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1. R/D 調査前にフィリピン側に送付した質問状

Questionnaire
related to
the Pesticide Monitoring System Improvement Project
in the Republic of the Philippines

This attached questionnaire is to confirm the Philippine side's ideas and present situation related to the Pesticide Monitoring System Improvement Project (hereinafter referred to as "the Project").

Although we have asked a few of them previously, we would like you to answer with update information.

The Implementation Study Team (hereinafter referred to as "the Team") for the Project is scheduled to be dispatched from 19 to 31 January 1997. It would be most appreciated if you could return your response when the Team arrives in the Philippines.

1. Concerning the Project operation

- 1) What is the Project budget allocation for fiscal year 1997 ? and from fiscal year 1998(plans)?
- 2) What is fixed numbers of staff of each PAL and FPA in 1997 and staff assignation plan from 1998 ?
- 3) Concerning counterpart training, you asked us to provide training in seven (7) fields. However, environmental toxicity and accreditation system are considered out of the scope of the Project. What are contents of the training you expect in the other five(5) fields concretely?
- 4) What kind of machinery and equipment will be needed for the Project, what do you need them for and where that machinery and equipment will be installed? Please answer respectively.
- 5) How do you think structure for the Project operation and management including relation among Joint Coordinating Committee, Implementation Committee and Program Advisory Committee?

2. Concerning Project activities

(1) Improvement of pesticide analysis technology

- 1) What is the condition (quantity used, type and so on) for determining the order of priority of target pesticides for pesticide residue analysis and formulation analysis? And what is the condition (quantity used, type and so on) for determining the order of priority of target crops for pesticide residue analysis?
- 2) We have heard that FPA orders the pesticide dealer to submit pesticide technical materials and analytical grade. How does FPA treat those materials and analytical grade? Are they analyzed at BPI?
- 3) How will you train the staff who will not be counterpart personnel of Japanese experts on the pesticide analysis technology?
- 4) What kind of training and how many training courses do you need for the staff on the pesticide analysis technology.

5) What do you think of the method for balancing the technology of each staff of PALs, and what criterion will you demand for them?

(2) Improvement of supervised pesticide residue trial in crops

1) What is the reason for giving priority to 10 crops and 5 pesticides for which will the pesticide residue trial be implemented?

2) Where are the productive areas of the 10 crops and what are the gross product quantities and production per 1 hectare of those 10 crops?

3) How will you train the staff who will not be counterpart personnel of Japanese experts on the supervised trial technology ?

4) Where do you have fields for supervised pesticide residue trial in crops and what is the relation between the supervised fields and those productive areas? And how many staff will be in charge of supervised pesticide residue trial?

5) Do you have manuals on the testing of pesticide efficiency and damages?

6) How will you manage the supervised fields for pesticide residue trial?

(3) Concerning Support for the Committee on Pesticide Residue Assessment Program (CPRAP)

1) Do you have food intake data available for the establishment of MRLs?

2) What have been the activities of CPRAP since establishment? Why the establishment of MRLs is not included in the activities of CPRAP? Does FPA establish MRLs?

3) What is the relation between CPRAP and Pesticide Technical Advisory Committee on pesticide residue?

4) Which agency determines Pesticide Safe Use Direction?

5) How does CPRAP get involved in the establishment of MRLs and determination of Pesticide Safe Use Direction?

6) Which committee should the Project provide scientific advice to establish MRLs and the pesticide safe use direction, to CPRAP or to Pesticide Technical Advisory Committee (PTAC)?

(4) Concerning dissemination for Pesticide safe use

1) How do you disseminate information on pesticide safe use and which agency has a main role for the dissemination?

2) What authority is given to Accredited Pesticide Professional Advisor, Accredited Responsibility Care Officer and Responsible Care Officer, and which act is that authority based on?

Are there any obligations for those qualifier, e.g. provide instruction to farmers on the pesticide safe use and which act is that obligation based on?

3) How do you cooperate with ATI and other agencies concerned?

2. 質問状に対するフィリピン側の回答

ANSWERS TO QUESTIONNAIRE

1. Concerning the Project Operation

- 1.) Please see attached Financial Plan (BPI and FPA).
- 2.) Staff involved in the project :
 - a. FPA (40)
 - b. BPI (43 permanent, 1 casual, 4 contractual)
- 3.) Contents of the Training :
 - a. Latest Technology for Analysis of pesticide residues and formulations
 - a.1 Pesticide Residue (PR)
 - (1.) collection of sample from the field
 - (2.) sampling procedure for analytical purposes
 - (3.) extraction of residue
 - (4.) clean-up
 - (5.) determination
 - (6.) documentation/reporting
 - a.2 Pesticide Formulation (PF)
 - (1.) collection of samples
 - (2.) sampling procedure
 - (3.) extraction and clean-up procedure
 - (4.) determination
 - (5.) documentation
 - b. Appropriate Method for Market Basket Research (Monitoring of Pesticide Residues)
 - (1.) design of the monitoring program ;
 - (2.) sampling techniques
 - (3.) evaluation, assessment and documentation

**c. Change Environmental Toxicity to
"Assessment of Pesticide Toxicity"
Evaluating Toxicity Studies which relate to the establishment of MRL**

Areas where training is required :

1. Development of capability/skill to collect, process and evaluate/interpret toxicological studies (Acute and chronic) which could be used as benchmark information for assessing risks posed by exposure to toxic residues.
2. Development of knowledge and skill in comparing dietary intake data with known toxicological effects of pesticides, Comparison may be considered for acute/chronic toxic end-points to determine if differences in potential effect/s would vary depending on whether intake of total residue is known a single dose or incrementally spread over a given duration of time.

d. Supervised Pesticide Residue Trial.

Guidelines on Producing Pesticide Residue Data from Supervised Trials

(1.) Design of Residue Trials

- 1.1 Trials Lay-Out
 - 1.1.1 Selection of Sites
 - 1.1.2 Number of Sites
 - 1.1.3 Replication
 - 1.1.4 Plots
 - 1.1.5 Type/Variety of Crop/Commodity/Cropping System
- 1.2 Applications of the Pesticide
 - 1.2.1 Formulation
 - 1.2.2 Methods of Application
 - 1.2.3 Dosage rates
 - 1.2.4 Number and Timing of Applications
 - 1.2.5 Additional Pesticides
- 1.3 Degradation Studies
- 1.4 Residue Decline Studies

- (2.) Sampling in Pesticide Residue Trials
 - 2.1 General Recommendations
 - 2.1.1 Methods of Sampling
 - 2.1.2 Replication
 - 2.1.3 Sample Handling
 - 2.2 Contamination
 - 2.3 Control Samples
 - 2.4 Sampling in Decline Studies and at Normal Harvest Time
 - 2.4.1 Sampling in Decline Studies
 - 2.4.2 Sampling at Normal Harvest Time
 - 2.5 Detailed Sampling Procedures
 - 2.5.1 Fruits and Tree Nuts
 - 2.5.2 Vegetables
 - 2.5.3 Grasses
 - 2.5.4 Seeds
 - 2.5.5 Herbs and Spices : Tea Leaves; Hops; Beer

e. Establishment Procedure of Risk Assessment and MRLs'

(1.) Exposure estimates/assessment on :

- 1. Total diet studies
- 2. Selective studies on individual foods
- 3. Duplicate portion studies

(2.) Risk Assessment/Characterization

- method of systematically organizing scientific and technical information, and its associated uncertainties to answer specific questions about health risks.

The outcome of the risk characterization is an estimate of the likelihood of adverse health effects in human populations as a consequence of the exposure. It takes into consideration the results of the hazard identification, hazard characterization and exposure assessment.

(3.) Hazard Identification

Epidemiological Studies
Toxicity and Impact on non-target

(4.) Hazard Characterization

Dose-response extrapolation
Dose-Scaling
Genotoxic and non-genotoxic carcinogens
non-threshold approaches

(5.) Uncertainty and Variability in the Risk Assessment Process

Model uncertainty versus input (parameter) uncertainty

- nature of models
- methods of addressing model uncertainty
- methods of representing and propagating input variance

Uncertainty and Variability in hazard identification.

Uncertainty and Variability in hazard characterization.

Uncertainty and variability in exposure characterization.

Uncertainty and variability in risk characterization.

f. Skills Development for Assessment of Laboratories for Accreditation.

- Safety Standards for Laboratory
- Operating Procedures
- Procedures for Laboratory Audit
- Evaluation of analytical capabilities of laboratories staff involved
- Determine adequacy, effectiveness and efficiency of laboratory apparatus and equipments.
- Evaluate the various indicators for safe operation of the laboratories
- Conduct of ring analysis

g. Orientation on Relevant Japanese Regulation Strategies for MRL Implementation.

- Standards/MRL for domestic imported/exported crop
- Import/Export Regulations/Legal mechanism
- Legal procedures/enforcement for cases violating MRLs
- Inter-agency linkages/coordination, for implementation of MRL

h. Information Dissemination

- Short course on computer use/networking
- Training Course for Trainers/Training Management (Training Design/Implementation)
- Short course on Visual Aids Production

4.) List of Equipment (Please see attached A-2)

The vehicles requested by FPA will be used for monitoring and sampling purposes especially in those areas which are found to have high pesticide usage.

The computers will be used for the data banking/information/communications which will be housed at the FPA Central Office.

- 5.) Two Committees only will suffice the need of the project.
The Joint Committee (JC) meets one or twice a year and the
Implementation Committee (IC) which meets more often or whenever the need
arises.

2. Concerning Project Activities

(1.) Improvement of Pesticide Analysis Technology

1.1 Crops

heavily sprayed, high risk (e.g. method of processing/how food is
eaten) highly consumed crops

1.2 Pesticide

1.2.1 Residues

most commonly used pesticide registered for the priority crops ;
Volume of usage and other issues as far as safety is concerned.

1.2.2 Formulation

highly saleable/most popular brand/formulation

- 2.) FPA requires the submission of pesticides technical materials/samples
and analytical grade by the registrants/companies as part of the
registration process. FPA in turn sends them to the BPI-PAL . The
materials are to be utilized for :

- a. quality control analysis
- b. residue analysis
- c. confirmatory analysis for pesticide registration

- 3.) Through local re-echo trainings and on-the-job trainings to be conducted
by FPA and BPI.

4.) Training Courses on Pesticide Analysis Technology

- Training Course on Pesticide Residue
- Training Course on High Pressure Liquid Chromatography (HPLC)
- Training Course on Gas Chromatography
- Training on Formulation Analysis
- Seminar/Workshop on Quality Control Procedures
- Pesticide Residue Sampling Techniques
- Chemistry of Pesticide

- 5.) - program of periodic upgrading/validation of skills among PAL staff.
- conduct of Interlab Ring Analysis

(2.) Improvement of supervised pesticide residue trial in crops.

- 1.) The 10 priority crops are based on consumption or the most eaten crop and the 5 pesticides are the most commonly sprayed brands/formulations.

2.) See attached

- 3.) Through local re-echo trainings/seminars and on-the-job training conducted by the FPA and BPI

- 4.) The supervised residue field trials will be at the BPI/DA Experimental Stations located at the BPI-PAL Satellites. (8 experimental station with 2 staff per satellite). The fields to be used for pesticide residue trials are situated/located within or in close proximity to the production areas of the same agro-climatic conditions.

- 5.) Yes, but the existing manual needs updating.

- 6.) The supervised field trials will be jointly coordinated, supervised and monitored by FPA and BPI.

3. Concerning Support for the Committee on pesticide Residue Assessment Program (CPRAP)

- 1.) Yes, data coming from DOH/FNRI/FDC, but the data need to be processed for our purpose/need.

2.) CPRAP activities since establishment:

2.1 Conducted Workshop on :

1. Pesticide Residue Control Program
August 22-23, 1995 at DAP, Tagaytay City
2. Planning Workshop on the Implementation of the National Monitoring Program on Pesticide Residue in Agriculture and the Environment and Pesticide Formulation (July 10-11, 1996, DCIEC, Quezon City)

3. Establishment of the Guidelines for the Accreditation of Pesticide Laboratories

Actual establishment of MRLs is not included in the activities of CPRAP since it is only a recommendatory/advisory body to FPA on MRL. (please see attached CPRAP S.O.) Yes, the mandate to establish MRL is with the FPA.

- 3.) The CPRAP and PTAC are both advisory committees. PTAC is a higher advisory body than CPRAP, and handles all technical issues/problems referred by the registration consultants and members of CPRAP. Recommendations formulated by CPRAP will be further discussed during PTAC meetings.
- 4.) Under Presidential Decree 1144, FPA is mandated to determine and enforce the Pesticide Safe Use Policy Directions
- 5.) CPRAP is an advisory body on technical matters as described under the Terms of Reference of the Committee.
- 6.) The Project should provide FPA the scientific advice/data to establish MRLs and pesticide safe use direction, then FPA will in turn provide/discuss the data to CPRAP and PTAC whichever it is relevant since both the committees are under FPA.

4. Concerning dissemination for Pesticide Safe Use

- 1.) FPA is the agency which has the main role for information dissemination on pesticide safe use. FPA cooperates/coordinates with BPI, Agricultural Training Institute (ATI), and Local Government Units(LGU) in information dissemination either through print or broadcast media.
- 2.) Pursuant to the provisions of PD 1144 and its Implementing Rules and Regulations, the FPA promulgated rules on the following :
 - a) The Accreditation of Professional Pesticide Adviser (APPA):as per FPA Memo Circular No. 06 Series of 1995, Memo Circular No. 96-03 Series of 1996 and Memo Circular No. 96-06 Series of 1996 " No Sale or transaction shall be conducted to customers of pesticide products falling under Categories I and II when the Accredited Professional Pesticide Adviser (APPA) is absent."

The APPA must be personally present to give advice to clients on the safe use of pesticide products falling under Categories I and II during its actual sale.

- b) On Accredited Responsible Care Officer (ARCO) : To address the judicious and safe use of pesticide in the interest of improving agricultural production, protecting public health and enhancing environmental quality, FPA institutionalized the concept of responsible care in handling crop protection products.

The Master Instructor-Responsible Care Officer (MI-RCO), RCO and ARCO shall provide active leadership in the education and training of farmers, contracted applicators and other relevant clientele. (Memo Circular No. 05 Series of 1996)

- 3.) Actual implementation of training programs and other information dissemination activities, e.g. training module preparation, packaging of information materials will be coordinated with ATI and other relevant agencies through Memoranda of Agreement (MOA) or Memoranda of Understanding (MOU).

3. R/D 調査時にフィリピン側から提出された供与機材要請リスト

LIST OF EQUIPMENT

FERTILIZER AND PESTICIDE AUTHORITY (FPA)

Equipment/Machinery	Purpose
Motor Vehicles 8 units Motor Vehicles For use of the 4 components of the project - Monitoring, Research, Establishment of MRL, Consultancy and Linkages Cost based on current price of Pajero - Diesel engine 8 units Utility Van	Monitoring and sampling for areas with high pesticide usage. To be used by the field people.
Laboratory Equipment 8 units Refrigerators	For storage of samples taken by the FPA field officers. To be installed/carried on the 8 motor vehicle distributed to the identified regional offices near the PAL-Satellites
Servers a) Networking 1 unit Network Server (BRANDED) Pentium 100 Processor, with 2 GB Hard PCI architecture Disk Capacity (PCI), CD-ROM Drive 100 MBPS Ethernet Interface Card 1 licensed Network Operating System Novell Novell 4.1; 100 user license 4 units Intelligent Hub/Routers 100 MBPS; 8 PORTS Stackable 40 pcs. Network Interface Card 100 MBPS. 4 rolls 10,000 Ft. UTP Wire b) Communications 1 unit Communication Server (BRANDED) Pentium 100 Processor, with 2 GB Hard PCI architecture Disk Capacity (PCI); CD-ROM Drive 100 MBPS Ethernet Interface Card 1 licensed Comm. Operating System Netware Connect 8 users 18 units Cellular phones	Data Banking (to be installed at the FPA Central Office) for communications (to be installed at the FPA Central Office)

Equipment/Machinery	Purpose
<p>1 licensed Network Operating System Novell Novell 4.1; 100 user license 8 Users</p> <p>1 pc Communication Port 8 Users Internal Comm. Port</p> <p>10 units Fax/Modern Card 28.8 KBPS Speed</p> <p>c) Print Server 1 unit Print Server with Software</p>	<p>Data Banking Information Communication</p>
<p>2. Personal Computers and Printers</p> <p>30 units Desktop Personal Computers Pentium 100 Processor, with 1.5 GB PCI architecture Disk Capacity (PCI); CD-ROM Drive</p> <p>30 units 24 Dot Matrix Printer Pref. EPSON LQ-1170</p> <p>1 Laser Printer (Colored)</p> <p>1 Laser Printer (Black & White)</p>	<p>Data Banking Information (to be installed at the FPA Central Office)</p>
<p>3. Other Components</p> <p>4 units Notebook</p> <p>4 units Portable Printer (Write Movell)</p> <p>1 unit SVGA Magna Byte</p> <p>1 unit Overhead Projector with copier</p> <p>20 units Computer Tables</p> <p>20 units Computer Chairs</p> <p>2 units Backup Drive (optical)</p> <p>10 units CD-ROM Drive (Upgrade)</p>	<p>For FPA Central Office for Training</p>
<p>4. Software</p> <p>1 licensed Windows 95 (For Workgroup)</p> <p>1 Licensed MS Office 95</p> <p>1 Licensed Other Desktop Softwares</p>	<p>For documentation (to be installed at FPA Central Office)</p>
<p>5. For Office Requirement</p> <p>1 unit Copying Machine Colored; Cost based on Price of Fuji Xerox</p> <p>1 unit cutter (heavy duty)</p>	<p>FPA Central Office for reproduction of Training Materials/phanplets /brochures</p>

Equipment/Machinery		Purpose
1 unit	TV set (42" multisystem)	For documentation (to be installed at FPA Central Office)
1 unit	VHS compatible to the TV	
2 units	Video Camera	
3 units	Still Photography Camera with Zoom lens 50 mm	
1 unit	Fax Machine	
20 units	Clerical Tables	
20 units	Clerical Chairs	
5 units	Calculators	
1 unit	Air Conditioning Unit 5 Tons	
1 unit	Air Conditioning Unit Window type	
1 unit	Panasonic Electronic Print Board KX-B630 (Wide) stand/KX-B630 & Interface Board for Printer KX-B09	
1 unit	Panasonic Printer (KX-P6500)	

#1 LIST OF EQUIPMENT (BPI)

Bureau of Plant Industry (BPI)			
Machinery/Equipment	Specification	Purpose	
1. 6 unit Motorcycle	125 cc	One each for Central and 5 Satellites for easy collection of field samples in diff. areas where roads are narrow.	
2. 6 unit 4-wheel drive tractor	diesel engine 15 horsepower w/ attachments: mouldboard plough repeated dry tilling & clay soil with 100 cm rotary tiller single gang harrow 6 x 16" dia disc	One each for Central and 5 Satellites for field preparation for supervised residue trials	
3. 5 unit generator	KVA 25 220 V output regulated 60 HZ 3 dia. diesel fueled	For continued supply of electric current in case of brown out or smooth supply in case of fluctuations.	
4. 5 unit water pump	jet pump, self priming 1 h.p. 220 V 1 diameter	For continuous supply of water in case of power failure	
5. 5 unit water tank on tower	>5,000 liter capacity stainless steel or comparable	For water reserve in case pump bog down	
6. 1 unit Atomic Absorption	w/ at least 6 kinds of cathode lamp	For detection of heavy metals as pesticide contaminants	
7. 16 unit high purity gases cylinders	100.00% standard size	For PAL-Satellites where high purity gases are not readily available	
air (4 cylinders)			
N ₂ (4 cylinders)			
H ₂ (4 cylinders)			
He (4 cylinders)			
8. 6 set Carbon Disulfide Trap	Quickfit glasswares	One each for Central and 5 Satellites for fungicide residue analysis. (This unit was not provided in the Grant-Aide Project).	
9. 7 set Vacuum Manifold (filter)	1 liter capacity	Necessary for preliminary processing of samples in HPLC analysis, 2 for Central and one each for five Satellites	
10. 2 unit Vacuum cleaner	Heavy duty with extended hose 2000-3000 watts 220 V	For the maintenance of the new NPAL building	
11. Printing Machine		For printing purposes of training/pamphlet materials	
stencil copier	DP-3080 or latest		
binding machine	Image maker 2000 or latest		
mimeographic machine	Rex rotary 830 or latest		
cutler	heavy duty		

12	Chairs for Semlnar Room	office chairs			For seminar room		
	60 pcs.						
13.	Meeting tables w/ chairs				For meeting room		
	-10 tables at 20 capacity						
	each						
	-10 tables at 40 capacity						
	each						
	- 90 pcs chairs						
14.	9 unit Office tables				For PAL staff & management		
15.	9 unit office chairs				For PAL staff & management		

4. 本プロジェクトへのフィリピン側予算プラン

FERTILIZER AND PESTICIDE AUTHORITY FINANCIAL PLAN - JICA PROJECT (in P Million)

PARTICULARS	1997	1998 ^{3/}	1999 ^{3/}	2000 ^{3/}	2001 ^{3/}
Personal Services ^{1/}	3.55	3.90	4.29	4.72	5.19
Maintenance and Other Operating Expenses ^{2/}	11.60	12.76	14.04	15.44	16.98
Total	15.15	16.66	18.33	20.16	22.17

^{1/} Budget for PS includes compensation for 17 additional manpower requirement.

^{2/} Total MOOE is for operating expenses of 65 present FPA staff to be involved in the JICA Project, 17 additional manpower being requested and consultants of the project.

^{3/} Budget for the year is previous year's budget plus 10% allowance for increase in compensation and 10% provision for inflation.

fn: jica
dn: excel

FINANCIAL PLAN (Bureau of Plant Industry)
PAL-Central and 5 Satellites (In Million Peso)

PARTICULARS	1997 (48 position) *	1998 (80 position) **	1999	2000	2001
Personal Services	7.113	10.840	13.009	15.610	18.733
Maintenance and Other Operating Expenses	4.041	15.878	19.063	22.863	27.437

Note:

* Permanent Position
45 itemized and 1 casual position
4 contractuals approved (salary from MOOE, object 29)

** Total Permanent and Proposed Position
44 (permanent position + 1 casual)
25 proposed position
4 existing 1997 contractuals
7 detailed to PAL from Laboratory Services Division (LSD)

5. 農作物生產量統計

Table 7. Vegetable Production in Metric Tons (1989-1992).

Commodity	PRODUCTION				TOTAL	AVERAGE
	1989	1990	1991	1992		
CABBAGE	75680.00	88338.00	75009.00	83209.00	302235.00	75000.75
EGGPLANT	111578.00	112574.00	104040.00	110451.00	438643.00	109660.75
BANANA	17200.00	17819.00	12425.00	11766.00	55210.00	13802.50
ONION	653.00	61476.00	60345.00	55505.00	177979.00	44494.75
TOMATO	178857.00	183962.00	177227.00	165423.00	705469.00	176367.25
ASPARAGUS	149.77	180.28	160.30	163.75	654.10	163.53
ANANAS	20180.79	21183.53	17581.54	17753.60	77709.46	19265.86
BATAT	637.30	683.61	762.59	715.91	2799.41	699.85
SWEET PEPPER	3151.64	2311.85	2038.80	2974.20	11369.37	2842.34
BROCCOLI	270.00	190.60	189.00	169.43	839.03	209.76
CARROTS	18091.22	12763.55	17156.07	17641.42	57652.26	14413.07
CAULIFLOWER	2001.36	2170.57	1854.86	1764.40	7791.19	1947.80
CELERY	770.21	910.40	1799.69	1703.38	5183.67	1295.92
CRAYOTE	10380.32	12370.93	16597.71	17625.05	57574.01	14393.50
CORPEA (GREEN)	525.67	323.40	358.20	302.61	1509.88	377.47
CORPEA (DRY)	136.45	107.39	75.37	85.12	404.33	101.08
CUCUMBER	4213.94	4872.17	5599.00	5746.90	20432.01	5108.00
GUARD (UPD)	16919.97	14992.71	15066.00	14336.91	61314.59	15328.65
MARICHELAS	2733.31	8930.20	7647222	11681.05	39117.07	9779.27
GREEN PEPPER (FINGER)	3015.54	2846.43	2073.53	2425.89	10361.39	2590.35
ENRI (FRUIT)	7878.15	79502.25	60570.76	111804.87	370056.03	92514.01
GABI (LEAVES/STEM)	7274.83	7215.10	7282.83	7420.37	29193.13	7298.28
IRISH POTATO	50243.96	63440.97	61684.51	61711.27	247080.71	61770.18
KANGKONG	9146.14	9526.23	9123.09	9245.69	37041.15	9260.29
EDNEY BEANS (RED/WHITE)	177.41	155.09	179.75	219.63	731.88	182.97
KONGOL	913.61	625.41	831.52	767.31	3137.85	784.46
LETTUCE	616.29	922.16	1036.58	1084.20	3659.23	914.81
LIMA BEANS (PLANT)	339.26	303.49	305.40	331.06	1279.21	319.75
HALUNGGAY (FRUIT)	3102.71	3187.23	2954.64	3047.20	12291.78	3072.70
HALUNGGAY (LEAVES)	6881.25	5579.49	5880.27	5697.29	24038.30	6009.58
MUSTARD	3700.16	3533.57	3164.84	3100.12	13498.69	3374.67
OKRA	6313.40	6449.07	6410.62	6015.25	25198.34	6299.59
ONION (LEAVES/SPRING)	8251.31	7785.92	6597.73	6728.10	29363.06	7340.77
PECHAY (NATIVE)	21768.04	20520.82	19024.87	19475.25	80799.98	20199.25
PATOLA	8330.74	8212.32	7279.05	7377.70	31199.81	7799.95
RADISH	6749.32	6312.70	6544.96	6574.91	26181.89	6545.47
SALUYOT	843.03	828.45	764.73	811.15	3247.36	811.84
SPINACH	250.52	312.29	312.50	311.04	1196.35	299.09
SQUASH (FRUIT)	50287.87	57725.95	51005.43	51262.10	210281.35	52570.34
SQUASH (TOPS)	566.49	476.61	411.56	406.50	1861.16	465.29
STRING BEANS	16003.90	14615.18	13306.40	13994.82	57920.30	14480.08
SWEET PEAS (SILKARD)	1217.60	1301.24	1216.13	1360.83	5195.80	1298.91
TUGUI	3162.22	3254.84	3187.64	3078.35	12683.05	3170.76
WINGED BEANS	1082.39	1147.15	1046.57	980.14	4256.25	1064.06
CANTALOUPE	2930.59	3216.16	11514.01	11826.59	29287.35	7322.09
HONEYDEW	84.50	84.00	110.75	111.70	391.95	97.99
RUSKELON	565.31	657.30	1359.43	1319.64	3901.68	975.42
WATERMELON	64300.67	67833.30	73290.11	71046.64	277270.69	69317.67
GRAND TOTAL	827079.11	905210.69	905693.15	935209.20	3573350.15	893337.54

SOURCES OF DATA : Bureau of Agricultural Statistics (BAS), Quezon City

6. 残留農薬評価プログラム委員会メンバーリスト



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF AGRICULTURE
FERTILIZER AND PESTICIDE AUTHORITY
4TH FLOOR, BUILDING B.
NIA COMPLEX, EDSA, QUEZON CITY

January 2, 1996

Special Order No. 54
Series of 1996

**Subject: Creation of a Committee to Establish the Operating Guidelines
and Procedures for a Pesticide Residue Assessment Program**

In line with FPA's mandate and in the interest of public service, a Committee on Pesticide Residue Assessment Program is hereby created with the following membership :

	<u>NAME</u>	<u>AGENCY</u>
Chairman :	Dr. Amelia W. Tejada	NCPC
Vice Chairman :	Ms. Paz B. Austria	BPI
Members:	Dr. Alicia O. Lustre	FDC
	Dr. Aida Aguinaldo	FNRI
	Ms. Rosario Martin	BFAD
	Ms. Evangeline Santiago	NSRI
	Ms. Ella Deocadiz	EMB
Resource Person On Call :	Dr. Virginia TD. Pacaba	BPI
	Ms. Cristina M. Bajet	NCPC
	Ms. Edna C. Mijares	Consultant
	Ricardo T. Deang	Consultant
Ex Officio Member:	Eng'r. Jacqueline M. Romualdez	FPA
	Ms. Angela B. Olegario	FPA
	Dr. Dario C. Sabularse	FPA
	Ms. Aida V. Ordas	FPA

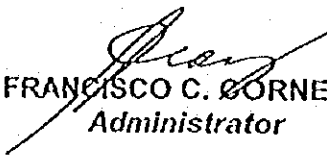
The Committee is charged to:

1. Prepare the guidelines for the recognition of a network of pesticide analytical laboratories.
2. Review and strengthen the national pesticide residue monitoring program and oversee the implementation by the network of pesticide laboratories.
3. Assess the applicability of existing CODEX MRL's and make needed recommendations for their adoption.
4. Establish a program for generating MRL's for those pesticide-crop combinations not in the codex.
5. Recommend to FPA for appropriate action, the control of pesticide residues in agricultural commodities.

Honorarium shall be given as follows:

Chairman	-	P 1,500.00/mo.
Vice-Chairman	-	P 1,200.00/mo.
Members	-	P 1,000.00/mo.
On Call	-	P 1,000.00/mo.

This order shall take effect immediately and shall remain enforced until December 1996.


FRANCISCO C. BORNEJO
Administrator *llb*



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF AGRICULTURE
FERTILIZER AND PESTICIDE AUTHORITY
4TH FLOOR, BUILDING B.
NIA COMPLEX, EDSA, QUEZON CITY

April 30, 1996

Special Order No. 68
Series of 1996

**Subject: Amendment to Special Order No. 54 series of 1996 re:
Creation of a Committee to Establish the Operating
Guidelines and Procedure for a Pesticide Residue
Assessment Program**

In the interest of the service, the membership of the Committee on Pesticide Residue Assessment Program is hereby amended to include Mr. Edgardo Juan of ITDI, DOST as Resource Person on Call. As such, subject person shall be entitled to the honorarium granted to Resource Persons on Call as provided under Special Order No. 54 series of 1996.

This order shall take effect May 1, 1996 and shall automatically end on December 31, 1996.

A
FRANCISCO C. CORNEJO
Administrator

7. 農薬販売等についての規制に関する資料



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF AGRICULTURE
FERTILIZER AND PESTICIDE AUTHORITY
4TH FLOOR, BUILDING B.
NIA COMPLEX, EDSA, QUEZON CITY

Memorandum Circular No. 06
Series of 1995
Dated: April 10, 1995

TO : All Concerned

SUBJECT : RESTRICTIONS ON THE AVAILABILITY/DISTRIBUTION/SALE OF PESTICIDES FALLING UNDER CATEGORY I AND II OF THE FPA'S TOXICITY AND HAZARD CLASSIFICATION SCHEDULE

Pursuant to the provisions of Presidential Decree No. 1144 and its Implementing Rules and Regulations, the Fertilizer and Pesticide Authority hereby promulgates the following rules on the availability/distribution/sale of pesticides products falling under Categories I and II :

I. COVERAGE AND DEFINITION OF TERMS

The Provision of this Circular shall cover pesticide formulations falling under Categories I and II of the FPA Toxicity and Hazard Classification scheme. This circular, however, does not supersede existing restrictions on availability of already restricted Categories I and II pesticide products. (e.g. Chlordane, Paraquat, etc.).

The FPA Toxicity and Hazard Classification scheme classifies pesticides products into various toxicity and hazard categories. Hazard referred to is the acute risk to health that might be encountered accidentally or occupationally by any person handling the product. While such classification is primarily based on the acute oral and dermal toxicity of the formulation, adjustment of the classification to a higher category has been and maybe made by the Authority for formulations with active ingredients which produce irreversible damage to vital organs, is highly volatile, markedly commulative in its effect, or is found after direct observations to be particularly hazardous to man, and such other appropriate criteria deemed necessary to protect public health and the environment.

II. PURPOSE

Pesticides falling under Categories I and II would generally require : The use of appropriate personal protective equipment (PPEs) for handling; the availability of educational materials and technical assistance to understand label recommendations and skill to adopt practices which will ensure efficient and safe use of such pesticide.

There is also the recognition of the fact that while government regulation/policies are in-place, the development of the infrastructures and the provisions of policing personnel leave much to be desired.

While the government recognizes the need to allocate high priority and adequate resources to the task of effectively managing the availability, distribution and use of such pesticide in the country, the pesticides industry has, likewise, to play an active role and work together with the government in this endeavors, especially in marketing said pesticides in areas which generally lack the health, educational and agricultural extension services to ensure that the benefits to be derived from the necessary and acceptable use of pesticides are achieved without significant adverse effects on human health and the environment.

The provisions of this circular are, therefore, intended to address the foregoing concerns by setting the guidelines under which such pesticides maybe sold/distributed.

III. REQUIREMENTS ON THE DISTRIBUTION OF PESTICIDES PRODUCTS EFFECTIVE APRIL 1, 1996 :

- a.) All FPA dealers/outlets wishing to carry/sell all four (4) categories of pesticide products must have under their employ at least one (1) agricultural graduate duly accredited by FPA to have been trained for the purpose of supervising the day to day sale operation of their shops.
- b.) Non-compliance with the requirement to employ at least one accredited agricultural graduate shall limit the pesticide products to be sold by dealers/outlets to those falling under Categories III and IV only
- c.) Importers/Manufacturer/Registrants/Distributors are prohibited from making available to any dealer/outlet pesticide products falling under Categories I and II unless evidence is shown that the latter has complied with the required employment of an accredited agricultural graduate.

EFFECTIVE APRIL 1, 1996 CATEGORIES I AND II PESTICIDE PRODUCTS WILL BE PULLED-OUT FROM DEALERSHIP OUTLETS WITHOUT THE REQUIRED FPA-ACCREDITED AGRICULTURAL GRADUATE.

IV. GUIDELINES IN THE ISSUANCE OF FPA-ACCREDITATION CARDS TO AGRICULTURAL GRADUATES


- 1) Any interested agricultural graduate should first undergo training to be undertaken by the FPA in coordination with the Weed Science Society of the Philippine (WSSP).
- 2) A trainee should pass the accreditation examination to be administered by FPA immediately after each training program.
- 3) Accreditation will be accorded to the individual. Issuance, however, of the accreditation cards will be specific of the dealership shop with which he/she is connected with at the time of accreditation.
- 4) FPA should be duly notified by the accredited agricultural graduate of any transfer or cancellation of employment contract with his/her existing dealer employer for issuance of a new accreditation card reflecting his/her new employer.
- 5) Accreditation shall be effective for one (1) calendar year and may be renewed thereafter unless sooner cancelled or revoked for cause by the Authority. Accreditation/renewal fee is two hundred fifty pesos (P 250.00).

V. PENALTIES

Administrative sanctions shall be imposed against all persons or entities who shall violate or shall refuse to abide by the provisions of this Memorandum Circular. These sanctions shall include, but will not be limited to, the cancellation of registration, revocation of license, and such other sanctions that the FPA is empowered to do under its Charter. The imposition of Administrative sanctions shall be without prejudice to the filing of criminal case against the erring persons pursuant to the penalty clause of P.D. 1144.

VI. EFFECTIVITY

This Memorandum Circular takes effect immediately.


FRANCISCO C. CORNEJO
Administrator

8. 農薬安全使用指導者についての資料 1,2,3



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF AGRICULTURE
FERTILIZER AND PESTICIDE AUTHORITY
4TH FLOOR, BUILDING 8,
NIA COMPLEX, EDSA, QUEZON CITY

Memorandum Circular No. 96-03
Series 1996
Dated: January 15, 1996

TO ALL CONCERNED

SUBJECT **AMENDMENT TO THE GUIDELINES FOR FPA ACCREDITED AGRICULTURIST/COLLEGE GRADUATE DISPENSER OF CATEGORY I AND II PESTICIDES, MC - 06, SERIES OF 1995**

Pursuant to the provisions of FPA Memorandum Circular No. 06, Series of 1995 dated April 10, 1995, entitled "Restrictions on the Availability/Distribution/Sale of Pesticides Falling Under Category I and II of the FPA's Toxicity and Hazard Classification Schedule", this circular is hereby issued to all concerned, relative to the requirement of employing at least one (1) FPA Accredited Agriculturist by FPA licensed dealers/outlets who wish to continue engaging in the sale of pesticide products falling under FPA toxicity Category I and II on April 1, 1996 onward. In connection with the aforementioned requirement, amendment of Section IV of the guidelines for FPA Accredited Agriculturists shall be as follows:

1. An FPA Accredited Agriculturist refers to college graduates who have undergone the training designed for such purpose by FPA in coordination with the Weed Science Society of the Philippines (WSSP), passed the accreditation examination administered by FPA, has taken an oath of responsibility administered for such purpose and issued an FPA accreditation card.

2. An FPA Accredited Agriculturist/College Graduate may be under an active or inactive status. Active status refers to those Accredited Agriculturist that are currently employed by an agrochemical dealer or are managing their own dealer, outlet and have paid their yearly FPA dues. Inactive status refers to those Accredited Agriculturist who have not paid their yearly FPA dues and/or are not currently employed by a dealer. Inactive status can be reverted to active status if the requirements are satisfied.

3. The Accredited Agriculturist/College Graduate must be personally present to give advice on the safe use of pesticides as indicated on the label while dispensing the pesticide products falling under Category I and II to the clients during its actual sale. **CONSEQUENTLY, NO SALE OR TRANSACTION SHALL BE CONDUCTED TO CUSTOMERS OF PESTICIDE PRODUCTS FALLING UNDER CATEGORY I AND II WHEN THE ACCREDITED AGRICULTURIST/COLLEGE GRADUATE IS ABSENT.**

The Guidelines in the issuance of FPA-Accreditation card and fee as provided for in section IV of FPA Memorandum Circular No. 06, Series of 1995 shall be followed as the basis for the use of such card.

FOR YOUR GUIDANCE AND STRICT COMPLIANCE.


FRANCISCO C. CORNEJO
Administrator



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF AGRICULTURE
FERTILIZER AND PESTICIDE AUTHORITY
4TH FLOOR, BUILDING B.
NIA COMPLEX, EDSA, QUEZON CITY

MEMORANDUM CIRCULAR NO. 96-06
Series of 1996

TO : ALL CONCERNED

SUBJECT : AMENDMENTS PRESCRIBING ADDITIONAL GUIDELINES TO
MEMORANDUM CIRCULAR NO. 6, SERIES 1995

To further strengthen the agency's campaign on the safe and judicious use of pesticides, FPA Memorandum Circular No. 6, Series of 1995, entitled "Restrictions on the Availability/Distribution/Sales of Pesticides Falling Under Category I and II of the FPA's Toxicity and Hazard Classification Schedule", as amended by MC-96-03, Series of 1996, is hereby further amended to read as follows:

1. An FPA Accredited Professional Pesticide Adviser (APPA) refers to an individual who is a graduate of a four (4) year college degree, or holder of a two (2) year diploma in agriculture who has undergone the training designed for such purpose by FPA in coordination with the Weed Science Society of the Philippines (WSSP), passed the accreditation examination administered by FPA, has taken an oath of responsibility administered for such purpose and issued an FPA accreditation card.

2. An FPA Accredited Professional Pesticide Adviser may be an active or inactive status. Active status refer to those Accredited Professional Pesticide Adviser who are currently employed by an agrochemical dealer or are proprietor of agrochemical outlets and have paid their yearly FPA dues. Inactive status refers to those Accredited Professional Pesticide Adviser who have not paid their yearly FPA dues and/or are not currently employed by a dealer. Inactive status can be reverted to active status if the requirements are satisfied.

3. Accreditation on a testimonial mode may be given to an owner/dealer of an FPA Licensed Agricultural Supply Store who is either graduate of a four (4) year agricultural course or a retiree who has been engaged in the business of agrochemical dealership for at least

ten (10) years provided he/she has attended the FPA-WSSP Training course for that purpose but need not take the examination. Accreditation card will be issued upon request and payment of fees.

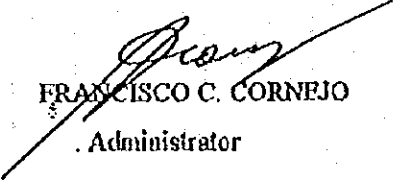
4. The Accredited Professional Pesticide Adviser must be personally present to give advice to the clients on the safe use of pesticides products falling under Category I and II during its actual sale. **NO SALE OR TRANSACTION SHALL BE CONDUCTED TO CUSTOMERS OF PESTICIDE PRODUCTS FALLING UNDER CATEGORY I AND II WHEN THE ACCREDITED PROFESSIONAL PESTICIDE ADVISER IS ABSENT."**

5. The Accredited Professional Pesticide Adviser should issue receipts and properly keep records of sale/disposition of all Category I and II products and that such records should be readily available for inspection by an FPA authorized personnel.

The guidelines for the issuance and use of FPA-Accreditation card as provided for in section IV of FPA Memorandum Circular No. 06, Series of 1995 shall be followed.

FOR YOUR GUIDANCE AND STRICT COMPLIANCE.

Quozon City, Philippines, 01 March 1996.



FRANCISCO C. CORNEJO

Administrator



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF AGRICULTURE
FERTILIZER AND PESTICIDE AUTHORITY
4TH FLOOR, BUILDING B,
NIA COMPLEX, EDSA, QUEZON CITY

MEMORANDUM CIRCULAR NO. 05
Series of 1996

TO All FPA Licensed Agricultural Importer-Distributors, Formulators, Repackers, Area Distributors, Sub-area Distributors of Chlordane, Institutional Users of Restricted Pesticides, FPA Regular and Deputized Regional and Provincial Development Officers, and Others Concerned.

SUBJECT Institutionalization of Responsible Care Concept in Handling Crop Protection Products

Pursuant to the provisions of Presidential Decree 1144 and FPA Rules and Regulations No. 1, Series of 1977, the Fertilizer and Pesticide Authority, in addressing the judicious and safe use of pesticides in the interest of improving agricultural production, protecting public health and enhancing environmental quality, institutionalizes the concept of **RESPONSIBLE CARE** in handling crop protection products. As such, all FPA licensed Agricultural Importer-distributors, Formulators, Area Distributors, Sub-area Distributors of Chlordane, Institutional Users of Restricted Pesticides, are hereby informed that new issuances and/or subsequent renewal of said licenses shall henceforth, require the employment of at least one ARCO. Field personnel of chemical companies and FPA Regular and Deputized Development Officers are also enjoined to participate in the program and be recognized as Responsible Care Officers (RCOs). In this regard, all concerned are hereby directed to attend any of the nationwide RCO/ARCO Training Programs scheduled for the whole month of March 1996.

The schedule of responsible care Officer (RCO) trainings in the different regions and the implementing guidelines for the institutionalization of Responsible Care Concept will be disseminated through the FPA Officers.

Please be guided accordingly.


FRANCISCO C. CORNEJO
Administrator

February 12, 1996

9. FPA の Visual Aids 専門家派遣要請書

Japanese Expert needed for Dissemination Activities for Safe Handling and Proper Use of Pesticide

- I. Japanese Expert on Development Communications or Tri-Media Expert or Materials Development Specialists (print, broadcast and film)
- II. Subject Matter for making visual aids (video/flip chart/brochures) needed for the training :
 - safe handling (transport/storage/mixing) and proper use of pesticide
 - proper use of Personal Protective Equipment (PPE) for Tropical Condition
 - proper disposal of pesticide wastes, containers, and spillages
 - information on correct pesticide type for specific crop
 - how to minimize pesticide residue in crops
- III. Output
 - Training Manual/Brochure/Pamphlets
 - Visual Aids
 - Flip chart
 - video film


Submitted by FPA

27 January 1997

フィリピン農業監視体制整備計画1期機材リスト

LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL CENTRAL - RESIDUE

Item #	Room #	Qty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Qty /set	Remarks
202	RE-09	1	Refrigerator	Sanyo	SR-33M			
301	RE-07	2	Blender	Oster	861	=Accessories= 1) Blending assembly (installed) 2) Glass container, 900cc 3) Cap for glass container =Spares= 1) Spare blade 2) Spare glass container, 900cc 3) Spare cap 4) Spare gasket	1 set 10 pcs. 10 pcs. 5 pcs. 10 pcs. 10 pcs. 30 pcs.	
302	RE-07	2	Homogenizer	Ika	T-25	=Accessories= 1) Generator shaft, 500ml, S25N-18G 2) Generator shaft, 2000ml, S25N-25G 3) Stand w/base plate, R1822 4) Boss head, R181 5) Strap clamp, RH1	2 pcs. 2 pcs. 1 pc. 1 pc. 1 pc.	
303	RE-09	1	Grinder	Ika	MFC	=Accessories= 1) Sieve, 0.2/0.5/0.7/1.0/1.5/2.0/3.0 2) Rack, holding 12 tubes 3) Cleaning tools	1 ea. 1 pc. 1 set	
304	RE-07	1	Shaker, horizontal/vertical	Iwaki Sangyo	V-SX	=Accessories= 1) Separatory funnel holder 2) Erlenmeyer flask holder 3) Erlenmeyer flask plate =Spares= 1) Spare fuse	6 pcs. 1 set 6 pcs. 5 pcs.	
307	RE-09		Sexhlet Extraction Apparatus	Taika Denki	EUR-3-6	=Accessories= 1) Glass set, 6ea./set, 300ml 2) Clamp/rod for holding above =Spares= 1) Spare glass set, 6ea./set	1 set 1 set 2 sets	
308	RE-04	1	Ultrasonic Bath	Branson	B8210E-MTH	=Accessories= 1) Tank cover 2) Insert tray 3) Beaker rack, 600ml x 6 4) SUS beaker, 600ml =Consumables= 1) Detergent	1 pc. 1 pc. 1 pc. 6 pcs. 12 btls	

**LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL CENTRAL - RESIDUE**

Item #	Room #	Q'ty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Q'ty /set	Remarks
309	RE-04	1	Ultrasonic Bath	Branson	BS210E-MTH	=Accessories= 1) Tank cover 2) Insert tray 3) Beaker rack, 600ml x 4 4) SUS beaker, 600ml =Consumables= 1) Detergent	1 pc. 1 pc. 1 pc. 4 pcs. 12 btls	
401	RE-08	1	Electronic Balance, analytical	Mettler	AG245			
402	RE-01	1	Electronic Balance, top loading	A&D	FP-6200	=Accessories= 1) Dust cover 2) Standard weight, 5000gm	1 pc. 1 pc.	
403	RE-09	1	Distilling Apparatus	Asahi Seisakusho		=Spare Parts= 1) Spare flask, 5000ml 2) Spare flask cover, tri-necked	2 pcs. 2 pcs.	
405	RE-09	1	Water Bath	Isuzu Seisakusho	RW-12S			
406	RE-09	1	Mantle Heater	Thomline	EM-1000/CE			
407	RE-09	1	Mantle Heater	Thomline	EM-0500/CE			
408	RE-09	7	Rotary Evaporator	EYELA	N-TNW	=Spare= 1) Vacuum seal set 2) Rotary joint, TS24/40 3) Sample flask, 1 liter	5 sets 1 pc. 1 pc.	
409	RE-09	4	Cooling Aspirator	EYELA	CA-1100A			
410	RE-09	2	Magnetic Stirrer	ADVANTEC	SR-350	=Accessories= 1) Stirring rod, 4 φ x 10/6.5 φ x 20mm 2) Mat, rubber 3) Remover of rod, 350mm =Spare= 1) Stirring rod, 4 φ x 10/6.5 φ x 20mm and 7.5 φ x 30mm	1 ea. 1 sht 1 pc. 2 ea.	
413	RE-09	1	Lab. Oven for column activation	Isuzu Seisakusho	ENS-111S	=Accessories= 1) Shelf, with bracket 2) Thermometer =Spare= 1) Spare heater 2) Spare thermometer	2 pcs. 1 pc. 2 pcs. 1 pc.	
414	RE-09	1	Dehumidifier (Desiccator)	Iuchi Seicido	MD-4	=Accessories= 1) Key 2) Shelf	1 pc. 4 pcs.	

LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL CENTRAL - RESIDUE

Item #	Room #	Q'ty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Q'ty /set	Remarks
415	RE-01	1	Muffle Furnace	ADVANTEC	KB-1602	3) Mat 4) Rack =Accessories= 1) Floor plate =Spares= 1) Spare lamp 2) Spare high out fuse 3) Spare heating elements =Accessories= 1) Scale remover, 1kg/pack =Spares= 1) Scale remover, 1kg/pack 2) Raw water filter 3) Ion exchange resin 4) Spare filter for pre-treatment 5) Pure water filter 6) Spare heater	4 shts 1 pc. 1 pc. 2 sets 1 pc. 1 set	
417	RE-05	1	Water Distilling Apparatus	EVELA	SA-5000E	=Accessories= 1) Shelf, with bracket 2) Bat =Spares= 1) Spare heater	1 pc.	
418	RE-04	1	Drying Oven	Isuzu Seisakusho	AKS	=Accessories= 1) Pipette rack 2) Hand pump 3) Sulfic acid tank =Consumables= 1) Detergent =Spares= 1) Spare pipette rack	4 pcs. 1 pc. 1 pc.	
419	RE-04	1	Ultrasonic Pipette Washer	Iuchi Seieido	UCL-1730	=Accessories= 1) Swing rotor, 15mlx40/50mlx4 2) Glass tube, 15ml/50ml, 100pcs. 3) Balancer =Spares= 1) Carbon brush 2) Spare fuse	12 btls 1 pc.	
420	RE-09	1	Centrifuge	Hitachi	CT6D		1 set 1 ea. 1 set 2 pcs. 5 pcs.	

LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL CENTRAL - RESIDUE

Item #	Room #	Q'ty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Q'ty /set	Remarks
421	RE-09	1	Centrifuge	Mitachi	CF5DL	=Accessories= 1) Swing rotor, 500mix4 2) 500ml tube, plastic 3) Glass tube, 50ml 4) Adaptor for 50ml tube 5) Balancer =Spares= 1) Spare carbon brush, 2pcs./set 2) Spare fuse 3) Spare tube	1 set 4 pcs. 24 pcs. 1 set 1 set 2 sets 2 pcs. 8 pcs.	
422	RE-05	1	Ice Making Machine	Sanyo	SIM-P30	=Accessories= 1) Ice scoop =Spares= 1) Spare overload relay 2) Spare fuse 3) Spare starting relay 4) Spare compressor	1 pc. 1 pc. 5 pcs. 1 pc. 1 pc.	
423	RE-09	1	pH Meter	Orion	720A	=Accessories= 1) Electrode 2) Electrode stand 3) Electrode cap 4) pH solution, pH4/7/9 5) Ref. solution 6) Dust cover =Spares= 1) Spare electrode =Consumables= 1) T-check capsule, pH 4/7/10 2) KCL solution	1 pc. 1 set 2 pcs. 1 ea. 1 btl 1 pc. 1 pc. 1 set 2 sets	
427		0.5	Glassware Assorted	Vidrex & others				
501a	RE-11	2	Gas Chromatograph, ECD dual	Hewlett Packard	HP6890	=System Configuration= 1) Main unit (G1530A) 2) Column injector 3) Auto injector (G1916A) 4) 100 sample unit 5) Capillary column accessories (19245-60590, G1543-60510, 19091J-413, G1530-61410, G1530-61400, G1530-60840	1 set 2 sets 1 set 1 set 1 set	built-in (1) built-in (3) equipped to (1)

LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL CENTRAL - RESIDUE

Item #	Room #	Qty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Qty /set	Remarks
501b	RE-11	1	Gas Chromatograph, ECD dual	Hewlett Packard	HP6890	G1545-60505 6) Work station (G1876AA) 7) Interface unit for (6) 8) Detector, ECD =Accessories= 1) Initial startup kit (19199M) =Spares/Consumables= 1) Chart paper, 500 shts/pack 2) Floppy disk, 10 shts/pack, (92192X) 3) Nitrogen cylinder, filled =System Configuration= 1) Main unit (G1530A) 2) Column Injector 3) Capillary column accessories (19245-60590, G1543-60510, 19091J-413, G1530-61410, G1530-61400, G1530-60840 G1545-60505) 4) Interface unit 5) Detector, ECD =Accessories= 1) Initial startup kit (19199M) =Spares/Consumables= 1) Chart paper, 500 shts/pack 2) Floppy disk, 10 shts/pack, (92192X) 3) Nitrogen cylinder, filled =System Configuration= 1) Main unit (G1530A) 2) Column Injector 3) Auto injector (G1916A) 4) 100 sample unit 5) Capillary column accessories (19245-60590, G1543-60510, 19091J-413, G1530-61410, G1530-61400, G1530-60840 G1545-60505) 6) Work station (G1876AA) 7) Interface unit for (6) 8) Detector, NPD =Accessories=	1 set 1 set 2 units 1 set 6 pks 3 pks 1 pc. 1 set 2 sets 1 set 1 set 2 units 1 set 6 pks 3 pks 1 pc. 1 set 2 sets 1 set 1 set 1 set 1 set 1 set 1 set 1 set 1 set 1 set 2 units 1 set 1 set 2 units	installed in (1) & (6) installed in (1) Consumed in startup built-in (1) equipped to (1) installed in (1) installed in (1) Consumed in startup built-in (1) built-in (3) equipped to (1) installed in (1) & (6) installed in (1)
502a	RE-11	1	Gas Chromatograph, NPD	Hewlett Packard	HP6890	G1545-60505 6) Work station (G1876AA) 7) Interface unit for (6) 8) Detector, NPD =Accessories= 1) Initial startup kit (19199M) =Spares/Consumables= 1) Chart paper, 500 shts/pack 2) Floppy disk, 10 shts/pack, (92192X) 3) Nitrogen cylinder, filled =System Configuration= 1) Main unit (G1530A) 2) Column Injector 3) Auto injector (G1916A) 4) 100 sample unit 5) Capillary column accessories (19245-60590, G1543-60510, 19091J-413, G1530-61410, G1530-61400, G1530-60840 G1545-60505) 6) Work station (G1876AA) 7) Interface unit for (6) 8) Detector, NPD =Accessories=	1 set 1 set 2 units 1 set 6 pks 3 pks 1 pc. 1 set 2 sets 1 set 1 set 1 set 2 units 1 set 6 pks 3 pks 1 pc. 1 set 2 sets 1 set 1 set 1 set 1 set 1 set 1 set 1 set 1 set 2 units 1 set 1 set 2 units	installed in (1) & (6) installed in (1) Consumed in startup built-in (1) built-in (3) equipped to (1) installed in (1) & (6) installed in (1)

LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL CENTRAL - RESIDUE

Item #	Room #	Q'ty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Q'ty /set	Remarks
502b	RE-11	1	Gas Chromatograph, NPD	Hewlett Packard	HP6890	1) Initial startup kit (19199M) =Spares/Consumables= 1) Chart paper, 500 shts/pack 2) Floppy disk, 10 shts/pack, (92192X) 3) Nitrogen cylinder, filled 4) Hydrogen cylinder, filled 5) Helium cylinder, filled 6) NPD alkaline chip, (G1534-60570) =System Configuration= 1) Main unit (G1530A) 2) Column injector 3) Capillary column accessories (19245-60550, G1543-60510, 19091J-413, G1530-61410, G1530-61400, G1530-60840 G1545-60505) 4) Interface unit 5) Detector, NPD 1) Initial startup kit (19199M) =Spares/Consumables= 1) Chart paper, 500 shts/pack 2) Floppy disk, 10 shts/pack, (92192X) 3) Nitrogen cylinder, filled 4) Hydrogen cylinder, filled 5) Helium cylinder, filled 6) NPD alkaline chip, (G1534-60570) =System Configuration= 1) Main unit (5890E) 2) Column injector 3) Capillary column accessories (19245-60505, 05890-60840, 19091J-413, 19243-60510) 4) Interface unit 5) Detector, FPD 6) Sn filter, K9590EM 7) P filter 8) S filter =Accessories= 1) Initial startup kit (19199M)	1 set 5 pks 3 pks 1 pc. 1 pc. 1 pc. 10 pcs. 1 set 2 sets 1 set 1 set 2 units 1 set 6 pks 3 pks 1 pc. 1 pc. 1 pc. 10 pcs. 1 set 2 sets 1 set 1 set 1 unit 1 set 1 set 1 set 1 set 1 set	Consumed in startup Consumed in startup built-in (1) equipped to (1) installed in (1) installed in (1) Consumed in startup Consumed in startup installed in (1) equipped to (1), installed in (1) installed in (1) installed in (1) installed in (1) Consumed in startup
503a	RE-11	1	Gas Chromatograph, FPD	Hewlett Packard	HP5890	=System Configuration= 1) Main unit (5890E) 2) Column injector 3) Capillary column accessories (19245-60505, 05890-60840, 19091J-413, 19243-60510) 4) Interface unit 5) Detector, FPD 6) Sn filter, K9590EM 7) P filter 8) S filter =Accessories= 1) Initial startup kit (19199M)	1 set 2 sets 1 set 1 set 1 unit 1 set 1 set 1 set	built-in (1) equipped to (1), installed in (1) installed in (1) installed in (1) installed in (1)

LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL CENTRAL - RESIDUE

Item #	Room #	Qty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Qty /set	Remarks					
						=Spares/Consumables= 1) P filter, 19256-80010 2) S filter, 19256-80000 3) Chart paper, 500 shts/pack 4) Floppy disk, 10 shts/pack, (92192X) 5) Nitrogen cylinder, filled 6) Hydrogen cylinder, filled 7) Helium cylinder, filled 8) Air cylinder, filled 9) Septum for packed column, 5182-0739, 50/pk 10) Septum for capillary column, manual, 5182-0745, 50/pk 11) Septum for autosampler, 5180-0739, 50/pk 12) Septum for cool-on column, 5181-1260, 25/p 13) Capillary column a: DB-1 (i.d. 0.53mm x 15m), 125-1012 b: DB-5 (i.d. 0.53mm x 15m), 125-5012 c: DB-17 (i.d. 0.53mm x 15m), 125-1712 d: DB-210 (i.d.0.53mm x 15m), 125-0212 e: DB-225 (i.d. 0.53mm x 15m), 125-2212 f: DB-Wax (i.d. 0.53mm x 15m), 125-7012 g: DB-1 (i.d. 0.32mm x 30m), 123-1032 h: DB-5 (i.d. 0.32mm x 30m), 123-5032 i: DB-17 (i.d. 0.32mm x 30m), 123-1732 j: DB-210 (i.d. 0.32mm x 30m), 123-0232 k: DB-225 (i.d. 0.32mm x 30m), 123-2232 l: DB-Wax (i.d. 0.32mm x 30m), 123-7032 m. Empty column (i.d. 0.53mm x 5m), 160-2537 14) Packed Column, empty a: i.d. 2mm x 4ft, 5880J x 92A04 b: i.d. 2mm x 6ft, 5880J x 92A06 c: i.d. 2mm x 8ft, 5880J-92A08 15) Packing material, Chromosorb W-HP(80/100), 16) Lquired phase a: OV-101 b: OV-17 c: OV-210 d: OV-225							

**LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL CENTRAL - RESIDUE**

Item #	Room #	Qty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Qty /set	Remarks
						e: OV-227 f: PEG-20M 17) Syringe: a: 10 µl for manual injection, 9301-0506 b: Replacement needle for above, 9301-0636 c: 10 µl for auto sampler (packed), 5181-8806 d: Replacement needle for above, 5181-8811 e: 10 µl for capillary column injector, 5182-083 5182-0832, 5182-0836, 5182-0833 18) Graphite ferrule for capillary column a: 0.5mm i.d., 5080-8853, 10pcs/pack b: 0.8mm i.d., 5080-8773, 10 pcs./pack 19) Graphite ferrule for packed column, 5080-877 20) Capillary column connector Universal type, 5181-3396, 5 pcs/pack 21) Gas clean filter system Oxygen trap including indicating O2 trap and Moisture/Hydrocarbon trap 22) Auto Sampler a: Bottle, 2ml, clear, with cap/septum, 5182-07 b: Septum (teflon/white silicon), 5182-0720 23) Gas leak checker, snoop, 9301-0311 24) Cap column tool kit, 5181-8630 25) Injector part kit, 5182-3449 26) Soap film flow meter with stand, 0101-0113 27) Ink jet cartridge, 92298A 28) Pesticide standard a: α-endosulfan b: β-endosulfan c: Carbaryl d: Carbofuran e: Chlorophrifos Ethyl f: Cypermethrin g: Deltamethrin h: Dizinon i: Heptachlor j: Cyhalothrin k. Malathion	Sgm 1bd 10 pcs. 6 pks 6 pcs. 6 pks 6 ea. 10 pks 10 pks 10 pks 5 pks 5 sets 300 pcs. 1500pcs. 2 pcs. 6 pks 1 set 1 set 5 pcs. 100mg 100mg 200mg 200mg 200mg 200mg 1000mg 200mg 100mg 1000mg	

LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL CENTRAL - RESIDUE

Item #	Room #	Q'ty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Q'ty /set	Remarks
505	RE-10	2	HPLC	Hitachi	L-7100	l. Methamidophos m. Monocrotophos n. Permethrin(Cis/Trans) o. Pynamin p. Forte (thiuram) =System Configuration= 1) Liquid pump 2) Fluorescence detector 3) UV/VIS detector 4) Column oven 5) System controller 6) Manula injector 7) Auto injector 8) On-line degassing unit 9) Reservoir box 10) Gradient mixer 11) Work station =Accessories= 1) Initial startup kit =Spares/Consumables= 1) Spare lamp for UV/VIS detector 2) Spare lamp for fluorescence detector 3) Piping parts kit (PEEK) 4) Sample vial, 100pcs./set 5) Septum for sample vial, 100pcs./pack 6) Chart paper, 500 sheets/pack 7) Printer cartridge 8) Fleppy disk, 10 sheets/box 9) Plunger seal 10) Suction filter 11) In line filter 12) Auto sampler syringe 13) Bottle seal 14) Manual injection syringe, 25 µl 15) Manual injection rotor seal 16) Manual injection bush, long & short 17) Manual injection ferule 18) Screw and ferrule combination set	200mg 200mg 200mg 200mg 200mg 3 sets 1 set 1 set 1 set 1 set 1 pc. 1 set 1 set 1 pc. 1 set 1 set 1 set 1 set 3 ea. 3 pcs. 1 set 3 sets 5 pks 10 pks 12 pcs. 2 box 18 pcs. 3 pcs. 3 pcs. 2 pcs. 2 pcs. 5 pcs. 3 pcs. 5 ea. 10 pcs. 10 pcs.	Consumed in startup

LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL CENTRAL - RESIDUE

Item #	Room #	Qty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Qty /set	Remarks
510	RE-13	1	Air Compressor	Hitachi	0.40P-7S	19) Tube, ϕ 0.13mm/ ϕ 0.25mm 20) Column ODS, 4.6mm x 15cm 21) Column ODS, 4.6mm x 30cm 22) Column silica gel, 4.6mm x 15cm 23) Column silica gel, 4.6mm x 30 cm 24) Guard column, ODS, silica gel	5m ea. 3 pcs. 3 pcs. 3 pcs. 3 pcs. 2 ea.	
						=Spares= 1) Spare drying unit 2) Spare dehydrocarbon/dehydrate cartridge	2 pcs. 2 pcs.	
701	RE-09	3	Laboratory Center Table	Prazaissions				
702	RE-02,07 11, S02	1ea.	Laboratory Center Table	Prazaissions				
703	RE-01,02 06,17 RE-09 RE-07,10 S02	1ea. 4	Laboratory Side Table	Prazaissions				
704	RE-04,05 10 RE-11 RE-12	1ea. 2 4	Laboratory Side Table	Prazaissions				
705	RE-01	1	Working Table	Prazaissions				
706	RE-04	1	Stainless Table	Prazaissions				
707	RE-07,08	1ea.	Laboratory Sink	Prazaissions				
708	RE-04	1	Laboratory Sink, 2 sinks type	Prazaissions				
709	RE-01,02 04,10	1ea.	Laboratory Sink, small	Prazaissions				
710	RE-01,07 09,11,12 RE-15	1ea. 8	Chemical Cabinet	Prazaissions				
711	RE-01,02 12, RE-07,11 S02 RE-08 RE-09 RE-10	2ea. 3ea. 1 6 4	Stool	Prazaissions				

LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL CENTRAL - RESIDUE

Item #	Room #	Qty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Qty /set	Remarks
712	RE-04	2	Assembling Shelf	Itoki	36-6894-6			
	RE-14	9						
	RE-16	5						
	RE-S02	4						
714	RE-02,07		Fire Extinguisher	Yamato Protec	YC-10			
	11,S01, S02	1 ea.						
	RE-09	2						
717	RE-02	1	Fume Cupboard	Prazaisions				
	RE-09	2						

LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL CENTRAL - FORMULATION

Item #	Room #	Q'ty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Q'ty /set	Remarks
201	FO-06	1	Refrigerator	Sanyo	SR-27K	=Accessories= 1) Defrost Spatula 2) Key 3) Tray =Spares= 1) Spare overload relay 2) Spare sensor	1 pc. 1 pc. 4 pcs.	
203	FO-02	1	Freezer	Sanyo	MDF-U332			
304	FO-05	1	Shaker, horizontal/vertical	Iwaki Sangyo	V-SX	=Accessories= 1) Separatory funnel holder 2) Erlenmeyer flask holder 3) Erlenmeyer flask plate =Spares= 1) Spare fuse	6 pcs. 1 set 6 pcs. 5 pcs.	
306	FO-05	1	Shaker, with water bath	Taitec	MM-10	=Accessories= 1) Shaking rack =Spares= 1) Spare heater 2) Spare pump	1 unit 1 set 1 unit	installed
307	FO-05		Soxhlet Extraction Apparatus	Taika Denki	EUR-5-6	=Accessories= 1) Glass set, 6ea./set, 500ml 2) Clamp/rod for holding above =Spares= 1) Spare glass set, 6ea./set	1 set 1 set 2 sets	
309	FO-05	1	Ultrasonic Bath	Branson	B5210E-MTH	=Accessories= 1) Tank cover 2) Insert tray 3) Beaker rack, 600ml x 4 4) SUS beaker, 600ml =Consumables= 1) Detergent	1 pc. 1 pc. 1 pc. 4 pcs. 12 btls	

LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL CENTRAL - FORMULATION

Item #	Room #	Q'ty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Q'ty /set	Remarks
310	FO-05	1	Ultrasonic Bath	Branson	B2210E-DTH	=Accessories= 1) Tank cover 2) Inset tray 3) Beaker rack, 600ml x 2 4) SUS beaker, 600ml 5) Mesh basket =Consumables= 1) Detergent	1 pc. 1 pc. 1 pc. 2 pcs. 1 pc. 12 btls.	
401	FO-03	1	Electronic Balance, analytical	Mettler	AG245	=Accessories= 1) Dust cover 2) Standard weight, 5000gm	1 pc. 1 pc.	
402	FO-02	1	Electronic Balance, top loading	A&D	FP-6200	=Spare Parts= 1) Spare flask, 5000ml 2) Spare flask cover, tri-necked	2 pcs. 2 pcs.	
404	FO-05	1	Distilling Apparatus	Asahi Seisakusho	N-1NW	=Spare Parts= 1) Vacuum seal set 2) Rotary joint, TS24/40 3) Sample flask, 1 liter	5 sets 1 pc. 1 pc.	
408	FO-05	2	Rotary Evaporator	EYELA				
409	FO-05	1	Cooling Aspirator	EYELA	CA-1100A	=Accessories= 1) Stirring rod, 4 φ x 10/6.5 φ x 20mm 2) Mat, rubber 3) Remover of rod, 350mm	1 ca. 1 sht 1 pc.	
410	FO-05	2	Magnetic Stirrer	ADVANTEC	SR-350	=Spare Parts= 1) Stirring rod, 4 φ x 10/6.5 φ x 20mm and 7.5 φ x 30mm	2 ca.	
413	FO-05	1	Lab. Oven for column activation	isuzu Seisakusho	ENS-111S	=Accessories= 1) Shelf, with bracket 2) Thermometer =Spare Parts= 1) Spare heater 2) Spare thermometer	2 pcs. 1 pc. 2 pcs. 1 pc.	

LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL CENTRAL - FORMULATION

Item #	Room #	Q'ty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Q'ty /set	Remarks
416	FO-16	1	Water Distilling Apparatus	EYELA	SA-2000E	=Accessories= 1) Scale remover, 1kg/pack =Spares= 1) Scale remover, 1kg/pack 2) Raw water filter 3) Ion exchange resin 4) Spare filter for pre-treatment	1 pk 2 pks 2 pcs. 2 pcs. 2 pcs.	
418	FO-15	1	Drying Oven	Isuzu Seisakusho	AKS	=Accessories= 1) Shelf, with bracket 2) Bat =Spares= 1) Spare heater	4 pcs. 1 pc. 1 pc.	
419	FO-15	1	Ultrasonic Pipette Washer	Iuchi Seieido	UCL-1730	=Accessories= 1) Pipette rack 2) Hand pump 3) Sulfic acid tank =Consumables= 1) Detergent =Spares= 1) Spare pipette rack	1 pc. 1 pc. 1 pc. 12 btls 1 pc.	
420	FO-05	1	Centrifuge	Hitachi	C16D	=Accessories= 1) Swing rotor, 15mix40/50mix4 2) Glass tube, 15ml/50ml, 100pcs. 3) Balancer =Spares= 1) Carbon brush 2) Spare fuse	1 set 1 ea. 1 set 2 pcs. 5 pcs.	
422	FO-16	1	Ice Making Machine	Sanyo	SIM-P30	=Accessories= 1) Ice scoop =Spares= 1) Spare overload relay 2) Spare fuse 3) Spare starting relay 4) Spare compressor	1 pc. 1 pc. 5 pcs. 1 pc. 1 pc.	

LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL CENTRAL - FORMULATION

Item #	Room #	Qty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Qty /set	Remarks
423	FO-05	1	pH Meter	Orion	720A	=Accessories= 1) Electrode 2) Electrode stand 3) Electrode cap 4) pH solution, pH4/7/9 5) Ref. solution 6) Dust cover =Spares= 1) Spare electrode =Consumables= 1) Tr-check capsule, pH 4/7/10 2) KCL solution	1 pc. 1 set 2 pcs. 1 ea. 1 btl 1 pc. 1 pc. 1 set 2 sets	
427		0.5	Glassware Assorted	Vidrex & others				
504a	FO-08	1	Gas Chromatograph, FID	Hewlett Packard	HP6890	← 7115 (x 3, 86) =System Configuration= 1) Main unit (G1530A) 2) Column injector 3) Auto injector (G1916A) 4) 100 sample unit 5) Capillary column accessories (19245-60590, G1543-60510, 19091J-413, G1530-61410, G1530-61400, G1530-60840 G1545-60505) 6) Work station (G1876AA) 7) Interface unit for (6) 8) Detector, FID =Accessories= 1) Initial startup kit (19199M) =Spares/Consumables= 1) Chart paper, 500 shts/pack 2) Floppy disk, 10 shts/pack, (92192X) 3) Nitrogen cylinder, filled 4) Hydrogen cylinder, filled 5) Helium cylinder, filled	1 set 2 sets 1 set 1 set 1 set 1 set 1 set 1 set 2 units 1 set 5 pks 3 pks 1 pc. 1 pc. 1 pc.	built-in (1) built-in (3) equipped to (1) installed in (1) & (6) installed in (1) Consumed in startup

LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL CENTRAL - FORMULATION

Item #	Room #	Qty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Qty /set	Remarks
504b	FO-08	1	Gas Chromatograph, FID	Hewlette Packard	HP6890	=System Configuration= 1) Main unit (G1530A) 2) Column injector 3) Capillary column accessories (19245-60590, G1543-60510, 19091J-413, G1530-61410, G1530-61400, G1530-60840 G1545-60505) 4) Interface unit 5) Detector, FID =Accessories= 1) Initial startup kit (19199M) =Spares/Consumables= 1) Glass insert for split, 18740-60840 2) Glass insert for splitless, 18740-80220 3) Chart paper, 500 shts/pack 4) Floppy disk, 10 shts/pack, (92192X) 5) Nitrogen cylinder, filled 6) Hydrogen cylinder, filled 7) Helium cylinder, filled 8) Air cylinder, filled 9) Septum for packed column, 5182-0739, 50/pk 10) Septum for capillary column, manual, 5182-0745, 50/pk 11) Septum for autosampler, 5190-0739, 50/pk 12) Capillary column a: DB-1 (i.d. 0.53mm x 15m), 125-1012 b: DB-5 (i.d. 0.53mm x 15m), 125-5012 c: DB-17 (i.d. 0.53mm x 15m), 125-1712 d: DB-210 (i.d. 0.53mm x 15m), 125-0212 e: DB-225 (i.d. 0.53mm x 15m), 125-2212 f: DB-Wax (i.d. 0.53mm x 15m), 125-7012 g: DB-1 (i.d. 0.32mm x 30m), 123-1032 h: DB-5 (i.d. 0.32mm x 30m), 123-5032 i: DB-17 (i.d. 0.32mm x 30m), 123-1732	1 set 2 sets 1 set 1 set 2 units 1 set 1 pc. 3 pcs. 2 pks 1 pk 1 pc. 1 pc. 1 pc. 1 pc. 2 pks 2 pks 1 pc. 2 pcs. 2 pcs. 1 pc. 1 pc. 1 pc. 2 pcs. 2 pcs.	built-in (1) equipped to (1) installed in (1) installed in (1) Consumed in startup

LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL CENTRAL - FORMULATION

Item #	Room #	Qty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Qty /set	Remarks
						j. DB-210 (I.d. 0.32mm x 30m), 123-0232 k. DB-225 (I.d. 0.32mm x 30m), 123-2232 l. DB-Wax (I.d. 0.32mm x 30m), 123-7032 m. Empty column (I.d. 0.53mm x 5m), 160-2537 13) Packed Column, empty a: I.d. 2mm x 4ft, 5880J x 92A04 b: I.d. 2mm x 5ft, 5880J x 92A06 c: I.d. 2mm x 8ft, 5880J-92A08 14) Packing material, Chromosorb W-HP(80/100) 15) Liquid phase a: OV-101 b: OV-17 c: OV-210 d: OV-225 e: OV-227 f: PEG-20M 16) Syringe: a: 10 μ l for manual injection, 9301-0506 b: Replacement needle for above, 9301-0636 c: 10 μ l for auto sampler (packed), 5181-8806 d: Replacement needle for above, 5181-8811 e: 10 μ l for capillary column injector, 5182-082 5182-0832, 5182-0836, 5182-0833 17) Graphite ferrule for capillary column a: 0.5mm I.d., 5080-8853, 10 pcs./pack b: 0.8mm I.d., 5080-8773, 10 pcs./pack 18) Graphite ferrule for packed column, 5080-877 19) Capillary column connector Universal type, 5181-3396, 5 pcs./pack 20) Gas clean filter system Oxygen trap including indicating O2 trap and Moisture/Hydrocarbon trap 22) Auto Sampler a: Bottle, 2ml. clear, with cap/septum, 5182-071300 pcs.	1 pc. 1 pc. 1 pc. 3 pcs. 3 pcs. 3 pcs. 2 pcs. 3 btl's 20gm 25gm 25gm 5gm 5gm 1btl 5 pcs. 3 pks 3 pks 3 pks 3 ea. 5 pks 5 pks 5 pks 3 pks 3 sets 300 pcs.	

LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL CENTRAL - FORMULATION

Item #	Room #	Qty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Qty /set	Remarks
510	FO-07	1	Air Compressor	Hitachi	0.40P-7S	=Spares= 1) Spare drying unit 2) Spare dehydrocarbon/dehydrate cartridge	2 pcs. 2 pcs.	
701	FO-05	2	Laboratory Center Table	Prazaisions			1500pcs.	
702	FO-02,06	1ea. 16	Laboratory Center Table	Prazaisions			2 pcs. 6 pks	b) Septum (teflon/white silicon), 5182-0720 23) Gas leak checker, snoop, 9301-0311 24) Cap column tool kit, 5181-8830
703	FO-04,05	3ea.	Laboratory Side Table	Prazaisions			1 set	25) Injector part kit, 5182-3449
704	FO-05,08	2ea.	Laboratory Side Table	Prazaisions			1 set	26) Soap film flow meter with stand, 0101-0113
705	FO-11	1	Working Table	Prazaisions			6 pcs.	27) Ink jet cartridge, 92298A
706	FO-11	1	Stainless Table	Prazaisions				
707	FO-05	1	Laboratory Sink	Prazaisions				
708	FO-15	1	Laboratory Sink, 2 sinks type	Prazaisions				
709	FO-02,04	1ea. 06,15	Laboratory Sink, small	Prazaisions				
710	FO-02	2	Chemical Cabinet	Prazaisions				
711	FO-03,08	1ea.	Stool	Prazaisions				
	FO-04	3						
	FO-05	4						
712	FO-09	8	Assembling Shelf	Itoki	36-6694-6			
	FO-10,15	2ea.						
714	FO-05	2	Fire Extinguisher	Yamato Protec	YC-10			
	FO-06,14	1ea.						
717	FO-05	1	Fume Cupboard	Prazaisions				

LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL DAVAO

Item #	Room #	Q'ty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Q'ty /set	Remarks
101	DA-14	1	Vehicle w/Refrigerator	Nissan Motor	TD42	=Accessories= 1) Refrigerator (installed in vehicle) 2) Folding table 3) Folding chair	1 unit 1 unit 4 pcs.	
201	DA-04	1	Refrigerator	Sanyo	SR-27K			
202	DA-02	2	Refrigerator	Sanyo	SR-33M			
203	DA-04	1	Freezer	Sanyo	MDF-U332	=Accessories= 1) Defrost Spatula 2) Key 3) Tray =Spares= 1) Spare overload relay 2) Spare sensor	1 pc. 1 pc. 4 pcs. 2 pcs. 2 pcs.	
204	DA-02	2	Freezer	Sanyo	MDF-U536D	=Accessories= 1) Defrost Spatula 2) Key 3) Basket, large 4) Basket, small =Spares= 1) Spare overload relay 2) Spare sensor	1 pc. 1 pc. 4 pcs. 6 pcs. 2 pcs. 2 pcs.	
301	DA-04	2	Blender	Oster	861	=Accessories= 1) Blending assembly (installed) 2) Glass container, 900cc 3) Cap for glass container =Spares= 1) Spare blade 2) Spare glass container, 900cc 3) Spare cap 4) Spare gasket	1 set 10 pcs. 10 pcs. 5 pcs. 10 pcs. 10 pcs. 30 pcs.	
302	DA-02	1	Homogenizer	Ika	T-25	=Accessories= 1) Generator shaft, 500ml, S25N-18G 2) Generator shaft, 2000ml, S25N-25G 3) Stand w/base plate, R1822 4) Boss head, R181 5) Strap clamp, RH1	2 pcs. 2 pcs. 1 pc. 1 pc. 1 pc.	

LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL DAVAO

Item #	Room #	Q'ty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Q'ty /set	Remarks
303	DA-02	1	Grinder	Ika	MFC	=Accessories= 1) Sieve, 0.2/0.5/0.7/1.0/1.5/2.0/3.0 2) Rack, holding 12 tubes 3) Cleaning tools	1 ea. 1 pc. 1 set	
304	DA-04	1	Shaker, horizontal/vertical	Iwaki Sangyo	V-SX	=Accessories= 1) Separatory funnel holder 2) Erlenmeyer flask holder 3) Erlenmeyer flask plate =Spares= 1) Spare fuse	6 pcs. 1 set 6 pcs. 5 pcs.	
305	DA-04	1	Shaker, rotary	Miki Seisakusho	RS-12			
309	DA-11	1	Ultrasonic Bath	Branson	B5210E-MTH	=Accessories= 1) Tank cover 2) Insert tray 3) Beaker rack, 600ml x 4 4) SUS beaker, 600ml =Consumables= 1) Detergent	1 pc. 1 pc. 1 pc. 4 pcs. 12 btl	
401	DA-03	1	Electronic Balance, analytical	Mettler	AG245			
402	DA-02	1	Electronic Balance, top loading	A&D	FP-6200	=Accessories= 1) Dust cover 2) Standard weight, 5000gm	1 pc. 1 pc.	
403	DA-04	1	Distilling Apparatus	Asahi Seisakusho		=Spare Parts= 1) Spare flask, 5000ml 2) Spare flask cover, tri-necked	2 pcs. 2 pcs.	
405	DA-04	1	Water Bath	Isuzu Seisakusho	RW-12S			
406	DA-04	1	Mantle Heater	Themoline	EM-1000/CE			
408	DA-04	5	Rotary Evaporator	EYELA	N-1NW	=Spares= 1) Vacuum seal set 2) Rotary joint, TS24/40 3) Sample flask, 1 liter	5 sets 1 pc. 1 pc.	
409	DA-04	3	Cooling Aspirator	EYELA	CA-1100A			
412	DA-04	1	Vacuum Pump	ULVAC	DA-30S	=Accessories= 1) Vacuum hose =Spares= 1) Spare diaphragm	2 m 2 shts	

LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL DAVAO

Item #	Room #	Qty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Qty /set	Remarks
413	DA-04	1	Lab. Oven for column activation	Isuzu Seisakusho	ENS-111S	=Accessories= 1) Shelf, with bracket 2) Thermometer =Spares= 1) Spare heater 2) Spare thermometer	2 pcs. 1 pc. 2 pcs. 1 pc.	
414	DA-04	1	Dehumidifier (Desiccator)	Iuchi Seieido	MD-4	=Accessories= 1) Key 2) Shelf 3) Mat 4) Rack	1 pc. 4 pcs. 4 shfts 1 pc.	
415	DA-02	1	Muffle Furnace	ADVANTEC	KB-1602	=Accessories= 1) Floor plate =Spares= 1) Spare lamp 2) Spare high cut fuse 3) Spare heating elements	1 pc. 2 sets 1 pc. 1 set	
416	DA-11	1	Water Distilling Apparatus	EYELA	SA-2000E	=Accessories= 1) Scale remover, 1kg/pack =Spares= 1) Scale remover, 1kg/pack 2) Raw water filter 3) Ion exchange resin 4) Spare filter for pre-treatment	1 pk 2 pks 2 pcs. 2 pcs. 2 pcs.	
418	DA-11	1	Drying Oven	Isuzu Seisakusho	AKS	=Accessories= 1) Shelf, with bracket 2) Bat =Spares= 1) Spare heater	4 pcs. 1 pc. 1 pc.	
419	DA-11	1	Ultrasonic Pipette Washer	Iuchi Seieido	UCL-1730	=Accessories= 1) Pipette rack 2) Hand pump 3) Sulfic acid tank =Consumables= 1) Detergent =Spares= 1) Spare pipette rack	1 pc. 1 pc. 1 pc. 12 btls 1 pc.	

LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL DAVAO

Item #	Room #	Q'ty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Q'ty /set	Remarks
421	DA-04	1	Centrifuge	Hitachi	CT5DL	=Accessories= 1) Swing rotor, 500mlx4 2) 500ml tube, plastic 3) Glass tube, 50ml 4) Adaptor for 50ml tube 5) Balancer =Spares= 1) Spare carbon brush, 2pcs./set 2) Spare fuse 3) Spare tube	1 set 4 pcs. 24 pcs. 1 set 1 set 2 sets 2 pcs. 3 pcs.	
422	DA-11	1	Ice Making Machine	Sanyo	SIM-P30	=Accessories= 1) Ice scoop =Spares= 1) Spare overload relay 2) Spare fuse 3) Spare starting relay 4) Spare compressor	1 pc. 1 pc. 5 pcs. 1 pc. 1 pc.	
423	DA-04	1	pH Meter	Orion	720A	=Accessories= 1) Electrode 2) Electrode stand 3) Electrode cap 4) pH solution, pH4/7/9 5) Ref. solution 6) Dust cover =Spares= 1) Spare electrode =Consumables= 1) Tr-check capsule, pH. 4/7/10 2) KCL solution	1 pc. 1 set 2 pcs. 1 ea. 1 bti 1 pc. 1 pc. 1 set 2 sets	
424	DA-12	1	Laboratory Cart	Iuchi Seieido				
427		0.5	Glassware Assorted	Vidrex & others				< 8/2/72 02 >

LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL DAVAO

Item #	Room #	Q'ty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Q'ty /set	Remarks
501a	DA-05	1	Gas Chromatograph, ECD dual	Hewlett Packard	HP6890	=System Configuration= 1) Main unit (G1530A) 2) Column Injector 3) Auto injector (G1916A) 4) 100 sample unit 5) Capillary column accessories (19245-60590, G1543-60510, 19091J-413, G1530-61410, G1530-61400, G1530-60840 G1545-60505) 6) Work station (G1876AA) 7) Interface unit for (6) 8) Detector, EOD =Accessories= 1) Initial startup kit (19199M) =Spares/Consumables= 1) Chart paper, 500 shts/pack 2) Floppy disk, 10 shts/pack, (92192X) 3) Nitrogen cylinder, filled	1 set 2 sets 1 set 1 set 1 set 1 set 1 set 2 units 1 set 6 pks 3 pks 1 pc.	built-in (1) built-in (3) equipped to (1) installed in (1) & (6) installed in (1) Consumed in startup
501b	DA-05	1	Gas Chromatograph, ECD dual	Hewlett Packard	HP6890	=System Configuration= 1) Main unit (G1530A) 2) Column Injector 3) Capillary column accessories (19245-60590, G1543-60510, 19091J-413, G1530-61410, G1530-61400, G1530-60840 G1545-60505) 4) Interface unit 5) Detector, EOD =Accessories= 1) Initial startup kit (19199M) =Spares/Consumables= 1) Chart paper, 500 shts/pack 2) Floppy disk, 10 shts/pack, (92192X) 3) Nitrogen cylinder, filled	1 set 2 sets 1 set 1 set 2 units 1 set 6 pks 3 pks 1 pc.	built-in (1) equipped to (1) installed in (1) installed in (1) Consumed in startup

LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL DAVAO

Item #	Room #	Qty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Qty /set	Remarks
502b	DA-05	1	Gas Chromatograph, NPD	Hewlette Packard	HP6890	=System Configuration= 1) Main unit (G1530A) 2) Column injector 3) Capillary column accessories (19245-60590, G1543-60510, 19091J-413, G1530-61410, G1530-61400, G1530-60840, G1545-60505) 4) Interface unit 5) Detector, NPD 1) Initial startup kit (19199M) =Spares/Consumables= 1) Chart paper, 500 shts/pack 2) Floppy disk, 10 shts/pack, (92192X) 3) Nitrogen cylinder, filled 4) Hydrogen cylinder, filled 5) Helium cylinder, filled 6) NPD alkaline chip, (G1534-60570)	1 set 2 sets 1 set 1 set 2 units 1 set 6 pks 3 pks 1 pc. 1 pc. 10 pcs.	built-in (1) equipped to (1) installed in (1) installed in (1) Consumed in startup
502c	DA-05	1	Gas Chromatograph, NPD	Hewlette Packard	HP6890	=System Configuration= 1) Main unit (G1530A) 2) Column injector 3) Capillary column accessories (19245-60590, G1543-60510, 19091J-413, G1530-61410, G1530-61400, G1530-60840, G1545-60505) 7) Interface unit for (6) 8) Detector, NPD 1) Initial startup kit (19199M) =Spares/Consumables= 1) Chart paper, 500 shts/pack 2) Floppy disk, 10 shts/pack, (92192X) 3) Nitrogen cylinder, filled 4) Hydrogen cylinder, filled 5) Helium cylinder, filled 6) NPD alkaline chip, (G1534-60570)	1 set 2 sets 1 set 1 set 2 units 1 set 6 pks 3 pks 1 pc. 1 pc. 10 pcs.	built-in (1) equipped to (1) installed in (1) & (6) installed in (1) Consumed in startup

LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL DAVAO

Item #	Room #	Q'ty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Q'ty /set	Remarks
503b	DA-05	1	Gas Chromatograph, FPD	Hewlette Packard	HP5890	=System Configuration= 1) Main unit (5890E) 2) Column injector 3) Capillary column accessories (19245-60505, 05890-60940, 19091J-413, 19243-60510) 4) Interface unit 5) Detector, FPD 6) Sn filter, K9590EM 7) P filter 8) S filter 9) Works station, G1876AA =Accessories= 1) Initial startup kit (19199M) =Spares/Consumables= 1) P filter, 19256-80010 2) S filter, 19256-80000 3) Chart paper, 500 shts/pack 4) Floppy disk, 10 shts/pack, (92192X) 5) Nitrogen cylinder, filled 6) Hydrogen cylinder, filled 7) Helium cylinder, filled 8) Air cylinder, filled 9) Septum for packed column, 5182-0739, 50/pk 10) Septum for capillary column, manual, 5182-0745, 50/pk 11) Septum for autosampler, 5180-0739, 50/pk 12) Septum for cool-on column, 5181-1260, 25/p 13) Capillary column a: DB-1 (i.d. 0.53mm x 15m), 125-1012 b: DB-5 (i.d. 0.53m m x 15m), 125-5012 c: DB-17 (i.d. 0.53mm x 15m), 125-1712 d: DB-210 (i.d.0.53mm x 15m), 125-0212 e: DB-225 (i.d. 0.53mm x 15m), 125-2212 f: DB-Wax (i.d. 0.53mm x 15m), 125-7012 g: DB-1 (i.d. 0.32mm x 30m), 123-1032 h. DB-5 (i.d. 0.32mm x 30m), 123-5032 i. DB-17 (i.d. 0.32mm x 30m), 123-1732	1 set 2 sets 1 set 1 set 1 unit 1 set 1 set 1 set 1 unit 1 set 1 pc. 1 pc. 5 pks 3 pks 1 pc. 1 pc. 1 pc. 1 pcs. 4pks 4pks 4 pks 8 pks 2 pcs. 4 pcs. 4 pcs. 2 pcs. 2 pcs. 2 pcs. 2 pcs. 4 pcs. 4 pcs.	built-in (1) equipped to (1) installed in (1) installed in (1) installed in (1) installed in (1) Consumed in startup

LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL DAVAO

Item #	Room #	Qty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Qty /set	Remarks
						j. DB-210 (I.d. 0.32mm x 30m), 123-0232	2 pcs.	
						k. DB-225 (I.d. 0.32mm x 30m), 123-2232	2 pcs.	
						L. DB-Wax (I.d. 0.32mm x 30m), 123-7032	2 pcs.	
						m. Empty column (I.d. 0.53mm x 5m), 160-2537	6 pcs.	
						14) Packed Column, empty		
						a: I.d. 2mm x 4ft, 5880J x 92A04	6 pcs.	
						b: I.d. 2mm x 6ft, 5880J x 92A06	6 pcs.	
						c: I.d. 2mm x 8ft, 5880J-92A08	4 pcs.	
						15) Packing material, Chromosorb W-HP(80/100)	6 btl's	
						16) Ligated phase		
						a: OV-101	20gm	
						b: OV-17	25gm	
						c: OV-210	25gm	
						d: OV-225	5gm	
						e: OV-227	5gm	
						f: PEG-20M	1btl	
						17) Syringe:		
						a: 10 μ l for manual injection, 9301-0506	10 pcs.	
						b: Replacement needle for above, 9301-0636	6 pks	
						c: 10 μ l for auto sampler (packed), 5181-8806	6 pcs.	
						d: Replacement needle for above, 5181-8811	6 pks	
						e: 10 μ l for capillary column injector, 5182-083	6 ca.	
						5182-0832, 5182-0836, 5182-0833		
						18) Graphite ferrule for capillary column		
						a: 0.5mm I.d., 5080-8853, 10pcs/pack	10 pks	
						b: 0.8mm I.d., 5080-8773, 10 pcs./pack	10 pks	
						19) Graphite ferrule for packed column, 5080-877	10 pks	
						20) Capillary column connector		
						Universal type, 5181-3396; 5 pcs./pack	5 pks	
						21) Gas clean filter system		
						Oxygen trap including indicating O2 trap and Moisture/Hydrocarbon trap	5 sets	
						22) Auto Sampler		
						a: Bottle, 2ml, clear, with cap/septum, 5182-07	300 pcs.	
						b: Septum (teflon/white silicon), 5182-0720	1500pcs.	
						23) Gas leak checker, snoop, 9301-0311	2 pcs.	
						24) Cap column tool kit, 5181-8830	6 pks	
						25) Injector part kit, 5182-3449	1 set	

LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL DAVAO

Item #	Room #	Q'ty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Q'ty /set	Remarks
						26) Soap film flow meter with stand, 0101-0113 27) Ink jet cartridge, 92298A	1 set 6 pcs.	
505	DA-07	2	HPLC	Hitachi	L-7100	=System Configuration= 1) Liquid pump 2) Fluorescence detector 3) UV/VIS detector 4) Column oven 5) System controller 6) Manula injector 7) Auto injector 8) On-line degassing unit 9) Reservoir box 10) Gradient mixer 11) Work station =Accessories= 1) Initial startup kit =Spares/Consumables= 1) Spare lamp for UV/VIS detector 2) Spare lamp for fluorescence detector 3) Piping parts kit (PEEK) 4) Sample vial, 100pcs./set 5) Septum for sample vial, 100pcs./pack 6) Chart paper, 500 sheets/pack 7) Printer cartridge 8) Floppy disk, 10 sheets/box 9) Plunger seal 10) Suction filter 11) In line filter 12) Auto sampler syringe 13) Bottle seal 14) Manual injection syringe, 25 µl 15) Manual injection rotor seal 16) Manual injection bush, long & short 17) Manual injection ferrule 18) Screw and ferrule combination set 19) Tube, φ0.13mm/ φ0.25mm 20) Column ODS, 4.6mm x 15cm	3 sets 1 set 1 set 1 set 1 pc. 1 set 1 set 1 pc. 1 set 1 set 1 set 1 set 1 set 1 set 3 ea. 3 pcs. 1 set 3 sets 5 pks 10 pks 12 pcs. 2 box 18 pcs. 3 pcs. 3 pcs. 2 pcs. 2 pcs. 5 pcs. 3 pcs. 5 ea. 10 pcs. 10 pcs. 5m ea. 3 pcs.	Consumed in startup

LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL DAVAO

Item #	Room #	Qty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Qty /set	Remarks
						21) Column ODS, 4.6mm x 30cm 22) Column silica gel, 4.6mm x 15cm	3 pcs. 3 pcs.	
507	DA-05	1	UV/VIS Spectrophotometer	Hitachi	U-3000	23) Column silica gel, 4.6mm x 30cm 24) Guard column, ODS, silica gel =Accessories= 1) 10mm cell, silica, 4 pcs./set =Spares/Consumables= 1) Spare D2 lamp 2) Spare tungsten lamp 3) Spare quartz cell 4) Floppy disk, 10 shits/pack	3 pcs. 2 ea. 1 set 1 pc. 1 pc. 1 set 1 pk	
701	DA-04	2	Laboratory Center Table	Prazaisions				
702	DA-02,05	1ea.	Laboratory Center Table	Prazaisions				
703	DA-04	3	Laboratory Side Table	Prazaisions				
	DA-05	1						
704	DA-05	4	Laboratory Side Table	Prazaisions				
705	DA-01	1	Working Table	Prazaisions				
706	DA-11	1	Stainless Table	Prazaisions				
707	DA-04	1	Laboratory Sink	Prazaisions				
708	DA-11	1	Laboratory Sink, 2 sinks type	Prazaisions				
709	DA-02,07	11	Laboratory Sink, small	Prazaisions				
		1ea.						
710	DA-02,04		Chemical Cabinet	Prazaisions				
	07.	1ea.						
	DA-05,13	2ea.						
711	DA-01,02		Stool	Prazaisions				
	03,07	1ea.						
	DA-04	4						
	DA-05	2						
712	DA-11	2	Assembling Shelf	Itoki	36-6694-6			
	DA-12	3						
	DA-13	1						
714	DA-04	2	Fire Extinguisher	Yamato Protec	YC-10			
	DA-05,10							
	13.	1ea.						
717	DA-04	1	Fume Cupboard	Prazaisions				
801	DA-08	4	Folding Table	Itoki	TBM-615JE-13			

LIST OF ACCESSORIES/SPARES/CONSUMABLES
PAL DAVAO

Item #	Room #	Qty /room	Equipment Name	Maker	Model	Accessories/Spares per a set	Qty /set	Remarks
802	DA-08	8	Folding Chair	Itoki	KKA-260DB			
803	DA-08	1	Slide Projector	Elmo	Omnigraphi 253	=Accessories= 1) Zoom lens, F3.5 70-120mm 2) Remote control, wired 3) Slide tray, circular, 80 slides =Spares= 1) Spare halogen lamp 2) Spare slide tray	1 pc. 1 pc. 1 pc. 10 pcs. 2 pcs.	
804	DA-08	1	Book Shelf	Itoki	EDS-1626TS			
805	DA-08	1	Opaque Projector	Elmo	EP-7000	=Accessories= 1) Screen, tripod type =Spares= 1) Spare halogen lamp	1 set 1 pc.	
808	DA-10	1	Computer Set	IBM	PC350	=Accessories= 1) Display 2) Ink jet printer 3) UPS, 0.5KVA 4) Computer talbe/chair 5) Software -Word/Excel/Fox pro/Norton Utility =Spares/Consumables= 1) Ink cartridge 2) 3.5" floppy disk, 10shts/box 3) 5.25" diskette, 10shts/box 4) Letter size paper, 500shts/pack	1 unit 1 unit 1 unit 1 set 1 set 1 doz. 2 box 2 box 2 pks.	
809	DA-09	1	Facsimile	Ricoh	FAX2700L	=Spares/Consumables= 1) Toner 2) Paper, letter size, 2500 shts/box.	5 pcs. 2 box	

DISTRIBUTION LIST (LOT 1)

ITEM NO.	EQUIPMENT	QTY	RE	FO	AN	SEM	CON	AV	MA	ADV	PAL			
											BG	CB	CG	BC
101	Vehicle w/Refrigerator (60L) unit	5			1						1	1	1	1
201	Refrigerator (for standard solution, Lab. use)	4									1	1	1	1
202	Refrigerator (for sample, Lab. use)	4	1	1										1
203	Freezer (for std. of Pesticide)	1									1			
204	Freezer (for sample homogenized)	5	2									1	1	1
301	Blender (heavy duty)	8									2	2	2	2
302	Homogenizer	4									1	1	1	1
303	Grinder continuous	1												1
304	Shaker (horizontal/vertical)	4									1	1	1	1
305	Shaker (rotary)	2										1		1
306	Shaker (with Water bath)	1									1			
307	Soxhlet extraction apparatus (6 ports)	1+2	1								1			1
309	Ultrasonic Bath (medium)	3									1		1	1
401	Analytical Balance	4									1	1	1	1
402	Electronic Balance (top loading)	3									1	1		1
403	Distilling Apparatus (5L)	4									1	1	1	1
405	Water Bath, 1kW	1+2									1	1		1

ITEM NO.	EQUIPMENT	QTY	RE	FO	AN	SEM	CON	AV	ADV	8G	CB	CG	BC
406	Mantle heater (1L)	5								1	2	1	1
408	Rotary Evaporator with water bath	8								2	2	2	2
409	Cooling Aspirator	8								2	2	2	2
410	Magnetic Stirrer with hot plate	2								1			1
411	Automatic Gel Permeation Chromatograph	1	1										
412	Vacuum Pump	1+1									1		1
413	Laboratory Oven (Activation column absorbent)	2								1			1
414	Dehumidifier	2								1	1		
415	Muffle furnace	1+2								1	1		1
416	Water Distilling Apparatus(S)	4								1	1	1	1
418	Drying Oven (for glassware)	3								1	1		1
419	Ultrasonic Pipette Washer	4								1	1	1	1
420	Centrifuge (Bench-top)	1										1	
421	Centrifuge (large)	2								1			1
422	Ice Making Machine	4								1	1	1	1
423	pH Meter	4								1	1	1	1
424	Laboratory Cart (1)	5	2	2									1
425	Laboratory Cart (2)	1	1										
426	Laboratory Cart (3)	1	1										

ITEM NO.	EQUIPMENT	QTY	RE	FO	AN	SEM	CON	AV	ADV	BG	CB	CG	BC
427	Glassware Assorted	2.5	0.5							0.5	0.5	0.5	0.5
505	High Performance Liquid Chromatograph (UV, Fluorescence)	4+1	1							1	1	1	1
506	High Performance Liquid Chromatograph (Mu)	2	1	1									
507	UV/VIS Spectrophotometer	6	1	1						1	1	1	1
509	Infrared Spectrophotometer	1	1	1									
601	Voltage Regulator, 20KVA	4								1	1	1	1
703	Laboratory Side Table	2											2
705	Working Table	1											1
707	Laboratory Sink	6								2	1	1	2
708	Laboratory Sink (2-sink type)	1											1
710	Chemical Cabinet	7								1	1	1	4
711	Stool	8											8
713a	Air Conditioner, Separate-type	4								1	1	1	1
713b	Air Conditioner, Separate-type	14									4	4	6
714	Fire Extinguisher (CO2 gas type)	20								5	5	5	5
715	Exhaust Fan	6											6
716	Fume Cupboard (Draft Chamber)	4								1	1	1	1
718	Emergency Shower	4								1	1	1	1
801	Folding Table	20											20

ITEM NO.	EQUIPMENT	QTY	RE	FO	AN	ISEM	COM	MA	ADV	BG	CB	CG	BC
802	Folding Chair	40				40							
803	Slide Projector	5				1				1	1	1	1
804	Book Shelf	6	4	2									
805	OHP with Screen Set	5				1				1	1	1	1
806	Video Projection System	1				1							
807	Video Editing System	1					1						
808	Computer Set	7	3							1	1	1	1
809	Facsimile	5							1	1	1	1	1
810	Hand Sprayer (for liquid type)	1				1							
811	Duster, Kapsack type (for powder type)	1				1							

DISTRIBUTION LIST (LOT 2)

(502, 503, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600)

ITEM NO.	EQUIPMENT	QTY	RE	FO	AN	SEM	CON	NAV	ADV	BG	CB	CG	BC
501a	Gas Chromatograph (ECD, Dual)	4								1	1	1	1
501b	Gas Chromatograph (ECD, Dual)	3								1	1	1	1
502a	Gas Chromatograph (NPD)	8	1							2	2	2	1
503a	Gas Chromatograph (FPD)	4+1	1							1	1	1	1
503c	Gas Chromatograph (FPD)	1	1										
508	Gas Chromatograph-Mass Spectrophotometer (GC/MS)	1	1										

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