THE NATIONAL VETERINARY DRUG ASSAY LABORATORY

DIRECTORATE GENERAL OF LIVESTOCK
SERVICES MINISTRY OF AGRICULTURE
THE REPUBLIC OF INDONESIA
2005

Foreword

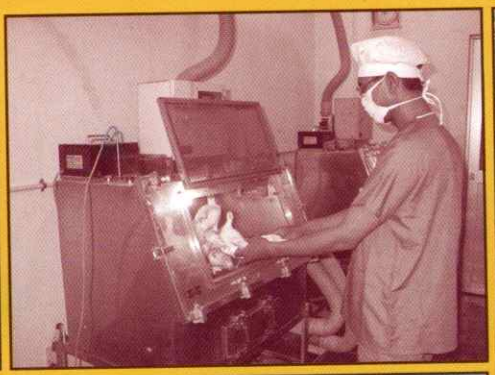
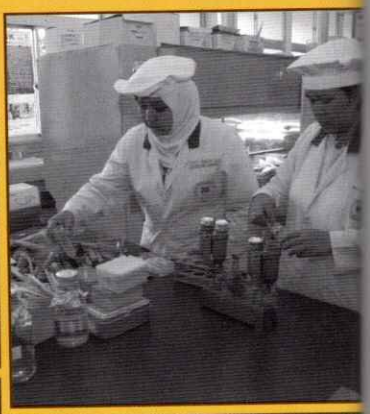
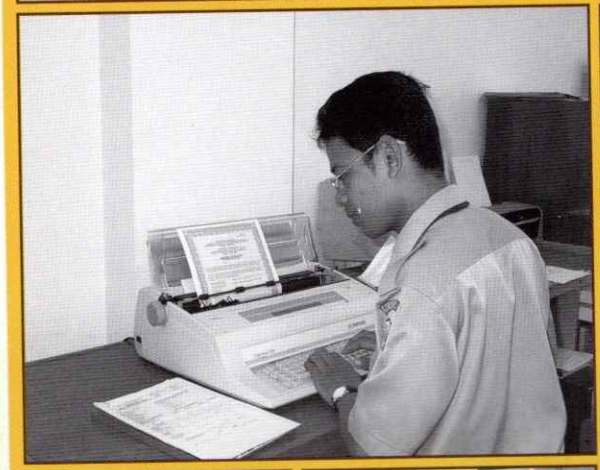
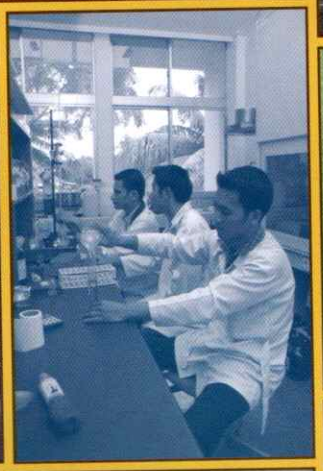
To ensure the quality of veterinary drugs distributed in Indonesia, the Government of Indonesia established a Veterinary Drug Assay Laboratory (VDAL), Echelon III/a, in Bogor, West Java with financial aid from the Government of Japan.

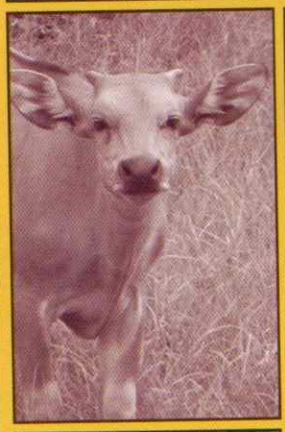
This project was implemented under a technical cooperation programme between the Government of Indonesia and the Government of Japan. The executing agencies from both governments were Directorate General of Livestock Services, The Ministry of Agriculture and the Japan International Cooperation Agency(JICA). This 5 year project started in April 1984, ending in 1989 and then was extended for two more years until 1991.

A technical cooperation Aftercare Programme was implemented from July 1994 until June 1996. To improve services to customers, the organization of VDAL was upgraded to Echelon II/b, and the name became National Veterinary Drug Assay Laboratory (NVDAL) in December 2003. The main functions of the laboratory are: testing and certification of veterinary drugs produced in and imported into the country and to monitor the quality of veterinary drugs in the market.

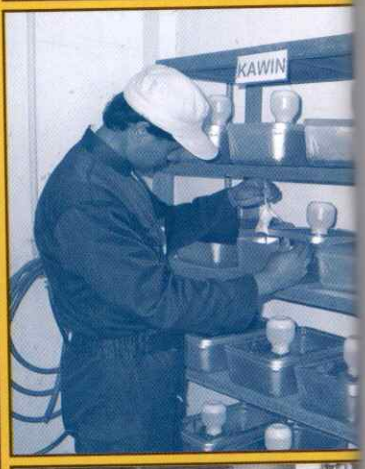
In this small booklet we tell the story of the National Veterinary Drug Assay Laboratory.

Bogor, September 2005

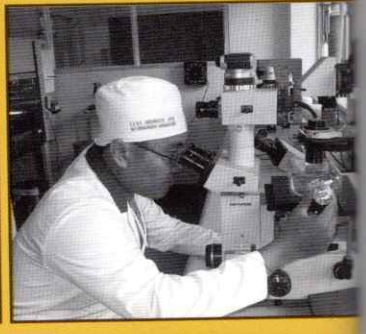












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1985

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1983

In March 1983, the Goverment of Japan dispatched two survey teams, namely, a Preliminary Survey Team on Technical Cooperation and a Basic Design Survey Team for the Construction of VDAL, to discuss technical and financial cooperation for establishment of VDAL.

Historical Background

Veterinary drugs play important roles in the control and prevention of animal diseases. A stable supply of good quality veterinary drugs is of great importance to the livestock industry to ensure high productivity. There has been a growing demand among people involved in livestock industry for institutional quality control of veterinary drugs for further development of the industry.

1982

The Government of Indonesia realized the importance of supervising veterinary drugs within the country and proposed a plan to establish a Veterinary Drug Assay Laboratory (VDAL) under the code number ATA-297. The Government of Indonesia then requested a grant of capital aid from the Government of Japan to finance the plan. The Government of Japan responded positively to the request and dispatched a contact mission to look into problems concerning supervision of veterinary drugs in Indonesia and investigate the necessity of establishment of a Veterinary Drug Assay Laboratory (VDAL) in November 1982.

1983

In March 1983, the Government of Japan dispatched two survey teams, namely, a Preliminary Survey Team on Technical Cooperation and a Basic Design Survey Team for the Construction of VDAL, to discuss technical and financial cooperation for establishment of VDAL. The teams concluded that VDAL would play a great role to ensure the quality of veterinary drugs distributed in Indonesia and contribute much to livestock development. As a result, Diplomatic Notes were exchanged in September 1983 between the Government of Indonesia and the Government of Japan to construct the VDAL with a grant of capital aid from the Government of Japan. In February 1984, the Record of Discussion on Technical Cooperation for VDAL was signed and the Japan International Cooperation Agency(JICA) extended technical assistance for five years, starting April 1st, 1984.

1985

A site of 5.5 hectares was prepared for the construction of VDAL by the Government of Indonesia, which also allocated counterbudget to construct ancillary facilities such as staff houses, a dormitory, fences around the premise, etc. The construction of the laboratory buildings started in March 1984 and they were completed in early January, 1985, then turned over to the Government of Indonesia on January 26th, 1985. On April 30th, 1985, the Minister of Agriculture issued a decree [no: 328/Kpts/TN.260/4/1985] concerning the functions and authorities of VDAL and authorized VDAL to conduct quality assay and quality certification of veterinary drugs.

The opening ceremony of VDAL was held on August 2nd, 1985 and officially inaugurated by Ir. Achmad Affandi, the Indonesian Minister of Agriculture. On February 4th, 1985, Dr Yuntiwa Ramdan, was assigned as the Director of VDAL and succeeded by Dr Syamsul Bahri Siregar MSc. on February 29th, 1988; Dr Puguh Darmadi, MVS. on October 14th, 1998; Dr Enuh Raharjo Jusa PhD. on May 15th, 2002. After the organization was upgraded into National Veterinary Drug Assy Laboratory (NVDAL), Echelon II/b, Dr Dewa Made Ngurah Dharma, MSc. PhD. was assigned as the Director on June 1st, 2004.

1994 to 1996

The technical cooperation started in April 1985. A number of Japanese experts had been assigned for VDAL and Indonesian staff had been sent to Japan to study assay techniques and related subjects since the commencement of the cooperation. Equipment and other materials necessary for the VDAL activities had also been provided by the Government of Japan pursuant to the Record of Discussion. A two-year technical cooperation had been implemented as an after-care programme had been implemented from July 1994 until June 1996.

Gas chromatography and A.A.S Room

From VDAL to NVDAL

Due to improvement of the tasks and functions of VDAL, the Government issued a decree no: 628/ Kpts/OT.140/12/2003, dated December 30th, 2003, concerning the improvement of the Institution of Veterinary Drug Assay Laboratory (VDAL) Eschelon III/a, to the National Veterinary Drug Assay Laboratory (NVDAL), Echelon II/b.


ASSAY
OLYMPUS

Vision

The vision of The National Veterinary Drug Assay Laboratory (NVDAL) is ***"to ensure veterinary drug quality through professional services in veterinary drug testing and certification".***

Objectives

The objectives of the National Veterinary Drug Assay Laboratory are to conduct laboratory testing and certification of veterinary drugs and to ensure the quality of all veterinary drugs distributed in Indonesia.

Main Tasks

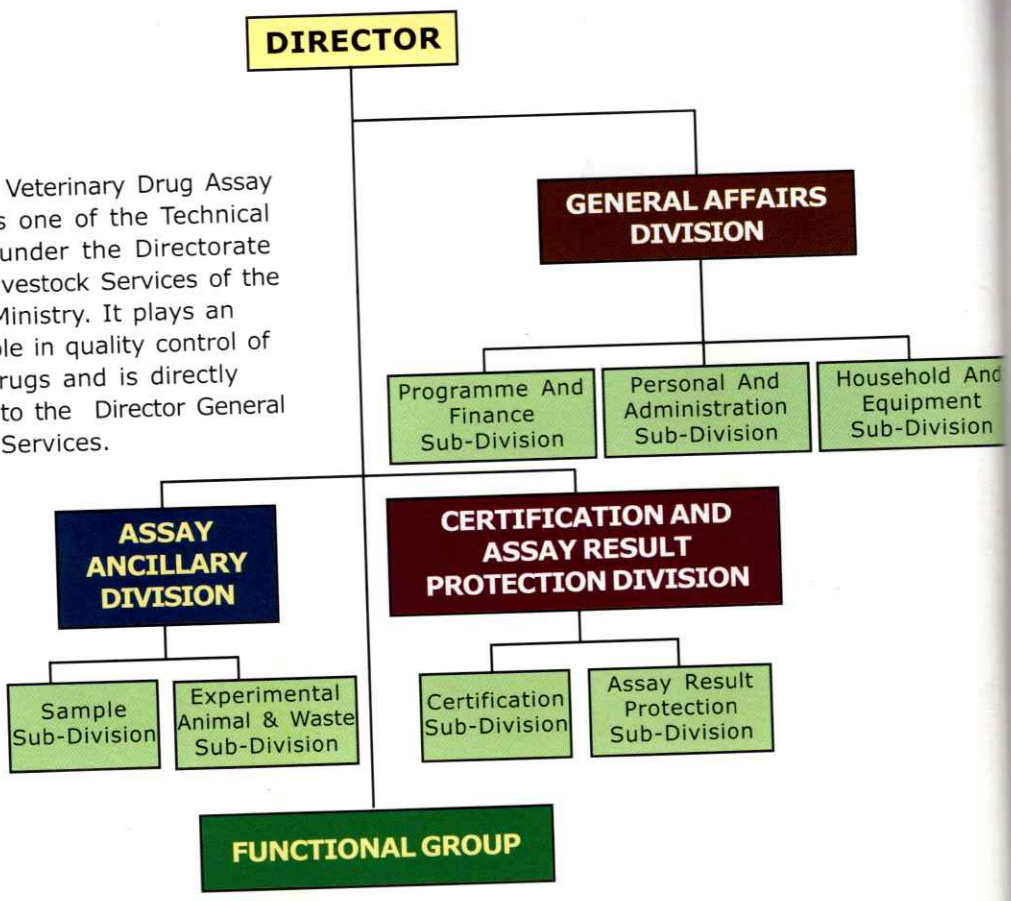
The main tasks of NVDAL are to test veterinary drug quality, to issue quality certificates, to conduct surveillance and monitoring of veterinary drugs.

Organization Structure

Position

1. **Position**

The National Veterinary Drug Assay Laboratory is one of the Technical Institutions under the Directorate General of Livestock Services of the Agriculture Ministry. It plays an important role in quality control of veterinary drugs and is directly responsible to the Director General of Livestock Services.



Functions

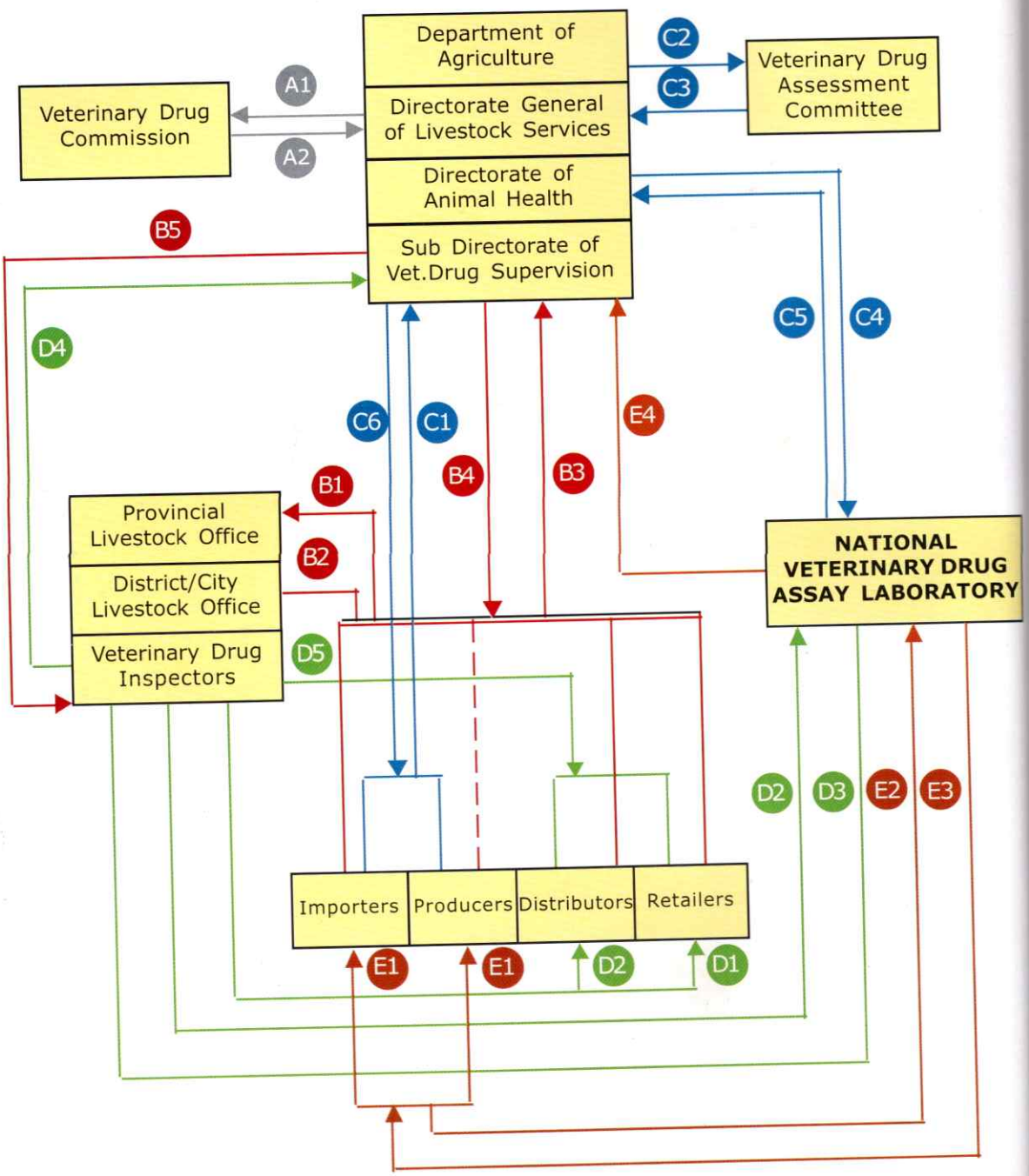
2. **Functions**

The functions of National Veterinary Drug Assay Laboratory are as follows:

2.1. To test the quality of veterinary drugs.
2.2. To issue quality certificates for veterinary drugs.
2.3. To investigate the quality of veterinary drugs.
2.4. To monitor the quality of veterinary drugs in the market.
2.5. To develop and improve test methods on veterinary drugs.
2.6. To produce and formulate feed for experimental animals.
2.7. To manage the experimental animals.
2.8. To manage the waste product of veterinary drugs assays.
2.9. To secure the results of veterinary drug tests.
2.10. To provide veterinary drug testing and investigation ancillaries.
2.11. To manage the administration and household affairs of NVDAL.

** (Min. of Agric. Decree No: 628/Kpts/OT.140/12/2003)*

The Role of NVDAL in Veterinary Drug Supervision in Indonesia



A. Veterinary Drug Administration Policy

A1 The Goverment requests suggestions and guidelines from The Veterinary Drug Commission (VCD).

A2 VDC provide suggestions and guidelines to the Government.

B. Trade Permit for Veterinary Drug Manufacturers

B1 The Customer applies for the recommendation of a trade permit.

B2 The Government inspects the trade location.

B3 The Customers submits an application for a trade permit.

B4 The Government issues the trade permit, based on the recommendation received.

B5 The Government informs the Provincial/District/City Livestock Office.

C. New Registration & Reregistration of Veterinary Drugs

C1 Customers submit the application of new registration/ re-registration of the veterinary drugs (locally produced or imported) including the dossiers.

C2 The application and the dossiers will be evaluated by the Veterinary Drug Assessment Committee (VDAC).

C3 VDAC gives evaluation results to the Government.

C4 The Government issues recommendations to the customers who submit veterinary drug samples for assay at NVDAL.

C5 NVDAL issues certificate of analysis and informs the Directorate of Animal Health.

C6 The Government issues new registration/re-registration number.

D. Veterinary Drug Monitoring

D1 Veterinary drug samples are obtained from Distributor/Warehouse or Poultry Shop by the Veterinary Drug Inspector from Livestock Office or officer from NVDAL.

D2 The samples are submitted to NVDAL.

D3 NVDAL issues assay results to the Provincial/District City Livestock Office.

D4 The results of monitoring are sent to the Directorate of Animal Health.

D5 The results of monitoring are sent to the Distributors / Poultry Shop.

E. Occasional Veterinary Drug Assay

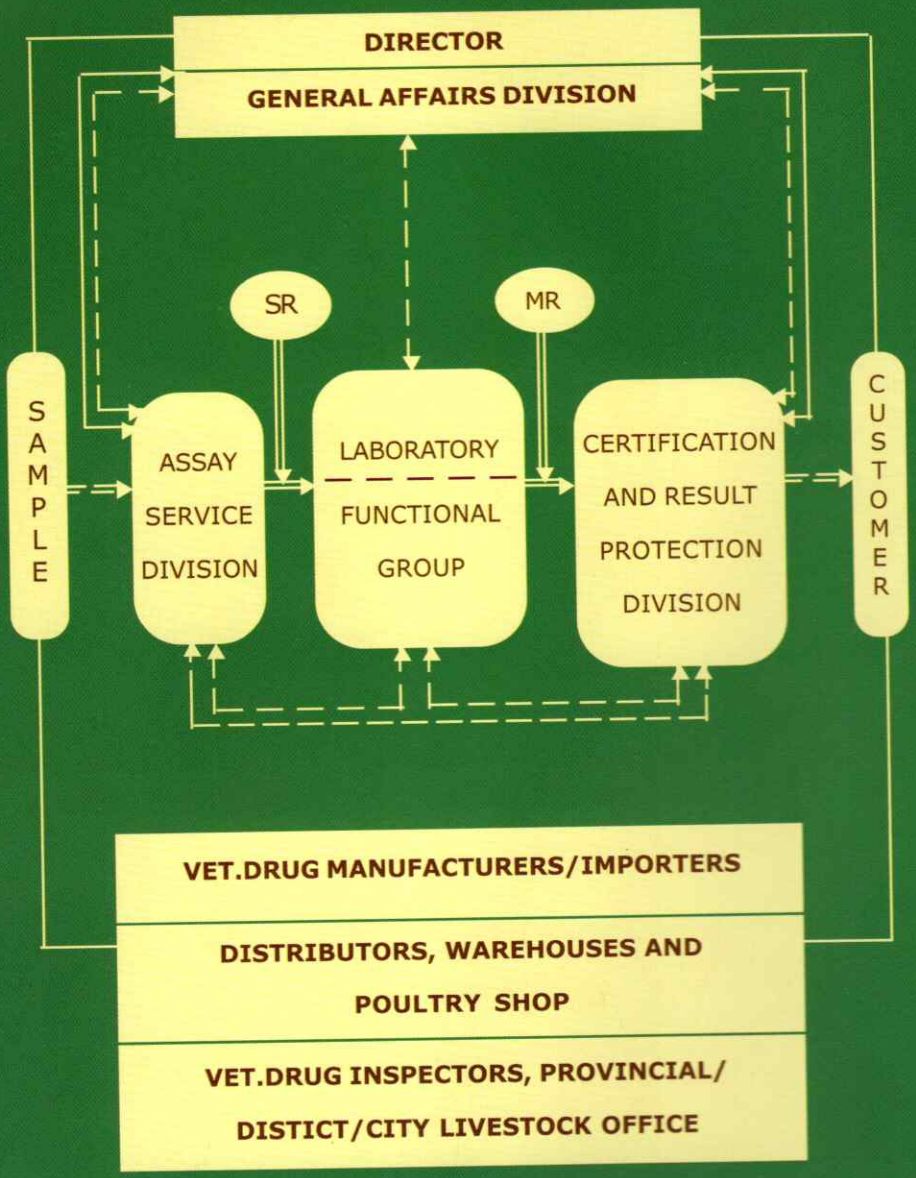
E1 Samples obtained from Manufactures / Importers.

E2 Samples are submitted to NVDAL.

E3 NVDAL issues certificate of analysis and sends it to the Producers or Importers.

E4 NVDAL sends a report to the Directorate of Animal Health.

Flowchart for Veterinary Drug Assay



Notes :

———	Command Line
— — — —	Coordination Line
———	Assay Line
= = =	Assay Coordination Line
SR	Sample Requirement
MR	Minimum Requirement

Human Resources

1. Staffing

The total number of NVDAL staff was 93 as of June 2005, consisting of 12 Structural staff, 3 Supervisors, 15 Examiners (Medic Veteriner), 28 Paravets (Paramedic Veteriner) and 35 administrative staff.

Table 1. Level and number of staff at NVDAL :

Level	IV c	IV b	IV a	III d	III c	III b	III a	II d	II c	II b	II a	I d	I c	Part-time employes
Total	1	3	12	5	1	13	21	17	5	2	2	1	3	7

Table 2. Academic records and number of staff at NVDAL Qualifications :

Qualifications	Doctor of Philosophy	Master Degree	Veterinarian	Pharmacist	Social Sci Graduate	Diploma (D3)	High School	Elementary School
Total	4	7	16	1	1	3	57	4

Main Buildings

Sample submission

Selection of mouse exp.animal

Tissue Culture Maintenance

Drug testing using high performance liquid Chromatography (HPLC)

Sample preparation for centrifugation

Counting bacterial colony in blood agar media

2. Structural Staff

The Director of NVDAL : **Dewa Made Ngurah Dharma, DVM, Msc,PhD**

1. Head of General Affairs Division : **I Gusti Agung Gde Anom, DVM**

a. Chief of Program and Finance Sub-Division : Liliek Indrayani, DVM
b. Chief of Personal and Administration Sub-Division : Ahmad Supriyadi, SIP
c. Chief of Household and Equipment Sub-Division : Khairul Daulay, DVM, MM

2. Head of Assay Ancillary Division : **Enuh Raharjo Jusa, DVM, Phd.**

a. Chief of Sample Sub-Division : Hany Mucharini,DVM
b. Chief of Experimental Animal and Waste Sub-Division : Bahruddin Syahroni Hasibuan, DVM, Msi

3. Head of Certification and Result Protection Division : **Endang Susanto, DVM**

a. Chief of Certification Sub-Division : Sumadi, DVM, Msi
b. Chief of Result Protection Sub-Division : Ni Made Ria Isriyanthi, DVM, Phd

4. Head of Functional Group : **Istiyaningsih, DVM**

5. Supervisors

a. Supervisor of Virology Unit : Ida Lestari Soedijar, DVM, MSc.
b. Supervisor of Bacteriology Unit : Ahmad Maizir, DVM
c. Supervisor of Pharmaceutical dan Premix Unit : Unang Patriana, DVM

6. Examiners

Virology Unit :
- Sri Murni Astuti, DVM,
- Ketut Karuni N. Natih, DVM, MSi
- Emilia, DVM,
- Rahmat Maharis, DVM
- Nur Khusni Hidayanto, DVM
- Yuni Yupiana, DVM

Bacteriology Unit :
- Siti Mariana, DVM, MSc.
- Istiyaningsih, DVM
- Hari Sakti Pancasunu, DVM
- Dina Kartini, DVM

Pharmaceutical and Premix Unit :
- Fadjar Sumping Tjatur Rasa,DVM, PhD.
- Sri Werdiningsih, DVM
- Muhammad Zahid, SSi, Apt

Procedures of Assaying and Certification

1. Sample Receiving

1.1 Sample admission for certification test.

1.1.1 Samples admitted from veterinary drug producers or importers for registration or re-registration.

1.1.2 Samples admitted from NVDAL officer, obtained from veterinary drug producers or importers for occasional assay.

1.2. Sample admission for monitoring test.

1.2.1 Samples admitted from Provincial/District/City Veterinary Drug Inspectors obtained from distributors or poultry shops for monitoring.

1.2.2 Samples admitted from NVDAL officer obtained from distributors or poultry shops for monitoring.

The principle of sample admission is sample verification which includes: packing conditions, packaging, enclosed documents, amount of samples, expiry dates, etc.

2. Drug Assays at the Laboratory

2.1. Assays on Biological Products

2.1.1. General assays include:
Physics, vacuum, purity, sterility, contamination (Mycoplasma, Salmonella and Fungi) and moisture tests.

2.1.2 Specific assays include:
Identity, inactivation, bacterial or viral content, safety, potency, abnormal toxicity test.

2.2 Assays on pharmaceutical and premix products.

2.2.1. General assays include:
Physics (uniformity of weight/volume, solubility, presence of foreign particles, odour and homogenity), sterility, moisture and acidity–alkalinity tests.

22.2. Specific assays include :
Identity, potency or content/amount, pyrogen, abnormal toxicity tests.

3. Judgement

Collection of test results and evaluation

4. Notes for assay results

4.1 Certificate is issued when the test results pass the minimum requirement.

4.2 Refusal letter is issued when the test results do not pass the minimum requirement.

4.3 Assay results are reported to Director General of Livestock Services cq. Director of Animal Health

Assay Activities

NO.	Activities	Kinds of Veterinary Drug	Remarks
1.	Testing for Certification	1. Vet.drugs for new registration 2. Vet drugs for registration 3. Registered vet.drug	Sampling from manufacturers or importers
2.	Testing for Monitoring	Registered vet.drugs on the market	Sampling from distributors, retailers and poultry shops.
3.	Testing for Method Trial	1. Registered vet.drugs 2. New registered vet.drugs	To develop/improve assay techniques.
4.	Testing for drug Surveillance	Registered vet. drugs, microorganisms and other specimens from the field	1. During an outbreak of a disease, to monitor side effects of vet.drug 2. Vet. drug evaluation,etc
5.	Technical Guidance	Producer/Importer,etc. Veterinary Drug Inspectors	Quality upgrading

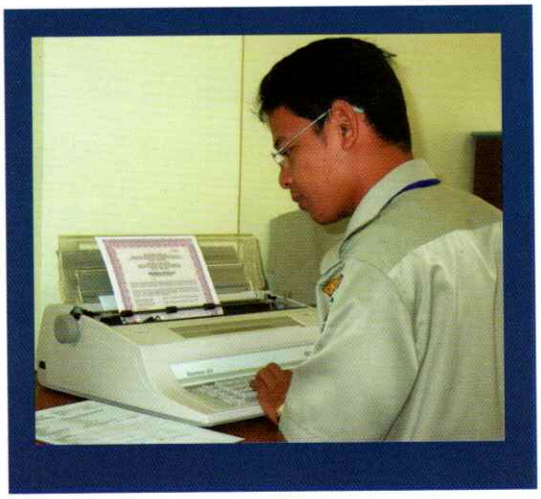
Testing for Certification

Veterinary drug testing for certification is based upon Government Regulation No: 78, issued in 1992, concerning Veterinary Drugs. Chapter IV, article 12 of the Regulation mentions that for quality assurances, newly registered and re-registered veterinary drugs should pass quality assay before being distributed to the market.

Table 1: Testing results for certification including newly registered, re-registered and occasional sample testing, from year 2000 up to June 30, 2005.

No.	Year	Number of Sample	Test Results	
			P	NP
1.	2000	246	230	16
2.	2001	377	360	17
3.	2002	429	411	18
4.	2003	436	424	12
5.	2004	497	380	25
6.	2005	163	114	1
Total Number		2,148	1,919	89

Note :
P = Passed
NP = Not Passed



Testing for Monitoring

The purpose of tests for monitoring of veterinary drugs is to determine the quality of veterinary drugs in the market, so that the customers will only use good quality veterinary drugs. The implementation of this monitoring testing is based on Ministry of Agriculture Decree No: 695/Kpts/TN.260/8/96 concerning the Requirements of Veterinary Drug Registration and Laboratory Assay (Chapter III, article 3); mentioning the necessity of sampling veterinary drugs from the field to assure the quality of veterinary drugs which have been registered and distributed to the market.

Tabel 2: Testing results on monitoring of veterinary drugs in the field, year 2000 ~ Juni 30th, 2005.

No.	Year	Number of Sample	Test Results	
			P	NP
1.	2000	181	173	8
2.	2001	166	156	8
3.	2002	113	113	0
4.	2003	16	16	-
5.	2004	129	106	4
6.	2005	-	-	-
Total Number		605	564	20

Note :
P = Passed
NP = Not Passed

Assay Fees

Assay fees must be paid by the customers based on Government Regulation No. 49/2002, amended Government Regulation No. 7/2004 concerning Non Taxable Government Income (PNBP) in the Ministry of Agriculture.

Table 3: Assay fees per sample of veterinary drugs

NON TAXES GOVERNMENT INCOME	FEE (Rp)
I. BIOLOGIC PRODUCT (VACCINES & ANTIGENS)	
1. Large Animals	
a. Vaccine Parainfluenza	1,737,000
b. Vaccine Infectious Bovine Rhinotracheitis Active	9,063,000
c. Vaccine Bovine Viral Diarrhea Active	9,063,000
d. Vaccine Bovine Enteritis Fever Active	9,063,000
e. Vaccine Akabane Active	9,063,000
f. Vaccine Adeno 7 Active	9,063,000
g. Vaccine BRSV Active	2,340,000
h. Vaccine Bovine Enteritis Fever Inactive	1,989,000
i. Vaccine PI + IBR + BVD Active	10,294,000
j. Vaccine PI + IBR + BVD Inactive	8,953,000
k. Vaccine Foot and Mouth Disease	13,222,000
l. Vaccine Haemorrhagic Septichemia	4,222,000
m.Vaccine Brucella	1,802,000
n. Vaccine Anthrax	1,080,000
o. Vaccine Escherichia Coli (Swine)	2,415,000
p. Vaccine Swine Erysipelas	1,567,000
q. Antigen Brucella	886,000
2. Small Animals	
a. Vaccine Rabies Inactive	1,680,000
b. Vaccine Canine Distemper	1,485,000
c. Vaccine Canine Parvovirus Active	1,859,000
d. Vaccine Canine Parvovirus Inactive	1,874,000
e. Vaccine Feline Panleucopenia Inactive	1,485,000
f. Vaccine Feline Panleucopenia Active	2,035,000
g. Vaccine Feline Calicivirus	2,035,000
h. Vaccine Feline Viral Rhinotracheitis 2,035,000	
i. Vaccine Distemper + Parvovirus	2,569,000
j. Vaccine Distemper + Hepatitis Active	2,156,000
k. Vaccine Distemper + Measles Active	2,156,000
l. Vaccine Distemper + Hepatitis + Parvovirus Active	3,156,000
m.Vaccine Distemper + Hepatitits + Parvivirus + Para Influenza Active	3,378,000
n. Vaccine Distemper + Hepatitis + Rabies	3,230,000
o. Vaccine Distemper + Hepatitis + Parvovirus + Rabies Active	4,276,000
p. Vaccine Distemper + Hepatitis + Parvovirus + Para Influenza + Rabies	4,453,000

3. Poultry	
a. Vaccine New Castle Disease Active	3,088,000
b. Vaccine New Castle Disease Inactive	2,350,000
c. Vaccine Infectious Bronchitis Active	2,180,000
d. Vaccine Infectious Bronchitis Inactive	3,076,000
e. Vaccine Fowl Pox Active	1,054,000
f. Vaccine Avian Enchephalomyelitis Active	3,925,000
g. Vaccine Avian Enchephalomyelitis Inactive	2,908,000
h. Vaccine Infectious Laryngo Tracheitis Active	3,356,000
i. Vaccine Marek's Disease Active	2,347,000
j. Vaccine Infectious Bursal Disease Active	2,822,000
k. Vaccine Infectious Bursal Disease Inactive	2,436,000
l. Vaccine EDS'76 Inactive	2,443,000
m. Vaccine Viral Arthritis Active	3,451,000
n. Vaccine Viral Arthritis Inactive	2,709,000
o. Vaccine Swollen Head Syndrome Active	3,005,000
p. Vaccine Swollen Head Syndrome Inactive	2,540,000
q. Vaccine Fowl Cholera Active	3,899,000
r. Vaccine Fowl Cholera Inactive	3,799,000
s. Vaccine Coryza Monovalent	1,973,000
t. Vaccine Coryza Bivalent	2,380,000
u. Vaccine Coryza Trivalent	2,787,000
v. Vaccine Mycoplasma Active	1,995,000
w. Vaccine Mycoplasma Inactive	1,895,000
x. Vaccine ND + IB Active	5,138,000
y. Vaccine ND + IB Inactive	5,366,000
z. Vaccine ND + EDS Inactive	4,733,000
aa. Vaccine ND + IBD Inactive	4,726,000
bb. Vaccine ND + IB + EDS Inactive	7,749,000
cc. Vaccine ND + IB + IBD Inactive	7,742,000
dd. Vaccine ND + EDS + IBD Inactive	7,749,000
ee. Vaccine ND + IB + IBD + EDS Inactive	10,125,000
ff. Vaccine ND + IB + IBD + Reo Inactive	10,391,000
gg. Vaccine ND + IB + IBD + SHS Inactive	10,222,000
hh. Vaccine ND + Coryza Monovalent	4,263,000
ii. Vaccine ND + Coryza Bivalent	4,670,000
jj. Vaccine ND + Coryza Trivalent	5,077,000
kk. Vaccine ND + Fowl Cholera	6,089,000
ll. Antigen Mycoplasma Gallisepticum	962,000
mm. Antigen Mycoplasma Synoviae	1,162,000
nn. Antigen Salmonella Pullorum	680,000

II. PHARMACEUTIC AND PREMIX PREPARATION	
1. Pharmaceutical Preparation content of Antibiotics	
a. Single oral	167,000
b. Mixed oral	361,000
c. Single infusion	496,000
d. Mixed infusion	773,000
e. Single injection	253,000
f. Mixed injection	466,000
g. Single suppositoria	174,000
h. Mixed suppositoria	313,000
i. Single topical	174,000
j. Mixed topical	313,000
k. Single premix (feed additive)	167,000
l. Mixed premix (feed additive)	361,000
2. Pharmaceutical Preparation content of Non Antibiotics	
a. Single oral	400,000
b. Mixed oral	450,000
c. Single infusion	948,000
d. Mixed infusion	1,025,000
e. Single injection	948,000
f. Mixed injection	1,025,000
g. Single suppositoria	400,000
h. Mixed suppositoria	450,000
i. Single topical	450,000
j. Mixed topical	550,000
k. Single premix (feed additive)	948,000
l. Mixed premix (feed additive)	1,025,000




Study & Scientific Publications

National Veterinary Drug Assay Laboratory is an institution committed to the study of veterinary drugs. NVDAL conducts tests and analysis of veterinary drugs; and also monitors and evaluates veterinary drugs in the field concerning: side effects, effectivity, and microorganism resistancy

Some studies and experiments had been reported to scientific meetings and published in Veterinary Drug Quality Control Bulletin, a bulletin issued by NVDAL yearly. The following are some of the articles which have been published recently.

Bacteriology articles

1. Antibody response of mice through ompA – recombinant feline chlamidiosis.
2. Development of a whole cell vaccine from Pasteurella multocida field isolates: Studies on immunogenicity of field isolate.

Virology articles

1. Evaluation of infectious bronchitis vaccine tests, year 1987 to 2001.
2. Serodiagnosis of porcine respiratory and reproductive syndrome (PRRS) in Indonesia by ELISA method.
3. Rabies vaccine, potency, immunisation and evaluation of test results in the field.

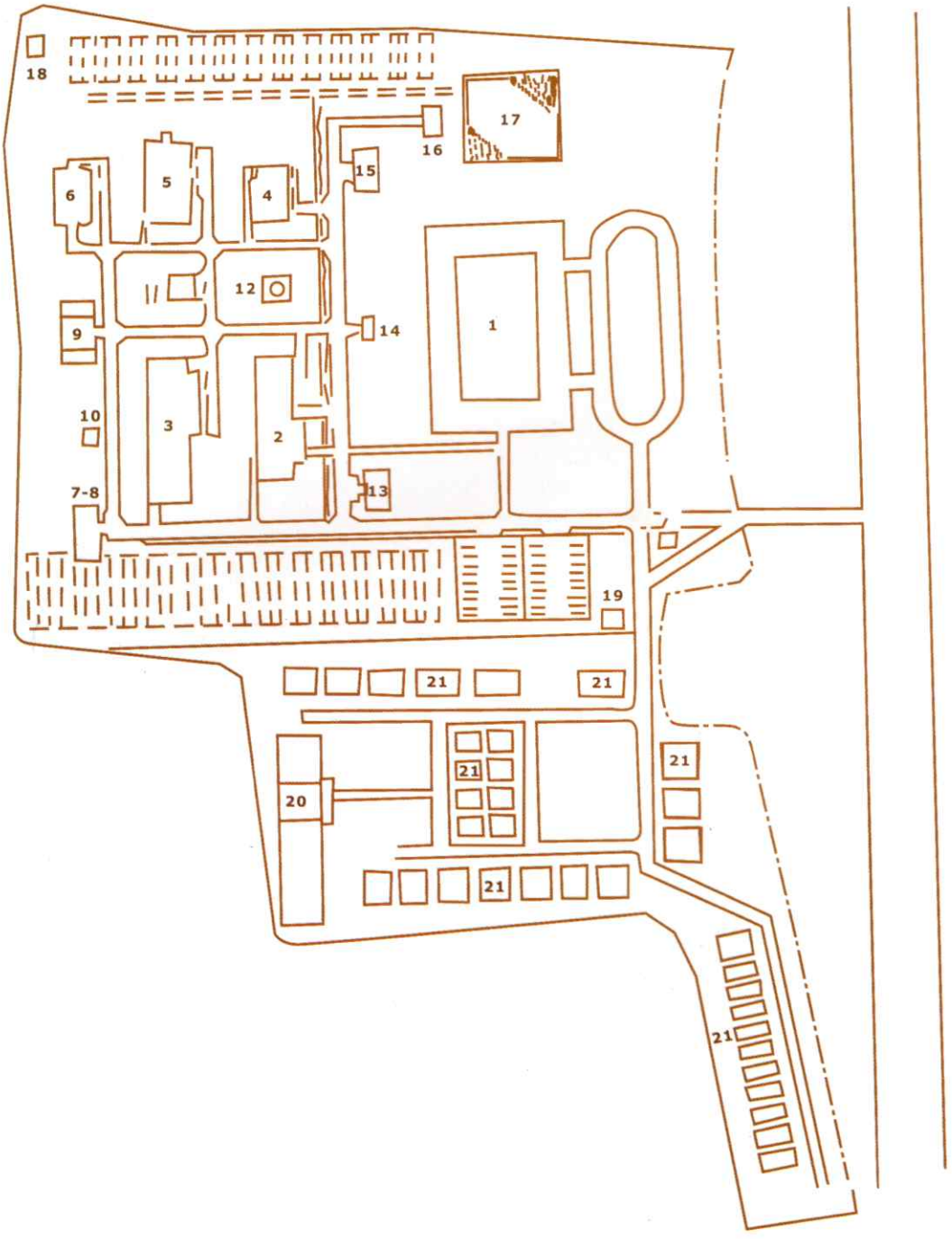
Pharmaceuticals and premix articles

1. Preliminary studies: verification of residue analysis method of pesticide organochlor (DDE and Heptachlor) in livestock products.
2. Withdrawal time of sulfadimethoxine in edible chicken tissues.
3. Method trial: identification of fradiomycine residues in chicken by ELISA
4. Drug residues in food from animal products.

Pathology articles

1. Case study of porcine respiratory and reproductive syndrome, pathology picture.

Layout of the Veterinary Drug Assay Laboratory



Buildings and other Facilities

NO.	Buildings/Facilities	
1.	Main Building (Laboratory and Administration Office)	2,454 m2
2.	Small Animal House	380 m2
3.	Fowl House	494 m2
4.	SPF Chicken House	225 m2
5.	Breeding House for Small Animals	312 m2
6.	Conventional Chicken House (Non SPF)	337 m2
7/8.	Post Mortem and Incinerator House	96 m2
9.	Large and Middle-size Animal House	63 m2
10.	Explosive Storage	
11.	Lavatory	
12.	Elevated Water Tank.	
13.	Power House	
14.	LPG Station	
15.	Workshop	
16.	Water Treatment Tanks	
17.	Drain Pool	
18.	Guard Post	
19.	Electrical Sub-station	
20.	Dormitory (Capacity of 22 inmates)	530.10 m2
21.	Staff Houses (35 houses; B type=1, C type= 5, D type=19, E type=10)	
	Total floor area	1.666.20 m2
22.	Fodder Fields	

Financing

Budget allocated for NVDAL by the Government of Indonesia amounted to Rp. 22,587,195,000 for the period of 2000 to 2005. The budget had been spent on purchases of assay instruments, reagents, standards, office maintenance and running costs etc. At present, the Government of Indonesia makes available all NVDAL operational costs. Budget allocated for NVDAL operational costs for the last six years is shown in Table 4

Tabel 4: Budget allocated for NVDAL operational costs, year 2000 to 2005

Year	Development (Rp)	Routine Budget (Rp)	Total (Rp)
2000	520.802.000	897.198.000	1.418.000.000
2001	798.061.000	1.421.399.000	2.219.460.000
2002	999.000.000	1.783.361.000	2.782.361.000
2003	2.347.000.000	2.089.649.000	4.463.649.000
2004	2.348.000.000	2.560.725.000	4.908.725.000
2005*)	2.795.000.000	4.000.000.000	6.795.000.000
		Total budget	**22.587.195.000**

No.	Year	Income (Rp)
1	2000	42.447.000
2	2001	274.755.000
3	2002	407.014.000
4	2003	468.797.000
5	2004	565.387.000
6	2005 (31 Oct)	522.000.000
Total		**2.280.400.000**

Table 5: Non Taxable Government Income earned by NVDAL year 2000 to 2005

As a veterinary drug assay institution that issues certificate of analysis, NVDAL earned an assay fee based on Government Regulation No. 49/2002 yo Government Regulation No:7, February 11, 2004. All fees earned by NVDAL are subjected to Non Taxes Government Income. The amount of income earned from assay fee in the last 6 years is shown in Table 5.

Assistance from The Government of Japan

1. Grant Capital Aid.

The main building, animal houses and other related facilities of NVDAL were constructed with the grant capital aid from the Government of Japan. Major equipment such as generators, incinerators and water purifiers were also provided by the grant capital aid.

The construction of NVDAL buildings started in March 1984 and was completed in January 1985. The handover ceremony of NVDAL was held in the presence of Director General of Livestock Services on January 26th 1985. The capital aid grant totalled 960 million Yen.

2. Technical Cooperation

The technical cooperation had been implemented from April 1984 until March 1989 and extended for two more years until March 1991. Technical cooperation consisted of three main components: dispatchment of Japanese experts, equipment provision and technical training of counterparts in Japan.

2.1. Dispatchment of Experts

Long-term and short-term experts of various specialties were assigned in the course of the cooperation term. They were: chief advisor, coordinator (liaison officer), experts on bacteriology, virology, antibiotics, pathology, laboratory animal, etc. as shown in Table 6.

Table 6: Assigment of Long-term Japanese Experts (as of March 1991)

Position	1984/ 1985	1985/ 1986	1986/ 1987	1987/ 1988	1988/ 1989	1989/ 1990	1990/ 1991
1. Advisor		1	1	1	1	1	
2. Coordinator	1	1	1	1	1		1
3. Virology	1	2	2	2	1	1	
4. Bacteriology		1	2	1	1	1	
5. Antibiotic		1	1	1		1	1
6. Pathology			1	1			
Total	2	6	8	7	4	4	2

Laboratory waste processing plan

Table 7: Assigment of Shot-term Japanese Experts (as of March 1991)

Position	1984/ 1985	1985/ 1986	1986/ 1987	1987/ 1988	1988/ 1989	1989/ 1990	1990/ 1991
1. Bacteriology		2	2		3	2	1
2. Virology			3	3	3	2	1
3. Antibiotic			3	1	2	2	1
4. Pathology			1	1			
5. Lab. Animal	1	2	1	2	1		
6. Veterinary Drug Administration	2	1		3	2		
7. Lab. equipment							
Total	3	5	10	10	11	6	3

2.2. Equipment Provision

Equipment was provided for NVDAL each year in accordance with the progress of the project. The total amount of the machinery and equipment granted valued 459 million Yen from the beginning of the project up to the end of the fiscal year 1990/1991 (Table 8). An additional value of 60 million Yen was also granted for aftercare programme.

Table 8: Indonesian officials trained in Japan under the Technical Cooperation Programme

Position	1984/ 1985	1985/ 1986	1986/ 1987	1987/ 1988	1988/ 1989	1989/ 1990	1990/ 1991
1. Advisor		1	1	1	1	1	
2. Coordinator	1	1	1	1	1		1
3. Virology	1	2	2	2	1	1	
4. Bacteriology		1	2	1	1	1	
5. Antibiotic		1	1	1		1	1
6. Pathology			1	1			
Total	**2**	**6**	**8**	**7**	**4**	**4**	**2**

2.3. Technical Training of Indonesian Counterparts in Japan

The Indonesian counterparts were sent to Japan every year for training, until the termination of technical cooperation. They were trained at the National Veterionary Assay Laboratory, Ministry of Agriculture, Forestry and Fisheries and other related institutions. Officials who studied laboratory animals were trained at the Kobuchizawa Laboratory Animal Breeding Farm, the Nippon Institute for Biological Science. The technical training included observation tours to various institutions concerned. A Master Course or further study at a Japanese University was also programmed as a part of counterpart training in Japan. Thirty six (36) officials have completed counterpart training in Japan and six (6) officials are taking further studies at Japanese University (see Table 9).

Table 9: Indonesian officials trained in Japan under Technical Cooperation Programme

Position	1984/ 1985	1985/ 1986	1986/ 1987	1987/ 1988	1988/ 1989	1989/ 1990	1990/ 1991
1. Advisor		1	1	1	1	1	
2. Coordinator	1	1	1	1	1		1
3. Virology	1	2	2	2	1	1	
4. Bacteriology		1	2	1	1	1	
5. Antibiotic		1	1	1		1	1
6. Pathology			1	1			
Total	**2**	**6**	**8**	**7**	**4**	**4**	**2**

2.4. Seminars / Training Courses

In order to develop Veterinary Drug Control System in Indonesia, NVDAL conducts group training courses for Veterinary Drug Inspectors in cooperation with Directorate of Animal Health and Indonesian Veterinary Drug Association.

Other training courses conducted at NVDAL are as follows:

- FAO/APHCA Workshop on Registration, Certification and Quality Control of veterinary Biologic for ASEAN Countries, 1990/1991.
- The First International Training Course on Veterinary Drug Improvement, for Asia and Pacific Countries, 1992
- The Second International Training Course on Veterinary Drug Improvement, for Asia and Pacific Countries, 1993
- The Third International Training Course on Veterinary Drug Improvement, for Asia and Pacific Countries, 1994z
- The Fourth International Training Course on Veterinary Drug Improvement, for Asia and Pacific Countries, 1994
- Training Course of Veterinary Drug Company Technical Staff I, 1994
- Training Course of Veterinary Drug Company Technical Staff II, 1995
- The Fifth International Training Course on Veterinary Drug Improvement, for Asia and Pacific Countries, 1996
- The Sixth International Training Course on Veterinary Drug Improvement, for Asia and Pacific Countries, 1997
- The Seventh International Training Course on Veterinary Drug Improvement, for Asia, Pacific and Africa Countries, 1998
- The Eight International Training Course on Veterinary Drug Improvement, for Asia, Pacific and Africa Countries, 1999
- The First International Training Course on Advanced Veterinary Drug Quality Control, for Asia, Pacific and Africa Countries, 2003
- The Second International Training Course on Advanced Veterinary Drug Quality Control, for Asia, Pacific and Africa Countries, 2004
- The Third International Training Course on Advanced Veterinary Drug Quality Control, for Asia, Pacific and Africa Countries, 2005

Laboratory Animals

Laboratory animals play an important role in conducting veterinary drug assays either for biological products (safety, potency,viral/bacterials content and abnormal toxic substance tests), or for pharmaceutical preparation (toxicity test). Laboratory animal houses at NVDAL were made available by grant capital aid from the Government of Japan.

Various laboratory animals such as cows, buffaloes, goats, sheeps, swine, rabbits, guinea pigs, mice, rats, SPF chicken and SPF eggs were made available for the tests, provided by the Indonesian Government. Animal feed, especially for chicken and mice, is formulated and produced by the institution itself to minimize contamination.

BALAI BESAR PENGUJIAN MUTU DAN SERTIFIKASI OBAT HEWAN

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