	Lot 3 Strand New Amsterdam Berbice
4	Cedric Premdas	Lot 10 Grant 1802 CWC Berbice
5	Chand Kumar Hardyal (Vishnu Super Store)	#71 Village Corentyne Berbice
6	Deomattie Sukhram	Bengal Farm Corentyne Berbice
7	Geddes Grant Guyana LTD	Lot 16 Strand New Amsterdam Berbice
8	Dudnath's Hardware & Agri Centre	Lot 1 Sec.A #79 Corriverton Berbice
9	Gubas Ramrup	Lot 5 Third Street Seawell Village Berbice
10	Haresh Rama	24 Grant 1651 Crabwood Creek Berbice
11	Jason Beram Singh (Numark Chemicals)	19 Main and Pope Streets New Amsterdam Berbice
12	Khalil Nizamudeen	41 Rampoor Scheme Corriverton Bebice
13	Leekha Rambrich	#41 Village Corentyne Berbice
14	Mohammed Kamalodeen	Lot 5 Number 46 Village Corentyne Berbice
15	Nanlall Hardwar	Lesbeholden BBP Berbice
16	Nazmoon Azimulla	Lot 56 Johanna South BBP Berbice
17	Outram Ramprashad	49 Mibikuri BBP Berbice
18	Poonai Bhigroog (Poonai's Pharmacy)	Lot 72A Rosehall Town Berbice
19	Ramesh Persaud	#36 Village Berbice
20	Seunarine Hardeen	325 # 55 Village Corentyne Berbice
21	Sheik Sattaur	#71 Village Corentyne Berbice
22	Sorojodin Jewdhan	91 Yakusari South BBP Berbice
23	Sukhram's Filling Station V.	Hogsty Berbice

	(Sukhram)	
24	Vimal Ganesh	7&8 Bush Lot Corentyne Berbice
25	Vishnu Sukhram	Rosehall Town Berbice

Region II Essequibo Coast

No.	Name	Address
1	Abdool Ansar Azam	Lima New Housing Scheme Essequibo
2	Adam Baksh (Imam Bacchus & Sons)	Affaiance Essequibo Coast
3	AINLIM	Lot 7 Henrietta Essequibo
4	Alfro Alphonso (A&S General Store)	Stall 13 Charity Market Essequibo Coast
5	Anand Singh	New Road Essequibo Coast
6	Ariff Mohammed Khan (Riff's Lima Fish Complex)	Lima Essequibo Coast
7	Azad Bacchus	47 Cottonfield Essequibo Coast
8	Balram Kewal	Land of Plenty Essequibo Coast
9	Basedeo Manman	40 Bush Lot Essequibo Coast
10	Boodhoo's General Store	Anna Regina Essequibo
11	Caribbean Chemicals	Lot C Anna Regina Essequibo Coast
12	Chate Narine	6 Paradise Essequibo Coast
13	Ghamshan Dalchand	Suddie Market Essequibo
14	Ghamshan Dalchand	Anna Regina Market Essequibo
15	Ghamshan Dalchand	26 Adventure Essequibo
16	Ghamshan Dalchand	Charity Market Essequibo
17	Geddes Grant	18 Cotton Field Essequibo Coast
18	GM&R Trading	Lot 100 Charity Essequbo Coast
19	GM&R Trading	Lot 1 Danielstown Essequibo Coast
20	Indar Singh	22 Airy Hall Essequibo
21	Ivan Narine	Anna Regina Essequibo
22	Karran Balbad	22 New Road Essequibo Coast
23	Monsoor Mohammed	Charity Essequibo
24	Parmanan Persaud	78 Huist Dierrien Essequibo
25	T and R Bisnauth	Lot A6 Spring Garden Essequibo Coast
26	Roopnarine Bisnauth	Stall #5 Supenaam Market Essequibo Coast
27	Samaroo's Investment	201 Hampton Court Essequibo
28	Sohanlall Baboolall	47 Public Road Queenstown Essequibo Coast

29	Sundar Persaud	6 Tayamouth Manor Essequibo
30	Tekram Sankar	28 Dennis Street Anna Regina
31	Thelome Matura	50 Aurora Essequibo Coast
32	Vincent Persaud	West Bury Essequibo Coast
33	Yoolaim Bacchus	92b Makeshift Aurora Essequibo Coast

APPENDIX VII
Pesticides and Toxic Chemicals Control Board Statement of Income and Expenditure for the Year Ended December 31st 2006

2005	OPERATING INCOME	NOTES		2006
$			$	$
14,592,000	Subvention			17,658,254
558,441	Miscellaneous Income	**2**		1,847,054
15,150,441				**19,505,308**
	OPERATING EXPENDITURE			
9,321,867	Employment Costs	**3**	11,061,217	
0	Local Travel & Subsistence		0	
456,000	Fees (Board Members)		243,000	
179,330	Office Materials & Supplies		1,276,689	
342,087	Building Maintenance		444,194	
766,112	Print & Non-Print Materials		2,639,559	
680,634	Fuel and Lubricants		546,430	
309,374	Office Equipment Maintenance		926,510	
361,442	Spares and Service		600,982	
226,260	Telephone Charges		197,800	
215,895	Refreshments		210,645	
23,452	Bank Charges		12,775.00	
3,092,189	Meetings & Other Events		4,109,072	
1,488,667	Depreciation	**1**	1,189,986	
				23,458,859
(2,312,868)	**Net Surplus/(Deficit)**			**(3,953,551)**

APPENDIX VIII
Pesticides and Toxic Chemicals Control Board Accounts for Period Ending December 31, 2007

Subvention			
	Balance 2006		**$8,479,769.27**
	Year To Date		**$17,901,000.00**
	Total		**$26,380,769.27**
Expenditure			**Year To Date**
	Inspection	**$ -**	**$ 806,674.00**
	Wages	**$2,116,820.00**	**$13,758,930.00**
	Fees	**$215,000.00**	**$476,000.00**
	Allowances	**$73,849.00**	**$783,172.00**
	NIS	**$75,194.00**	**$591,027.00**
	Fuel & Lubricants	**$0.00**	**$505,378.00**
	Spares & Servicing	**$0.00**	**$458,501.00**
	Office Material & Supplies	**$152,934.00**	**$1,386,198.00**
	Print Materials	**$0.00**	**$1,791,145.00**
	Meetings & Other Events	**$100,000.00**	**$3,193,484.00**
	Telephone Charges	**$0.00**	**$363,244.00**
	Refreshments	**$0.00**	**$267,246.00**
	Office Building Maintenance	**$223,000.00**	**$3,451,030.00**
	Office Equipment Maintenance	**$0.00**	**$1,093,809.00**
	Electricity Charges	**$0.00**	**$908,587.00**
	Bank Charges	**$0.00**	**$15,400.00**
	Total	**$2,956,797.00**	**$ 29,849,825.00**
Income	**Administrative Fees**	**$ 501,076.00**	**$ 13,907,199.00**
	Interest	**$39,604.79**	**$105,029.55**
	Others	**$0.00**	**$ 328,555.00**
Balance			**$10,871,727.82**
	NBIC (Management Account)		**$7,864,688.32**
	NBIC (Current Account)		**$2,627,610.50**
	Cash In Hand		**$379,429.00**
	Total		**$10,871,727.82**

APPENDIX IX
Pesticides and Toxic Chemicals Control Board

Details	Budget 2007	Actual 2007	Budget 2008	Indicative 2009	Indicative 2010	Indicative 2011
Total Revenue	16760	29850	41277	45600	50400	52800
Recurrent Revenue	16760	29850	41277	45600	50400	52800
Subsidies and Contributions from Central Government	**16760**	**17901**	**15357**	**0**	**0**	**0**
Revenue from Operations	**0**	**0**	**0**	**0**	**0**	**0**
Sale of Goods and Services	**0**	**0**	**0**	**0**	**0**	**0**
Fees, Fines, etc.	**0**	**11949**	**25920**	**45600**	**50400**	**52800**
Rents, Royalties, etc.	**0**	**0**	**0**	**0**	**0**	**0**
Other Recurrent Revenue	**0**	**0**	**0**	**0**	**0**	**0**
Interest Received	**0**	**0**	**0**	**0**	**0**	**0**
Miscellaneous Receipts	**0**	**0**	**0**	**0**	**0**	**0**
Capital Revenue	0	0	0	0	0	0
Capital Grants from Central Government	**0**	**0**	**0**	**0**	**0**	**0**
Sale of Assets, etc.	**0**	**0**	**0**	**0**	**0**	**0**
Miscellaneous Capital Revenue	**0**	**0**	**0**	**0**	**0**	**0**
External Grants	0	0	0	0	0	0
External Grants	**0**	**0**	**0**	**0**	**0**	**0**
Total Expenditure	16760	29850	41277	43837	46837	46837
Recurrent Expenditure	16760	29850	41277	43837	46837	46837
Employment Cost	11580	16796	24314	24314	24314	24314
Wages and Salaries	**8466**	**13759**	**18006**	**18006**	**18006**	**18006**
Overhead Expenditure	**3144**	**3037**	**6308**	**6308**	**6308**	**6308**
Other Recurrent Charges	5180	13054	16963	19523	22523	22523
Materials, Equipment and Supplies	**680**	**3605**	**4450**	**6850**	**9850**	**9850**
Fuel and Lubricants	**1128**	**784**	**1188**	**1188**	**1188**	**1188**
Rental and Maintenance of Buildings	**630**	**3451**	**810**	**810**	**810**	**810**
Maintenance of Infrastructure	**0**	**0**	**0**	**0**	**0**	**0**
Transport, Travel and Postage	**1337**	**922**	**2460**	**2580**	**2580**	**2580**
Utility Charges	**480**	**2175**	**4440**	**4440**	**4440**	**4440**
Other Goods and Services Purchased	**160**	**771**	**335**	**335**	**335**	**335**
Other Operating Expenses	**765**	**1346**	**3280**	**3280**	**3280**	**3280**
Education, Subventions and	**0**	**0**	**0**	**0**	**0**	**0**

Training						
Rates and Taxes and Subventions to Local Authorities	**0**	**0**	**0**	**0**	**0**	**0**
Pensions	**0**	**0**	**0**	**0**	**0**	**0**
Internal Interest	**0**	**0**	**0**	**0**	**0**	**0**
External Interest	**0**	**0**	**0**	**0**	**0**	**0**
Capital Expenditure	0	0	0	0	0	0
Capital Expenditure	**0**	**0**	**0**	**0**	**0**	**0**
		0				
Surplus (Deficit)	0	0	0	1763	3563	5963
Total Financing						
External Loans (Net)						
External Loans – Disbursements						
External Loans – Principal Repayments						
Internal Loans (Net)						
Internal Loans – Disbursement						
Internal Loans – Principal Repayments						
Net Change in Cash and Bank Balances						

APPENDIX X
List of chemicals prohibited in Guyana

(a) 2,4,5-T and its salt and esters;

(b) Aldrin;

(c) Captafol;

(d) Chlordane;

(e) Chlordimeform;

(f) Chlorobenzilate;

(g) Dieldrin;

(h) Dinoseb;

(i) 1-2-Dibromoethane;

(j) Fluoroacetamide;

(k) Heptachlor;

(l) Hexachlorobenzene;

(m) Lindane;

(n) Mercuric chloride;

(o) Methyl Parathion;

(p) Mirex;

(q) Parathion;

(r) Pentachlorophenol;

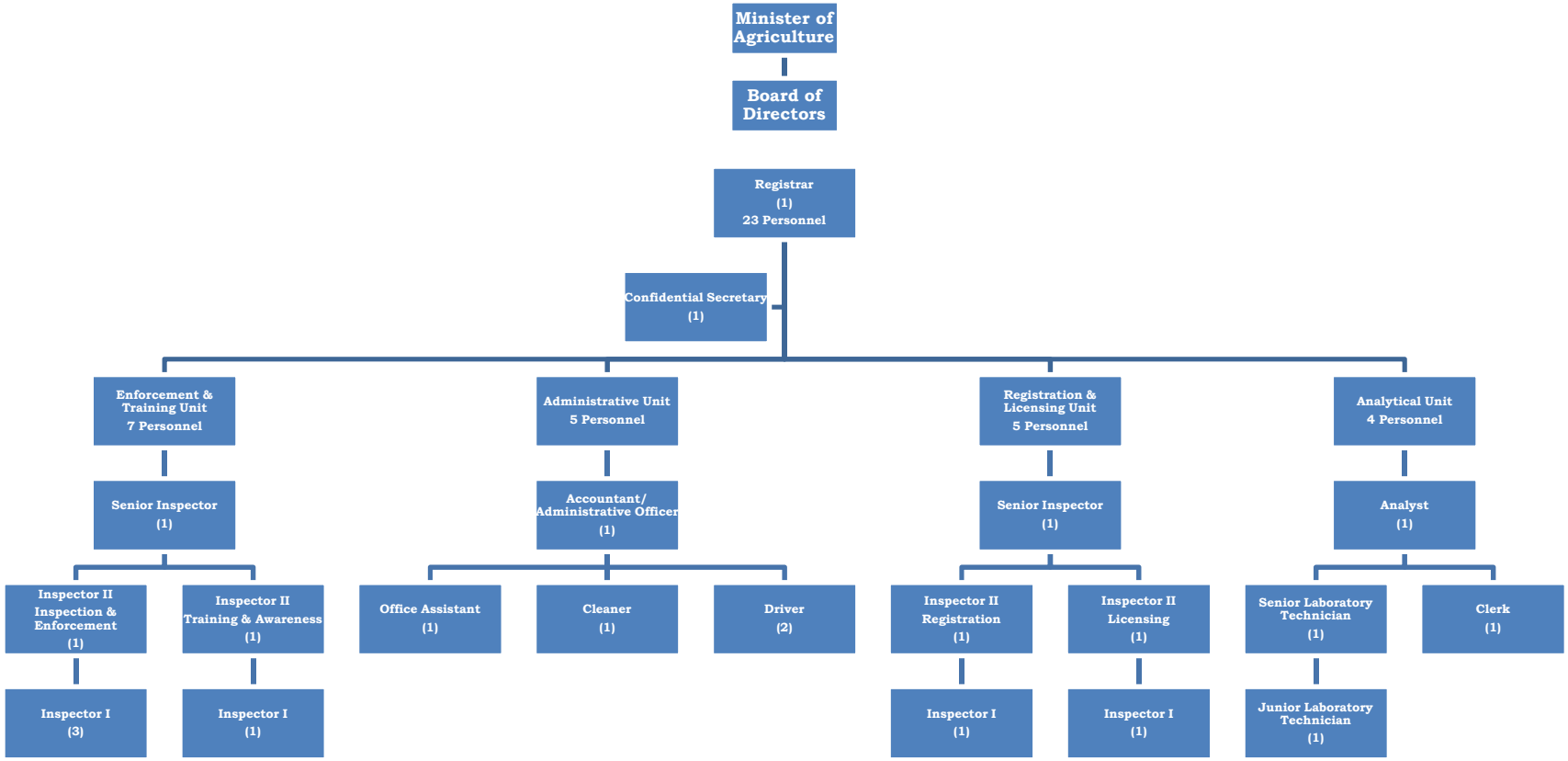
(s) Phosphamidon;

(t) Toxaphene;

(u) Mixed Isomers of Hexachlorocyclohexane; and

(v) Endrin.

Appendix XI
Organisational & Personnel Chart for the Pesticides and Toxic Chemicals Control Board



APPENDIX XII
Pesticides and Toxic Chemicals Control (Amendment) Act 2007

GUYANA

ACT No. 13 of 2007

PESTICIDES AND TOXIC CHEMICALS CONTROL
(AMENDMENT) ACT 2007

ARRANGEMENT OF SECTIONS

Section

AN ACT to amend the Pesticides and Toxic Chemicals Control Act 2000.

A.D. 2007 Enacted by the Parliament of Guyana:-

Short title.

1. This Act, which amends the Pesticides and Toxic Chemicals Control Act 2000, may be cited as the Pesticides and Toxic Chemicals Control (Amendment) Act 2007.

Amendment of long title of Principal Act.

2. The long title of the Principal Act is amended by inserting, immediately after the word "importation", a comma followed by the word "exportation".

Amendment of section 7 of Principal Act.

3. Section 7 of the principal Act is amended-

(a) by renumbering it "7 (1)";

(b) by inserting in paragraph (b), immediately after the word "import", a comma followed by the word "export";

(c) by inserting in paragraph (f), immediately after the word "importation", a comma followed by the word "exportation";

(d) by inserting, immediately after paragraph (i), the following paragraphs –

"(ia) to provide information and advice as required to fulfill Guyana's obligations under international agreements;

"(ib) to oversee Guyana's implementation of international agreements"; and

(e) by adding the following subsection –

"In subsection (1)(ia) and (ib), "international agreements" means international agreements to which Guyana is a party concerning the manufacture, importation, exportation, transportation, storage, sale, use, or disposal of pesticides or toxic chemicals."

Amendment of section 11 of Principal Act.

4. Section 11 of the Principal Act is amended by inserting, immediately after the word "import", a comma followed by the word "export".

Amendment of section 12

5. Section 12 of the Principal Act and the marginal note are amended by

of Principal Act.

substituting for the words "or import" in both places where they occur, the words "import or export".

Amendment of section 15 of Principal Act.

6. Section 15 of the Principal Act is amended by inserting, immediately after the word "import", a comma followed by the word "export".

Amendment of section 16 of Principal Act.

7. Section 16(1) of the Principal Act is amended by inserting, immediately after the word "import", a comma followed by the word "export".

Amendment of section 18 of Principal Act.

8. Section 18 of the Principal Act is amended -

(a) by inserting in the marginal note, immediately after the word "imported", the words "or exported"; and

(b) by inserting, immediately after subsection (2), the following subsection -

"(3) Except as provided by the regulations, no controlled product shall be exported from Guyana unless the product wholly conforms to the law of Guyana and is accompanied by a certificate from Board in the form determined by the Board that the product does not contravene any known requirement of Guyana."

Amendment of section 19 of Principal Act.

9. Section 19 of the Principal Act is amended -

(a) by substituting, for subsection (1), the following subsection -

"(1) The Minister may, by order made after consultation with the Board, specify either or both of the following for the purposes of this Act-

(a) pesticides that must not be imported into or used in Guyana;

(b) pesticides that must not be exported from Guyana";

(b) by substituting for the words "the list of specified prohibited pesticides" in subsection (2), the words "any order made under subsection (1)"; and

(c) by substituting for subsection (3) the following subsection -

"(3) An order made under this section may provide for the withdrawal from sale or use, and for the disposal of, any pesticide specified in the order."

Amendment of section 29 of Principal Act.

10. Section 29 of the Principal Act is amended -

(a) by inserting in subsection (1), immediately after the words "imported into", the words "or to be exported from";

(b) by inserting in subsection (2), immediately after the word "importer", the words "or exporter (as the case may be)"; and

(c) by substituting for subsection (3), the following subsections -

"(3) In the case of a product to be imported into Guyana, -

(a) if it appears from the report of the inspector or analyst that the sale or use of the product in Guyana would contravene this Act, the product must not be admitted into Guyana; and

(b) otherwise, the product shall, subject to any other law, be admitted into Guyana.

(3A) In the case of a product to be exported from Guyana to another country, -

(a) if it appears from the report of the inspector or analyst that exportation of the product to the country concerned is not authorized by an export license issued by the Board, the product shall not be exported from Guyana; and

(b) otherwise, the product shall, subject to any other law, be permitted to be exported to that country".

Amendment of section 32 of Principal Act.

11. Section 32 of the Principal Act is amended –

(a) by inserting in paragraph (a), immediately after the word "importation, a comma followed by the word "exportation";

(b) by inserting in paragraph (i), immediately after the word "imported", a comma followed by the word "exported"; and

(c) by inserting in paragraph (w), immediately after the word "importers", a comma followed by the word "exporters".

Amendment of section 34 of Principal Act.

12. Section 34(1) of the Principal Act is amended by inserting in paragraph (a), immediately after the word "imports", a comma followed by the word "exports".

Passed by the National Assembly on 13th March, 2007.

S.E. Isaacs.
Clerk of the National Assembly.

(BILL No. 4 /2007)

APPENDIX XIII
Pesticides and Toxic Chemicals Regulations

GUYANA **No. 5 of 2007**

REGULATIONS

MADE UNDER
THE PESTICIDES AND TOXIC CHEMICALS CONTROL ACT 2000
(No. 13 of 2000)

ARRANGEMENT OF REGULATIONS

REGULATION

IN EXERCISE OF THE POWERS CONFERRED UPON ME BY SECTIONS 16 AND 32 OF THE PESTICIDES AND TOXIC CHEMICALS CONTROL ACT 2000, I HEREBY MAKE THE FOLLOWING REGULATIONS:-

Citation. 13. These Regulations, which amend the Pesticides and Toxic Chemicals Control Regulations 2004, may be cited as the Pesticides and Toxic Chemicals Control (Amendment) Regulations 2007.

Commencement.

14. (1) Subject to paragraph (2), these Regulations are deemed to have come into force on 27 November 2004.

(2) Regulation 4 comes into force on 1 April 2007.

Insertion of new Part VIA in Principal Regulations.

15. The Principal Regulations are amended by inserting, after Part VI, the following Part -

"PART VIA

IMPORTATION OF PESTICIDES OR TOXIC CHEMICALS

Form of application for import licence.

Sixth Schedule

Third Schedule

135A. Any person who wishes to import a controlled product may apply to the Registrar for an import licence in Form G of the Sixth Schedule accompanied by the fee set out in the Third Schedule.

Features of import licence.

Sixth Schedule

135B. An import licence issued by the Board –

(a) shall be in Form H of the Sixth Schedule;

(b) is valid for a single importation of the product specified in the licence;

(c) expires six months after its date of issue, unless an earlier expiry date is specified on the licence; and

(d) cannot be transferred or renewed.

Board to give reasons for refusing application.

135C. If the Board decides to refuse an application for an import licence, the Board shall, as soon as practicable,

notify the applicant in writing of this decision and the reasons for it.

Board to give reasons for revoking licence.

135D. If the Board decides to revoke an import licence, the Board shall, as soon as practicable, notify the licence holder in writing of this decision and the reasons for it.

Notification of minor changes.

135E. (1) The holder of an import licence shall notify the Registrar in writing of -

(a) any change in the trade name of a product specified in the licence;

(b) any change in the name or address of the holder; and

(c) any change in the identity, name, or address of the supplier or buying agent.

(2) A notification under paragraph (1) shall be made –

(a) before any further importation of product under the relevant licence; and

(b) in any case, within one month of the relevant change.

(3) Failure to comply with paragraph (2) invalidates the licence."

Substitution of Third Schedule to Principal Regulations.

4. The Principal Regulations are amended by substituting, for the Third Schedule to those regulations, the Third Schedule set out in the schedule to these Regulations.

SCHEDULE

NEW THIRD SCHEDULE TO PRINCIPAL REGULATIONS

Regulation 4

"**Third Schedule**

Fee Structure for Pesticides and Toxic Chemicals

Regulation 135A

TYPE OF FEE	FEE
Application Fee for Import Licence	A fee equivalent to 3% of the value (cost, insurance, and freight) of the pesticide or toxic chemical imported

No other fee applies."

Made this 13th day of March 2007.

…….
Minister of Agriculture

SCHEDULE 1

New Form I added to Sixth Schedule of principal regulations

FORM I

APPLICATION FOR LICENCE TO EXPORT PESTICIDES AND TOXIC CHEMICALS

(To be prepared in Duplicate)

APPLICATION FOR EXPORT LICENCE

PESTICIDES AND TOXIC CHEMICALS

(Under the Pesticides and Toxic Chemicals Act (No. 13 of 2000))

TO THE REGISTRAR, PESTICIDES AND TOXIC CHEMICALS:

We,_____

____ of _____ hereby apply for Licence to export the goods specified below to:

	Product Name	**Active Ingredients & %**	**Product Type**	**Registration No.**
(a)	_____	_____	_____	_____
(b)	_____	_____	_____	_____
(c)	_____	_____	_____	_____
(d)	_____	_____	_____	_____
(e)	_____	_____	_____	_____

_____

(Country of consignment)

Name and Address of Importer: _____

_____ e-mail:_____ Phone No.:_____ Fax No._____.

2. We desire to forward these goods on or about _____(Date) by _____.(State whether by air or ship, or otherwise)

Per _____(Name of authorized Individual)

Signature_____ Date_____

SCHEDULE 2

New Form J added to Sixth Schedule of principal regulations

FORM J

FORM OF EXPORT LICENCE

PESTICIDES AND TOXIC CHEMICALS CONTROL BOARD

Reference: _____

EXPORT LICENCE
PESTICIDES AND TOXIC CHEMICALS

Permission is hereby granted under the Pesticides and Toxic Chemicals Control Act (No. 13 of 2000) to _____ to export the following goods specified below:

	Description of Goods	**Quantity**	**Classification**
(a)	_____	_____	_____.
(b)	_____	_____	_____.
(c)	_____	_____	_____.
(d)	_____	_____	_____.
(e)	_____	_____	_____.

to _____

subject to the conditions, restrictions and limitations stated hereunder.

CONDITIONS

1. This licence shall remain in force until the _____ day of _____ 20_____.
2. .....
3. .....

_____ _____

Registrar **Date**

Pesticides and Toxic Chemicals

Stamp **Seal**

APPENDIX XIV
Skeldon Report

SUMMARY

An enquiry committee appointed by the Honourable Minister of Agriculture comprising four members and one observer investigated a spray incidence which took place at Skeldon Estate on the 29th August 2007. The Committee visited the site and interviewed workers, union officials and representative, management personnel and aircraft technical personnel.

The committee main findings and observation are summarised as follows:

- **(a) The workers were operating approximately 3.2 kilometres from the sprayed fields;**
- **(b) Medical personnel did not observe any significant physical symptoms among the patients treated;**
- **(c) Logistical arrangements for the spray application were adhered to but trafficking of the dams was breached since there was no alternative route predetermined; and**
- **(d) Management response to the workers claim was not conciliatory.**

The committee main recommendations are summarised as follows:

- **(i) Educate workers and union officials of the chemicals used on the Estate;**
- **(ii) Wider dissemination of the intent to conduct aerial application of pesticides should be carried out;**
- **(iii) Field Management representatives should be in stationed at strategic points of the cultivation in radio contact with the airstrip to monitor progress and enforce access restriction; and**
- **(iv) Supervisory personnel including senior management staff should be more sensitive to claims of this nature.**

INTRODUCTION

The Minister of Agriculture Honourable Robert Persaud appointed a Committee to enquire into the allegation of inhalation of pesticides at Skeldon Estate arising from an aerial application of herbicides on the 29th August 2007. The committee comprised of the following members:

(i) Dr. Kumarie Jaipersaud, Director of Regional Health Services, (Chairperson);

(ii) Ms. Marlyn Samad, Guyana Agricultural Workers Union (GAWU)(Member);

(iii) Dr. Harold Davis, Director of Agricultural Research (Member);

(iv) Mr. Basudeo Dwarka, Registrar, Pesticides and Toxic Chemicals (Member); and

(v) Mr. Fiazal Jafferally, Community Relation Officer (Observer).

The Terms of Reference of the Committee were as follows:

"enquire into the claims of the workers that they were affected by chemicals originating from the aerial application of herbicides on the 29th August 2007, at Skeldon Estate" This was communicated on the 31st August 2007.The venue for hearings was given as Skeldon Estate with the proposed date of commencement as the 7th September 2007 and submission of the report within fourteen days of the commencement.

The Committee met on the 7th September 2007 in the Office of the Registrar, Pesticides and Toxic Chemicals Control Board 18 Brickdam, Stabroek, Georgetown. The meeting was convened to discuss the methodology and procedures for the investigation.

The Committee visited Skeldon Estate on the 11th – 12th September 2007 and interviewed a cross section of workers, estate management and supervisory staff , Union officials and medical personnel from Guysuco and the Skeldon Hospital.

The Committee then visited the Guyana Sugar Corporation Aircraft Department on Friday Sept 14th 2007and had discussion with the aircraft technical personnel. The operating principles of aerial spraying including the SATLOC M3 guidance system were explained.

Guysuco recommended procedures for aerial application are outlined in APPENDIX I

COMMITTEE OBSERVATION AND FINDINGS

OBSERVATION

The names of the individuals interviewed are shown as Appendix II.

The following are the finding of the Inquiry Committee after their investigation and interviews:

(a)	Date of Application	:	29th August 2007
(b)	Time of Application – Start	:	09:00 hrs
	Finish	:	10:15 hrs

(c)	Chemicals Applied & Rate	:	2,4 - D Amine 2.7 l / ha Terbutryn 2.0 l / ha
(d)	Location of Application	:	79/54B – 68B SG/15 – 21 + 24 – 31 NSG/14 – 23
(e)	Gangs in the Alleged Drift Area	:	8 C Cane Harvesting No 5 Creole Gang (Fertilising)
(f)	Number of Workers	:	8 C – 258 workers 5 A – 32 workers
(g)	Number of workers complained	:	8 C – 67 persons 54 – 6 persons

(h) All of the complaints were of the scent of poison, no one made a differentiation as to what they were smelling;

(i) The complaints were from a complete cross section of the fields;

(j) All of the workers said they saw the aircraft;

(k) The effects complained of is consistent with the effects of 2,4-D Amine, burning of face, eyes and throat;

(l) The workers were operating approximately 3,200 metres from the location of the aerial spraying;

(m) The reports on wind direction and speed in the spray area were inconsistent and could not be verified with any accuracy

(n) The workers were treated by prophylaxis by the medical personnel but the three workers complaining of stomach pains were treated for ingestion and were retained for observations overnight;

(o) Medical personnel did not observe any significant physical symptoms among the persons treated. Complaints of stomach ailments were more consistent with ingestion of chemicals rather than inhalation or skin exposure;

(p) No leaks were detected from the aircraft at any time;

(q) The aircraft made two turns approximately 1000 metres away from the work area;

(r) The aircraft would have been visible to the workforce at that distance. However according to the SATLOC image, the micronair nozzles were closed at the end of the run on the target areas;

(s) Complaints of chemical odour could have arisen from residual scents from the treated fields while traversing the Baker shop dam shortly after the spray operation;

(t) Managerial logistic arrangement for the spray operation was adhered to except with the trafficking of the only good dam which ran alongside the treated fields; there was no feasible planned alternative exit route;

(u) Management response in the post incidence period to the workers complaints and claims were not conciliatory; and

(v) There is a widespread fear of any agrochemical among estate workers.

HERBICIDE EVALUATION

Trade Name	:	2,4-D Amine
Active Ingredients	:	Dichlorophenoxy Acetic Acid
Common Name	:	2,4-D
Biochemistry	:	Synthetic auxin (acting like indolylacetic acid).
Toxicity Classification	:	WHO II – Moderately Hazardous USEPA II - Warning
Mode of Action	:	Selective systemic herbicide where the salts are readily absorbed by the roots, whilst esters are readily absorbed by the foliage. Translocation occurs, with accumulation principally at the meristematic regions of shoots and roots. Also acts as a growth inhibitor.

Mammalian Toxicity	:	**Oral** Acute oral LD_{50} for rats 639-764, mice 138 mg/kg. **Skin and eye** Acute percutaneous LD_{50} for rats >1600, rabbits >2400 mg/kg. Skin and eye irritant (rabbits). A skin sensitiser (guinea pigs). **Inhalation** LC_{50} (24 h) for rats >1.79 mg/l.
Symptoms	:	Irritation of skin, eyes and respiratory tract. Inhalation may cause burning sensation in nasopharynx and chest, coughing, and/or dizziness. Headache, vomiting, diarrhea. Confusion, bizarre or aggressive behavior. Kidney failure, increased heart rate. Metabolic acidosis resulting in peculiar odor on breath.
Trade Name	:	Igran
Active Ingredients	:	N^2-*tert*-butyl-N^4-ethyl-6-methylthio-1,3,5-triazine-2,4-diamine
Common Name	:	Terbutryn
Biochemistry	:	Photosynthetic electron transport inhibitor at the photosystem II receptor site.
Toxicity Classification	:	WHO (a.i) U – Product unlikely to cause hazard in normal use USEPA III - Caution
Mode of Action	:	Selective herbicide, absorbed by the roots and foliage, with translocation acropetally through the xylem, and accumulation in the apical meristems.

Mammalian Toxicity	:	**Oral** Acute oral LD_{50} for rats 2500, mice 500 mg/kg. **Skin and eye** Acute percutaneous LD_{50} for rats >2000, rabbits >20 000 mg/kg. Not a skin or eye irritant (rabbits). Not a skin sensitiser (guinea pigs). **Inhalation** LC_{50} (4 h) for rats >2200 mg/m^3 air.
Symptoms	:	Acute systemic toxicity is unlikely unless large amounts have been ingested. Irritation of eyes, skin and respiratory tract

RECOMMENDATION

1. COMMUNICATIONS

Knowledge of the applications of pesticides on estates should not be interpreted as restricted to management. The corporation should be more forth coming as to notification of aerial spray operations.

The Corporation should:

(a) Educate workers and the Union Officials of the chemicals used on the plantation and provide copies of Material Safety Data Sheet (MSDS) and a label of the chemicals where applicable;

(b) Provide a wider dissemination of the intent to conduct aerial pesticide application to all on the estate and the proposed dates, sites and restricted areas two days before the operations;

(c) Station field management representatives at appropriate strategic points of the cultivation with radio contact to the airstrip to monitor progress and to enforce precautionary rules with respect to restricted access to the area

during the conduct of any aerial pesticide application. This would remove any ambiguity with respect to resumption of traffic.

(d) The final decision whether to offer work or not to offer work on the day of the aerial application is the prerogative of the employer.

The Union should:

(i) Work with the Corporation to inform its members of the types and nature of the herbicides used on the plantation, their relative properties and measures taken to ensure there is no risk of exposure;

(ii) Workers should seek to make themselves more aware of the information on operation's on the estate and assure themselves that their programmed work will be in areas that will not expose them to chemical exposure.

2. AERIAL APPLICATION SAFETY POLICY GUIDELINE

The Guyana Sugar Corporation Agricultural Guidelines relative to the aerial application of pesticides should be reviewed with a view to revised the document and bring it in line with new policies where applicable. The content of the document should be disseminated to the Union and used for training and education of management, supervisory and workers.. The critical technical considerations in handling of agrichemicals should be summarised in poster form and prominently displayed at various points in the estate. This document would form a good platform for workers training

Areas suggested for inclusion and review into the guidelines are as follows:

(a) Alternative entrance and exit through the plantation when aerial application is in progress and in an emergency;

(b) Establishing buffer zones;

(c) Pre Application notification and procedures; and

(d) Post Application notification and procedures.

Senior management should carry out unannounced audit check on the guidelines to verify adherence at any time on any day of aerial application.

3. MANAGEMENT RESPONSE AND RESPONSIBILITY

Supervisory personnel including senior management staff should be more sensitive to claims of this nature rather than to be openly dispute the allegations which are of a sensitive nature and could evolve into a potentially explosive situation . Pronouncements on these issues should be left to the medical personnel.

4. EMERGENCY RESPONSE TIME

Communication to the pilot can only be done from the central location at Ogle or at the airstrip at the point of refilling. The presence of staff members with radio contact at strategic points in the location would improve communication with the central location in the event of an emergency. The pilot would then be in a position to take the appropriate action to dump his load at the designated site should this action be warranted.

5. MEDICAL RESPONSIVENESS

It is desirable that each estate should have a medical officer on call or on permanent attachment to cope with emergency situations, including chemical incidents. There is

presently no guarantee that a doctor would be at the estate on each aerial spray campaign. However with improved knowledge of procedures and chemicals within the estate it is very likely the occurrence of alarming incidents such as the present situation could significantly decrease.

6. TRAINING OF SUPPORT STAFF

Support staff to workers such as drivers should be included in all training initiatives as regards knowledge of pesticides so that they can understand risks associated with the various classes of pesticides and the importance of the transport staff input in an emergency response situation. The alternative routes to and from work location should be clearly communicated with their input on the day of any aerial application.

(v) The adherence to the guideline is the responsibility of the Field Manager who should have exercised more overall control of communication and emergency procedures.

(vi) There is evidence of dispute of veracity of the claims of the workers in the post incidence period. Management should be trained to handle these situation is a more conciliatory manner.

(vii) Superintendent Deane was weak and did not exercise any control over the lorry driver that drove through the spray area without warning. He should be given a written warning and counselling.

(viii) The driver of the lorry who failed make "good sense prevail" knowing that the area was being sprayed and allowed the workers to influence his control of the vehicle should also be disciplined. He should be warned and counselled.

APPENDIX XIVA

GUYSUCO GUIDELINES FOR AERIAL APPLICATION OF AGROCHEMICALS

GENERAL

These guidelines contain the information needed for the planning, preparation and execution of Aerial Application of Chemicals and Fertilizers to sugarcane.

PLANNING AND PREPARATION

Estates when deciding on work areas must take the following into consideration:-

(a) Safety of personnel, livestock and property in the vicinity of the area of operations,

(b) Possible deleterious effects on water supplies and crops other than sugarcane or surrounding vegetation of the chemicals to be used.

(c) Possible annoyance and noise to people and livestock.

(d) Presence of flight obstructions such as masts, electric cables and trees.

Having decided on the work areas estates are required to submit their maps and worksheets to the Agriculture Director, for approval a minimum of one week in advance of the date of the intended application.

OPERATIONS

Estates must ensure that their airstrips are properly maintained at all times and that this includes the display of a functional windsock.

When fertilizers are being applied estates are to ensure that the fertilizer loader is at the airstrip with the required amount of fertilizer to complete the programme. In like manner adequate supplies of water and chemical must be available at the airstrip for spray operations.

The Estate's Field Department is responsible to ensure on the day prior to the start of operations the boundaries of the individual blocks to be sprayed/ fertilised are clearly

delineated with flags. Flags are composed of flourescent orange or red material and are mounted at a height of at least 5 m. c Personnel are not permitted in the treatment Blocks during the aerial operations. A minimum boundary of 750 m (200 rods) is maintained outside of the operating area ,within which no person is permitted, is stipulated for all aerial operations

Before commencing operation the pilot will conduct a reconnaissance of the areas to be spayed to ensure that the guide flags are clearly visible and correctly placed. Way-points for the Satloc operation are fixed during the actual spraying.

Estate Field Department personnel must be aware that the aircraft swath width for:

Solid Fertilizers is	14.6 m
Liquid herbicide, ripener and growth regulators is	18.3 m (Piston)#
Liquid herbicide, ripener and growth regulator	27.4 m (Turbine)

The productivity of the aircraft for operations is to be budgeted at

Solid Fertilisers	-	40 has per hour flying time
Herbicides, ripeners, growth regulators		115 has per hour flying time

/hour flying time

Insecticides are not under any circumstance applied by air to Guysuco's cultivation. Insecticide

All applications are flown in a straight line from one end to of a block of fields to the other end of the block parallel to the longest edge of the block.

AIRCRAFT DEPARTMENT

2. The Chief Pilot/Pilot will have in his possession a map and worksheet illustrating all obstruction data and potential dumping zones to enable him to do an initial site assessment. The pilot will review all possible problems with the Field Manager at the airstrip prior to the commencement of operations. It is essential that the Field Manager or his Senior A.F.M. and not a junior manager, conduct this review.

3. It is the responsibility of the Aircraft Department to ensure that the requisite oils, fuel, support equipment and personnel are in place at the location.

4. The Aircraft Department ground staff will be on location one day before work is scheduled to commence to confirm the status of the airstrip and the state of readiness of the estate.

PROTECTIVE CLOTHING AND FIRST AID

2. All personnel involved in aerial applications must at all times during the operation wear the appropriate protective clothing.

3. It is the responsibility of the Estate and the Aircraft Department to ensure that their respective personnel are in possession of the appropriate protective clothing. When chemicals (not including fertilizers) are being applied the flagmen must be provided with "Kleenguard" disposable overalls as well as the usual boots, gloves and hats. For fertilizer work the standard "Protecto" cotton/polyester overall is required together with boots, gloves and hats.

4. The estate must display at the site of operation information about the types of chemicals, handling precautions quantity of chemical and total volume to be applied per acre and type of spray equipment to be used.

5. If chemicals are changed during the course of an operation the aircraft hopper and spray equipment are flushed with copious quantities of clean water before the second set of chemicals are added.

6. There must be supply of clean water for emergency decontamination at the airstrip. The water from the clean water container must not be used for mixing any chemical.

7. A first-aid kit will be provided in the aircraft and in the ground support vehicles. The estate must arrange for a first-aid kit at the airstrip. As with all chemical use the Estate Medical Officer must be advised in advance of operations to ensure that any needed antidotes are to hand. This is especially important in the (unlikely) event that an insecticide is to be sprayed.

EMERGENCIES AND MISHAPS

1. It is the responsibility of the estate to have comprehensive standing instructions on action to be taken in the event of flag and crash emergencies, or mishaps with chemicals such as dumping and accidental spraying.

   Matters to be covered included:

   (a) Procedures for emergency dumping at any time during the flight, preferably with a dump site identified.

   (b) Crash/rescue procedures and provision of rescue, fire fighting and first-aid equipment at the estate airfield.

   (c) Arrangements for emergency communications with Police, Fire and Ambulance Services.

   (d) Methods of isolating and neutralising poisonous chemicals when dumped from the air, spilled during ground handling or in aircraft crash.

   (e) First-aid to be applied in the event of suspected poisoning. This information is available from the Agrochemical First Aid Poster, a copy of which must be on hand at the airstrip together with the needed first aid equipment.

COMMUNICATIONS

1. Aircraft Department personnel at the airstrip will have ground to air communication with the aircraft.

2. The flagmen's' supervisor who must be positioned in the field with the flagmen must have radio communication with the Field Manager's representative at the airstrip.

3. The Field Manager's representative at the airstrip must have communication with Estate Control Centre by radio.

4. Aerial application on estate will be under the direction of the Field Manager or his representative. However, it must be made clear that in matters of aviation safety the Pilot has the overriding authority

5. The estate must advise neighbouring householders or farmers of the planned operations wherever there is a possibility that the operations may impinge on them.

APPENDIX XIVB

Name	Gang / Representation
B. Sugrim 11774	8 C
Naimchand Lutchminarine 12263	8 C
R. Joseph 20899	8 C
K. Chunilall 14004	8 C
H. Ragunandan 18947	No 5 Creole
Y. Chattergoon 18837	8 C
Ramesh Singh 18857	8 C
D. Persaud 20340	8 C
K. Stoll 20852	8 C
D. Seenauth 18578	8 C
M. Hussien 15732	8 C
R.Ragubeer 18597	8 C
G. Singh 20946	8 C
R. Rose 19443	8 C
W Josiah 19288	8 C
P. Melville 20510	8 C
R. Haynes 20915	8 C
N. Inderdas 20108	No 5
P. Persaud 11628	8 C
Purshotam Anand Persaud	General Manager
T. Bahadur Singh	Field Manager
Jason Gravesande	Supervisor 8 C
R. Tiwari	GAWU Organising Secretary
Nazeer K Ozeer	Field Secretary
Jerrick Southwell 17337	Representative 8 C
Beatrice Basdeo;	Medex
Dr. S. Sawh	Estate Medical Officer
K. Crawford 11024	8 D
Lennox April 19036	Representative 5 A
Winston Noel 19154	No 5
Dr. Persaud	District Medical Officer
Ron Burnette 17525	8 C
Z. Deane	Superintendent
D. Chatoo	Supervisor 8 D

APPENDIX XV
China Report

Acknowledgement

The participant wishes to acknowledge the contribution of the following:

The People's Republic of China for making the course possible and the Government of Guyana and the Honourable Minister of Agriculture for selecting and allowing him to participate in the training programme;

China International Centre for Agricultural Training (CICAT) for providing all the logistic arrangement for his participation in the course from Guyana and whilst in China;

Mrs. Chen Hong, Office Chief and Ms Li Huiling, Program Officer of CICAT for their patience, support and encouragement during his stay in China and for also improving his understanding of Chinese customs, language and culture;

The lecturers and other resource personnel of South China Agricultural University for their clarifications, explanation and understanding during the lectures, field work and experiments;

The Staff of the Zhu Yuan Hotel for their accommodation, appreciation and patience;

The staff of the Canteen for making meals satisfying and enjoyable;

The students of SCAU for their patience and acceptance whilst making sightseeing in Guangzhou an entertaining experience;

Team six (6) for their cooperation during the entire course; and

Finally to all the participants of the course for making my stay in China an unforgettable one.

Final Report

Introduction

The China International Centre for Agricultural Training (CICAT) requires a final report as part of the "Crop Diseases and Pest Control Training Course 2007" from each participant that reflects the overall presentation and management of the course. This report will be used by CICAT, as a tool for evaluating the course as well as a correcting means for improving similar and other training courses. This report examines and considers the participant's involvement in the course with specific emphasis to the objectives of the training, training methods and techniques, activities, field visits, tours and other indirect activities of the course.

Background

Guyana has frequently been touted as the potential "bread basket" of the English-speaking Caribbean. This is mainly due to her vast land area - approximately 216,000 km^2 – as compared with other Caribbean countries, suitable climatic conditions, and abundance of natural water resources, adequate topographic and pedographic characteristics, and the opportunity for the development of large-scale agricultural production systems.

The single most important sector of Guyana's economy is agriculture, both in terms of foreign exchange generation and the number of persons employed.

In any country where the economy is agriculturally driven, the agricultural sector must be critically managed to ensure that the sector is dynamic and is capable to respond to changing market demands that places more emphasis on food safety and other related issues.

Against this background and the continuing rising cost of procured inputs such as pesticides and fertilisers, the Registrar of Pesticides and Toxic Chemicals was chosen by the Minister of Agriculture to represent Guyana at the "Training Course on Crop Disease and Pest Control for Developing Countries 2007". The expectation was to broaden and develop the selected individual capabilities in improved agriculture production techniques for additional job performance that involves technology transfer. The participant is expected after the completion of the training to impart new knowledge and skills leading to behavioural and attitude change by farmers so that they are better equipped to perform their roles that will – in the long term - be proactive to the demands of a dynamic market requirements.

The training course was coordinated by the China International Centre for Agricultural Training (CICAT) and held at the South China Agricultural University (SCAU),

Guangzhou, People's Republic of China from October 10th 2007 to 25th November 2007. The course attracted sixty-eight participants from thirty-nine countries.

Objectives

(a) The major objective of the training course was to expose the participants to agricultural progress, pest management strategies and control techniques used for the management of crop pests and diseases in China;
(b) Secondly, provide the trainees with the necessary tools to improve and promote agricultural development in their home country;
(c) Thirdly, exposure to agricultural pest and disease management strategies and control techniques used in other participating countries;
(d) Fourthly, exposure to some new management and control techniques currently being researched and under evaluation in China specifically at South China Agricultural University; and
(e) Fifthly, exposure to the culture and lifestyle of the people of China.

Accommodation

The participants were accommodated at the Zhu Yuan Hotel located on the South China University Campus, 483 Wushan Street, Tianhe, Guangzhou.

Activities

(1) Training Methods and Techniques

The teaching techniques employed for the training of the participants were theoretical lectures and presentations, group discussions, symposiums, laboratory work and field practice as well as educational and recreational tours.

The participants were exposed to training that encompassed the following subject area:
(i) Rice insect and diseases and their ecological control;
(ii) Vegetable insect and diseases and their ecological control;
(iii) Pathogenic nematodes and their identification and control;
(iv) Pathogenic viruses and their detection and control;
(v) Pathogenic bacteria, their detection and control;
(vi) Fruit insects and their ecological control;
(vii) Weed Science;
(viii) Ecology and control of locusts;
(ix) Chemical and Botanical pesticides;
(x) Pesticide residue analysis and inspection;
(xi) Experiments on chemical pesticides and rapid inspection techniques;
(xii) Microbial and bio pesticides and production techniques;

(xiii) Application of biotechnology to diagnosis and control of plant diseases; and
(xiv) Insect enemies and application to pest control.

(2) Field Visits

The participants had field visit to the following areas during the course:
(i) Xinhui – Cultivation base of organically grown rice;
(ii) Xinhui – Milling and Packaging facility for Organic rice;
(iii) Yangchun – Orchards for lichi, citrus and banana;
(iv) Shenzhen – Modern Agriculture Demonstration Farm;
(v) Shenzhen – Huanong Biological Engineering Company Limited;
(vi) Shenzhen – Noposion Chemical Company;
(vii) Zhuhai - Zhuhai Agricultural Research Institute;
(viii) Zhuhai - Panyu Agricultural Research Institute;
(ix) Guangzhou - Guangdong Entomological Institute; and
(x) Guangzhou - Guangdong Plant Quarantine Centre.

(3) Tours

The participants had educational and recreational tour of the following areas and events:
(a) Pearl River,
(b) 102nd Canton Fair,
(c) Hong Kong,
(d) Guangzhou Honda Car Assembling Plant,
(e) City tour of Guangzhou;
(f) Splendid China – Shenzhen;
(g) Jing Hua Yuan Park;
(h) Yuexiu Park;
(i) South China Agricultural University Campus; and
(j) Baomo Gardens.

(4) Chinese Culture

Lecture and presentation on Chinese culture and lifestyle, history, beliefs, visit to Chinese family, participating in Chinese sports activities such as badminton, table tennis Ping Pong, tug of war, football, volley ball and other activities such as:
(i) Theatrical Performance of "Journey to the West";
(ii) Other plays; and
(iii) Personal Interaction with Chinese students and other persons.

Areas of Interest

NOTE: The participant area of work is in the management of pesticides and toxic chemicals and whilst he is aware of most of the agricultural research development in Guyana in the last three years, he is not totally aware of unsuccessful research areas relative to Guyana agriculture before this time. The possibility exists that some areas proposed may have already been researched and the participant is not aware of it, or, the findings of these investigations. Against the aforementioned background this section of the report is written and is based only on the participant's awareness, knowledge and experience.

The lectures and presentations were mainly based on the ecological control methods or Integrated Pest Management techniques successfully utilised in China. Presentations were also made of new and developing research techniques in South China Agricultural University. Arising out of these lectures and presentations from the participating countries, the participant believes that Guyana's agriculture stands to benefit by thoroughly investigating and researching the following technological areas, and where applicable, introduction into our agriculture production systems. The proposed areas are as follows:

(a) ***Diadegma semiclusum*** – can be used to control diamond back moth in cabbage. The presentation showed that there could be approximately 80% control of this pest using biological control with this agent;

(b) ***Trichogramma confusum*** – can be used to control some pests in Guyana. Research work need to be carried out to determine the pests applicable to Guyana and whether the insect can survive under local condition. China has the technique to produce the eggs required to rear the pest in the laboratory. This could also be used against the diamond back moth in cabbage.

(c) Padi bugs – control of the rice bug in Thailand and other countries have been successful using the fungus ***Metarhizium anisopiae*** excellent effects. Further work needs to be carried out to determine if the strain of the fungus used is different from the one experimented in Guyana.

(d) Need to make Integrated Pest Management, Integrated Crop Management and Good Agricultural Practices a part of all research and control of pest. This guiding principle should be should be set by the Minister of Agriculture and incorporated in all research in Guyana for agricultural purposes.

(e) Field scale experimentation should be carried out using yellow light to determine control of some pest in vegetables especially in areas where the houses are located on the farms and where possible solar energy cost effectiveness can be determined for application.

(f) Control of *Ecchornia crassipes* (water hyacinth) by some varieties of fungus and insects could be helpful in the control of the water flow in the irrigation system. The weevil *Neochetina eichhorniae* (Warren), *N. bruchi* (Hustoche) and the moth *Sameodes albugitalis* (Warren) have been successfully used to restrain the spread of the weed in Sudan. The moth was introduced into that country

and the climate and conditions are similar to Guyana's. The report from that country stated that "*N. brushi* inflict reduction in leaf numbers and offset production, *N. eichhorniae* reduced the doubling time for the weed and offset production and no weeds have been reported south of that country." This will be of great importance in Guyana especially in the irrigation canal and rivers that are sometimes blocked and pose a hazard to flooding. Some fungus was also determined as natural enemies, namely: ***Acremonium zonatum; Alternaria eichhorniae; Cercospora piaropi;*** and ***Helminthosporium bicolour.***

(g) Some beneficial insects are available on a commercial scale from Austrailia www.bugsforbugs.com.au . Possibility exists for initial investigation of biocontrol agents for some pests in Guyana in the laboratory to determine control against some similar pests as presented.

(h) Relook at technologies and their effect and applicability or acceptability in Guyana;

(i) Use of Gas and Liquid Chromatographs and its importance in pesticide analysis. This understanding was important since Guyana is now establishing a pesticide laboratory.

(j) Rapid Detection techniques for organophosphates and carbamates will need to determine same and applicability in Guyana especially for exported fruit and vegetables.

(k) Understanding the development and synthesis of *Bacillus thuringiensis* (Bt); need to look at the strains of Bt and possible resistance, 6 strains produced in China cyt1, p21zb, etc. this will prove to be vital in the evaluation of registration documents for bio pesticides.

Comments & Suggestions

(a) General Training Course

Comments: Training is a complex activity and in any training and learning environments, trainee motivation is essential for receptivity and learning which was well executed by the coordinating committee. The Course was well planned and organised with all the lecturers punctual and timely in their delivery and presentations. The organiser provided clear daily instructions and timely message updates to the participants related to the training schedule and other activities.

Suggestions: There are no suggestions since the organisers were able to provide all the requirements required for the training course.

(b) Lectures and Presentation

Comments: All of the lectures were informative and well presented and the lecturers were timely in their delivery. However, some lecturers were experiencing some difficulties in understanding questions from the participants which could have been two fold – most of the participants delivery of English were not of the best and the lecturers had difficulty in understanding or the lecturers had difficulty in expressing themselves in English. It is also accepted that there will be always be some difficulty for any lecturer delivering a two hour lecture in another language once per year and then spending the rest of the year lecturing in Chinese. Within the aforesaid it may be portrayed that the comment is unfair, however, it must be taken as "unfair but necessary."

Suggestions: In light of the above arguments, no suggestion can be made.

(c) Laboratory Sessions

Comments: **(i)** The laboratory sessions were well organised and applicable to the training, however, in my opinion due to the splitting of the participants into two groups, the laboratory session were too short since the time had to be split in two as well. This allocation of time did not allow the participants to interact well and being able to totally achieve the objectives and purpose of the laboratory sessions.

(ii) Some of the laboratory session requires a least two to three weeks to arrive at a result, so the participants were unable to determine the importance of the laboratory preparation eg biocontrol of citrus red mites and weed science.

Suggestions: **(i)** The laboratory sessions should be allocated that each group will have a different laboratory sessions at the same time and interchange the following day. This will allow the participants to maximise their understanding of the sessions.

(ii) The courses that require long term determination should be done in the first week and there should be a second laboratory session to see the result and interpret what it means to agriculture practices.

(d) Field Visits:

Comments: These were well organised and essential to the lectures presented.

Suggestions: No suggestions.

(e) Educational & Recreational Tours

Comments: These were well organised and essential to the lectures, while the recreational tours were well received and offered a good understanding of china and its development as well as tourist offerings.

Suggestions: No suggestions

(f) Chinese Culture:

Comments: An excellent exposure to Chinese culture and the participant was better able to appreciate the way of life of the Chinese people. There was lacking of presentation of simple day-to-day Chinese language. The training course manual presented a couple of sentences but the pronunciation is not the same and the participants should have an understanding of this. It must be accepted that one of the unique part of Chinese culture is the language

Suggestions: I would suggest that there should some exposure to the intricacies of the language so that participants will understand better Chinese culture since the language is part of the culture.

(g) Others – Accommodation and Meals

Comments: Accommodation and meals were excellent. However, there was not enough local cuisine available. What must be accepted is that you can't be in China and eating another country's cuisine.

Suggestions: Participants should be exposed to more local cuisine. This I feel would aid in understanding Chinese culture as well.

Future Plans

The areas considered important by the participant will be presented to the various departments of the Ministry of Agriculture for their action and possible inclusion in their work programs. Follow up will be done in the short (2 years), medium (5 years) and long term (10 years) to make a determination on the achievement derived from this training. Where possible, the participant will try to work along with some department to achieve a pronouncement on the important areas identified.

Conclusion

In conclusion, the course has achieved all of its stated objectives, while the participant exposure to the management techniques in crop management in China and the other participating countries will play a key role for Guyana in the face of increasing demands for adequate and safe food in an ever expanding market especially in the context of sustainable agriculture and plant protection.

Also, the promotion of Integrated Pest Management (IPM) and Good Agricultural Practice (GAP) along with the use of new and improved technologies will be an important component in increased and sustainable agricultural production in Guyana. This will also maintain environment safety and provide economic feasibility as well as deriving greater efficiency from procured inputs such as pesticides and fertilisers.

APPENDIX XVI
St. Lucia Report

Report Title:

Sound Management of Chemicals in the Caribbean
Bay Gardens Hotel, St. Lucia, October 29-31, 2007

Participants in attendance were from a number of Countries Regional Institution as well as National Institutions (see Appendix).

Objectives of the Training Course

a) To achieve consensus on priorities pertaining to the stockpile of Persistent Toxic Substances
b) To promote information sharing and exchange of best practice in chemicals management
c) To provide framework for development of a regional strategy for the safe disposal of Persistent Toxic Chemicals
d) To contribute towards a draft regional policy on chemical stockpiling, and on the management and transboundary movement of PTS and other hazardous wastes

Technical Sessions were presented on the Regional, Legal and Institutional Framework for the Management of Obsolete Pesticides Stockpiles, The Prevention and Disposal of Obsolete Pesticides and The Roles and Requirements of The Rotterdam & Stockholm Conventions.

Arising from the various technical and working group sessions was the development of **National and Regional Priorities** for the Sound Management of Chemicals in the Caribbean. These are as follows:

National Priorities

1. Inventory of Obsolete Stockpiles
2. Inventory of sites contaminated by PTS
3. Harmonization of Legislation and Agencies
4. Preventing Mercury Contamination
5. Public Awareness
6. Creation of National Implementation Plans

Regional Priorities

1. Inventories of PTS & PCB'S
2. Registration and licensing procedures
3. Capacity Building
4. Information Exchange
5. Identifying proper Storage & Disposal facilities
6. Implementation of NIP's

Importance and Applicability to Guyana

1. Inventory of Obsolete Stockpile and Pesticide Contaminated Sites

- FAO has indicated there interest and assistance in executing an Inventory for Obsolete Pesticide Stockpiles in Guyana, which can be facilitated by the FAO TCP Facility in Trinidad.

2. Development and Implementation of Methods for Preventing Mercury Contamination

- The Use of Mercury in mining was highlighted because of the Environmental Contamination risk related with its use.

3. Identification and Development of a Proper Storage Facility

- A Proper Storage facility is needed for seized pesticides.

4. Development & Implementation of NIP's

- In accordance with the Stockholm Convention, to which Guyana has not yet acceded to, countries must develop and endeavour to implement a plan for the implementation of its obligations under the Convention. Financing for eligible countries to develop these plans is available through the Global Environment Facility.