

1. KARANGAN

SCIENTIFIC AND TECHNOLOGICAL INFORMATION AND DATA SOURCE IN INDONESIA. A BRIEF OVERVIEW

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There are a total of 581 special libraries and information sources unevenly distributed in 65 cities in Indonesia. The majority are located in Java, with the highest concentration in Jakarta. A large proportion of these libraries are affiliated to educational institutions/universities, with an interest in sciences in general, with a holding of 1,000 - 10,000 book volumes; only a small number of them have computer facilities. To optimize the services of these libraries and information centers, a National Scientific Documentation and Information Network System had been set up with four centers as focal points respectively in the fields of humanities, science & technology, biology & agricultural sciences, and health & medical sciences. No less than 14 institutions can be considered as data centers on various fields of science and technology. Some of them which deal with biological resources have worked together in a network under the coordination of the National Commission for the Preservation of Plant and Animal Genetic Resources. Fourteen of these institutions had been identified also as microbial culture collections.

Introduction

While there are more than 2907 different kinds of libraries in Indonesia (Pringgoadisurjo and Budihardjo, 1986), only 581 can be classified as special libraries and information sources (Dwinarto

and Iswanti, 1987). A special library is a library or information center maintained by an individual, corporation, association, government agency or any other group; or a specialized or departmental collection within a library, for the organization and dissemination of information, and primarily offering services to a specialized clientele through the use of varied media and methods. Whereas an information source means body or unit of organization which has potential scientific documentation or information services (Anonymous, 1976).

This paper presents a brief overview on various special libraries and information sources, ways to optimize their services, a number of data centers, and a network of centers on biological materials, particularly those on microbial cultures (culture collections) in Indonesia.

Special libraries and information sources

Altogether there are no less than 581 special libraries and information sources. As is the case with the population distribution (Table 1), they are also unevenly distributed in 65 cities. The highest concentration is in Java, while much lower number exist in Sumatra, Sulawesi, and Kalimantan. Those found in Java are mostly located in Jakarta. In the other islands, only Medan in Sumatra and Ujung Pandang in Sulawesi have more than 10 (Tbl.2)

Table 1. Size and population number of some islands*

Island	Size (km ²)	Population No. (x10 ³)	Population density (/km ²)
Java	132,187	99,852	755
Sumatra	473,606	32,603	69
Kalimantan	539,460	7,722	14
Sulawesi	189,216	11,554	61
West Irian	421,981	1,371	3
The rest	162,993	10,945	67
Indonesia	1,919,443	164,047	85

* CBS (1986)

Table 2. Special libraries and information sources distribution according to island*

Island	No. of li- braries & info sources	No. of cities	Principle cities with >10 libraries & info. sources
Java	35	473	Jakarta (225), Bandung (59), Yogyakarta (55), Bogor (28), Surabaya (22), Semarang (18), Malang (17), Surakarta (10)
Sumatra	12	57	Medan (17), Banda Aceh (10)
Kalimantan	5	8	
Sulawesi	5	21	Ujung Pandang (12)
West Irian	1	2	
The rest	7	20	
Indonesia	65	581	

* Adapted from Dwinarto and Iswanti, 1987

As regard the parent institutions of these libraries and information sources, the majority are educational establishments/universities followed in descending order by respectively ministerial, private, and non-ministerial institutions (Table 3).

The field of interest of the special libraries and information sources varies from a rather specific one on natural or social sciences to a more general one. As the majority them belong to educational establishment (Table 3) which serve various client-

Table 3. Special libraries and information sources according to type of parent institutions*

Island	Parent institutions**					
	M	N	E	P	O	T
Java	149	45	194	78	7	473
Sumatra	18	-	35	4	-	57
Kalimantan	4	-	3	1	-	8
Sulawesi	5	-	16	-	-	21
West Irian	-	-	2	-	-	2
The rest	6	-	13	1	-	20
Indonesia	182	45	263	84	7	581

* Adapted from Dwinarto and Iswanti, 1987

** M : Ministerial N : Non-ministerial E : Educational
P : Private O : Others T : Total

es, it follows that the highest number have an interest on sciences in general. Next in line is on humanities and social sciences, followed by natural sciences & technology, biological, agricultural & environmental sciences, and health & medical sciences (Table 4).

Of the different kinds of documents constituting the holding of special libraries and information sources, the size of the book collection seems to be the most reliable parameter to estimate the wealth of such institutions. On this basis it is shown that the majority have a collection of 1,000 - 10,000 of books, followed by those with less than 1,000. Only 13 have a collection larger than 40,000 volumes, of which 12 are in Java and in

Table 4. Special libraries and information sources distribution according to field of interest*

Island	Field **						Total
	STI	BAE	HM	SoHEC	Univ.	Others	
Java	67	52	27	88	204	35	473
Sumatra	4	11	-	2	36	4	57
Kalimantan	2	2	-	-	3	1	8
Sulawesi	1	4	1	-	15	-	21
West Irian	-	-	-	-	2	-	2
The rest	2	2	1	1	12	2	20
Indonesia	76	71	29	91	272	42	581

* Adapted from Dwinarto and Iswanti, 1987.

** STI : sciences, technological & industrial sciences
 BAE : biological, agricultural & ecological sciences
 HM : health & medical sciences
 SoHEC : sociological, humanities & economical sciences
 Univ. : university

Sulawesi (Table 5).

Table 5. Special libraries and information sources distribution according to holding of books*

Island	Holding (x1,000)						Total
	>40	30-40	20-30	10-20	1-10	<1	
Java	12	10	14	53	297	87	473
Sumatra	-	1	1	1	39	15	57
Kalimantan	-	-	-	1	5	2	8
Sulawesi	1	-	1	3	9	7	21
West Irian	-	-	-	-	2	-	2

Table 5. (continued)

Island	Holding (x1,000)						Total
	>40	30-40	20-30	10-20	1-10	<1	
The rest	-	-	1	2	10	7	20
Indonesia	13	11	17	60	362	118	581

* Adapted from Dwinarto and Iswanti, 1987

With the proliferation of computers in Indonesia in these last few years, more and more libraries have been able to equip themselves with this important tool. Thus, out of the existing 581 special libraries and information sources, 84 have one or more units of computer. They are mostly PC model, but a number of establishments own already a mainframe. With a few exception, most of these institutions are located in Java, particularly in Jakarta (Table 6).

Table 6. Possession of computers by special libraries and information sources*

Island	Possession		
	No	Yes	Total
Java	395	78	473
Sumatra	54	3	57
Kalimantan	7	1	8
Sulawesi	20	1	21
West Irian	2	-	2
The rest	19	1	20

* Adapted from Dwinarto and Iswanti, 1987

Special libraries and information sources network

In view of the uneven distribution of special libraries and sources of information in Indonesia as well as the existing constraints in manpower, facilities, and budget faced by almost all of them, it is necessary that a mechanism has to be devised to optimize their services. For that purpose a national scientific documentation and network system had been set up with the objectives of cooperation in solving common problems and sharing of resources. The operation of the network is coordinated by four documentation centers as focal points, each is responsible for a particular field (Table 7).

Table 7. Nat. scien. documentation and information network system*

Focal point**	Field
Perpustakaan Nasional (Nat. Lib. of Ind)	Humanities
Pusat Dokumentasi dan Informasi Ilmiah (PDII-LIPI) (Centre for Scientific Documentation and Information - Indonesian Institute of Sciences)	Science and technology
Pusat Perpustakaan Pertanian dan Biologi (Nat. Lib. for Agric. Sci.)	Agricultural sciences
Bagian Perpustakaan dan Informasi Penelitian, Badan Penelitian dan Pengembangan Kesehatan (National Institute of Health Research and Development, Library and Research Information Division)	Health and medical sciences

* Pringgoadisurjo and Budihardjo, 1986

** For details see Appendix 1

Data sources/centers

While plenty of published information can be found on bibliographic and non-bibliographic data centers in Indonesia, there is practically none on numeric data. This, however, does not mean that there is no such data centers. In fact, there are at least 29 of research organizations, which may be considered as data centers because they generate and handle raw or partially processed data or partially processed results concerning large scale phenomena (Atherton, 1977). Some of the important ones are listed in Table 8.

Table 8. Data centers on various fields

Center	Field
1. Observatorium Bosscha, Departemen Astronomi, Institut Teknologi Bandung (Bosscha Observatory, Department of Astronomy, Bandung Institute of Technology), Bandung	Astronomy
2. Pusat Penelitian dan Pengembangan Geologi (Geological Research and Development Center), Bandung	Geology
3. Pusat Pengembangan Geologi Kelautan (Marine Geological Institute), Bandung	Marine geology
4. Pusat Riset Dirgantara-LAPAN (Aerospace Research Center, Indonesian National Institute of Aeronautics and Space), Bandung	Aerospace

Table 8. (continued)

Center	Field
5. Badan Koordinasi Survei dan Pemetaan Nasional (National Co-ordinating Agency for Survey and Mapping), Cibinong - Bogor	Geography
6. Herbarium Bogoriensis-LIPI (Herbarium Bogoriense-Indonesian Institute of Sciences) Bogor	Taxonomic botany
7. Pusat Penelitian Tanah (Centre for Soil Research), Bogor	Soil science
8. Biro Pusat Statistik (Central Bureau of Statistics), Jakarta	National Statistics
9. Pusat Standardisasi-LIPI (Institute for Standardization-Indonesian Institute of Sciences), Jakarta	National standards
10. Pusat Aplikasi Isotop dan Radiasi, Badan Tenaga Atom Nasional (Centre for the Application of Isotopes and Radiation, National Atomic Energy Agency), Jakarta	Isotopes and radiation
11. Pusat Analisa Perkembangan Ilmu Pengetahuan dan Teknologi, Lembaga Ilmu Pengetahuan Indonesia (Centre for Analysis of Science and Technology Development, Indonesian Institute of Sciences), Jakarta	Science and
12. Pusat Penelitian dan Pengembangan Oseanologi-LIPI (Centre for Oceanological Research and Development-Indonesian Institute of Sciences), Jakarta	Oceanology
13. Pusat Penelitian Nuklir, Badan Tenaga Atom Nasional (Nuclear Research Centre, National Atomic Energy Agency), Yogyakarta	Nuclear energy
14. Pusat Penelitian dan Pengembangan Teknologi Minyak dan Gas Bumi "LEMIGAS" ("LEMIGAS" Research and Development Centre for Oil and Gas Technology), Jakarta	Oil and natural gas

Network of centers on biological materials

In the field of biological material resources, there is a network coordinated by the National Commission for the Preservation of Plant and Animal Genetic Resources. This Commission was set up by the Ministry of Agriculture to coordinate activities on the conservation, utilization, and protection of plant, animal and microbial genetic resources. The network comprises 13 institutions (Table 9).

Table 9. Institutions constituting the network for the conservation of plant and animal genetic resources

-
1. Balai Penelitian Perkebunan Bogor-BPP Bogor (Bogor Estate Crops Research Institute), Bogor
 2. Pusat Penelitian dan Pengembangan Bioteknologi-LIPI (Research and Development Institute for Biotechnology, Indonesian Institute of Sciences), Bogor
 3. Pusat Penelitian dan Pengembangan Biologi-LIPI (Research and Development Institute for Biology, Indonesian Institute of Sciences), Bogor
 4. Badan Penelitian dan Pengembangan Pertanian (Agency for Agricultural Research and Development), Jakarta
 5. Balai Penelitian Tanaman Rempah-rempah dan Obat (Spices and Medicinal Plants Research Institute), Bogor
 6. Balai Penelitian dan Pengembangan Hortikultura (Horticultural Research and Development Institute), Jakarta
 7. Balai Penelitian Tanaman Pangan Bogor (Bogor Food Crops Research Institute), Bogor
 8. Direktorat Jenderal Perlindungan dan Pengawetan Hutan (Directorate General for Forest Protection and Nature Conservation), Bogor
 9. Balai Penelitian Ternak (Animal Husbandry Research Institute), Bogor
 10. Balai Penelitian Perikanan Air Tawar (Fresh Water Fishery Research Institute), Bogor
 11. Balai Penelitian Perikanan Laut (Marine Fishery Research Institute), Jakarta
 12. SEAMEO Regional Center for Tropical Biology (BIOTROP), Bogor
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With regard to microbial data centers, at present there are 14 of them (Table 10). Despite the differences in their field of interest, a close similarity can be found in their mode of operation with respect to the collection, evaluation, storage and retrieval, dissemination, and exchange of materials and information.

Table 10. List of institutions possessing microbial culture collections*

Name	Main interest
1. Biotechnology Culture Collection (BTCC), Research and Development Center for Biotechnology, Indonesian Institute of Sciences, Bogor	Agricultural, industrial, and environmental microbiology
2. Perum Bio Pharma, Bandung	Health and medical microbiology
3. Center for the Application of Isotopes and Radiation, National Atomic Energy Agency, Jakarta	Health, industrial, and agricultural microbiology

Table 10. (continued)

Name	Main interest
4. Sungei Putih Research Center for Estate Crops, Medan	Agricultural microbiology
5. Research Institute for Tobacco and Fiber Crops, Malang	Agricultural microbiology
6. Seameo-BIOTROP, Bogor	General and agricultural microbiology
7. Pusat Veterinaria Farma, Surabaya	Veterinary microbiology
8. Faculty of Biology, Gadjah Mada University, Yogyakarta	General microbiology
9. Indonesian Sugar Research Institute, Pasuruan	Agricultural and industrial microbiology
10. Balitvet Culture Collection (BCC) W.D.C. No. 10, Bogor	Veterinary microbiology
11. Faculty of Agriculture, Gadjah Mada University, Yogyakarta	General and agricultural microbiology
12. Institute of Technology Bandung Culture Collection W.D.C. No. 44 Bandung	General and industrial microbiology
13. Department of Microbiology, University of Indonesia, Jakarta	Medical microbiology
14. University of Indonesia Culture Collection (UICC) W.D.C. No. 563, Depok - Jakarta	General and industrial

* For details see Appendix 2

The majority of their holdings are of indigenous origin, and only a small number came from overseas through exchange or purchase. With a few exceptions, the majority of the indigenous cultures have not been identified down to the species due to the lack of expertise, facilities, and funds. On the other hand, information on the history, origin, method of preservation, and economic importance of these cultures are usually available (Saono, 1988).

References

- Anonymous, 1976. "Bylaws". *Special Libraries (USA)* 67(10): 75
- Atherton, P., 1977. *Handbook for information systems and services*. UNESCO.
- CBS (Central Bureau of Statistics), 1986. *Statistical yearbook of Indonesia*. Jakarta.
- Dwinarto, S. and S. Iswanti (Comp. & Eds.), 1987. *Directory of special libraries and information sources in Indonesia*

1985. 7th ed. Indonesian Centre for Scientific Documentation and Information, Indonesian Institute of Sciences. Jakarta.

Pringgoadisurjo, L. and U. Budihardjo, 1986. Indonesia: science and technology information issues. In: Laporan Lokakarya & Konferensi Pembinaan Jasa Informasi Ilmu dan Teknologi. Jakarta 16-19 Juni.

Saono, S., 1988. Indonesian country report. ASCA Seminar on Information Network on Biological Materials-Microbial Strains, Cell Lines & Others. Tokyo, Japan 14-16 March.

Appendix 1

1. PERPUSTAKAAN NASIONAL (NATIONAL LIBRARY OF INDONESIA)

- Address: Jl. Salemba Raya 28, Kotak Pos 3624, Jakarta Pusat, Indonesia
- Founded: 1980
- Staff: 8 libr.; 45 sub. spec.; 152 others
- Users: open to public
- System: open & closed access
- Main subject: general geography & history; law; the arts education; literature/belles letters
- Holdings: books 350,000 titls.; bound periodicals 11,000 titls.; periodical subscr.: 99 local, 313 foreign; microfilms 882; microfiches 239; photoes 70; maps 17,927; dissertations 5,000; reports; paintings; others 400
- Languages: Local: 10%; Indon. 25%; English 20%; Others 25%
- Classif.: DDC, local
- Services: library; interlibrary loan; current awareness; inquiry; consultancy; search; reprography: photocopying, microfiching, printing, binding
- Equipments: microreaders; microreader printer; photocopiers; catalog card duplicator; film projector; slide projector; computer units
- Prof. membership: Ikatan Pustawan Indonesia; Conference of Southeast Asian Librarians (CONSAL); International Federation of Library Association (IFLA)
- Publications: Bibliografi Khusus; Daftar Tambahan Koleksi; Indeks; Laporan Tahunan; Sari

2. PUSAT DOKUMENTASI DAN INFORMASI ILMIAH (PDII-LIPI) (INDONESIAN CENTRE FOR SCIENTIFIC DOCUMENTATION AND INFORMATION - INDONESIAN INSTITUTE OF SCIENCES)

- Address: Jl. Jend. Gatot Subroto, P.O. Box 269/JKSMG/88, Jakarta Selatan, Indonesia
- Founded: 1965
- Staff: 15 libr.; 57 sub. spec.; 123 others
- Users: open to public
- System: open access

- Main subject: science & technology; literature on development; secondary literature; library & information sciences
- Holdings: books & bound periodicals 86,800 titles.; periodical subscr.: 1,315 local, 1,277 foreign; microfilms 1,507; microfiches 44,058; standards 11,346; maps 50; reports; dissertations 1,350; theses 750
- Languages: Indon. 20%; English 80%
- Classif.: DDC
- Services: library; interlibrary loan; current awareness; inquiry; consultancy; search; reprography: photocopying, microfilming, microfiching
- Equipments: microreaders; microreader printers; microprinter; microfiche cameras; photocopiers; catalog card duplicators; overhead projectors; vacuum packaging machine; film projector; slide projector; computer terminals; computer units; video recorders; tape recorders; film printers; poster processors; microscan system; diazo developer
- Prof. membership: Ikatan Pustakawan Indonesia; Conference of Southeast Asia Librarian (CONSAL); International Federation Documentation (FID); International Federation Documentation Commission for Asia and Oceania (FID-CAO); International Serials Data System (ISDS); National Libraries and Documentation Centre of Southeast Asia Consortium (NLDC-SEA)
- Publications: BACA, Index of Indonesian Learned Periodicals, Indeks Laporan Penelitian dan Survei, Indeks Makalah Konferensi dan Lokakarya, Daftar Tambahan Buku, Katalog Induk Disertasi Indonesia, Sari Makalah Bidang Lingkungan Hidup, Sari Laporan Penelitian dan Survei, Direktori Perpustakaan Khusus dan Sumber Informasi di Indonesia, Direktori Nasional: sumber informasi lingkungan hidup, Prosiding, Special Bibliographies, Annual Report.

3. PUSAT PERPUSTAKAAN PERTANIAN DAN BIOLOGI (NATIONAL LIBRARY FOR AGRICULTURAL SCIENCES)

- Address: Jl. Ir. H. Juanda 20, Bogor, Indonesia
- Founded: 1842
- Staff: 13 libr.; 32 sub. spec.; 114 others
- Users: open to public
- System: open access
- Main subject: agriculture & related sciences; botanical sciences; zoological sciences; bibliographies & catalogs; index & abstracts; library & information sciences
- Holdings: books 95,000 titles.; bound periodicals 9,000 titles.; periodical subscr.: 150 local, 967 foreign; manuscripts 5,000; microfilms 1,500; brochures 6,000; reports 2,000; dissertations & theses 3,000; maps 100
- Languages: Local 1%; Indon. 20%; English 40%; others 39%
- Classif.: UDC, AGRIS
- Services: library; interlibrary loan; current awareness; inquiry; consultancy; search; SDI (agriculture, animal husbandry, forestry); reprography: photocopying, microfilming, microfiching
- Equipments: catalog card duplicators; microreaders; microreader printer; overhead projectors; film projector; slide

projectors; computer units; tape recorders; photography unit; photocopiers

- Prof. membership: Ikatan Pustakawan Indonesia; Federation of International Documentation (FID); International Association of Agricultural Librarians & Documentalists (IAALD); International Federation of Library Association and Institutions (IFLA)
 - Publications: Bibliografi Khusus; Daftar Tambahan Koleksi; Indeks; Laporan Tahunan; Sari; Warta Penelitian dan Pengembangan Pertanian; Indonesian Agricultural Research and Development Journal; Indonesian Journal of Crops Science; Seri Pengembangan; Buku Badan Penelitian dan Pengembangan Pertanian.
4. BAGIAN PERPUSTAKAAN DAN INFORMASI PENELITIAN, BADAN PENELITIAN DAN PENGEMBANGAN KESEHATAN (NATIONAL INSTITUTE OF HEALTH RESEARCH AND DEVELOPMENT, LIBRARY AND INFORMATION DIVISION
- Address: Jl. Percetakan Negara I, P.O. Box 226, Jakarta Pusat, Indonesia
 - Founded: 1969
 - Staff: 3 libr.; 6 sub. spec.; 22 others
 - Users: limited public service
 - System: open access
 - Main subject: medical sciences; managerial services; chemistry and allied sciences; bibliographies & catalogs; index & abstracts; library & information sciences
 - Holdings: books 9,818 titls.; bound periodicals 91 titls.; periodical subscr.: 40 local, 49 foreign; reports 708
 - Languages: Indon. 42%; English 56%; others 2%
 - Classif.: DDC, NLM
 - Services: library; interlibrary loan; photocopying; inquiry; consultancy; search; reprography: printing, binding
 - Equipments: computer units; microreaders; catalog card duplicators; automatic transparency machine; automatic lettering machine; mini offset
 - Prof. membership: Pusat Jaringan Informasi IPTEK Kesehatan; Hellis Network (WHO-SEARC); SEAMIC; MEDLARS; International Medical Library Association
 - Publications: Bibliografi Khusus; Daftar Tambahan Koleksi; Indeks; Abstrak; Buletin Penelitian Kesehatan; Monograf Laporan Penelitian

Appendix 2

1. BIOTECHNOLOGY CULTURE COLLECTION (BTCC)
RESEARCH AND DEVELOPMENT CENTER FOR BIOTECHNOLOGY
INDONESIAN INSTITUTE OF SCIENCES
(KOLEKSI BIAK JASAD RENIK BIOTEKNOLOGI
PUSAT PENELITIAN DAN PENGEMBANGAN BIOTEKNOLOGI
LEMBAGA ILMU PENGETAHUAN INDONESIA)

- Address: Jl. Ir. H. Juanda 18, P.O. Box 323
Bogor 16122, Indonesia

- Telephone: (0251) 21038/21039
- Contact: Triadi Basuki
- Staff: 7
- Sponsor: Government
- Coverage: Information and collection of microbial, plant cell & tissue cultures of economic importance
- Output: Publication of data in periodicals and occasional reports
- Publication: Annales Bogorienses, Abstrak Biotek, Warta Biotek
- Service: Storage & identification of specific microbial cultures; training & consultation on cultures and culture collection upon request
- Availability: Part restricted to certain users, part open to all users on an exchange basis/fees
- Language: Indonesian and English
- Keywords: Culture Collection, Plant Tissue Culture, Agricultural Microbiology, Industrial Microbiology, Applied Microbiology, Fermentation, Biotechnology

2. PERUM BIO FARMA

- Address: Jl. Pasteur 28, P.O. Box 47
Bandung 40161, Indonesia
- Telephone: (022) 83755-83757 Telex: 28432 BIOFAR IA
- Contact: S. Iwan Soemara
- Staff: 11
- Sponsor: Government
- Coverage: Information and collection of microbial cultures & animal cell lines of medical importance
- Output: Publication of data in periodicals and occasional reports
- Publication: Buletin Bio Farma
- Service: Patent deposits, storage & identification of specific microbial cultures; training & and consultation on cultures and culture collection upon request
- Availability: Part restricted to certain users, part open to all users on an exchange basis/fees
- Language: Indonesia and English
- Keywords: Culture Collection, Medical Microbiology, Immunology

3. CENTER FOR THE APPLICATION OF ISOTOPES AND RADIATION, NATIONAL ATOMIC ENERGY AGENCY (PUSAT APLIKASI ISOTOP DAN RADIASI, BADAN TENAGA ATOM NASIONAL BATAN)

- Address: P.O. Box 2, KBYL
Jakarta Selatan 12240, Indonesia
- Telephone: (021) 7690 709 ext. 110 Telex: 47113 CAIRCA IA
- Contact: Harsojo
- Staff: 12
- Sponsor: Government
- Coverage: Information and collection of microbial cultures

- Output: Publication of data in periodicals and occasional reports
- Publication: Hasil Penelitian Pusat Aplikasi Isotop dan Radiasi BATAN
- Service: Consultation of microbial cultures upon request
- Availability: Part restricted to certain users, part open to all users on an exchange basis/fees
- Languages: Indonesian and English
- Keywords: Culture Collection, Radiation Biology, General Microbiology, Applied Microbiology, Industrial Microbiology, Fermentation, Radiation Biology

4. SUNGAI PUTIH RESEARCH CENTER FOR ESTATE CROPS

- Address: P.O. Box 416, Medan 20000, Indonesia
- Telephone: (061) 23923
- Contact: A. Darussamin
- Staff: 3
- Sponsor: Semi-government
- Coverage: Information and collection of microbial cultures of economic importance
- Output: Publication of data in periodicals and occasional reports
- Publication: Buletin Perkaretan, Warta Perkaretan
- Service: Storage of specific microbial cultures upon request
- Availability: Part restricted to certain users, part open to all users on an exchange basis/fees
- Language: Indonesian and English
- Keywords: Culture Collection, Environmental Protection, Plant Pathology, Agricultural Microbiology

5. RESEARCH INSTITUTE FOR TOBACCO AND FIBER CROPS

- Address: Jl. Raya Karang Ploso, P.O. Box 199
Malang, Indonesia
- Telephone: (035) 41301/41447
- Contact: Ms Nildar Hasnam
- Staff: 8
- Sponsor: Government
- Coverage: Information and collection of microbial cultures of economic importance
- Output: Publication of data in periodicals and occasional reports
- Publication: Penelitian Tanaman Tembakau dan Serat
- Service: Storage of specific microbial cultures upon request
- Availability: Part restricted to certain users, part open to all users on an exchange basis/fees
- Language: Indonesian and English
- Keywords: Culture Collection, Plant Pathology

6. SEAMEO-BIOTROP

- Address: Jl. Raya Tajur Km. 6, P.O. Box 17
Bogor, Indonesia

- Telephone: (0251) 23848 Telex: 48299 BIOTRO IA
- Contact: Ms Okky Setyawati Dharmaputra
- Staff: 1
- Sponsor: Private
- Coverage: Information and collection of microbial cultures of economic importance
- Output: Publication of data in periodicals and occasional reports
- Publication: BIOTROP Bulletin, BIOTROP Special Publication, BIOTROP Technical Bulletin, BIOTROP Newsletter
- Service: Provision of information and microbial cultures upon request
- Availability: Part restricted to certain users, part open to all users on an exchange basis/fees
- Language: Indonesian and English
- Keywords: Culture Collection, Plant Pathology

7. PUSAT VETERINARIA FARMA

- Address: Jl. A. Yani 68-70
Surabaya, Indonesia
- Contact: Soenardi
- Sponsor: Government
- Coverage: Information and collection of microbial cultures of economic importance
- Output: Publication of data in periodicals and occasional reports
- Publication: Buletin VETMA
- Service: Provision of information and microbial cultures upon request
- Availability: Part restricted to certain users, part open to all users on an exchange basis/fees
- Language: Indonesian and English
- Keywords: Applied Microbiology, Cell Biology, Veterinary, Vaccine

8. FACULTY OF BIOLOGY, GADJAH MADA UNIVERSITY

- Address: Jl. Teknik Selatan
Yogyakarta, Indonesia
- Telephone: (0274) 88688 ext. 415
- Contact: I.G.P. Badjra Sidemen
- Staff: 5
- Sponsor: University
- Coverage: Information and collection of microbial cultures
- Output: Publication of data in periodicals and occasional reports
- Service: Identification of specific microbial cultures and training on culture collection upon request
- Availability: Part restricted to certain users, part open to all users on an exchange basis/fees
- Language: Indonesian and English
- Keywords: Culture Collection, General Microbiology

9. **INDONESIAN SUGAR RESEARCH INSTITUTE**

- Address: Jl. Pahlawan 25
Pasuruan 67126, Indonesia
- Telephone: (0343) 21086/21087 Telex: 31008 SUGEX S IA
- Contact: Gading F. Hutasoit
- Staff: 10
- Sponsor: Government
- Coverage: Information and collection of microbial cultures
- Output: Publication of data in periodicals and occasional reports
- Publication: Buletin Balai Penyelidikan Perusahaan Perkebunan Gula, Majalah Perusahaan Gula, Warta Bulanan Balai Penyelidikan Perusahaan Perkebunan Gula
- Service: Storage & identification of specific microbial cultures and consultation on culture collection upon request
- Availability: Part restricted to certain users, part open to all users on an exchange basis/fees
- Language: Indonesian and English
- Keywords: Culture Collection, Agricultural Microbiology, Applied Microbiology, Industrial Microbiology, Fermentation, plant Pathology, etc.

10. **BALITVET CULTURE COLLECTION (BCC) W.D.C. No. 10**
(BALAI PENELITIAN VETERINER)

- Address: Jl. R.E. Martadinata 30
Bogor 16114, Indonesia
- Telephone: (0251) 21048/311657 Telex: 448304 BPPH BG IA
- Fax.: (0251) 26425 RIVS
- Contact: Sukardi Hastiono
- Staff: 4
- Sponsor: Government
- Coverage: Information and collection of microbial cultures of economic importance
- Output: Publication of data in periodicals and occasional reports
- Publication: Penyakit Hewan
- Service: Storage and identification of specific microbial culture upon request
- Availability: Part restricted to certain users, part open to all users on an exchange basis/fees
- Language: Indonesian and English
- Keywords: Culture Collection, Agricultural Microbiology, General Microbiology, Veterinary, Animal Pathogen

11. **FACULTY OF AGRICULTURE, GADJAH MADA UNIVERSITY**

- Address: Jl. C. Simanjuntak 1, P.O. Box 1
Yogyakarta 55581 B, Indonesia
- Telephone: (0270) 3062/88688 ext. 545 Telex: UGM 25135
- Contact: Ms Siti Kabirun Sri Hartadi
- Staff: 3
- Sponsor: University

- Coverage: Information and collection of microbial cultures of economic importance
- Output: Publication of data in periodicals and occasional reports
- Publication: Buletin Fakultas Pertanian, Ilmu Pertanian, Pewarta Fakultas Pertanian
- Service: Identification of special cultures and training on culture collection upon request
- Availability: Part restricted to certain users, part open to all users on an exchange basis/fees
- Language: Indonesian and English
- Keywords: Culture Collection, Applied Microbiology

12. INSTITUTE OF TECHNOLOGY BANDUNG CULTURE COLLECTION
W.D.C. No. 44

- Address: Jl. Ganesa 10
Bandung 40132, Indonesia
- Telephone: (022) 84251 ext. 356
- Contact: Ibrahim Sastramihardja
- Staff: 19
- Sponsor: University
- Coverage: Information and collection of microbial cultures
- Output: Publication of data in periodicals and occasional reports
- Publication: Berkala ITB
- Service: Storage and identification of specific cultures; training on culture collection upon request
- Availability: Part restricted to certain users, part open to all users on an exchange basis/fees
- Language: Indonesian and English
- Keywords: Culture Collection, Agricultural Microbiology, Applied Microbiology, Industrial Microbiology, Fermentation etc.

13. DEPARTMENT OF MICROBIOLOGY UNIVERSITY OF INDONESIA
JAKARTA (DMUIJ) W.D.C. No. 472

- Address: Jl. Pegangsaan Timur 16, Jakarta Pusat, Indonesia
- Telephone: (021) 322850
- Contact: R. Utji
- Sponsor: University
- Coverage: Information and collection of microbial cultures of medical importance
- Output: Publication of data in periodicals and occasional reports
- Publication: Mikrobiologi Klinik Indonesia
- Service: Storage and identification of specific cultures; training and consultation on cultures and culture collection upon request
- Availability: Part restricted to certain users, part open to all users on an exchange basis/fees
- Language: Indonesian and English
- Keywords: Culture Collection, Medical Microbiology

14. UNIVERSITY OF INDONESIA CULTURE COLLECTION (UICC)
* W.D.C. No. 563

- Address: FMIPA-UI
Kampus Depok Baru
Depok, Jawa Barat, Indonesia
- Contact: Ms Indrawati Gandjar
- Staff: 4
- Sponsor: University, Private
- Coverage: Information and collection of microbial cultures
- Output: Publication of data in periodicals and occasional reports
- Service: Identification of specific cultures, training & consultation on cultures and culture collection upon request
- Availability: Part restricted to certain users, part open to all users on an exchange basis/fees
- Language: Indonesian and English
- Keywords: Culture Collection Applied Microbiology, Industrial Microbiology, Fermentation, etc.

LIST OF PRESENTATION
(Final Ed.)

- ATTHASAMPUNNA, Poonsook: Data activity at TISTR (on micro-organisms)
- BAHNG, Gun Woong: Standard reference data activities at KSRI
- BUDIHARDJO, Utari: Data/information services and main S&T data centres in Indonesia.
- HU, Yaru: Recent advance of domestic data collection in some scientific and technical fields in China.
- JHON, Mu Shik: Introductory remarks for Korea CODATA activity.
- JIAN, Chusheng: The development of data activities in chemistry and chemical engineering in China
- KANDA, Toshihiko: Data activities at JICST.
- KHALID, Adnan HJ: Organisation on R&D and S&T data activities in Malaysia.
- KOLASKAR, A.S.: A unique data bank for protein engineers. Usefulness and structure.
- KWON, O Ryong: The activities for construction technology databases in Korea.
- LIN, Jung-Yaw: Biological data activities in Taiwan, China.

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W.D.C. No. 563

- Address: FMIPA-UI
Kampus Depok Baru
Depok, Jawa Barat, Indonesia
- Contact: Ms Indrawati Gandjar
- Staff: 4
- Sponsor: University, Private
- Coverage: Information and collection of microbial cultures
- Output: Publication of data in periodicals and occasional reports
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- KWON, O Ryong: The activities for construction technology data-bases in Korea.
- LIN, Jung-Yaw: Biological data activities in Taiwan, China.

LAL, Krishan: Survey of data activities in India.

MITHEN, Bernard J.: A overview of Australian numerical and factual database development.

NEGISHI, Masamitsu: Problems in compiling and servicing full text database and numerical database. Experiments and plans at NACSIS.

PARK, Changkyu: Informatics in molecular biology.

SAONO, S.: Scientific and technological information and data sources in Indonesia. A brief overview.

SHEU, Yen-zu: A preliminary survey of data sources in Taiwan.

SUGAWARA, Hideaki: Comments on the talks by Dr. Saono and Dr. Atthasampunna.

TAN, Rudy H.: Current data activities on science and technology in the Philippines.

TSUGITA, Akira: Protein database activities in Japan.

WANG, Yuan: A study on the exchangeable format of spectroscopic database and the standardization of user interfaces.

WEIK, Yau Huei: Sequence data of proteins and nucleic acids.

WESTRUM, Edgar F.: Visualization of scientific data: Needs and uses.

YANG, Young-Kyu: CODATA activity in Korea.

ZAIDI, Zafar H.: Status of dissemination of scientific data in Pakistan.