



Haffkine Institute

**ANNUAL
REPORT**

2004-2005

2005-2006

2006-2007

2007-2008

2008-2009



ANNUAL REPORT

OF THE

HAFFKINE INSTITUTE

FOR THE YEAR

2004-2005

2005-2006

2006-2007

2007-2008

2008-2009



CONTENTS

Administration:	Page
Governing Council	3-8
Academic Council.....	9
Advisory Council for Research	10
Executive Committee	11
Staff of the Haffkine Institute	12-13
 Introduction:	 14-16
Zoonoses.....	17-21
Bacteriology.....	22-28
Chemotherapy	29-36
Testing	37-39
Virology	40-47
Clinical Pathology	48-52
Biochemistry	53-55
Library	55-60
 Appendix:	
I Teaching faculty & Post-graduate Courses	61
II Students Registered	62
III Degree Awarded during the year	63

HAFFKINE INSTITUTE FOR TRAINING, RESEARCH AND TESTING

GOVERNING COUNCIL : 2004-2005 PRESIDENT

Shri Dilip Valse Patil

Hon. Minister for Medical Education,
Government of Maharashtra,
Mantralaya, Mumbai-32

Vice President

Shri Suresh Shetty

Hon. Minister for State for Medical Education,
Mantralaya, Mumbai-32.

Member – Secretary

Dr. S.M.Sapatnekar

Director, Haffkine Institute, Parel, Mumbai-12

Members :

Shri G. S. Gill

Principal Secretary to Government of Maharashtra, Medical Education
And Drugs Department, Mantralaya, Mumbai-32.

Dr. R L Malhotra

Director –General of Health Services, Government of India
Nirman Bhavan, New Delhi-11

Shri A Ramakrishnan

Commissioner, Food and Drugs Administration, Maharashtra State,
Griha Nirman Bhavan, Bandra (E), Mumbai-51.

Dr. R K Shrivastav

Director General—Directorate of Health and Family Welfare,
Govt. of India, Nariman Bhavan, New Delhi

Dr. W.B. Tayade

Director of Medical Education and Research, Govt. of Maharashtra,
St. Georges Hospital Compound, Mumbai-1

Dr. Vijay Khole

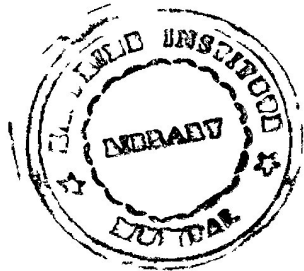
Invitee Vice Chancellor, University of Mumbai, Mumbai-32.

Dr. Subhash Salunke

Invitee Director of Health Services, Govt. of Maharashtra,
St. Georges Hospital Compound, Mumbai-1

Dr. Nirmalkumar Ganguly

Invitee Director General, Indian Council of Medical Research,
New Delhi



HAFFKINE INSTITUTE FOR TRAINING, RESEARCH AND TESTING

GOVERNING COUNCIL : 2005-2006

PRESIDENT

Shri Dilip Valse Patil

Hon. Minister for Medical Education and Drugs,
Government of Maharashtra,
Mantralaya, Mumbai-32

Vice President

Shri Suresh Shetty

Hon. Minister for State for Medical Education and Drugs,
Mantralaya, Mumbai-32.

Member –Secretary

Dr. (Smt.) R.A.Deshmukh

Director, Haffkine Institute, Parel, Mumbai-12

Members :

Shri G. S. Gill

Principal Secretary to Government of Maharashtra, Medical Education
And Drugs Department, Mantralaya, Mumbai-32.

Shri A. Ramakrishnan

Commissioner, Food and Drugs Administration, Maharashtra State,
Griha Nirman Bhavan, Bandra (E), Mumbai-51.

Dr. W. B. Tayade

Director of Medical Education and Research, Govt. of Maharashtra,
St. Georges Hospital Compound, Mumbai-1

Dr. S.P. Aggarwal

Director General–Directorate of Health and Family Welfare,
Govt. of India, Nariman Bhavan, New Delhi

HAFFKINE INSTITUTE FOR TRAINING, RESEARCH AND TESTING

GOVERNING COUNCIL : 2006-2007

PRESIDENT

Shri Dilip Valse Patil

Hon. Minister for Medical Education and Drugs,
Government of Maharashtra,
Mantralaya, Mumbai-32

Vice President

Shri Suresh Shetty

Hon. Minister for State for Medical Education and Drugs,
Mantralaya, Mumbai-32.

Member –Secretary

Dr. (Smt.) R.A.Deshmukh

Director, Haffkine Institute, Parel, Mumbai-12

Members :

Shri A.M.Khan

Principal Secretary to Government of Maharashtra, Medical Education
And Drugs Department, Mantralaya, Mumbai-32.

Shri M. Rameshkumar

Commissioner, Food and Drugs Administration, Maharashtra State,
Griha Nirman Bhavan, Bandra (E), Mumbai-51.

Dr. W.B. Tayade

Director of Medical Education and Research, Govt. of Maharashtra,
St. Georges Hospital Compound, Mumbai-1

Dr. R.K.Shrivastav

Director General–Directorate of Health and Family Welfare,
Govt. of India, Nariman Bhavan, New Delhi

HAFFKINE INSTITUTE FOR TRAINING, RESEARCH AND TESTING

GOVERNING COUNCIL : 2007-2008 PRESIDENT

Shri Dilip Valse Patil

Hon. Minister for Medical Education and Drugs,
Government of Maharashtra,
Mantralaya, Mumbai-32

Vice President

Shri Suresh Shetty

Hon. Minister for State for Medical Education and Drugs,
Mantralaya, Mumbai-32.

Member – Secretary

Dr. (Smt.) R.A.Deshmukh

Director, Haffkine Institute, Parel, Mumbai-12

Members :

Shri A.M.Khan/Amitabh Chandra

Principal Secretary to Government of Maharashtra, Medical Education
And Drugs Department, Mantralaya, Mumbai-32.

Shri. Dhanraj Khamatkar

Commissioner, Food and Drugs Administration, Maharashtra State,
Griha Nirman Bhavan, Bandra (E), Mumbai-51.

Dr. W.B. Tayade

Director of Medical Education and Research, Govt. of Maharashtra,
St. Georges Hospital Compound, Mumbai-1

Dr. R.K.Shrivastav

Director General–Directorate of Health and Family Welfare,
Govt. of India, Nariman Bhavan, New Delhi

HAFFKINE INSTITUTE FOR TRAINING, RESEARCH AND TESTING

GOVERNING COUNCIL : 2008 - 2009

PRESIDENT

Shri Rajesh A. Tope

Hon. Minister for Medical Education and Drugs,
Government of Maharashtra,
Mantralaya, Mumbai-32

Vice President

Shri Suresh Shetty

Hon. Minister for State for Medical Education and Drugs,
Mantralaya, Mumbai-32.

Member –Secretary

Dr. Abhay Chowdhary

Director, Haffkine Institute, Parel, Mumbai-12

Members :

Shri Bhushan Gagarani

Principal Secretary to Government of Maharashtra, Medical Education
And Drugs Department, Mantralaya, Mumbai-32.

Shri Dhanraj Khamatkar

Commissioner, Food and Drugs Administration, Maharashtra State,
Griha Nirman Bhavan, Bandra (E), Mumbai-51.

Dr. W.B. Tayde

Director of Medical Education and Research, Govt. of Maharashtra,
St. Georges Hospital Compound, Mumbai-1

Dr. R K Shrivastav

Director General–Directorate of Health and Family Welfare,
Govt. of India, Nariman Bhavan, New Delhi

ACADEMIC COUNCIL

- | | | |
|-----|---|----------|
| 1) | Dr. (Mrs.) Mrudula A. Phadke
Vice Chancellor, Maharashtra University of Health Sciences
Mhasrul, Dindori Road, NASHIK – 422 004 | Chairman |
| 2) | Dr. W. B. Tayade
Director, Medical Education and Research
Govt Dental College Building, 4th Floor,
St George Hospital Campus, Mumbai – 400 001 | Member |
| 3) | Dr. Sanjay Oak
Director, (Medical Education & Major Hospitals)
MCGM Seth G S Medical College & K E M Hospital,
Parel, Mumbai – 400 012. | Member |
| 4) | Dr. R. S. Inamdar
Dean, Grant Medical College & Sir J J. Group of Hospitals
Byculla, Mumbai – 400 008 | Member |
| 5) | Dr. Nilima A. Kshirsagar
Director, Professor of Infectious Diseases
Department of Infectious Diseases Maharashtra University
of Health Sciences, Mumbai Regional Office Govt Dental
College Building 4th Floor, St George's Hospital Compound
Mumbai – 400 001. | Member |
| 6) | Dr. V. A. Tabhane
Director,
Institute of Science
15, Madam Cama Road, Fort, Mumbai – 400 032 | Member |
| 7) | Dr. G. D. Yadav
Director,
Institute of Chemical Technology
Nathalal Parikh Marg, Maheshwari Udyan
Matunga (E) - Mumbai – 400 019 | Member |
| 8) | Dr. Abhay Chowdhary
Director,
Haffkine Institute For raining, Research & Testing
Acharya Donde Marg, Parel, Mumbai – 400 012 | Member |
| 9) | Dr. Ajita Mehta
Visiting Scientist, HITRT
24, Silver Sands, Juhu Tara Road,
Santacruz (W), Mumbai – 400 049 | Member |
| 10) | Dr. S. V. Athlekar
Sr Scientific Officer, CI-I
In-Charge, Training Section
Haffkine Institute for Training, Research & Testing
Acharya Donde Marg, Parel, Mumbai – 400 012 | Convener |

ADVISORY COUNCIL FOR RESEARCH

- | | | |
|-----|--|----------|
| 1) | Dr. R. D. Lele
Deptt of Nuclear Medicine Jaslok Hospital & Research Centre
15, Dr Deshmukh Marg Mumbai – 400 026. | Chairman |
| 2) | Dr. (Mrs.) Mrudula A. Phadke
Vice Chancellor,
Maharashtra University of Health Sciences
Mhasrul, Dindori Road, NASHIK – 422 004. | Member |
| 3) | Dr. D. S. Dakhure
Director of Health Services Aarogya Bhavan,
St George's Hospital Campus, MUMBAI – 400 001. | Member |
| 4) | Dr. W. B. Tayade
Director, Medical Education and Research
Govt Dental College Building, 4th Floor,
St. George's Hospital Campus, Mumbai – 400 001. | Member |
| 5) | Vaidya Kuldeep Raj Kohli
Director of Ayurveda,
Govt Dental College Building, 4th Floor
St. George's Hospital Campus, Mumbai – 400 001. | Member |
| 6) | Dr. Rajiv Sarin
Director, Advanced Centre for Treatment,
Research Education in Cancer (ACTREC) Sector-22,
Near Owe Village, Kharghar - Navi Mumbai - 410 210. | Member |
| 7) | Dr. Nilima A. Kshirsagar
Member, Director, Professor of Infectious Diseases
Department of Infectious Diseases Maharashtra University of
Health Sciences, Mumbai Regional Office, Govt Dental College Building
4th Floor, St. George's Hospital Compound, Mumbai – 400 001 | |
| 8) | Dr. H. S. Palep
Dr. Palep's Medical Education & Research Trust
19, Mahalaxmi Indl. Estate, 1st Floor, Gandhi Nagar, D C Road,
Lower Parel (W), MUMBAI – 400 013 | Member |
| 9) | Dr. Abhay Chowdhary
Director, Haffkine Institute For Training, Research & Testing
Acharya Donde Marg, Parel, Mumbai – 400 012 | Member |
| 10) | Shri L. S. Patil
Assistant Director, Chemical Testing Laboratory
Haffkine Institute for Training, Research & Testing
Acharya Donde Marg, Parel, Mumbai – 400 012 | Convener |

EXECUTIVE COMMITTEE

- | | | | |
|-----|---|-------------|------------------|
| 1. | Dr. Abhay Chowdhary
Director, Haffkine Institute | (2008-2009) | Chairman |
| 2. | Dr.(Smt.) C. H. Pandit
Senior Scientific Officer-Class I
Clinical Pathology Dept. | (2003-2004) | Member |
| 3. | Dr. S.B. Dholam
Senior Scientific Officer-Class I
Chemical Testing Dept. | (2004-2005) | Member |
| 4. | Dr.(Smt.) R. A. Deshmukh
Senior Scientific Officer-Class I
Dept. of Virology | (2004-2008) | Member |
| 5. | Dr. S. S. Mahajani
Senior Scientific Officer-Class I
Dept. of Pharmacology | (2005-2006) | Member |
| 6. | Shri. L. S. Patil
Assistant Director
Dept. of Chemical Testing | | Member |
| 7. | Dr. S. P. Gajbhiye
Senior Scientific Officer-Class I
Dept. of Bacteriology | | Member |
| 8. | Smt. P. V. Ansulkar
Senior Scientific Officer-Class I
Dept. of Biochemistry | | Member |
| 9. | President, Shramik Utkersha Sabha
Haffkine Unit / Representative | | Member |
| 10. | Chief Administrative Officer | | Member secretary |

STAFF OF THE HAFFKINE INSTITUTE

ADMINISTRATION

Director :

Dr. Abhay S. Chowdhary, M.D., DHA, DM Virology, FIMSA.

Chief Administrative Officer :

Shri. L. S. Patil, M.Sc., D.M.L.T., D.B.M.

Accounts Officer :

Shri. G. R. Tamagadge

BACTERIOLOGY

Senior Scientific Officer, Class I :

Shri S.P. Gajbhiye, M.Sc.

BIOCHEMISTRY

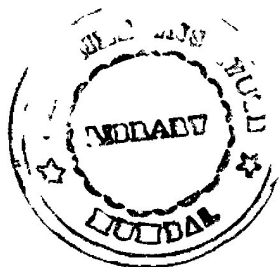
Senior Scientific Officer, Class I :

Smt. P. V. Ansulkar, M.Sc.

CLINICAL PATHOLOGY

Scientific Officer, Class II :

Dr. S. V. Athlekar, M.Sc., Ph.D.



CHEMICAL TESTING UNIT

Assistant Director :

Shri. L. S. Patil, M.Sc., D.M.L.T., D.B.M.

Scientific Officer, Class II :

Dr. A. S. Bobade, M.Sc., Ph.D.

Scientific Officer, Class II :

Smt. S. L. Patil, B.Sc.

TOXICOLOGY

Scientific Officer Class II :

Shri. A. G. Mitra, B.Sc. MSc, DBM.

TRAINING

Officer In-charge :

Dr. S. V. Athlekar, M.Sc., Ph.D.

ZOONOSIS

Scientific Officer Class II :

Shri. K. R. Pawar, M.Sc.

Scientific Officer Class II :

Dr. M.L. Ramaiyya, M.Sc., Ph.D.

CHAPTER 1

INTRODUCTION

Haffkine Institute, one of the premier institutes of our country has provided training and research facilities to graduate and post-graduate students of various colleges for last several years. This was the very institute where first ever clinical trial of plague vaccine was conducted by the founder of this institute by injecting himself with the plague vaccine. The institute has research laboratories which comprise:

Chemotherapy, Pharmacology, Toxicology and Human Pharmacology, Immunology, Bioavailability, Virology, Clinical Pathology, Biochemistry and Zoonoses. Haffkine institute has been selected to be part of the **Avian Influenza Laboratory Network by NICD**- a project to be funded by World Bank. Following are the services currently offered by the Institute.

Zoonosis:

The department of zoonosis continued their screening programme for screening insecticidal agents. Maintenance of colonies of insects of public health and strains of parasites in experimental animals was continued. Venomous snakes were maintained at the venomous animal unit of the department. In all 5.92 g. of venom was supplied. During the period of three years, 8,320 visitors visited the department.

Department of Bacteriology:

This department has been carrying out the Bacteriological examination of water samples from various sources, testing of various types of water purifiers, *in vitro* anti-microbial testing of disinfectants and anti-microbial agents and lyophilisation of bacterial cultures etc. The department also imparts training on Bacteriological examination of water samples to the persons from various government organizations.

Department of Chemotherapy:

The main activity of the department has been to admit graduate and post-graduate students for M.Sc. and Ph.D. programme. Currently 6 students

have been registered for M.Sc. (By Research), in organic chemistry. The department has also started short term training programme to graduates and post-graduates.

TESTING:

Testing unit is actively involved in distillation of HPLC grade solvents, standardization of denaturants on GLC and estimation of harmful ingredients in CL III samples.

VIROLOGY:

The Department of Virology is primarily engaged in the research of viruses like HIV, Influenza and the Rabies Virus. The Department is also one of the WHO surveillance centers for influenza viruses. The department is also a part of an ICMR-WHO National Influenza Surveillance Project for Human Influenza. A separate BSL-3 facility is to be set up with the Department of Virology under the NICD-World Bank-MoHSW project for pandemic-preparedness for Avian Influenza. It is a National reference centre for rabies and NICD/WHO centre for viral Hepatitis for Maharashtra and Goa. The Department is also recognised by the State and the Central FDA for Pharmacovigilance studies in humans and animals.

The Department is affiliated to the University of Mumbai for MSc and PhD degrees, and currently has 7 PhD students and 1 MSc student carrying out research. The Department also undertakes several training programs at an undergraduate and post-graduate student level. These include the Annual Biotechnology Training Program and the Annual Course in Medical Virology (Viro Vitals). Apart from these, training is also imparted in specific virological techniques like *in vivo*, *in ovo* and *in vitro* cultivation of viruses, Polymerase Chain Reaction, Animal Tissue Culture and Anti-viral assays.

The department of Virology has numerous state-of-the-art equipment for conducting research in the fields of Virology and Molecular Biology. The laboratories of the department house instruments such as Thermal Cyclers, Real Time PCR, Ultra Pure Water Purification system, -20° and -80°C Freezers, FACSCount and Guava EasyCD4 systems for CD4/CD8 testing, Inverted Microscopes, Refrigerated Centrifuges, Microplate

Readers etc. The department is also involved in various testing activities for commercial and academic purposes. These include diagnosis of viral infections by ELISA and PCR, *in vitro* and *in vivo* cytotoxicity testing and assaying potential anti-viral agents.

Department of Clinical Pathology:

The main activity of this department is diagnostic bacteriology, serology, histopathology and hematology. The department receives clinical samples from E.S.I.S. hospitals, govt. hospitals and public health dispensaries. Anti-microbial testing of commercial synthetic compounds is also done in the department. Two students were registered for M.Sc. (By Research), in Microbiology. Research projects on anti-malarial and anti-filarial activity by plant extracts were undertaken in the dept. of clinical pathology. The department participates in short term training programme in biotechnology conducted by the institute.

Training Programme:

The institute has offered short term training programme in Biotechnology to the students of various colleges. Short term research projects were also given to the students of biotechnology in the department of virology. A list of recognized teachers at the institute is given in Appendix I. A list of students registered for M.Sc. and Ph.D. degrees and those who successfully completed their thesis and obtained their degrees is given in Appendix II-A & II-B and Appendix III-A & III-B respectively.

Haffkine institute has introduced a course in Basic Clinical Research Management & Regulatory Affairs from Jan 2009 onwards. First batch of 17 students is already undergoing training for the course. The second batch will commence from June 2009. The institute will also launch Specialized & Advanced Clinical Research course in due course of time.

ADMINISTRATIVE BODIES:

The Governing Council presided over by the Honorable Minister for Public Health, Govt. of Maharashtra, met twice during the year. Apart from this Executive Council met several times to provide smooth functioning of the institute.

Department of Zoonosis

Annual Report : 2004-2005

Training Activities:

Training was provided to students on Larvicidal testing.

Testing Activities:

Sr. No.	Nature of sample tested And the test performed.	Total no. of sample tested	Testing charges earned (Rs)
1	Commercial Insectide Testing	23	4,04,336
2	Supply of Venoms	2gm.	20,000
3	Number of visitors visited to snake farm	3081	6,162

Total Income from testing and Sponsored Research Activities:

A total income of Rs.4, 30,498/- was earned by the department during the period of 1St. April 2004 to 31St. March 2005.

Year : 2005-2006

Training Activities:

Training was provided to students on larvicidal testing.

Research Activities:

Dr. Saroj Bapna presented a paper on "Anti-Malarial activity of Eclipta alba against Plasmodium berghei infection in mice" in National Symposium on Recent Trends in Malarial Studies, January 2006, Pune.

Testing Activities:

Sr. No.	Nature of the sample tested and the test performed	Total no. of samples tested	Testing charges earned Rs.
1	Commercial Insecticide Testing	12	1,77,972
2	Supply of Venoms	3.1gm	22,600
3	Number of visitors visited to snake farm	2476	24,760

Total Income from testing and Sponsored Research Activities:

A total income of Rs. 2, 25,332/- was earned by the department during the period of 1St April 2005 to 31St March 2006.

Year : 2006-2007**Training Activities:**

Training was provided to students on larvicidal testing, Anti malarial testing and Real Time PCR.

Sponsored Research Studies:

Research project entitled "In –vivo and *In-vitro* testing of plants extracts/ pure compounds against malarial parasites" funded by DRDE, Gwalier.

Research papers published in Scientific Journals:

1. **A rare case of human nasal myiasis due to *oestrus ovis* larvae.**
Saroj Bapana, Sweta Kothari, S. Raju, H.Y.Palampalle,
V.S. Deshpande, L.S. Patil and Ranjana A. Deshmukh.
Journal of Parasitic Diseases, Vol.30, 2, Dec. 2006.

2. **Antimalarial activity of eclipta alba against plasmodium berghei infection in mice.**

Saroj Bapana, Shashank Adsule, S.Jadhav, Mahendra Shirsath, L.S.Patil, R.A.Deshmukh.

Testing Activities:

Sr. No.	Nature of the sample tested And the test performed.	Total number of Sample tested.	Testing charges Earned. Rs.
1	Commercial Insecticide Testing	31	8,13,401
2	Leptospirosis Testing.	89	88,800
3	Supply of Venoms	0.82 gms.	8,920
4	No. of visitors to snake park	2763	27,630

Total income from testing and Sponsored Research Activities :

A total income of Rs. 9, 38,751/- was earned by the department during the period mentioned above.

Year : 2007-2008

Training Activities:

Training provided to students Real Time PCR.

Research Activities:

Post –Graduate Students' Research projects: Nil

Sponsored Research studies:

Research project entitled "*In-vivo* and *In-vitro* testing of plant extracts/ pure compounds against malarial parasites" funded by DRDE, Gwalior.

Papers presented at Seminars, Conferences & Symposia: Nil

Research papers published in Scientific Journals:

Antimalarial activity of *eclipta alba* against *plasmodium berghei* infection in mice.

Sent for publication in International Journal of Pharmacology and Biological Sciences.

Saroj Bapna., L.S. Patil., R.A. Deshmukh.

(Abstract of this paper published in National symposium on recent trends in Malaria

Organization of Scientific Seminars/Symposia/Conferences: Nil

Testing Activities:

The department is undertaking testing of various commercial formulations of insecticides for its Bio-efficacy study against mosquitoes, cockroaches, houseflies and other house hold pests under Laboratory conditions.

Testing Activities : (1st April 2007 to 31st March 2008)

Sr. No.	Name of the sample tested and the Test performed	Total Number of sample tested	Testing Charges Earned Rs.
1.	Commercial Insecticide Testing	31	8,13,401/-
2.	Leptospirosis testing	89	nil

Leptospirosis testing:

Around 1050 blood samples have been tested for Leptospirosis by Real Time PCR and Elisa. For doing RT PCR and Elisa the Institute received Rs.14,40,000/- as special grants from Govt.of Maharastra.

Total Income from Testing Activities : A total income of Rs.8,99,053/- was earned by the department during the period of 1st april 2007 to 31st march 2008.

Year : 2008-2009**Training Activities:**

- 1) Training provided to students Real Time PCR.
- 2) Dr.M.L.Ramaiya ,Scientific officer,attended Apex Level Training on Rodent Control under National Programme on Rodent Pest Management. At Hydrabad. (AP) on25th to 27th Feb. 2009.

- 3) Dr. M.L. Ramaiya, Scientific officer, attended a workshop on "Malaria & other vector borne diseases" conducted by Municipal Corporation Of Greater Mumbai on 14th to 16th Jan.2009.
- 4) Dr. S.Bapana, Research associate, attended a workshop on "Malaria & other vector borne diseases" conducted by Municipal Corporation Of Greater Mumbai on 14th to 16th Jan.2009.

Research Activities:

Post –Graduate Students' Research projects: Nil

Sponsored Research studies:

Research project entitled "*In-vivo* and *In-vitro* testing of plant extracts/ pure compounds against malarial parasites" funded by DRDE, Gwalior.

Papers presented at Seminars, Conferences & Symposia: Nil

Testing Activities:

The department is undertaking testing of various commercial formulations of insecticides for its Bio-efficacy study against mosquitoes, cockroaches, houseflies and other house hold pests under Laboratory conditions.

Testing Activities : (1st April 2008 to 31st March 2009)

Sr. No.	Name of the sample tested and the Test performed	Total Number of sample tested	Testing Charges Earned Rs.
1.	Commercial Insecticide Testing	15	12,96,392/-
2.	Leptospirosis testing	22	nil

Leptospirosis testing:

Around 96 blood samples have been tested for Leptospirosis by Real Time PCR and Elisa.

Total Income from Testing Activities:

A total income of Rs.10,37,356/-was earned by the department during the period of 1st april 2007 to 31st march 2008.

Department of Bacteriology

Introduction:

The Department have been engaged in the following research projects, testing and Training activities:-

1. Studies on multiple drug resistance in enterobacteriaceae.
2. Antibacterial activity of Amikacin–Cefotaxime combination against Ciprofloxacin resistant isolates.
3. This Department was conducting the genetic studies on R. plasmid mediated antibiotic resistance in *S.typhi*. They also undertook the studies on antibacterial activities of the extract of indigenous plant.

Testing:-

This Department have been carrying out the Bacteriological examination of water sample from various sources, Testing of various types of water purifiers, *In vitro* anti-microbial testing of various types of disinfectants and anti-microbial agents and lyophilization of bacterial cultures, etc.

Training:-

This Department also imparted training on Bacteriological examination of water samples to the personals from various Government organization.

DATA OF SPONSORED RESEARCH AND TESTING STUDIES

Annual Report : 2004-2005

Sr No	Nature of the Sample Tested And the Test Performed	Total Number of Samples Tested	Testing Charges Earned. Rs.
1	Water samples (Bacteriological examination of water sample)	84	82400/-
2	Culture supply (Maintenance, preservation and supply)	52	17100/-
3	Water purifiers of all types(Anti-bacterial efficacy and retention of bacteria by water purifiers)	21	45000/-
4.	Disinfectant (Anti-microbial efficacy testing of various disinfectant samples + H&R Jhonson Tiles Project	19 -	136849/- 120000/-
5	Miscellaneous (Lyophilization, water storage tank, microbiological examination of samples etc.	25	63000/-
	Total numbers of samples tested including number of cultures supply and total charges earned (in Rupees) during the year April 2004 to March 2005:	182	464349/-

Sr. No.	R & D PROJECTS:- TITLE	COST	FUNDING
1)	DEVELOPMENT AND EVALUATION OF 'ANTIMICROBIAL COATED TILES	Rs. 1,20,000/-	M/S. H & R JOHNSON (I) LTD., MUMBAI – 400 054.
2)	2) IN VITRO ANTI-BACTERIAL AND ANTI-FUNGAL EFFICACY TESTING OF 15 DIFFERENT DISINFECTANTS SOLUTION SAMPLES	Rs 2,34,000/-	M/S. CORAL
3)	3) ANTI-MICROBIAL EFFICACY EVALUATION OF CHLORINATED COMPOUND BASED DISINFECTANT TABLETS.	Rs. 38,000/-	CLINICAL SYSTEMS, MUMBAI – 400 059. M/S. T. M. THAKORE PHARMACEUTICALS LABORATORIES, MUMBAI – 400 060.

Imparted training on various aspects of microbiological techniques like microbiological assay of antibiotics in a given solution., Anti-bacterial and Anti-fungal testing methods of anti-microbial agents.

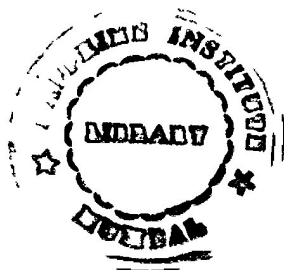
Year : 2005-2006

Sr. No.	Nature of the Sample Tested And the Test Performed	Total Number of Samples Tested	Testing Charges Earned. Rs.
1	Water samples (Bacteriological examination of water sample)	47	47700 /-
2	Culture supply (Maintenance, preservation and supply)	86	20200 /-
3	Water purifiers of all types(Anti-bacterial efficacy and retention of bacteria by water purifiers)	44	155269 /-
4.	Disinfectant (Anti-microbial efficacy testing of various disinfectant samples)	43	469000 /-
5	Miscellaneous (Lyophilization, water storage tank, microbiological examination of samples etc.	9	31900 /-
	Total numbers of samples tested including number of cultures supply and total charges earned (in Rupees) during the year April 2005 to March 2006:	229	724079 /-

Year : 2006-2007

Sr. No.	Nature of the Sample Tested And the Test Performed	Total Number of Samples Tested	Testing Charges Earned. (in Rs.)
1	Water samples (Bacteriological examination of water sample)	58	51700 /-
2	Culture supply (Maintenance, preservation and supply)	99	25150 /-
3	Water purifiers of all types(Anti-bacterial efficacy and retention of bacteria by water purifiers)	35	51000 /- Service Tax: Rs. 6001.4/-
4.	Disinfectant (Anti-microbial efficacy testing of various disinfectant samples)	27	165000 /- Service Tax: Rs. 19171/-
5	Miscellaneous (Lyophilization, water storage tank, Paint & microbiological examination of samples etc.	9	32400 /- Service Tax : Rs. 1469/-
	Total numbers of samples tested including number of cultures supply and total charges earned (in Rupees) during the year April 2006 to March 2007:	228	334250 /- Service Tax: Rs. 26641.4/-

Training: Trained two technicians from Bureau of Indian Standards, Mumbai, on "Bacteriological Examination of Water Samples", during May, 2006 to June,2006 (two weeks training).



Year : 2007-2008

Sr. No.	Nature of the Sample Tested And the Test Performed	Total Number of Samples Tested	Testing Charges Earned. (in Rs.)
1	Water samples (Bacteriological examination of water sample)	51	72000/-
2	Culture supply (Maintenance, preservation and supply)	99	52830/-
3	Water purifiers of all types(Anti-bacterial efficacy and retention of bacteria by water purifiers)	35	132000/-
4.	Disinfectant (Anti-microbial efficacy testing of various disinfectant samples)	27	188000/-
5	Miscellaneous (Lyophilization, water storage tank, Paint & microbiological examination of samples etc.	59	7750/-
	Total numbers of samples tested including number of cultures supply and total charges earned (in Rupees) during the year April 2007 to March 2008:	242	441750/- (Excluding service tax) -

Year : 2008-2009

Sr. No.	Nature of the Sample Tested And the Test Performed	Total Number of Samples Tested	Testing Charges Earned. (in Rs.)
1	Water samples (Bacteriological examination of water sample)	65	130000/-
2	Culture supply (Maintenance, preservation and supply)	95	57000/-
3	Water purifiers of all types(Anti-bacterial efficacy and retention of bacteria by water purifiers)	12	26500/-
4.	Disinfectant (Anti-microbial efficacy testing of various disinfectant samples)	07	132084/-
5	Miscellaneous (Lyophilization, water storage tank, Paint & microbiological examination of samples etc.	Nil	—
	Total numbers of samples tested including number of cultures supply and total charges earned (in Rupees) during the year - 2008 to 2009:	179	345584/- (Excluding service tax) -

DEPARTMENT OF CHEMOTHERAPY

Annual Report : 2004-2005

Research:

One paper is presented at **Indian Pharmaceutical Congress**, Pune in the month of December 2004.

Testing:

- 1] Department has installed **BR 9400 Spinning Band High Purity Solvent Recycling System**. During the period 2004-2005 department has taken samples from Cipla company for distillation of HPLC grade solvents and earned a revenue of Rs. 6750/-.
- 2] Standardization of percentage of Alcohol and detection of denaturants like methanol, acetone, crotonaldehyde, pyridine, benzene, diethyl amine, ethyl acetate, diethyl phthalate and ether is carried on **GLC [Gas-Liquid Chromatography]**. From the period of July 2005 to December 2005, **535 samples** were standardized on GLC.
- 3] From the period of July 2005 to December 2005, **275 CL III samples** have been estimated.

CL III includes testing of Country Liquor by analytical methods in which tests for harmful ingredients, total acidity, volatile acidity, esters and ethyl acetates, higher alcohols, aldehydes and test for furfurals were carried out.

Training:

In the year 2004-2005 department was having only one scientific person who was recently recognized by **Mumbai University** as a Research Guide.

Year : 2005-2006

Research:

In the year 2005-2006, 4 students have been admitted for M.Sc. [by Research].

The name of the student and the respective project are as follows:

Sr. No.	Name of the Project	Name of the Student
1.	Synthesis and anti-microbial activity of some unique 4-substituted amido-1,2-Dihydro-2-substituted phenyl-1,5-Dimethyl-3H-pyrazol-3-one.	Amita V. Mayekar
2.	5,6-Disubstituted Benzothiazoles and Benzimidazole sulfonamides/sulfonyl sulfides as possible therapeutic agents.	Rajeev R. Varma
3.	Synthesis & study of substituted pyrazoles & triazolo thiazoles as possible antimicrobial agents.	Ameya G. Yadav
4.	Synthesis and Study of Substituted Benzimidazoles as possible Therapeutic Agents	Yogesh S. Rane

Testing:

- 1] Standardization of percentage of Alcohol and detection of denaturants like methanol, acetone, crotonaldehyde, pyridine, benzene, diethyl amine, ethyl acetate, diethyl phthalate and ether is carried on **GLC [Gas-Liquid Chromatography]**. From the period of 1st January 2006 to 31st December 2006, **370 samples** were standardized on GLC.
- 2] From the period of 1st January 2006 to 31st December 2006, **3890 CL III samples** have been estimated.
CL III includes testing of Country Liquor by analytical methods in which tests for harmful ingredients, total acidity, volatile acidity, esters and ethyl acetates, higher alcohols, aldehydes and test for furfurals were carried out.

Training:

In the year 2005-2006, one more scientific officer was recently recognized by **Mumbai University** as a Research Guide for M.Sc.[by Research] in Organic Chemistry.

Year : 2006-2007

Research:

In the academic year 2006-2007 three new students were admitted for M.Sc. [by research] students in the department. The name of the student and the respective project are as follows:

Sr. No.	Name of the Project	Name of the Student
1.	Synthesis and Study of New Heterocyclic Organic Compounds as Possible Therapeutic Agents.	Yogesh P. Jadhav
2.	Synthesis & Study Of Substituted Benzothiazoles, Triazoles & Pyrazoles As Possible Anti-Microbial Agents.	Vrushali N. Patil
3.	Synthesis & Study Of Some Substituted Oxadiazoles, Triazoles & Thiazolidinones As Possible Anti-Microbial Agents.	Kushal H. Dawane

Testing:

- 1] Standardization of percentage of Alcohol and detection of denaturants like methanol, acetone, crotonaldehyde, pyridine, benzene, diethyl amine, ethyl acetate, diethyl phthalate and ether is carried on **GLC [Gas-Liquid Chromatography]**. From the period of 1st January 2007 to 31st May 2007, **135 samples** were standardized on GLC.
- 2] From the period of 1st January 2007 to 31st May 2007, **2479 CL III samples** have been estimated.

CL III includes testing of Country Liquor by analytical methods in which tests for harmful ingredients, total acidity, volatile acidity, esters and ethyl acetates, higher alcohols, aldehydes and test for furfurals were carried out.

Year : 2007-2008

Research:

In the year 2007-2008, 4 students have completed all their project work for M.Sc. [by Research] .The name of the student and the respective projects are as follows:

Sr. No.	Name of the Project	Name of the Student
1.	Synthesis and anti-microbial activity of some unique 4-substituted amido-1,2-Dihydro-2-substituted phenyl-1,5-Dimethyl-3H-pyrazol-3-one.	Amita V. Mayekar
2.	5,6-Disubstituted Benzothiazoles and Benzimidazole sulfonamides/sulfonyl sulfides as possible therapeutic agents.	Rajeev R. Varma
3.	Synthesis & study of substituted pyrazoles & triazolo thiazoles as possible antimicrobial agents.	Ameya G. Yadav
4.	Synthesis and Study of Substituted Benzimidazoles as possible Therapeutic Agents	Yogesh S. Rane

Three students have registered their name for M. Sc. (Organic Chemistry) in University of Mumbai. The name of the student and the respective projects are as follows:

Sr. No.	Name of the Project	Name of the Student
1.	Synthesis and Study of New Heterocyclic Organic Compounds as Possible Therapeutic Agents.	Yogesh P. Jadhav
2.	Synthesis & Study Of Substituted Benzothiazoles, Triazoles & Pyrazoles As Possible Anti-Microbial Agents.	Vrushali N. Patil
3.	Synthesis & Study Of Some Substituted Oxadiazoles, Triazoles & Thiazolidinones As Possible Anti-Microbial Agents.	Kushal H. Dawane

All the seven students have cleared their M. Sc. (By Research) examination in March 2008.

Testing:

- 1] Standardization of percentage of Alcohol and detection of denaturants like methanol, acetone, crotonaldehyde, pyridine, benzene, diethyl amine, ethyl acetate, diethyl phthalate and ether is carried on **GLC [Gas-Liquid Chromatography]**. From the period of 1st April 2007 to 31st March 2008, **350 samples** were standardized on GLC.
- 2] From the period of 1st April 2007 to 31st March 2008, **3500 CL III samples** have been estimated. CL III includes testing of Country Liquor by analytical methods in which tests for harmful ingredients, total acidity, volatile acidity, esters and ethyl acetates, higher alcohols, aldehydes and test for furfurals were carried out.

Year : 2008-2009

Research:

In the year 2008-2009, 4 students have submitted their synopsis in Dec. 2008 as M.Sc. [by Research] students. The name of the student and the respective projects are as follows:

Sr. No.	Name of the Project	Name of the Student
1.	Synthesis and anti-microbial activity of some unique 4-substituted amido-1,2-Dihydro-2-substituted phenyl-1,5-Dimethyl-3H-pyrazol-3-one.	Amita V. Mayekar
2.	5,6-Disubstituted Benzothiazoles and Benzimidazole sulfonamides/sulfonyl sulfides as possible therapeutic agents.	Rajeev R. Varma
3.	Synthesis & study of substituted pyrazoles & triazolo thiazoles as possible antimicrobial agents.	Ameya G. Yadav
4.	Synthesis and Study of Substituted Benzimidazoles as possible Therapeutic Agents	Yogesh S. Rane

In the year 2008-2009, three students have completed their project work for M.Sc. [by Research] .The name of the student and the respective projects are as follows:

Sr. No.	Name of the Project	Name of the Student
1.	Synthesis and Study of New Heterocyclic Organic Compounds as Possible Therapeutic Agents.	Yogesh P. Jadhav
2.	Synthesis & Study Of Substituted Benzothiazoles, Triazoles & Pyrazoles As Possible Anti-Microbial Agents.	Vrushali N.Patil
3.	Synthesis & Study Of Some Substituted Oxadiazoles, Triazoles & Thiazolidinones As Possible Anti-Microbial Agents.	Kushal H. Dawane

Testing:

- 1] Standardization of percentage of Alcohol and detection of denaturants like methanol, acetone, crotonaldehyde, pyridine, benzene, diethyl amine, ethyl acetate, diethyl phthalate and ether is carried on **GLC [Gas-Liquid Chromatography]**. From the period of 1st April 2008 to 31st March 2009, **320 samples** were standardized on GLC.
- 2] From the period of 1st April 2008 to 31st March 2009, **2780 CL III samples** have been estimated.

CL III includes testing of Country Liquor by analytical methods in which tests for harmful ingredients, total acidity, volatile acidity, esters and ethyl acetates, higher alcohols, aldehydes and test for furfurals were carried out.

Research Papers Sent for Publication In The Year (2008-2009).

- 1) Y.S.Rane, L.S.Patil, S.V.Athlekar, A.S.Chowdhary, A.S.Bobade.
"Synthesis and biological activity of 5-substituted and 5,6-disubstituted-2-(N,N-Dialkyl thiocarbamido) benzimidazoles".
Indian Drugs.
- 2) Y.S.Rane, L.S.Patil, S.V. Athlekar, A.S. Chowdhary, A.S. Bobade.
"Synthesis and biological activity of 5-substituted and 5,6-disubstituted-2-Phenoxymethyl benzimidazoles".
Indian Journal Of Heterocyclic Chemistry".
- 3) Ameya G. Yadav, A.S.Bobade, S.V.Athlekar, Abhay Chowdhary.
"Synthesis of 2,4-Disubstituted Thiazole Derivatives containing 1,2,4-Triazole Ring System As Anti-Microbial Agents".
Indian Journal Of Heterocyclic Chemistry".
- 4) Ameya G. Yadav, A.S.Bobade, S.V.Athlekar, Abhay Chowdhary.
"Synthesis and Anti-Microbial Activity Of Some Benzimidazolyl Pyrazolone Derivatives".
Indian Drugs.
- 5) R.R.Varma, S.V.Athlekar, L.S.Patil, A.S.Bobade, A.S.Chowdhary.
"Synthesis and biological activity of Some substituted Benzothiazoles."
Indian Journal Of Heterocyclic Chemistry".
- 6) A.V.Mayekar, S.V.Athlekar, L.S.Patil, A.S.Bobade, A.S. Chowdhary.
"Synthesis and Biological Activity Of Compounds Derived From Substituted 4-Amino Antipyrine And Substituted Benzaldehyde".
Indian Journal Of Heterocyclic Chemistry".

TESTING UNIT

Annual Report : 2004-2005

Nature of Sample	Number
I.M.F.L.	4,327
Toddy	3,677
Country Liquor CL-I	11,074 (Rs. 16,61,100)
Denaturants, O.D.S., S.D.S., French Polish etc.	3,973 (Rs. 11,91,900)
Country Liquor CL-III	3,877 (Rs.7,75,400)
Other Drugs and Samples.	59 (Rs. 40,200)
Total Samples	26,987
Testing Charges Received	Rs. 36,68,600

Year : 2005-2006

Nature	Number
I.M.F.L.and Beer	4,441
Toddy	4,251
Country Liquor CL-I	14,779(Rs. 22,16,900)
Denaturants, O.D.S., S.D.S., French Polish etc	3,934 (Rs.29,57,100)
Country Liquor CL-III	5,362 (Rs.10,72,400)
Other Drugs and Samples	11,342 (Rs.27,72,700)
Total Samples	34,109
Testing Charges Received	Rs.90,19,100/-

Table showing the nature and number of samples received from

Year : 2006-2007

Nature of Sample	Number
I.M.F.L.	5,423
Toddy	4,460
Country Liquor CL-I	15,765(Rs.23,64,750)
Denaturants,O.D.S.,S.D.S., French Polish etc.	3,372(Rs.33,72,000)
Country Liquor CL-III	6,006 (Rs.12,01,200)
Other Drugs and Samples	87(Rs.43,150)
Total Samples	35,113

Year : 2007-2008

Sr. No.	Type of Sample	Number	Testing Charges Received (Rs.)
1.	Denaturants	4681	46,81,000
2.	Toddy, Ganja Bhang etc.	4311	—
3.	I.M.F.L./Beer	6563	—
4.	Country Liquors	21606	35,42,050
5.	Other Sample	56	36,008
	TOTAL	37,217	82,59,058

Year : 2008-2009

Sr. No.	Type of Sample	Number	Testing Charges Received (Rs.)
1.	Denaturants	3290	32,90,000
2.	Toddy, Ganja Bhang etc.	3787	10,20,000
3.	I.M.F.L./Beer	6851	13,08,600
4.	Country Liquors	22119	36,21,850
5.	Other Sample	17	8600
	TOTAL	36,064	92,49,050

DEPARTMENT OF VIROLOGY:

Annual Report : 2006-2007

Training Activities:

The following staff members of the department were recognized guiding teachers at the University of Mumbai for the respective degrees and subjects mentioned bellow, During the period of rep[orting].

Sr. No.	Name of the Guiding Teacher	Degree & subject for which recognised.	Total intake capacity 2006-2007	Total No. of students registered as on 31-3-2007
1	Dr.(Mrs.) R.A.Deshmukh	M.Sc. & Ph.D. Microbiology.	10	10

The department conducted the Annual Biotechnology Training Program for B.Sc., B.Tech. M.Sc. & M.Tech. students from in and around Mumbai city. For this course, 229 enrolments were made and revenue of Rs. 2, 33,600/- was generated. Besides, 6 students from D.Y.Patil College, Pune and 2 students from Sophia College, Mumbai were trained in PCR and Animal Tissue Culture. Total Rs. 60,000/- was generated as training charge.

Sr. No.	Name of the Student & Guiding Teacher.	Degree (Year of passing)	Title of Thesis
1	Ms. Neena Walawalkar (Dr.(Mrs.) R.A.Deshmukh)	Ph.D. (2006)	Purification & app. of lipoara.... Antigen as a diagnostic tool & its comparison with PCR, BACTEC, and conventional methods for diagnosis of Tuberculosis.
2	Mr. Rajesh Roy. (Dr.(Mrs.) R.A.Deshmukh)	Ph.D. (2006)	Indigenous production of and app. of Recombinant Human Interferon alpha. (rhIFN-alpha).

Research Activities: (1st April 2006 to 31 Mar. 2007):**Post Graduate Students Research Project:**

1. In-Vitro study of *Phyllanthus amarus* and other Photochemical as Anti-HIV Agents.
2. Prevalence of HBV and HCV in HIV infected migrant workers in Mumbai.
3. Role of Co-receptors in HIV pathogenesis in Indian Cohorts.
4. Interplay of Superoxide Dismutase, Free Radicals and Apoptosis in HIV/AIDS patients.
5. Study of immune responses in spouses of HIV seropositive migrant workers.
6. Study of Morbidity and Mortality trends in HIV associated Wasting Syndrome.
7. Preparation of monoclonal antibodies to differentiate Rabies and Rabies related viruses.
8. In-vitro testing of Anti-HIV properties of Mangrove and some other Medicinal plants.
9. Study of Drug-Resistant HIV-1 in the patient cohort in Mumbai.
10. Study of seroprevalence of Leptospirosis using conventional and modern diagnostic tools.

Sponsored Research and Testing Studies:

1. IN-vitro Anti HIV activity of HIV-1 SJ, funded by Jondhale Research Foundation (Funds received Rupees Six Thousand only).
2. Endotoxin Testing of Diaphragm, funded by M/s. Mascon Tech Needs.(Funds Received Rupees Fifteen Thousand only).
3. "Multi site Epidemiological and Virological Monitoring of Human Influenza in India" Phase -1. Funded by ICMR for the WHO (Funds received Twenty Five Lakhs Twenty three thousand Four Hundred and Sixty Three only).

Papers presented at Seminars, Conferences and Symposia:

1. Lecture on "Bird Flu" at LTMMC, Sion, on 14th June 2006.
2. Lecture on "HIV and TB Testing: Interpretation and Legal Issues" at the ACLAP Conferences, at Nashik on 21st January 2007.
3. An Experience with HIV-SJ: A Novel Ayurvedic Preparation for the Treatment of HIV/AIDS; Jondhale S.M., Shringare P., Mahajan K., Likhitkar J.M., Tilgote A., Dahake P., and Deshmukh R.A.;

Abstracts of the National Symposium on Recent Immunological Advancements in HIV and Opportunistic Infections, Annamalai University, Chidambaram, 24-25 March 2007.

Publications:

1. V.Tripathi, K.T.Chitralkha, A.R.Bakshi, D.Tomar, R.A.Deshmukh, M.A.Baig, D.N.Rao. Inducing systemic and mucosal immune response to B-T construct of F1 antigen of Yersinia Pestis in microsphere delivery, Vaccine, 24:3279-3289 (2006).
2. S.Kothari and R.A.Deshmukh. Estimation of mRNA Levels of Interleukin (IL)-10, Tumor Necrosis Factor (TNF)- , IL-4 and Interferon (IFN)- in HIV infected children in Mumbai. Indian Journal of Clinical Biochemistry, 2006,21(1),15-26.
3. A rare case of human nasal myriasis due to Oestrus ovis larvae: Saroj Bapna, Sweta Kothari, S.Raju, H.Y.Palampalle, V.S.Deshpande,L. S.Patil and R.A.Deshmukh. Jr. of Parasitic diseases. 2006; Vol.30, No.2, 184-186.
4. Medicinal herbs: Potential Anti-HIV agents? K.Mulye, S.Tawade, P. Shringare,R. A. Deshnukh. Journal of Ayurveda 2007; Vol.1,(No.1, Jan-Mar,2007); 57-59.

Testing Activities: (1st April 2006- 31st March 2007)

Sr. No.	Nature of the Sample Tested and the Test performed	No. of Tests	Charges per Tests Rs.	Testing Charges Earned Rs.
1	CD4/CD8	01	1200/-	1200/-
2	ELISA FOR HIV	01	150/-	150/-
3	ELISA FOR DENGUE	11	800/-	8,800/-
4	IN VITRO ISOLATION FOR HSV/CMV	02	150/-	300/-
5	DETECTION OF CMV IN URINE	01	50/-	50/-
6	RABIES ELISA	01	3750/-	3750/-
7	IMMUNISATION CLINIC ((POLIO/DPT/ARV)	--	--	--
TOTAL		17		14,250/-

Total Income from Testing and Sponsored Activities:

A total income of Rs. 25,58,713/- was earned by the department during the period of 1st April 2006 to 31st March 2007.

Year : 2007-2008

Training Activities:

The following staff members of the department were recognized guiding teachers at the University of Mumbai for the respective degrees and subjects mention below during the period of reporting.

Sr. No.	Name of the guiding Teacher	Degree & Subject for which Recognized by the University of Mumbai	Total Intake Capacity 2007-2008	Total Number of Students registered as on 31-3-2008
1.	Dr.(Mrs.) R A. Deshmukh	M.Sc. & Ph.D., Microbiology	10	07

*Maximum total number of students allowed registration as per University rules.

1. The Department conducted the Annual Biotechnology Training Program for the B.Sc, M.Tech, M.Sc & M.Tech students from in and around Mumbai. For this course 274 enrolments were made and revenue of Rs. 3,57,600/- was generated.

List of students completing Post Graduate studies and obtaining degrees of the Mumbai University, during the period 2007-2008

Sr. No	Name of the Students & [Guiding Teacher]	Degree Subject (Year of Passing)	Title of Thesis
1	Ms. Shweta Tawde [Dr. (Mrs.) R. A. Deshmukh]	M.Sc (2007)	Study of Immune responses in spouses of HIV seropositive migrant workers
2	Mr. Prathmesh Shringare [Dr. (Mrs.) R. A. Deshmukh]	M.Sc (2007)	Prevalence of HBV and HCV in HIV infected migrant workers in Mumbai
3	Ms Swapnaja Ghadigaonkar [Dr. (Mrs.) R. A. Deshmukh]	M.Sc (2008)	Preparation of monoclonal antibodies to differentiate Rabies and rabies related Viruses

Research Activities: (1st April 2007 to 31st March 2008)

Post – Graduate Students Research Projects:

- 1) Interplay of Superoxide Dismutase, Free Radicals and Apoptosis in HIV/AIDS patients.
- 2) Study of Morbidity and Mortality trends in HIV associated Wasting Syndrome.
- 3) *In vitro* testing of Anti-HIV properties of Mangrove & some other medicinal plants.
- 4) *In vitro* study of *Phyllanthus amarus* and other phytochemicals as anti-HIV agents
- 5) Role of Co-receptors in HIV Pathogenesis in Indian Cohorts
- 6) Study of Drug-Resistant HIV-1 in the patient cohort in Mumbai.
- 7) Study of seroprevalence of Leptospirosis using conventional & modern Diagnostic tools.

Sponsored Research & Testing Studies:

“Multi Site Epidemiological & Virological Monitoring of Human Influenza in India” Phase – 1, Funded by ICMR for the WHO (Funds received Rupees Twenty Five Lakhs Twenty Three Thousand Four Hundred & Sixty Three Only)

Publications:

1. Mass fingerprinting of toxic fractions from the venom of the Indian red scorpion, *Mesobuthus tamulus*: biotope-specific variation in the expression of venom peptides; Newton KA, Clench MR, Deshmukh R, Jeyaseelan K, Strong PN. Rapid Commun Mass Spectrom. 2007; 21 (21):3467-76.
2. Increased Genetic Diversity and Intersubtype Recombinants of HIV-1 in Blood Donors From Urban Cameroon. Machuca, Ana ; Tang, Shixing; Hu, Jinjie; Lee, Sherwin; Wood, Owen; Vockley, Christopher ; Vutukuri, Suresh Gupta ; Deshmukh, Ranjana; Awazi, Bih; Hewlett, India. Journal of Acquired Immune Deficiency Syndrome. 45 (3):361-363, July 1, 2007

Testing:

Sr. No.	Name of the Test	Total Test	Testing Charges
1	Brain samples for Rabies Viruses Isolation	2	Free
2	Plant extracts	4	Rs.3000/-each (Total Rs.12000/-)
3	Dengue IgM	1	Free
4	Disinfectant From CORAL	1	Rs. 96,502/-
5	Slides for Detection of Negri Bodies	1	Free

Year : 2008-2009

Training Activities:

The following staff members of the department were recognized guiding teachers at the University of Mumbai for the respective degrees and subjects mention below during the period of reporting.

Sr. No.	Name of the guiding Teacher	Degree & Subject for which Recognized by the University of Mumbai	Total Intake Capacity 2007-2008	Total Number of Students registered as on 18-02-2009
1.	Dr. Abhay Chowdhary	M.Sc. & Ph.D , Microbiology	10	3
2.	Dr.(Mrs.) R. A. Deshmukh	M.Sc. & Ph.D , Microbiology	10	05

1. The Department conducted the Week long training in VIROLOGY. B.Sc, M.Sc & M.Tech students from in and around Mumbai. For this course, 37 enrolments were made and revenue of Rs. 1,11,000/- was generated.

- 28 students came for Educational visit and revenue of Rs. 2800/- was generated.
- The Department also conducted "Viro-Vitals", Annual Course in Medical Virology for M.Sc and M.D. Students of University of Mumbai and Maharashtra University of Health Sciences.

List of students completing Post Graduate studies and obtaining degrees of the Mumbai University, during the period 2008-2009

Sr. No	Name of the Students & [Guiding Teacher]	Degree Subject (Year of Passing)	Title of Thesis
1	Kalpita Mahajan [Dr. (Mrs.) R. A. Deshmukh]	PhD (2008)	<i>In vitro</i> study of <i>Phyllanthus amarus</i> and other phytochemicals as anti-HIV agents
2	Sandeepan Mukherjee [Dr. (Mrs.) R. A. Deshmukh]	M.Sc (2008)	Interplay of Superoxide Dismutase, Free Radicals and Apoptosis in HIV/AIDS patients

Research Activities: (1st April 2008 to 31st March 2009)

Post – Graduate Students Research Projects:

- Study of Morbidity and Mortality trends in HIV associated Wasting Syndrome.
- In vitro* testing of Anti-HIV properties of Mangrove & some other medicinal plants.
- Role of Co-receptors in HIV Pathogenesis in Indian Cohorts
- Study of Drug-Resistant HIV-1 in the patient cohort in Mumbai.
- Study of seroprevalence of Leptospirosis using conventional & modern Diagnostic tools.

Sponsored Research & Testing Studies:

- Establishment of Avian Influenza Laboratory Network for National Surveillance of Avian Influenza – Project Funded by IDSP-NICD, MoHWF-Govt. of India and World Bank [Laboratory Support of Rupees Three Hundred Twenty Lakhs Sixty-two Thousand Only towards Laboratory Setup and Consumables]

2. "Clinical trial for New Rabies Vaccine" From **M/s. CADILA** (Charges received Rs .Two Lakhs Sixteen Thousand Six Hundred ninety only.)
3. In Vitro HIV-cidal and HBV-cidal evaluation for the product "NUSEPT", from **M/s. CORAL** (Charges received Rs. One lakh Forty Six Thousand Sixty Eight only)
4. In vitro and Vivo action of disinfectant sample against Anti HIV activity and Rabies virus from **M/s. BIOS AGRICORP.** (Charges received Rs. Two Lakh Two Thousand Two Hundred Forty Only

Guest Lectures:

Dr. Abhay Chowdhary, Head, Department of Virology & Director, Haffkine Institute, delivered guest lectures at scientific meetings during the year 2008–2009

Trainings & Workshops Attended:

1. Ms. Amita Patil, Sr. Technician underwent Training at the National Institute of Virology, Pune, from 18th November 2008 to 28th November 2008 in Tissue Culture Techniques.
2. Ms. Amita Patil, Sr. Technician and Mr. Sandeepan Mukherjee, S. R. F, attended a workshop on "Hands on Laboratory Training on Molecular Characterization of Influenza Group of Viruses" at the National Institute of Communicable Diseases, New Delhi from 15th December 2008 to 20th December 2008.

Testing:

Sr. No.	Name of the Test	Total Test	Testing Charges
1	Brain samples for Rabies Viruses Isolation	Nil	Nil
2	Dengue IgM	1	Rs.800/-
3	Anti viral (anti-HIV and anti-HBV) testing for academic institutions	3	Rs. 21,240/-
4	Slides for Detection of Negri Bodies	1	Free

DEPARTMENT OF CLINICAL PATHOLOGY

Annual Report : 2004-2005

Training Programme:

Department has admitted students for their Postgraduate degree in Applied Biology for Mumbai University. Short-Term Training programme is arranged for the graduates. The department has various research projects, which are public health oriented.

Research Projects in the Clinical Pathology Department.

1. Studies of Antibacterial activity of some selected flowers.
2. Evaluation of some indigenous plant extract for possible insecticidal activity against vector of Filariasis.
3. Antimalarial activity of plant extracts of Asteraceae species.
4. Evaluation of larvicidal activity of selected plant extract against Aedes aegypti Larve.

Testing Activities

The department receives clinical specimens from various hospitals, physicians and general nursing homes for routine investigations.

The services offered cover the following areas:

1. Diagnostic bacteriology and mycology.
2. Diagnostic serology.
3. Antimicrobial testing of commercial synthetic compounds.
4. Routine haematological examination.
5. Histopathological examination of surgical specimens and biopsies.
6. Cytology of various body fluids.

Samples received from hospitals

Year	No. of Samples	Testing Charges
2004-2005	2714	2,22,310/-

Year : 2005-2006

Training Programme

Four M.Sc. (Applied Biology) Students are registered in the department and short-term training students are also admitted in this department for training in microbiology and allied fields.

Research Projects in the Clinical Pathology Department.

1. Studies on selected flowers (Jasminum sambac, Michelia Champaca etc.) with potential antibacterial activity.
2. *in-vitro* antimalarial activity of plant extract of *Asteraceae* spp. (Eclipta alba, ageratum conyzoides etc.)
3. Evaluation of some indigenous plant extracts for possible Insecticidal activity against vector of Filariasis.
4. Evaluation of larvicidal properties of selected plant extract against vector Aedes aegypti Larve. (Annona squamosa, Azadirachta indica)

Testing Activities

The department received clinical specimens from various hospitals, physicians and general nursing homes for routine investigations.

The services offered cover the following areas:

1. Diagnostic bacteriology and mycology.
2. Diagnostic serology.
2. Antimicrobial testing of commercial synthetic compounds.
3. Routine haematological examination.
4. Histopathological examination of surgical specimens and biopsies.
5. Cytology of various body fluids.

Samples received from hospitals

Year	No. of Samples	Testing Charges
2005-2006	1373	2,18,505/-

Year : 2006-2007

Training Programme

Two student for M.Sc. (Microbiology) have been admitted in the department under the guidance of Dr. S.V. Athlekar. New short term training programme in Clinical Pathology & Biochemistry is proposed. Students for Biotechnology training programme are admitted every year in department of Clinical Pathology.

Research Projects in the Clinical Pathology Department.

1. Study of serological parameter in patients suffering from pyrexia of unknown origin.
2. Study of prevalence of Influenza virus in mumbai.

Testing Activities

The department receives clinical specimens from various hospitals, physicians and general nursing homes for routine investigations.

The services offered cover the following areas:

1. Diagnostic bacteriology and serology.
2. Antimicrobial testing of commercial synthetic compounds.
3. Routine haematological examination.
4. Histopathological examination of surgical specimens and biopsies.
5. Cytology of various body fluids.

Samples received from hospitals

Year	No. of Samples	Testing charges
2006-2007	3700	200,000 /-

Year : 2007-2008

Research

Two research students have been enrolled for M.Sc.(Microbiology) by research in the department under the guidance of Dr. S.V.Athlekar. Proposal to start the Short-Term Certificate courses in Medical Biotechnology has been sanctioned and department will participate in the training programme.

Research Projects in the Clinical Pathology Department.

1. Study of prevalence of Influenza virus in Mumbai.

Testing Activities

The department receives clinical specimens from various hospitals and general nursing homes for routine investigations.

The services offered cover the following areas:

1. Diagnostic bacteriology and serology.
2. Antimicrobial testing of commercial synthetic compounds.
3. Routine haematological examination.
4. Histopathological examination of surgical specimens and biopsies.
5. Cytology of various body fluids.

Samples received from hospitals

Years	No. Of Samples	Testing charge
2007-2008	3498	1,79,960/-

Research publication

1. Ganesh A. Thakur, Shrikant V. Athlekar, S.R.Dharwadkar, M. M. Shaikh " Synthesis & biological activity of mixed ligand dioxouranium(VI) and thorium(IV) complexes"
Acta pol. Pharma. 64 (1) : 9-15, 2007



Year : 2008-2009

Research

Two research students have been enrolled for M.Sc.(Microbiology) by research in the department under the guidance of Dr.S.V.Athlekar. Department will participate in the various training programme.

Research Projects in the Clinical Pathology Department.

1. Study of prevalence of Influenza virus in Mumbai.

Testing Activities

The department receives clinical specimens from various hospitals and general nursing homes for routine investigations.

The services offered cover the following areas:

1. Diagnostic bacteriology and serology.
2. Antimicrobial testing of commercial synthetic compounds.
3. Routine haematological examination.
4. Histopathological examination of surgical specimens and biopsies.
5. Cytology of various body fluids.

Samples received from hospitals

Years	No. Of Samples	Testing charge
2008-2009	1882	2,63,200/-

Conferences

1. Dr.S.V. Athlekar, Scientific officer & I/C Training, of the department attended a national conference held at Hyderabad on 29th&30th Jan. 2009. The topic of the conference was" CPCSEA National conference on Ethical use of Animals in Research & Education & Dissemination of Norms & Guidelines of CPCSEA"
2. Mrs.Trupti A.Satvekar, Sr. technical assistant, attended a "Training course on surveillance & control of plague" at Bangalore on 29/09/08 to 2/10/08.
3. Mrs. Trupti A. Satvekar, Sr. technical assistant, attended a workshop on "Malaria & other vector borne diseases" conducted by Municipal Corporation Of Greater Mumbai on 14th to 16th Jan. 2009.

DEPARTMENT OF BIOCHEMISTRY

Annual Report : 2004-2005

Testing Activity

The testing activity of the department include Biochemical investigations of Blood/urine, urinary calculi & gall stone referred by Hospitals. & private practitioners.

Name of the test	Number of tests		Income April 2004-March 2005
	Free	Paid	
Blood Sugar	35	47	
Urinary Calculi	—	19	
Total Tests	35	66	
Total	101		Rs. 4,000/-

Year : 2005-2006

Testing Activity

The testing activity of the department include Biochemical investigations of Blood /urine ,urinary calculi & gall stone referred by Hospitals.& private practitioners.

Name of the test	Number of tests		Income April2005-March 2006
	Free	Paid	
Urine stone	--	48	
Blood Glucose	57	125	
Serum cholesterol	--	100	
Serum triglycerides	--	100	
Serum uric acid	--	3	
Gall stone	--	3	
Total	57	379	Rs. 26,350/-

Year : 2006-2007

Testing Activity

The testing activity of the department include Biochemical investigations of Blood /urine, urinary calculi & gall stone referred by Hospitals. & private practitioners.

Name of the test	Number of tests		Income April2006- March 2007
	Free	Paid	
Urine stone	--	33	
Blood Glucose	33	209	
Serum cholesterol	3	1	
Serum triglycerides	2	--	
Serum uric acid	1	--	
Gall stone	--	--	
Total	39	243	Rs.19840/-

Year : 2007-2008

Testing Activity

The testing activity of the department include Biochemical investigations of Blood /urine, urinary calculi & gall stone referred by Hospitals. & private practitioners.

Name of the test	Number of tests		Income April2007- March 2008
	Free	Paid	
Urine stone	--	28	
Blood Glucose	10	20	
Serum cholesterol	-	1	
Serum triglycerides	-	-	
Serum uric acid	-	-	
Gall stone	-	-	
Total	10	49	Rs. 9,450/-

Year : 2008-2009

Testing Activity:

The testing activity of the department include Biochemical investigations of Blood /urine, urinary calculi & gall stone referred by Hospitals. & private practitioners.

Name of the test	Number of tests		Income April 2008- March 2009
	Free	Paid	
Urine stone	---	52	
Blood Glucose	42	133	
Serum cholesterol	---	---	
Serum triglycerides	----	---	
Gall stone	---	---	
Total	42	185	Rs.13,600/-

Research & Training:

Department of Biochemistry participate in Annual Biotechnology training course each yearly conducting Lectures & practicals for students.

There is one Senior scientific officer class-1& one laboratory attendant in Biochemistry Department. It is possible to start new projects & training programme with the help of sufficient staff & basic instruments like Biochemistry analyzer.

ANNUAL REPORT OF THE LIBRARY 2004-2005

The aim and objective of the Haffkine Institute Library has been to collect, organize, search and retrieve information in the research and training activities of the institute in the areas of biomedical and allied sciences with a special reference to the communicable diseases.

This year the library subscribed to 86 specialized journals and added 35 new books and monographs in the various fields of research that institute has undertaken from time to time. With this, the total collection of the library has grown to 10,489 books and 26,428 back volumes of journals.

The library continued to provide Medline and Life Sciences Database search and retrieval facilities to its staff, students and also to outside visitors at nominal charges. Considering the need and urgency of the requirement, the library continued to deliver documents by post / courier to the distant users who could not come to the library.

The library made available different publications from other libraries to the staff and students of this institute for about 17 times on the basis of Inter library cooperation. Similarly, 38 publications available in our library were made available to other libraries.

The library continued this year taking part in the Training programme for the Bachelor of Library and Information Science course conducted by S.N.D.T. University, by giving an exposure of actual functioning of library to their students.

The library regularly imparted induction and orientation training to outside visitors and new students of the institute on the library usage and conducting literature searches.

YEAR	2004-05
Books Added	35
Journals Bound	25
Total Titles	10489
Journals subscribed	86
Inter library Loan :	
Loaned Out	38
Borrowed in	17
Number of times the library collection was consulted by the :	
Outside Visitors	5009
Staff and Students	2572

Year : 2005-2006

The aim and objective of the Haffkine Institute Library has been to collect, organize, search and retrieve information in the areas of prime activities of the institute i.e. biomedical and allied subjects with a special reference to the communicable diseases.

The library subscribed to 86 specialized journals and added 9 new books in the various fields of research. With this, the total collection of the library has grown to 10,498 books and 26,599 back volumes of journals.

The library continued to provide online database search and retrieval facilities to its staff and students. Considering the need and urgency of the requirement, the library continued to deliver documents by post / courier to the distant users who could not come to the library.

The library made available different publications from other libraries to the staff and students of this institute for about 5 times on the basis of Inter library cooperation. Similarly, 18 publications available in our library were made available to other libraries.

The library continued this year taking part in the Training programme for Bachelor of Library and Information Science course conducted by S.N.D.T. University, by giving an exposure of actual functioning of library to their students.

The library regularly imparted induction and orientation training to outside visitors and new students of the institute on the library usage and conducting the literature searches effectively.

YEAR	2005-06
Books Added	9
Journals Bound	171
Total Titles	10498
Journals subscribed	86
Inter library Loan :	
Loaned Out	18
Borrowed in	5
Number of times the library collection was consulted by the :	
Outside Visitors	4487
Staff and Students	1673

Year : 2006-2007

The aim and objective of the Haffkine Institute Library has been to collect, organize, search and retrieve information in the research and training activities of the institute in the areas of biomedical and allied sciences with a special reference to the communicable diseases.

This year the library subscribed to 74 specialized International and Indian journals and added about 7 new books and monographs in the various fields of research that institute has undertaken from time to time. With this, the total collection of the library has grown to 10, 513 books and 26,689 back volumes of journals.

The library continued to provide online database search and retrieval facilities to its staff and students. Considering the need and urgency of the requirement, the library continued to deliver documents by post / courier to the distant users who could not come to the library.

The library made available different publications from other libraries to the staff and students of this institute for about 10 times on the basis of Inter library cooperation. Similarly, 11 publications available in our library were made available to other libraries.

The library continued this year taking part in the Training programme for the Bachelor of Library and Information Science course conducted by S.N.D.T. University, by giving an exposure of actual functioning of library to their students.

The library regularly imparted induction and orientation training to outside visitors and new students of the institute on the library usage and to conduct the literature searches effectively.

YEAR	2006-07
Books Added	15
Journals Bound	90
Total Titles	10513
Journals subscribed	74
Inter library Loan :	
Loaned Out	11
Borrowed in	10
Number of times the library collection was consulted by the :	
Outside Visitors	3209
Staff and Students	1258

Year : 2007-2008

The aim and objective of the Haffkine Institute Library has been to collect, organize, search and retrieve information in the areas of prime activities of the institute i.e. biomedical and allied subjects with a special reference to the communicable diseases.

The library subscribed to 61 specialized scientific journals and added 04 new books in the various fields of research. With this, the total collection of the library has grown to 10,517 books and 26,817 back volumes of journals.

The library continued to provide online database search and retrieval facilities to its staff and students. Considering the need and urgency of the requirement, the library continued to deliver documents by post / courier to the distant users who could not come to the library.

The library made available different publications from other libraries to the staff and students of this institute for about 12 times on the basis of Inter library cooperation. Similarly, 19 publications available in our library were made available to other libraries.

The library continued this year taking part in the Training programme for Bachelor of Library and Information Science course conducted by S.N.D.T. University, by giving an exposure of actual functioning of library to their students.

The library regularly imparted induction and orientation training to outside visitors and new students of the institute on the library usage and conducting the literature searches effectively.

YEAR	2007-08
Books Added	04
Journals Bound	128
Total Titles	10517
Journals subscribed	61
Inter libra Loan :	
Loaned Out	12
Borrowed in	19
Number of times the library collection was consulted by the :	
Outside Visitors	1603
Staff and Students	1140

Year : 2008-2009

The aim and objective of the Haffkine Institute Library has been to collect, organize, search and retrieve information in the research and training activities of the institute in the areas of biomedical and allied sciences with a special reference to the communicable diseases.

This year the library subscribed to 66 specialized scientific journals of national and international importance and added 05 new books in the various fields of research that institute has undertaken from time to time. With this, the total collection of the library has grown to 10,521 books and 26,910 back volumes of journals.

The library continued to provide Online search and retrieval facilities to its staff and students.. Considering the need and urgency of the requirement, the library has continued to deliver documents by post / courier to the distant users who could not come to the library.

The library made available different publications from other libraries to the staff and students of this institute for about 14 times on the basis of Inter library cooperation. Similarly, 22 publications available in our library were made available to other libraries.

The library continued this year taking part in the Training programme for the Bachelor of Library and Information Science course conducted by S.N.D.T. University, by giving an exposure of actual functioning of library to their students.

The library regularly imparted induction and orientation training to outside visitors and new students of the institute on the library usage and conducting literature searches.

YEAR	2008-09
Books Added	05
Journals Bound	92
Total Titles	10521
Journals subscribed	66
Inter library Loan :	
Loaned Out	22
Borrowed in	14
Number of times the library collection was consulted by the:	
Outside Visitors	1493
Staff and Students	653

Appendix I

LIST OF RECOGNISED POST-GRADUATE TEACHERS & TEACHING FACULTY

Sr. No.	Name	Designation	Course recognised for	Subjects	University
1	Dr.A. S. Chowdhary. M.D ,DHA,DM Virology, FIMSA	Director	M Sc., Ph D. Ph D	Microbiology Appl.Biology Microbiology Appl.Biology Microbiology	Mumbai University MUHS
2	Shri. L. S. Patil. M.Sc ,D M.L T ,D B M	Assistant Director	M Sc	Organic Chemistry	Mumbai University
3	Dr.S. V. Athlekar M.Sc., Ph.D.	Scientific Officer& I/C Training	M.Sc.,	Microbiology	Mumbai University
4.	Dr A. S Bobade M.Sc., Ph.D	Scientific Officer	M.Sc ,	Organic Chemistry	Mumbai University
5.	Dr.Mrs R.A Deshmukh M D., Ph.D.	Visiting Scientist			
6	Dr. Naresh Tongay Ph D. (Pharma)	Visiting Scientist			
7.	Dr. Ajita Mehta M D , D C P	Visiting Scientist			



Appendix II-A

List of students registered for M.sc.

Sr. No.	Name of student	Subject	Year of Registration
1.	Mr.Yadav Ameya G.	Organic chemistry	7/12/2006
2.	Mr.Verma Rajeew R.	Organic chemistry	7/12/2006
3.	Mr. Rane Yogesh S.	Organic chemistry	7/12/2006
4.	Ms. Mayekar Amita V.	Organic chemistry	7/12/2006
5.	Mr. Jadhav Yogesh p.	Organic chemistry	13/08/2007
6.	Ms.Patil Vrushali N.	Organic chemistry	13/08/2007
7.	Mr. Dawane Kushal H.	Organic chemistry	13/08/2007
8.	Mr. Soumen Roy	Microbiology	3/10/2007

Appendix II-B

List of students registered for Ph.D

Sr. No.	Name of student	Subject	Year of Registration
1.	Ms.Bangera priya N.	Microbiology	5/05/2004
2.	Mr. V.Suresh Gupta	Microbiology	13/06/2003
3.	Ms. Rege Anuya A.	Microbiology	13/06/2004
4.	Mr. Dahake Ritwik v.	Microbiology	18/08/2006
5.	Mr. Patil Deepak.	Applied Biology	23/08/2006

Appendix III- A

List of students who obtained M.sc.
(Year 2004 – 2009)

Sr. No.	Name of student	Subject	Year of Passing
1.	Mrs.Renudevi O. Singh	Microbiology	5/03/2005
2.	Mr. Tripathi Vikrant H.	Applied Biology	28/03/2006
3.	Ms. Telang Pallavi A.	Applied Biology	15/02/2007
4.	Ms. Tawade Shweta S.	Microbiology	17/10/2007
5.	Mr. Shringare Prathmesh A.	Microbiology	28/11/2007
6.	Ms.Ghadigaonkar Swapnaja P.	Microbiology	18/03/2008
7.	Mr. Jadhav Suryaji T.	Applied Biology	2/08/2007
8.	Mr. Chorge Mangesh S.	Applied Biology	16/11/07
9.	Mr. Mukharji Sandipan R.	Microbiology	23/05/08

Appendix III- B

List of students who obtained Ph.D
(Year 2004 – 2009)

Sr. No.	Name of student	Subject	Year of Passing
1.	Ms.Kothari Sweta T.	Microbiology	15/03/2005
2.	Ms. Walawalkar Neena A.	Microbiology	03/11/2006
3.	Mr. Roy Rajesh kumar	Microbiology	15/06/2006
4.	Ms. Mahajan Kalpita B.	Microbiology	17/05/2008

