

LITERATURE SEARCH AND DOCUMENT RETRIEVAL SYSTEM FOR THE  
UNIVERSITY OF MAINE  
AGROFORESTRY OUTREACH RESEARCH PROJECT

by

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## TABLE OF CONTENTS

TABLE OF CONTENTS	i
ACKNOWLEDGMENTS	11
CHAPTER 1. INTRODUCTION	1
CHAPTER 2. CONCLUSIONS AND RECOMMENDATIONS	2
REFERENCES CITED	3
APPENDIX I. MICRODIS	4
APPENDIX II. COMPUTER SEARCH SERVICE	7
APPENDIX III LIST OF DOCUMENT HOLDERS IN HAITI	9
APPENDIX IV. LIST OF DOCUMENT SOURCES AND INFORMATION SOURCES IN THE UNITED STATES AND THE UNITED KINGDOM	11
APPENDIX V. LIST OF ACRONYMS	14
APPENDIX VI. LIST OF DESCRIPTOR/IDENTIFIERS	15
APPENDIX VII. AN EXAMPLE OF A SEARCH MADE WITH MICRODIS WITH SUGGESTIONS FOR IMPROVING SEARCH EFFICIENCY AND COMPLETENESS	16
APPENDIX VIII. MICRODIS DATABASE STRUCTURE	18
APPENDIX IX. MICRODIS SITE CODE LIST	19

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## CHAPTER 1

### INTRODUCTION

The Agroforestry Outreach Research Project (AFORP) required a means of searching for and obtaining documents necessary for accomplishing its program. The development described herein furnishes such a means. It consists of two ways to make searches and two ways to obtain the documents found by the searches.

The documents of interest are those dealing with agroforestry in general and, more specifically, with areas of special interest to the project, for example, with certain varieties of trees (*Leucaena leucocephala*, *Azadirachta indica*, *Prosopis juliflora*) and certain aspects of agroforestry such as traditional agroforestry systems, hedgerows and nursery practice.

This report describes the search and retrieval methods. It is also designed to serve as an operating manual instructing the reader in the use of the system.

#### Description of the System

Documents that are available in Haiti, and certain other important and appropriate documents, are catalogued in the computer program MicroDIS (Howard and Bohall, 1986). See Appendix I for a description of this program. A user can query MicroDIS and receive a list of citations satisfying the criteria of the query. The citation includes the location of the document if it exists in Haiti. To obtain it the user must communicate with the holder of the document. A list of document holders in Haiti is given in Appendix III. If the document does not exist in Haiti, the user must call the Raymond H. Folger Library of the University of Maine which will send it if it is available at the University of Maine. If it is not, the user must request the document from an appropriate source such as the National Agricultural Library of the U.S. Department of Agriculture. A list of sources in the United States is given in Appendix IV.

The second way to make a search is to request it of the Computer Search Service (CSS) of the University of Maine. The search criteria can be telephoned to CSS. They perform the search using all the appropriate data bases and mail the results as hardcopy by Federal Express. The documents are obtained as described in the foregoing paragraph. Since it is possible that the citation found by the CSS search is in the MicroDIS catalogue (and not retrieved by MicroDIS because of differing responses to search criteria) one should consult MicroDIS to see if the document is in Haiti before ordering it abroad. See Appendix II for specific information.

## CHAPTER 2

### CONCLUSIONS AND RECOMMENDATIONS

The Literature Search and Document Retrieval System can presently be used to produce citation lists satisfying the criteria formulated by the user. It is important that the system be used and maintained regularly, following these specific recommendations:

Citations for new documents in the U of M offices in Port-au-Prince be entered into MicroDIS on a monthly basis

Other Haitian document holders be reviewed on a six-month basis and citations for their new documents entered into MicroDIS.

Citation searches be made frequently, resulting in suggestions for improvement.

A brochure be prepared and circulated to all concerned people and groups in Haiti, describing the system, inviting them to use it, and contribute appropriate bibliographies.

The descriptor/identifiers of new citations be chosen by reading the document if possible, or at least by reading the abstract.

One of the writers of the MicroDIS program from the LTS Corporation be invited to Haiti to review the operation, to suggest improvements, and to bring the latest up-dates and user manual.

REFERENCES CITED

1. Howard, Paul and Bohall, Brian. 1986. "MicroDIS: A Microcomputer Based Development Information System. User's Manual, Version 1.0." LTS Corporation, Vienna, Virginia.

## APPENDIX I

### MICRODIS

MicroDIS is a library program based on DBase 3. It was developed for the Agency for International Development (USAID) by the LTS Corporation of Vienna, Virginia for use by USAID missions and USAID projects. Its components are those of a complete library system. They are:

- Acquisitions
- Catalog
- Circulation
- Daily Log
- Reference Desk.

Presently, only the Catalog component is used. The other components are either not presently needed or not yet developed to a usable stage (the LTS Corporation is still developing the system).

There are about 1000 citations in the catalog. The documents cited deal with the broad subject of agroforestry with emphasis on those aspects of agroforestry which are of special interest to this project. An attempt has been made to cite all pertinent documents which exist in Haiti. The citation includes their location if they are in Haiti. Documents of special interest to the project which were not found in Haiti are also cited.

The citation includes the usual information such as title, authors, callnumber, publication date and descriptor/identifiers. Furthermore, there is a "NOTES" field which contains the abstract, summary, or sometimes other information concerning the document. There is no field for the publisher. It is therefore placed in the field named "SERIES". The complete field structure of the record (citation) is shown in Appendix VIII.

The user can perform searches according to search criteria which he specifies. The MicroDIS program leads the user through the search process with prompts and instructions. There is an on-line "HELP" facility. There is also a User Manual supplied by the LTS Corporation. Additional assistance to the user is provided below.

The program runs on an IBM compatible personal computer with a minimum of 256K memory. A hard disk is required since the program and data files require several megabytes of disk space. A system for backing up the data files other than with floppy disks is desirable.

The procedure for entering citations into the catalog is described in the MicroDIS User's Manual. Entering citations, as well as all work on the system except for searches, can only be done by a qualified operator. Access to the system, except for searches, is by password.

Entering a citation into the system is straightforward. However, the assignment of descriptor/identifiers (keywords or expressions which the searcher uses) requires, in most cases that one read the document. This is not always possible so that the descriptor/identifiers must be assigned from the title, the abstract, or in rare cases from a list of keywords given by the author. It is important that the descriptor/identifiers be properly assigned in order to render the searches efficient and complete. Fortunately, it is easy to modify records so that the descriptor/identifiers, and other fields, can be improved during routine maintenance of the catalog.

### Searching for a Document with MicroDIS

Searching for a document or a class of documents is the most important user interaction with the MicroDIS system. Assuming that the user is unfamiliar with the system, the following outline details all the necessary actions to do a search. The specific details apply to the Kaypro computer on which MicroDIS is installed at the U of M office in Port-au-Prince.

To start:

Turn the computer on. After a short time the DOS prompt C:> will appear on the screen indicating that the user is working in the root directory of the C (hard disk) drive.

Type < cd microdis > to change to the MicroDIS directory (type the material within the angular brackets; do not type the brackets).

Type < microdis > to load the MicroDIS program into memory. After a short time the initial screen of the MicroDIS program will appear.

Type < 1 > for English language.

Type < 1 > for document database processing.

Press < enter > for search. No password is necessary.

Type < 2 > for catalog. It will ask, "Do you want search help Y/N ?". For the first time through the user can type < Y > and read the three pages of instructions presented. These same three pages are found in the User's Manual.

Type < N > if help is not necessary. The MicroDIS search screen will now appear and one is ready to state one's search criteria. The screen will lead one through the process of stating search criteria, in viewing the results, and in printing the results.

The search criteria are:

- (1) words in the descriptor/identifier field
- (2) words in the document title
- (3) an author's name or a range of author's names
- (4) publication date

The three other criteria listed on the search screen bibtype, project #, and document i.d. are not currently usable.

The user may ask for all citations dealing with leucaena hedgerows with no limitation on author or publication date. He would therefore state his criteria as "all citations containing the word leucaena in the descriptor/identifier field OR in the title field AND which contain the word hedgerow in the same two fields". The OR and AND are the logical "connectors" used by DBaseIII and by MicroDIS. Unfortunately, one cannot state criteria as an English language phrase. However, the MicroDIS' Search Screen leads one through the procedure of stating one's criteria in a straightforward manner. The results of an actual search, along with instructions and suggestions for making a correct and efficient search, are given in Appendix VII.

#### Obtaining Documents from the MicroDIS Search

Many of the documents in the MicroDIS catalog are located in offices and libraries in the Port-au-Prince region. The holder is identified in the field callnumber; the location is given in the field location. The list of holders and locations, with addresses and phone numbers, is given in Appendix III. The documents at the U of M office are on the second floor in the "Library" file. To obtain other documents located in Haiti refer to Appendix III and call the holder.

The catalog includes many documents which do not, to our knowledge, exist in Haiti. The first step in obtaining a document which is not available in Haiti is to request it from the University of Maine by communicating with the Computer Search Service (CSS) of the Raymond H. Folger Library (see Appendix IV). They will determine whether it is obtainable from the U of M system and, if it is, assist in obtaining it. If it is not obtainable from U of M one must go to another source.

This could be a library, publisher, or bookstore. The National Agricultural Library of the Department of Agriculture can provide documents but it considers itself a source of last resort.

Sources of documents with names, addresses and phone numbers are listed in Appendix IV. Information concerning ordering procedures is also given if known.

## APPENDIX II

### COMPUTER SEARCH SERVICE

The Computer Search Service (CSS) of the Raymond H. Folger Library has agreed to do literature searches for AFORP. It will also determine whether the document is available from the U of M system.

#### Searching for Documents at the Computer Search Service

The CSS has access to all major and appropriate data bases in the United States and the United Kingdom. These include DIALOG, BRS, BIOSIS, AGRICOLA and CAB (see Appendix IV). The procedure for requesting a search is:

- (1) Determine the search criteria. This should be done carefully since the project will do a significant number of searches and wants them to cover all important areas of interest to the project without being excessively duplicative.
- (2) Telephone the search criteria to CSS.
- (3) The results of the search will arrive by Federal Express about one week after initiation of the search. If one has more time the results can be sent by ordinary mail.
- (4) Enter the important and appropriate citations into the MicroDIS system. File each search in a separate manila folder in the Searches section of the library file.

The following searches have been completed:

#### Search SERA

Criteria: Agroforestry AND tropical in title or subject heading.

Date criteria: None.

#### Search SERB

Criteria: Economic analysis of agroforestry systems or farming systems in developing countries.

Date criteria: after January 1, 1981.

#### Search SERC

Criteria: *Cassia Siamea*.

Date criteria: after January 1, 1981.

#### Search SERD

Criteria: *Azadirachta indica* (neem).

Date criteria: after January 1, 1984.

Search SERE

Criteria: Agroforest= OR agrosilvicultur= OR agrisilvacultur=  
OR agrosilvicultur= OR agrosilvacultur= OR silvopastoral AND  
tropical developing countries.

Date criteria: For CAB Abstracts, after 12/31/83; for  
AGRICOLA after 12/31/78.

Search SERF

Criteria: Traditional farm= OR traditional agricultur= (for  
AGRICOLA also OR peasant farm= OR subsistence farm=) AND  
tropical developing countries.

Date criteria: For CAB Abstracts after 12/31/83; for AGRICOLA  
after 12/31/78.

In the last two searches "tropical developing countries" was  
defined by a list of synonyms such as "underdeveloped" and  
"third world" and by a list of developing country names. These  
lists can be found in the file for Search SERF.

The citations from these searches, which were determined to  
be appropriate, are entered into the MicroDIS catalog with call  
numbers beginning with the search number (for example SERB23,  
SERD12).

### APPENDIX III

#### LIST OF DOCUMENT HOLDERS IN HAITI

The MicroDIS catalog assigns a call number to each document. Those documents which are currently located in Haiti can be located by reference to this call number which contains the code for the document holder. For example, the call number LOW123 tells one that the document is in the collection of Ira Lowenthal. Furthermore, the location field of MicroDIS will give AIDH (USAID in Haiti) as the location.

There is one variation to this rule. All documents which were not found in Haiti have the call number UOM\*\*\* where the \*\*\* stands for a three digit number. The same form is used for those documents which actually exist at the U of M offices in Port-au-Prince. To determine whether the documents with U of M call numbers are located at our offices refer to the field location or to the field copies. If the document is not at the U of M offices the location field will be empty and the copies field, which gives the number of copies, will be 0 (zero).

In the following list the call number of the document is given first. It is followed by the name, address, and phone number of the holder.

UOM\*\*\*

University of Maine Agroforestry Outreach Research Project  
Avenue John Brown at Christ Roi  
Port-au-Prince  
2-2401

LOW\*\*\*

The office of Ira Lowenthal  
USAID, Boulevard Harry Truman  
Port-au-Prince  
2-5789

PEL\*\*\*

The office of Richard Pellek  
USAID, Boulevard Harry Truman  
Port-au-Prince  
2-5789

KOOI\*\*

The office of Clarence Kooi  
Laboule 21  
Laboule

AID\*\*\*  
Library  
USAID, Boulevard Harry Truman  
Port-au-Prince  
2-5500 ext.3079

ADS\*\*\*  
The office of Richard Swanson.  
The ADSII project, MARNDR  
Damien, Haiti.  
2-4631

FAO\*\*\*  
The Food and Agriculture Organization of the United Nations  
24, Ave Debussy 16, Rue A. Holly  
Port-au-Prince  
5-2899, 5-3010

UND\*\*\*  
The United Nations Development Program  
20, Ave Ducoste  
Port-au-Prince  
2-1404, 2-0751

FAM\*\*\*  
Faculté d'Agronomie et de Médecine Vétérinaire, Bibliothèque.  
Cazeau, Haiti.  
2-4781 (Vice-Doyen aux Affaires Académiques).

CARE\*\*  
Cooperative for American Relief Everywhere  
Port-au-Prince, Gonaives  
2-2314, 2-3537

PADF\*\*  
Pan American Development Foundation  
Port-au-Prince  
6-0786, 6-3938

ODH\*\*\*  
Operation Double Harvest  
Cazeau, Haiti  
2-5019

PC\*\*\*\*  
Peace Corps  
Port-au-Prince  
5-3294

---

Note: The last four document sources have not yet been surveyed  
(December 15, 1986).

## APPENDIX IV

### LIST OF DOCUMENT SOURCES AND INFORMATION SOURCES IN THE UNITED STATES AND THE UNITED KINGDOM

This appendix contains names of organizations, addresses, names of people and other information needed for communicating with information sources and document sources in the United States and the United Kingdom.

The University of Maine Library  
Computer Search Service (CSS)  
Raymond H. Folger Library  
Science and Engineering Center  
University of Maine  
Orono, Maine 04469

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This is AFORP's primary contact in the U.S. for making searches and for obtaining documents. All relevant databases are accessed. These include DIALOG, BRS, BIOSIS, AGRICOLA, and CAB. Search criteria to CSS and they will send the results by Federal Express as a printout and, if desired, on diskettes. This takes about a week.

Requests for documents can also be telephoned to CSS. Those available from the University of Maine will be sent. Others must be obtained via Interlibrary Loan, purchased from a publisher or bookstore, or obtained from another library such as the National Agricultural Library.

Payment for search and document retrieval services is made from a fund deposited to the AFORP account at the Computer Search Service. Contact Bruce Leach. 207-581-1678.

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National Agricultural Library (NAL)  
United States Department of Agriculture  
Route 1  
Beltsville, Maryland 20705

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#### AGRICOLA

Agricultural literature base of over 500,000 citations.  
Contact Maria Pisa. 301-344-3705

This database is accessed by the CSS searches. Photocopied literature describing AGRICOLA is in the "Information Sources" file.

Reference Desk  
Contact Shelton Cheney. 301-344-3755

Loan and Document Delivery  
CONTACT Karen Perkins. 301-344-4110

This is a library of last resort. Other sources must be tried first. To obtain photocopies a Form LF607 must be submitted for each document. This form establishes the recipient's "willingness to pay" and contains a necessary copyright statement. These forms are in the file labelled "National Agricultural Library". They can be sent by mail or by FAX to:

FAX No. 3013443675.

A second method is to mail a request (Form No. U603E) to AIDCOPY, 4605 Brandon Lane, Beltsville, MD 20705 (301-344-3604). This is being investigated.

NAL can supply up to 50 pages per document. The cost is:

First 10 pages	\$5.00
Each additional 10 pages	\$3.00.

There does not appear to be any way to order by phone (although Karen Perkins said they might do it one time). The University of Maine can request documents on Interlibrary Loan and transmit them (or photocopies) to Haiti. This would be the "normal" and cheaper way.

---

DIALOG Information Retrieval Service  
3460 Hillview Avenue  
Palo Alto, California 94304  
415-858-2700

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DIALOG databases contain over 119 million records and have access to more than 250 databases including AGRICOLA, CAB and BIOSIS. See information sheets in "Information Sources" file.

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BRS Information Technologies  
1200 Route 7  
Latham, New York 12110  
800-345-4BRS  
518-783-7251

---

BRS has access to a large number of databases including AGRICOLA, CAB and BIOSIS. See information in the "Information Sources" file.

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BIOSIS  
Biosciences Information Services  
2100 Arch Street  
Philadelphia, PA 19103-1399

---

Covers biology, medicine, and inter-disciplinary life sciences. See information in "Information Sources" file. Contact J. Mark Danley or Ann Farren. 800-523-4806, 215-857-4800.

---

CAB Abstracts  
CAB International  
Farnham House  
Farnham Royal  
Slough SL2 3BN  
United Kingdom  
011-44-2814-2281

In the United States:  
845 North Park Ave.  
Tucson, Arizona 35919

---

CAB (formerly the Commonwealth Agricultural Bureaux) covers all branches of agricultural science including forestry. See the "Information Sources" file for further information. In the United States contact Barbara Hutchinson. 800-528-4841, 602-621-7879.

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UPDATE  
Room 1404  
National Agricultural Library  
Beltsville, Maryland 20705

---

No longer funded by AID. Under investigation. Contact Harry Dewey. 301-344-3604, 3044.

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## APPENDIX V

### LIST OF ACRONYMS

The following list of acronyms is from the ACRONYM file in MicroDIS. The list can be updated by procedures described in the User's Manual. Some acronyms are not the ones normally used, for example, UNH for the United Nations Development Program in Haiti, UOM for the University of Maine and A.I.D. for the Agency for International Development. They are included for two reasons. The first is that these forms are frequently used and searches must pick them up. The second is that the MicroDIS field of concern may not be long enough to accommodate the "normal" acronym so that a shorter one must be invented.

## APPENDIX VI

### LIST OF DESCRIPTOR/IDENTIFIERS

The following list contains the Descriptor/identifiers used in the citations. It is a file in the MicroDIS system. Descriptor/identifiers are automatically added to this file when used in a citation. The list can also be modified by procedures described in the User's Manual. The user should consult this list when formulating search criteria.

The column headed by "AID term" states whether the term is contained in the "AID Thesaurus". Since that thesaurus is not yet in the AFORP files the entry is always "N". The column headed by "hits" tells how many citations there are in the catalog which have that term in the descriptor/identifier field. The column labelled "Thesaurus term" is the descriptor/identifier. "Keyword" is another synonym for "Thesaurus term" although it is not used in this report.

Acronym	Description
A.I.D.	U.S. Agency for International Development
ADSII	Agricultural Development Support
AFORP	Agroforestry Outreach Research Project
AID	U.S. Agency for International Development
AID/NPS	Agency for International Development/National Park Service
AOP	Agroforestry Outreach Project
ARI	Agricultural Research Institute
ASAE	American Society of Agricultural Engineers
ATDC	Agriculture Technology for Developing Countries
ATIBT	Association Technique Internationale des Bois Tropicaux
BIOSIS	Biosciences Information Service
BOSTID	Board on Science and Technology for International Developmen
CAB	Commonwealth Agricultural Bureaux
CARE	Cooperative for American Relief Everywhere
CATIE	Centro Agronomico Tropical de Investigacion y Ensenanza
CDIE	Center for Development Information and Evaluation
CEQ	Council on Environment Quality
CRDA	Centre de Recherche et de Documentation Agricoles
CRIES	Comprehensive Resource Inventory and Evaluation System
CSIRO	Commonwealth Scientific and Industrial Research Organization
CSS	Computer Search Service of the University of Maine
CTFT	Centre Technique Forestier Tropical
DOS	U.S. Department of State
DWRC	Denver Wildlife Research Center
FAM	Faculte d'Agronomie et de
FAMV	Faculte d'agronomie et de Medicine Veterinaire
FAO	Food and Agriculture Organization of the United Nations
FORI	Forest Research Institute
FS	Forest Service
HACHO	Haitian-American Community Help Organization
IARC	International Agricultural Research Centers
ICRAF	International Council for Research in Agroforestry
ICRISAT	International Crops Research Inst. for the Semi-arid Tropics
IDCA	U.S. International Development Cooperation Agency
IDRC	International Development Research Centre
IFT	Institute of Tropical Forestry
IICA	Institut Interamericain de Cooperation pour l'Agriculture
IITA	International Institute of Tropical Agriculture
ITED	International Institute for Environment and Development
ITP	Institute of Tropical Forestry
IUFRO	International Union of Forest Research Organizations
MARNDR	Ministere: Agriculture, Ressources Naturel., Develop. Rural
NAP	National Academy Press
NAS	National Academy of Sciences
NFT	Nitrogen Fixing Tree Association
NRC	National Research Council
NRDC	Natural Resource Defense Council
NTIS	National Technical Information Service
ODA	Overseas Development Association
ODC	Overseas Development Council

Acronym	Description
=====	=====
ODH	Operation Double Harvest
OECD	Organization for Economic Cooperation and Development
PADE	Pan American Development Foundation
PC	Peace Corps
PNUD	Program des Nations Unies pour le Development
U OF M	University of Maine
U.S.A.I.D.	U.S. Agency for International Development
UNDP	United Nations Development Program
UNH	United Nations Development Program in Haiti
UOM	University of Maine
USAID	U.S. Agency for International Development
USDA	United States Department of Agriculture
USDC	U.S. Department of Commerce
USG	U.S. Government

## AID

term	hits	Thesaurus Term
====	====	=====
N	4	ACACIA ALBIDA
n	1	ACACIA ANEURA
N	1	ACACIA ARABICA
N	1	ACACIA AULACOCARPA
N	3	ACACIA AURICULIFORMIS
N	1	ACACIA GLAUCA
N	4	ACACIA MAGNIUM
N	1	ACACIA MEARNSII
N	1	ACACIA NILOTICA
N	8	ACACIAS
N	1	ACID RAIN
N	2	ACTINORHIZAL
N	1	ACTINORHIZAL PLANTS
N	2	ADMINISTRATIVE ACTIVITIES
N	13	AFFORESTATION
N	2	AFFORESTATION SYSTEMS
N	12	AFRICA
N	1	AFRICA, SUB-SAHARAN
N	50	AGRICULTURAL
N	1	AGRICULTURAL CROPS
	1	AGRICULTURAL DEVELOPMENT POLICY
N	1	AGRICULTURAL IMPROVEMENT
N	1	AGRICULTURAL OUTREACH
N	1	AGRICULTURAL PRODUCTION
N	1	AGRICULTURAL RESEARCH
N	17	AGRICULTURAL SYSTEMS
N	13	AGRICULTURE
N	2	AGRISYLVICULTURAL
N	1	AGRO-SYLVICOLE
N	1	AGROECOLOGICAL
N	1	AGROECOSYSTEMS
N	80	AGROFORESTRY
N	1	AGROFORESTRY CONTEXT
N	1	AGROFORESTRY DEVELOPMENT
N	1	AGROFORESTRY IN THE THIRD WORLD
N	1	AGROFORESTRY OUTREACH
N	1	AGROFORESTRY POTENTIALS
N	1	AGROFORESTRY PRACTICES
N	2	AGROFORESTRY PROJECT
N	6	AGROFORESTRY RESEARCH
N	26	AGROFORESTRY SYSTEMS
N	1	AGROPASTORAL
N	4	AGROSILVOPASTORAL
N	0	AGROTECHNOLOGY TRANSFER
N	1	ALAMO SWITCHGRASS
N	1	ALBIZIA FALCATARIA
n	5	ALBIZIA LEBBECK
N	0	ALBIZIA SPECIES
N	1	ALCOHOL
N	1	ALCOHOL FUELS

AID

term	hits	Thesaurus Term
====	====	=====
N	1	ALKALI
N	6	ALLEY CROPPING
N	1	ALLOCASUARINA
N	1	ALLOGAMOUS
N	2	ALNUS
N	1	ALTERNATE CYCLE AGROFORESTRY
N	2	AMAZON
N	1	ANALYSIS
N	1	ANIMAL TRACTION
N	1	ANTHROPOLOGY
N	1	ANTIFEED
N	1	ANTIFEEEDANT
N	1	APICULTURE
N	4	ARID LANDS
N	2	ARID REGIONS
N	4	ARID ZONES
N	5	ARRANGEMENT
N	4	ASIA
N	1	AUDIOVISUAL AIDS
N	5	AUSTRALIA
N	1	AUTOGAMOUS
N	17	AZADIRACHTA INDICA
N	1	AZTEC MAXIMILIAN SUNFLOWER
N	1	BABASSU PALM
N	1	BAHIA GRASS
N	1	BAKERIES
N	1	BANAK
N	1	BARE-ROOT
N	1	BAYANI
N	1	BENZOLIVE
N	1	BERMUDAGRASS
N	15	BIBLIOGRAPHY
N	1	BIODEGRADABLE
N	1	BIOENERGY
N	2	BIOGAS
N	1	BIOLOGICAL
N	1	BIOLOGICAL DIVERSITY
N	12	BIOMASS
N	1	BIOMASS PRODUCTION
N	1	BIOMASS YIELD
N	1	BIRDS
N	1	BORO RICE
N	1	BOTANY
N	1	BOX-PRUNED ROOT SYSTEM
N	2	BRAZIL
N	1	BRAZILIAN AMAZON
N	1	BREEDING
N	1	BRIQUETTE
N	1	BROMELIA PINGUIN
N	1	BROWSE

## AID

term	hits	Thesaurus Term
====	====	=====
N	1	BUTTERFLIES
N	1	CALLIANDRA
N	3	CALLIANDRA CALOTHYRSUS
N	1	CAMPECHE
N	1	CANADA
N	1	CANE ENERGY SYSTEMS
N	1	CANOPI COVER
N	1	CARRON CYCLE
N	8	CARIBBEAN
N	1	CAROB
N	1	CASH CROP
N	1	CASH-CROPPING
N	2	CASSIA
N	1	CASSIA AURICULATA
N	16	CASSIA SIAMEA
N	1	CASSIA STURTII
N	6	CASUARINA EQUISETIFOLIA
N	2	CASUARINA FRANKIA
N	11	CASUARINAS
N	1	CATALPA LONGISSIMA
N	5	CENTRAL AMERICA
N	1	CHAD
N	19	CHARCOAL
N	1	CHINA
N	1	CHROMATOGRAPHY
N	1	CLAIRIN
N	1	CLASSIFICATION
N	4	CLIMATE
N	3	COCONUT
N	1	COFFEA ARABICA
N	3	COFFEE
N	1	COFFEE PLANTATIONS
N	1	COLLOQUIM
N	1	COLORADO
N	2	COMMUNITY DEVELOPMENT
N	3	COMMUNITY FORESTRY
N	1	CONCEPTS
N	1	CONFERENCE PROCEEDINGS
N	1	CONGO
N	1	CONIFERS
N	11	CONSERVATION
N	1	CONSTRUCTION MATERIALS
N	20	CONTAINERS
N	1	COOKING STOVES
N	1	COOKSTOVES
N	1	COPAIFERA MULTIJUGA
N	1	COPPICING
N	1	COPPICING PLOT
N	2	COPPICING TRIALS
N	1	CORDIA ALLIODORA

## AID

term	hits	Thesaurus Term
====	====	=====
N	7	COSTA RICA
N	1	COSTS
N	1	COVERING
N	1	CRITERIA
N	1	CROP PRODUCTION
N	2	CROP ROTATION
N	2	CROPPING SYSTEMS
N	1	CROPS
N	1	CUSTARD APPLE
N	1	CUTTINGS
N	1	CYPRUS
N	1	DATA BASE
N	1	DECENTRALIZATION
N	24	DEFORESTATION
N	2	DEGRADATION
N	1	DESERT CONTROL
N	7	DESERTIFICATION
N	2	DESIGN
N	1	DESMODIUM APARINES
N	1	DESTRUCTION
N	3	DEVELOPING COUNTRIES
N	47	DEVELOPMENT
N	1	DEVELOPMENT PLANNING
N	3	DEVELOPMENT PROGRAMS
N	1	DISEASES
N	3	DOMINICAN REPUBLIC
N	1	DROUGHT TOLERANCE
N	1	DROUGHTS
N	1	DRY CLEANERS
N	1	DRY FARMING
N	2	DRY REGIONS
N	1	DRYING
N	1	EAST AFRICA
N	1	EASTERN CARIBBEAN
N	8	ECOLOGICAL
n	1	ECOLOGICAL BALANCE
N	1	ECOLOGICAL VALUE
N	1	ECOLOGICAL ZONES
N	23	ECOLOGY
N	0	ECONOMIC VALUE
N	84	ECONOMICS
N	6	ECOSYSTEM
N	2	ECOSYSTEMS
N	4	ECTOMYCORRHIZAE
N	2	EDUCATION
	53	ENERGY
N	1	ENERGY FARMS
N	1	ENERGY INPUTS
N	2	ENERGY PLANTATION
N	1	ENERGY PRODUCTION

## AID

term	hits	Thesaurus Term
====	====	=====
N	1	ENERGY SECTOR
N	1	ENERGY SOURCES
N	1	ENERGY TREE FARMS
N	1	ENGLAND
N	17	ENVIRONMENT
N	1	ENVIRONMENTAL DEGRADATION
N	1	EQUIPMENT & SUPPLIES CATALOG
N	1	ERODIBILITY
N	55	EROSION
N	7	EROSION CONTROL
N	1	ERYTHRINA
N	1	ETHNOECOLOGICAL
N	9	EUCALYPTUS
N	5	EUCALYPTUS CAMALDULENSIS
N	1	EUPHORBIA
N	1	EUPHORBIA LACTEA
N	3	EVALUATION
N	1	EVAPORATION
N	2	EVAPOTRANSPIRATION
N	2	EXPERIMENTAL AGROFORESTRY
N	4	EXTENSION
N	1	FACT SHEET
N	1	FARM CHEMICALS HANDBOOK
N	1	FARM LABOR
N	1	FARM LAND
N	5	FARMERS
N	2	FARMING
N	16	FARMING SYSTEMS
N	1	FARMLANDS
n	1	FASTGROWING TREES
N	1	FEED
N	1	FERTILITY
N	27	FERTILIZER
N	1	FILMS
N	1	FIRE
N	2	FIREWOOD
N	1	FISHERY
N	2	FLOODING
N	2	FLOODS
N	2	FLORIDA
N	5	FODDER
N	11	FOOD
N	1	FOOD AID
N	2	FOOD PRODUCTION
N	1	FOOD SUPPLY
N	19	FORAGE
N	47	FOREST
N	1	FOREST DYNAMICS
N	0	FOREST ECOLOGY
N	1	FOREST ECONOMICS

## AID

term	hits	Thesaurus Term
====	====	=====
N	1	FOREST EVALUATION
N	1	FOREST FIRES
N	1	FOREST FOR PEOPLE
N	1	FOREST INVENTORIES
N	3	FOREST INVENTORY
N	9	FOREST MANAGEMENT
N	1	FOREST MODELS
N	4	FOREST POLICY
N	16	FOREST PRODUCTS
N	1	FOREST PROJECTS
N	1	FOREST RESERVES
N	1	FOREST RESIDUES
N	3	FOREST RESOURCES
N	1	FOREST UTILISATION
N	1	FOREST UTILIZATION
N	69	FORESTRY
N	1	FORESTRY ASPECTS
N	1	FORESTRY ASSISTANCE
N	1	FORESTRY DEVELOPMENT
N	3	FORESTRY PROJECTS
N	2	FORESTRY RESEARCH
N	1	FORESTRY SUPPLIERS
N	2	FORESTRY SUPPORT
N	2	FORESTRY WASTES
N	1	FOREWOOD
N	1	FRAMEWORK
N	1	FRANCE
N	4	FRANKIA
N	4	FRUIT
N	4	FRUIT TREES
N	5	FUEL
N	1	FUEL OILS
N	61	FUELWOOD
N	1	FUELWOOD AND RURAL ENERGY
N	1	FUELWOOD SPECIES
N	1	FUNGI
N	1	GAMBIA
N	1	GAME REPELLENT
N	1	GENETICS
N	1	GEOLOGY
N	1	GERMINATION
N	1	GERMPLASM
N	1	GHANA
N	1	GLIRICIDIA MACULATA
N	7	GLIRICIDIA SEPIUM
N	2	GLOBAL DEFORESTATION
N	1	GMELINA ARBOREA
N	1	GRASSES
N	1	GRASSLANDS
N	1	GRAZING

## AID

term	hits	Thesaurus Term
N	4	GREEN MANURE
n	1	GREENHOUSE
N	3	GROWING MEDIUM
N	2	GROWTH
N	3	GROWTH RATES
N	1	GROWTH ZONES
N	1	GUATEMALA
N	2	GUAYULE
N	1	HAGUE
N	135	HAITI
N	1	HANDBOOK
N	3	HARDWOODS
N	6	HAWAII
N	1	HEDGE
N	13	HEDGEROWS
N	1	HERPETOFAUNAS
N	2	HILL FARMING
N	1	HIMALAYA
N	1	HONDURENSIS
N	1	HONOLULU
N	1	HORSERADISH-TREE
N	1	HORTICULTURE
N	1	HUMID TROPICAL LOWLANDS
N	13	HUMID TROPICS
N	2	HYDROLOGICAL
N	1	HYDROLOGY
N	1	IMPROVED SEED
N	6	INDIA
N	2	INDONESIA
N	1	INFORMATION SOURCES
N	1	INOCULANTS
N	10	INOCULATION
N	1	INSECTICIDES
N	1	INSECTS
N	4	INSECTS, PESTS, DISEASES
N	1	INSTITUTIONAL CONSTRAINTS
N	1	INSTITUTIONAL ISSUES
N	9	INTERCROPPING
N	1	INTERNATIONAL TRADE
N	1	INVESTMENT
N	2	IRRIGATION
N	2	IRRIGATION MANAGEMENT
N	4	JAMAICA
N	1	JAVA
N	1	JODPUR
N	1	KAYAPO INDIANS
N	10	KENYA
N	1	KLEINGRASS
N	1	LABOR CONSTRAINTS
N	1	LAMTORO GUNG

## AID

term	hits	Thesaurus Term
N	1	LAND DEGRADATION
N	1	LAND INSECURITY
N	2	LAND MANAGEMENT
N	19	LAND TENURE
N	4	LAND USE
N	5	LAND USE SYSTEMS
N	1	LANDHOLDINGS
N	1	LANDSAT
N	4	LATIN AMERICA
N	8	LEGUMES
N	2	LEGUMINOUS
N	10	LEGUMINOUS TREES
N	17	LEUCAENA
N	1	LEUCAENA HEDGEROWS
N	29	LEUCAENA LEUCOCEPHALA
N	2	LIQUID FUELS
N	1	LIST OF TREES
N	1	LISTS OF TREES
N	9	LIVESTOCK
N	2	LIVING FENCES
N	1	LOBLOLLY PINE
N	3	LOGGING
N	1	LOWLAND
N	1	LUMBER
N	1	LUMBER TREE
N	1	LYCTID BEETLE
N	3	MAIZE
N	1	MALAWI
N	1	MALAYSIA
N	5	MANAGEMENT
N	1	MANGIUM
N	1	MANGROVES
N	2	MANURE
N	4	MARKETING
N	1	MARKETING RESEARCH
N	1	MATERIALS COLLECTION
N	1	MAYA LOWLANDS
N	1	MEASUREMENTS
N	2	MEDICINAL PLANTS
N	1	MELALEUCA
N	1	METHODOLOGY
N	1	MICRO-CLIMATE
N	0	MIMOSA SCABRELLA
N	1	MIXED CROP SYSTEMS
N	5	MIXED CROPPING
N	1	MODELS
N	1	MOISTURE STRESS
N	3	MOLT
N	1	MONITORING
N	1	MONTSERRAT

```
=====  
AID  
term      hits  Thesaurus Term  
=====  
N         1  MORINGA TREE  
N         1  MOUNTAINS  
N         1  MULCH  
N         1  MULTI-STRADA  
N         1  MULTIPURPOSE  
N         0  MULTIPURPOSE PALM  
N         1  MULTIPURPOSE TREE GERMPLASM  
N         7  MULTIPURPOSE TREES  
N        15  MYCORRHIZAE  
N         3  NATURAL FORESTS  
N        12  NATURAL RESOURCES  
N        44  NEEM  
N         1  NEEM RESEARCH  
N         2  NEPAL  
N         4  NEW GUINEA  
N         6  NIGERIA  
N         1  NITRIFICATION  
N         6  NITROGEN  
N        27  NITROGEN FIXATION  
N         1  NITROGENASE  
N         1  NO-TILLAGE  
N         1  NODULATION  
N         1  NODULES  
N         1  NOMAD  
N         1  NUECES BUFFELGRASS  
N        22  NURSERY  
N         2  NURSERY PRACTICE  
N         1  NURSERY TECHNIQUES  
N         5  NUTRIENTS  
N         1  NUTRITION  
N         3  OIL  
N         1  OPTIONS  
N         1  OPTIONS AND ACTIONS  
N         1  ORCHIDS  
N         3  OXISOLS  
N         1  PAKISTAN  
N         1  PANICUM MAXIMUM  
N        10  PARKS  
N         1  PASTURE  
N         1  PAULOWINA  
N         1  PERSONAL ACTIVITIES  
N         2  PESTS  
n         1  PHOTOPERIOD  
N         1  PIGS  
N         4  PINE  
N         1  PINE FORESTS  
N         1  PINUS  
N         5  PINUS CARIBAEA  
N         1  PINUS MERKUSII  
N         1  PINUS PINEA
```

AID	term	hits	Thesaurus Term
====	====	====	=====
N		1	PINUS RADIATA
N		1	PISOLITHUS
N		4	PISOLITHUS TINCTORIUS
N		1	PLAN
N		1	PLANIFICATION
N		12	PLANNING
N		1	PLANT AND SOIL
N		2	PLANT GROWTH
N		2	PLANT PHYSIOLOGY
N		2	PLANT RESEARCH
N		10	PLANTATIONS
N		2	PLANTING
n		0	PLANTING PROGRAMS
N		1	PLANTING SURVEY
N		1	PLANTING TREES
N		1	PLANTS HORTICULTURAL
N		2	POLES
N		5	POLICY
N		1	POLITICS
N		1	POST
N		2	POTENTIAL
N		1	POTTING MEDIA
N		1	POTTING MIXTURE
N		2	POVERTY
N		3	PRACTICES
N		1	PRECIPITATION
N		2	PRESERVATION
N		1	PRIVATE ENTERPRISE
N		2	PRODUCTION
N		2	PRODUCTIVITY
N		3	PROJECT DESIGN
N		2	PROJECT DIAGNOSIS
N		2	PROJECT EVALUATION
N		2	PROJECT PAPER
N		1	PROPOSAL
N		4	PROSOPIS
N		3	PROSOPIS CINERARIA
N		8	PROSOPIS JULIFLORA
N		1	PROSOPIS TAMARUGO
N		1	PSYLLIDS
N		3	PUERTO RICO
N		1	PULSES
n		1	PURCHASE DOCUMENT
N		2	RAINFALL
N		2	RAINFOREST
N		1	RAISED-FIELD AGRICULTURE
N		1	RAPID GROWTH
N		1	RAPIDLY GROWING TREES
N		1	RATIONAL
N		1	REAFFORESTATION

## AID

term	bits	Thesaurus Term
N	50	REFORESTATION
N	1	REGENERATION
N	0	REINFORCEMENT
N	1	RENEWABLE RESOURCES
N	2	REPORT
N	25	RESEARCH
N	1	RESEARCH AREA
N	1	RESEARCH METHODOLOGY
N	1	RESEARCH RESULTS
N	1	RESOURCE MANAGEMENT
N	1	RESOURCE SURVEY
N	5	RESOURCES
N	1	RESOURCES ASSESSMENT
N	1	RESTAURANTS
N	10	RHIZOBIA
N	8	ROOT
N	1	ROOT CROPS
N	1	ROOT DEVELOPMENT
N	1	ROOT GROWTH
N	2	ROOT NODULES
N	1	ROOT PROBLEMS
N	6	ROOT PRUNING
N	1	ROOT RATIOS
N	1	ROOT SYSTEMS
N	1	RUBBER
N	1	RURAL COMMUNITIES
N	6	RURAL DEVELOPMENT
N	1	RURAL PARTICIPATION
N	1	RURAL ROADS
N	1	RWANDA
N	1	SABINE ILLINOIS BUNDLEFLOWER
N	5	SAHEL
N	3	SALINE
N	2	SALINE WATER
N	1	SALT
N	1	SAND LOVEGRASS
N	2	SANTO DOMINGO
N	1	SAVANNAH
N	1	SEED LANDS
N	2	SEED PRODUCTION
N	1	SEED SOURCES
N	1	SEED STORAGE
N	24	SEEDLING
N	26	SEEDS
N	1	SEMI-ANNUAL
N	1	SEMI-ARID
N	1	SESBANIA GRANDIFLORA
N	1	SHADE
N	1	SHADE MANAGEMENT
N	1	SHADE TREES

## AID

term	hits	Thesaurus Term
====	====	=====
N	1	SHEEP
N	3	SHELTERBELTS
N	9	SHIFTING CULTIVATION
N	4	SHOOT
n	1	SHOOT GROWTH
N	1	SHOOT/ROOT RATIOS
N	2	SHRUBS
N	1	SILVI-PASTORAL
N	8	SILVICULTURAL
N	4	SILVOPASTORAL
N	1	SISALANA
n	1	SITE PREPARATION
N	1	SITE SELECTION
N	2	SLASH AND BORN
N	2	SLASH-AND-BURN
N	3	SMALL FARMERS
N	1	SMALLHOLDER
N	2	SMALLHOLDINGS
N	14	SOCIAL
N	4	SOCIAL ASPECTS
N	6	SOCIAL FORESTRY
N	1	SOCIAL SOUNDNESS
N	28	SOCIOECONOMIC
N	2	SOCIOLOGY
N	1	SOIL AND WATER IMPACTS
N	1	SOIL BIOLOGY
N	1	SOIL CHARACTERISTICS
N	34	SOIL CONSERVATION
N	1	SOIL DEGRADATION
N	1	SOIL DRYING
N	12	SOIL EROSION
N	10	SOIL FERTILITY
N	4	SOIL IMPROVEMENT
N	1	SOIL MANAGEMENT
N	1	SOIL NUTRIENT
N	2	SOIL PRODUCTIVITY
N	1	SOIL RESOURCES
N	1	SOIL STABILIZATION
N	1	SOIL TYPE
N	47	SOILS
N	1	SOMALIA
N	1	SOUTH AMERICA
N	1	SOUTHERN NIGERIA
N	0	SOUTHWEST U.S.
N	1	SOWING
N	1	SPAIN
N	33	SPECIES
N	2	SPECIES CATALOGUE
N	7	SPECIES LIST
N	3	SPECIES SELECTION

## AID

term	hits	Thesaurus Term
N	2	SPECIES TRIALS
N	1	STATISTICS
N	4	STOVES
N	1	STRATEGY POLICY
N	1	STREAMFLOW
N	3	SURVEY
N	1	SURVEY METHODS
N	1	SURVIVAL
N	6	SWIDDEN
N	20	SYLVICULTURE
N	1	SYMBIOSIS
N	1	SYSTEMS
N	4	TAUNGYA
N	1	TAUNGYA SYSTEM
N	1	TEACHING
N	1	TEAK
N	1	TECHNICAL ACTIVITIES
N	1	TECHNICAL ASSISTANCE
N	1	TECHNICAL BULLETIN
N	1	TECHNICAL COMMUNICATION
N	1	TECHNICAL FORESTRY
N	1	TECHNIQUES
N	1	TECTONA GRANDIS
N	1	TEMPARATE REGIONS
N	1	TENURE
N	1	TERMINALIA
N	3	TERRACES
N	1	TEST RESULTS
N	1	THAILAND
N	1	THEOBROMA CACAO
N	1	THERMAL GASIFICATION
N	6	TIMBER
N	27	TRADITIONAL AGRICULTURE
N	1	TRADITIONAL AGROFORESTRY
N	8	TRAINING
N	1	TRAINING METHODS
N	1	TREE CHARACTERISTICS
N	5	TREE CROP
N	4	TREE IMPROVEMENT
N	1	TREE LEGUME
N	1	TREE MYTHS
N	1	TREE NAMES
N	3	TREE PLANTATIONS
N	6	TREE PLANTING
N	3	TREE PRODUCTS
N	1	TREE PROPERTIES
N	1	TREE SEED
N	1	TREE SELECTION
N	12	TREE SPECIES
N	1	TREE SPECIES MIXTURE

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AID
term  hits  Thesaurus Term
=====
N      1  TREE SURVIVAL
N     18  TREES
N      1  TREMA
N      9  TROPICAL
N     13  TROPICAL AGRICULTURE
N      2  TROPICAL AGROFORESTRY
N      4  TROPICAL DEFORESTATION
N      1  TROPICAL EXTENSION
N      1  TROPICAL FARMING SYSTEMS
N      1  TROPICAL FOOD CROPS
N      1  TROPICAL FOREST
N      1  TROPICAL FOREST CLEARING
N      1  TROPICAL FOREST ECOSYSTEMS
N     15  TROPICAL FORESTRY
N     31  TROPICAL FORESTS
N      1  TROPICAL LEGUMES
N      0  TROPICAL PLANTS
N      1  TROPICAL REFORESTATION SPECIES
N      1  TROPICAL TREES
N      3  TROPICS
N      3  ULTISOLS
N      2  UPLAND WATERSHEDS
N      1  VEGETATIVE PROPAGATION
N      2  VENEZUELA
N      1  VILLAGE
N      0  VILLAGE WOODLOTS
N      1  VIRGIN ISLANDS
N      1  VIROLA
N      8  WATER
N      2  WATER MANAGEMENT
N      3  WATER RESOURCES
N      1  WATERSHED DEVELOPMENT
N     18  WATERSHED MANAGEMENT
N      3  WATERSHED PROTECTION
N     10  WATERSHEDS
N      1  WEST AFRICAN
N      2  WHEAT
N      2  WILDLIFE
N      1  WIND EROSION
N      1  WIND POWER
N     10  WINDBREAKS
N      1  WINDWARD ISLANDS
N      7  WOOD
N      3  WOOD PRODUCTS
N      3  WOOD PROPERTIES
N      1  WOOD TREATMENT
N      1  WOOD VOLUME
N      1  WOODCRAFTS
N      1  WOODCUTTER
N      2  WOODLOTS

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AID

term	hits	Thesaurus Term
====	====	=====
N	0	WOODY PLANTS
N	20	YIELD
N	1	ZAIRE
N	1	ZAMBIA
N	1	ZERO-TILLAGE SYSTEM

## APPENDIX VII

### AN EXAMPLE OF A SEARCH MADE WITH MICRODIS WITH SUGGESTIONS FOR IMPROVING SEARCH EFFICIENCY AND COMPLETENESS

A MicroDIS search is shown on the following pages. These were printed directly from the MicroDIS program. They begin with a printout of the Search Screen as it appears when the search has been completed and ready to be printed. It shows the search criteria and the number of citations retrieved for each criterion or combination of criteria.

The printout of the Search Screen is followed by a printout of the results of the search. This list of citations can be printed, or displayed on the screen, in four levels of detail. In the examples, level 1 (record number and document title) and level 4 (full citation) were chosen. Level 4 includes the descriptor/identifier and the notes fields.

The objective of this search was to find all citations dealing with leucaena hedgerows. One begins by requesting all citations which contain hedgerow as a title word or as a descriptor/identifier. Thirteen citations are found (see the first printout of the Search Screen; and continue to refer to the subsequent printouts for the remainder of this discussion). Since alley cropping, terraces, and living fences are similar to hedgerow one repeats the request for each in turn. This gives a total of 22 citations. These 22 citations are then printed out in level 1 (record number and title).

Before continuing with the search an explanation of the Search Screen is in order. Under "TYPE" one specifies the field to be searched. In the example, the field types are field 1 (descriptor/identifier) and field 2 (title word). Under "VALUE" one types the word or group of words for which one is searching. The words should be truncated using the = sign as shown. Truncation guarantees that all forms of the word will be selected (hedge, hedges, hedgerow, hedgerows, and even misspelled forms such as hedgrow). Under "CON" one types O or A, the logical operators OR and AND. OR selects the citations that have hedgerow in either of the two fields but rejects duplicates. In the example there are twelve citations having hedgerow in field 1 and two citations having hedgerow in field 2. But there is one which has hedgerow in both fields. The OR connector insures that it is not counted twice. The results are shown under the headings "Found", where the total number for each criterion is recorded, and "Total" where the duplicates have been eliminated.

One now asks for only those of the 22 that deal with leucaena. This is done by requesting the same 22 citations, then adding "and with leucaena in the descriptor/identifier field". The result is, as shown on the second Search Screen printout, that only six of the 22 are selected (notice the truncation of leucaena). The level 1 and level 2 printouts of these six citations follow.

The final step is a repetition of the previous step with descriptor/identifier changed to title word. MicroDIS then searches for those of the original 22 citations which also have leucaena in the title. Seven citations satisfying these criteria are found and printed out. Comparison with the six found in the previous step shows that all but two are duplicates. The two new citations are printed out in full (level 4) and the search is complete with eight citations having been found.

The user can expand the search by including, for example, intercropping as well as hedgerow, alley cropping, and terraces. This would, in fact, produce three more citations which could be of interest to the searcher. In order to include all words and phrases appropriate to the search it is helpful to consult the descriptor/identifier list (Appendix VI) .

It is not necessary, and usually not desirable, to specify the criterion word too precisely. For example, if one asked for everything with economics in the title one would not recover citations with economic analysis or with any other form that was not identical to economics. This is where "right truncation" is useful. Instead of typing economics one would type economic=. Then all criterion words which begin with economic such as economical and economics would be recovered. One could truncate down to econom= and also recover economy and econometric. Truncating down to eco=, however, would be too much since unwanted words such as ecology and ecosystem would be included in the criteria. Some truncation is necessary in order to include the entire range desired. Too much would broaden the search to subjects outside the desired range.

The user should experiment with ANDing, ORing and truncating in order to develop his search capability. This is more easily done with a personal computer system than with a large data system such as Dialog or BRS with which one cannot experiment as easily or as cheaply.

MicroDIS -- Search Screen  
 .....

CON: connector           A (and) or O (or)  
 TYPE: field type        1 - descriptor/identifier   2 - title word   3 - author  
                           4 - bibtype       5 - project #   6 - call #  
 VALUE: the term to search for (use = for right truncation)

CON	TYPE	VALUE	Found	Total
	1	hedg=	13	13
O	2	hedg=	3	14
O	1	alley=	6	18
O	2	alley=	4	19
O	1	terrac=	3	21
O	2	terrac=	1	21
O	1	living fenc=	2	22
O	2	living fenc=	0	22

A   pubdate <>=           / /   yy/mm/dd

Do you want to <V>iew the documents, <C>ontinue search,  
 start a <N>ew search, or <Q>uit?

- Retrieved record # 1 FAM60  
L'arbre et la haie pour la production agricole, pour l'equilibre  
ecologique et le cadre de vie rurale, 4e ed.
- Retrieved record # 2 UOM49  
Agroforestry as an alternative to shifting cultivation
- Retrieved record # 3 SERA2  
Perspectives on hedgerow intercropping
- Retrieved record # 4 SERA16  
Trees in agricultural and livestock development
- Retrieved record # 5 SERA19  
Economic evaluation of alley cropping leucaena with maize - maize and  
maize -cowpea in Southern Nigeria
- Retrieved record # 6 SERA55  
Lantoronisasi in Kabupaten Sikka
- Retrieved record # 7 SERA57  
Leucaena for erosion control and green manure in Sikka-leucaena  
research in the Asian-Pacific region
- Retrieved record # 8 KOOI18  
Systeme d'agrosylviculture employant la leucaena pour etablir des  
barrieres contre l'erosion
- Retrieved record # 9 UOM9  
Leucaena leucocephala: an excellent feed for livestock
- Retrieved record # 10 UOM162  
Agroforestry systems: multipurpose leguminous trees and shrubs for  
agroforestry
- Retrieved record # 11 UOM190  
Alley cropping: a stable alternative to shifting cultivation
- Retrieved record # 12 UOM229  
Sustained output from legume-tree-based agroforestry systems
- Retrieved record # 13 AD927  
Bilan des realisations du secteur agriculture: exercice 1977-1978
- Retrieved record # 14 UOM86  
Potential contribution of leucaena hedgerows intercropped with maize  
to the production of organic nitrogen and fuelwood in the lowland  
humid tropics
- Retrieved record # 15 KOOI23  
Influence of windbreaks on crop performance and snow management in  
North Dakota

- Retrieved record # 16 KOOI29  
Effects of windbreak planting on adjacent crops
- Retrieved record # 17 KOOI33  
Selected trees and shrubs evaluated for single-row windbreaks in the  
Central great plains
- Retrieved record # 18 SERB1  
Decomposition and nitrogen contribution by prunings of selected  
legumes in alley cropping systems
- Retrieved record # 19 UOM62  
Alley cropping with maize and leucaena in Southern Nigeria
- Retrieved record # 20 AID31  
Terraces, trees, and the Haitian peasant: an assessment of  
twenty-five years of erosion control in rural Haiti
- Retrieved record # 21 AID84  
Erosion problem (Haiti)
- Retrieved record # 22 SERA22  
Gliricidia maculata - a review

MicroDIS -- Search Screen

CON: connector A (and) or O (or)  
 TYPE: field type 1 - descriptor/identifier 2 - title word 3 - auth  
 4 - bibtype 5 - project # 6 - call #  
 VALUE: the term to search for (use = for right truncation)

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O	1	living fenc=	2	22
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MicroDIS --- SEARCH report

12/12/86

11:58:37

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 Lamtoronisasi in Kabupaten Sikka

Retrieved record # 2 KOOI18  
 Systeme d'agrosylviculture employant la leucaena pour etablir des  
 barrieres contre l'erosion

Retrieved record # 3 UOM9  
 Leucaena leucocephala: an excellent feed for livestock

Retrieved record # 4 UOM190  
 Alley cropping: a stable alternative to shifting cultivation

Retrieved record # 5 UOM86  
 Potential contribution of leucaena hedgerows intercropped with maize  
 to the production of organic nitrogen and fuelwood in the lowland  
 humid tropics

Retrieved record # 6 UOM62  
 Alley cropping with maize and leucaena in Southern Nigeria

Retrieved record # 1

SITE CODE: HA-AOP CALL NUMBER: SERA55  
TITLE: Lamtoronisasi in Kabupaten Sikka  
AUTHOR1: Farera, V.  
PUB. DATE: 80/ / PAGES: p.13-14  
BIBTYPE: LANGUAGES: EN LOCATION:  
AID DOCID: AID PROJECT NUMBERS:

DESCRIPTORS: /SOIL FERTILITY/ /HEDGEROWS/ /AGROFORESTRY/ /LEUCAENA  
LEUCOCEPHALA/

NOTES: A brief account is given of the use of  
: lamtoro(l.leucocephala) in agroforestry in Sikka to create  
: hedgerows for controlling erosion and improving soil  
: fertility

Retrieved record # 2

SITE CODE: HA-AOP CALL NUMBER: KOOI18  
TITLE: Systeme d'agrosylviculture employant la leucaena pour  
: etablir des barrieres contre l'erosion  
AUTHOR1: Benge, M.D.  
FUB. DATE: ND/ / PAGES: p.19-25  
BIBTYPE: LANGUAGES: EN LOCATION:  
AID DOCID: AID PROJECT NUMBERS:

DESCRIPTORS: /LEUCAENA/ /AGROFORESTRY SYSTEMS/ /HEDGEROWS/

Retrieved record # 3

SITE CODE: HA-AOP CALL NUMBER: UOM9  
TITLE: Leucaena leucocephala: an excellent feed for livestock  
AUTHOR1: Benge, M.D.  
PUB. DATE: 80/09/ PAGES: 23pp  
BIBTYPE: LANGUAGES: EN LOCATION: AIDH  
AID DOCID: AID PROJECT NUMBERS:

DESCRIPTORS: /LEUCAENA LEUCOCEPHALA/ /HEDGEROWS/ /EROSION/

Retrieved record # 4

SITE CODE: HA-AOP CALL NUMBER: UOM190  
TITLE: Alley cropping: a stable alternative to shifting cultivation  
AUTHOR1: IITA  
PUB. DATE: ND/ / PAGES:  
BIBTYPE: LANGUAGES: EN LOCATION: UOM  
AID DOCID: AID PROJECT NUMBERS:

DESCRIPTORS: /HEDGEROWS/ /LEUCAENA LEUCOCEPHALA/ /GLIRICIDIA SEPIUM/  
/MAIZE/ /ALLEY CROPPING/

NOTES: This publication describes the results of eight years of  
: research on what foresters call agroforestry. Its greatest  
: significance is that it consists not of the enthusiastic  
: statements that foresters sometimes publish on this subject  
: but of the data presented by an  
: agricultural (nonforestry) institution

Retrieved record # 5

SITE CODE: HA-AOP CALL NUMBER: UOM86  
TITLE: Potential contribution of leucaena hedgerows intercropped  
: with maize to the production of organic nitrogen and  
: fuelwood in the lowland humid tropics  
AUTHOR1: Torres, F.  
PUB. DATE: 83/ / PAGES: p.323-333  
BIBTYPE: LANGUAGES: EN LOCATION: UOM  
AID DOCID: AID PROJECT NUMBERS:

DESCRIPTORS: /LEUCAENA HEDGEROWS/ /FUELWOOD/ /MAIZE/

NOTES: Data from the literature were analysed. Annual N-production  
: by 1. leucaena hedgerows planted more than 150cm apart  
: and cut every 8wk to 15-30cm was estimated to be 45g/linear  
: m of hedgerow. The system is thought to be useful where soil-N  
: availability is a limiting factor and where maize  
: productivity is less than 1000kg/ha (when increases of  
: 112percent for 1.5m hedge spacings to 28percent for 6m  
: spacings are predicted

Retrieved record # 6

SITE CODE: HA-AOP CALL NUMBER: UOM62  
TITLE: Alley cropping with maize and leucaena in Southern Nigeria  
AUTHOR1: Kang, B.T.  
AUTHOR2: Wilson, G.F.  
AUTHOR3: Sipkens, L.  
PUB. DATE: 81/ / PAGES:  
BIBTYPE: LANGUAGES: LOCATION: UOM  
AID DOCID: AID PROJECT NUMBERS:

DESCRIPTORS: /PLANT AND SOIL/ /MAIZE/ /LEUCAENA LEUCOCEPHALA/  
/SOUTHERN NIGERIA/

MicroDIS -- Search Screen

CON: connector           A (and) or O (or)  
 TYPE: field type        1 - descriptor/identifier   2 - title word   3 - author  
                           4 - bibtype       5 - project #   6 - call #  
 VALUE: the term to search for (use = for right truncation)

CON	TYPE	VALUE	Found	Total
	1	hedg=	13	13
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O	2	alley=	4	19
O	1	terrac=	3	21
O	2	terrac=	1	21
O	1	living fenc=	2	22
O	2	living fenc=	0	22
A	2	leuc=	37	7

A pubdate <>=           / /   yy/mm/dd

Do you want to <V>iew the documents, <C>ontinue search,  
 start a <N>ew search, or <Q>uit?

MicroDIS --- SEARCH report

12/12/86

12:09:08

- Retrieved record #   1           SERA19  
 Economic evaluation of alley cropping leucaena with maize - maize and  
 maize -cowpea in Southern Nigeria
- Retrieved record #   2           SERA55  
 Lamtoronisasi in Kabupaten Sikka
- Retrieved record #   3           SERA57  
 Leucaena for erosion control and green manure in Sikka-leucaena  
 research in the Asian-Pacific region
- Retrieved record #   4           KOOI18  
 Systeme d'agrosylviculture employant la leucaena pour etablir des  
 barrieres contre l'erosion
- Retrieved record #   5           UOM9  
 Leucaena leucocephala: an excellent feed for livestock
- Retrieved record #   6           UOM86  
 Potential contribution of leucaena hedgerows intercropped with maize  
 to the production of organic nitrogen and fuelwood in the lowland  
 humid tropics
- Retrieved record #   7           UOM62  
 Alley cropping with maize and leucaena in Southern Nigeria

Retrieved record # 1

SITE CODE: HA-AOP CALL NUMBER: SERA19  
TITLE: Economic evaluation of alley cropping leucaena with maize -  
: maize and maize -cowpea in Southern Nigeria  
AUTHOR1: Ngambeki, D.S.  
PUB. DATE: 85/ / PAGES: p.243-258  
BIBTYPE: LANGUAGES: EN LOCATION:  
AID DOCID: AID PROJECT NUMBERS:

DESCRIPTORS: /AGROFORESTRY SYSTEMS/ /FERTILIZER/ /ECONOMICS/  
/HEDGEROWS/ /ALLEY CROPPING/

NOTES: Alley cropping is an aspect of agroforestry being developed  
: for small farmers in the tropics. It consists of establishing  
: fast-growing leguminous shrubs or tree species in rows, then  
: controlling the shading from the trees during cropping by  
: pruning the branches which can be used as mulch or  
: green manure to benefit the companion crops planted between  
: the alleys. This paper attempts to assess the economic  
: implications on labour utilization for the management of  
: the leucaena hedgerows, on crop yields

Retrieved record # 3

SITE CODE: HA-AOP CALL NUMBER: SERA57  
TITLE: Leucaena for erosion control and green manure in  
: Sikka-leucaena research in the Asian-Pacific region  
AUTHOR1: Farera, V.  
PUB. DATE: 83/ / PAGES: p.169-172  
BIBTYPE: LANGUAGES: EN LOCATION:  
AID DOCID: AID PROJECT NUMBERS:

DESCRIPTORS: /GREEN MANURE/ /HEDGEROWS/ /TERRACES/ /EROSION CONTROL/  
/INTERCROPPING/

NOTES: Sikka district, on the Island of Flores, is small, densely  
: populated, dry, and eroded. Since 1973, its people have  
: successfully planted *L. leucocephala* for erosion control and  
: green manure. Lamtoro biasa is a local term used for the  
: Hawaiian-type leucaena which is sown to create  
: hedgerows for terraces to control erosion. The Hawaiian giant  
: varieties on the other hand are planted out on the flat  
: areas of bench terraces, and more than 2 million Hawaiian  
: giants planted. On these terraced lands, perennial crops

## APPENDIX VIII

### MICRODIS DATABASE STRUCTURE

The MicroDIS database structure is shown below. The system developer, LTS Corporation, is willing to modify the structure in response to user comments in future up-dates of the program.

Structure for database: C:DOCUMENT.dbf

Number of data records: 1021

Date of last update : 12/11/86

Field	Field Name	Type	Width	Dec
1	ISN	Character	5	
2	PRINTFLAG	Numeric	1	
3	CIRC_COUNT	Numeric	2	
4	SITECODE	Character	3	
5	CALLNUMBER	Character	25	
6	COPIES	Character	1	
7	LOCATION	Character	10	
8	FORMAT	Character	2	
9	BIBTYPE	Character	2	
10	DOCTITLE	Character	250	
11	SERIES	Character	70	
12	SERIESNUM	Character	8	
13	AUTHOR1	Character	77	
14	AUTHOR2	Character	77	
15	AUTHOR3	Character	77	
16	AUTHOR4	Character	77	
17	AUTHOR5	Character	77	
18	PUBDATE	Character	8	
19	PAGINATION	Character	25	
20	LANGUAGES	Character	4	
21	AID_DOCID	Character	14	
22	AID_PROJ9	Character	27	
23	CONTRACTNO	Character	25	
24	DATECOMP	Date	8	
25	DESCRIPTOR	Character	50	
26	IDENTIFIER	Character	50	
**	Total	**	976	

APPENDIX IX

MICRODIS SITE CODE LIST

The Agroforestry Outreach Research Project is the eighth installation of MicroDIS and only the third outside of the United States. This reflects the newness of the program which is still ~~UNDER DEVELOPMENT~~.

The AFORP site code is 008 and its "short name" is HA-AOP.

MicroDIS --- SITE CODE list  
.....

12/12/86

11:39:31

Code	Short Name	Description
====	=====	=====
001	EG-DIC	DEVELOPMENT INFORMATION CENTER CAIRO
002	US-DIHF	AID DIHF USA
003	US-CDIE	PPC/CDIE ARLINGTON, VA, USA
004	US-WR	Winrock International USA
005	US-PRE/P	PRE/PRIVATIZATION
006	PZ-CPES	Centro Paraguayo de Est. Sociol <sup>o</sup> gicos
007	US-AID/SCI	Science Advisor
008	HA-AOP	Agroforestry Outreach Project, Haiti
900	DEMO	DEMONSTRATION VERSION OF MICRODIS
999	NONE	NO SITE INFORMATION ENTERED