TECHNICAL REPORT 3

PN-ABK-920

Decision Support System for Agrotechnology Transfer (DSSAT)

Level 1: User's Guide for the Minimum Data Set Entry

Version 1.1

IBSNAT
International Benchmark Sites Network for Agrotechnology Transfer

Decision Support System for Agrotechnology Transfer (DSSAT)

Level 1: User's Guide for the
Minimum Data Set Entry

Version 1.1

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CHAPTER ONE
GETTING STARTED

THE IBSNAT SYSTEM

Welcome to the **Decision Support System for Agrotechnology Transfer (DSSAT)** of the International Benchmark Sites Network for Agrotechnology Transfer (IBSNAT). DSSAT consists of crop models, appropriate data files, a data base management system (DBMS), expert systems, and computer programs to link these components and provide specific outputs for users. This Technical Report 3, DSSAT Level 1: User's Guide for Minimum Data Set Entry is designed to help you install the IBSNAT microcomputer DBMS for minimum data set entry.

These are the requirements for getting started and running the IBSNAT microcomputer system.

Hardware

Use a microcomputer with a minimum of 512K random access memory (RAM).

- IBM PC or PC-compatible microcomputer with two (dual) 360K disk drives
- IBM-PC-XT or XT-compatible microcomputer
- IBM-PC-AT or AT-compatible microcomputer

Software

Use a Disk Operating System (DOS) with versions 2.0 or greater.

- MS-DOS
- PC-DOS

IBSNAT Project supplies these four floppy diskettes.

- IBSNAT DBMS EXPERIMENT PROGRAM (Original) VERSION 1.1
- IBSNAT DBMS EXPERIMENT DATA (Original) VERSION 1.1
- IBSNAT DBMS WEATHER PROGRAM (Original) VERSION 1.1
- IBSNAT DBMS WEATHER APPEND PROGRAM (Original) VERSION 1.1

FIRST THINGS TO DO

Copy IBSNAT original diskettes

Use only double-sided, double-density floppy diskettes to make backups of the IBSNAT original diskettes. Use the DISKCOPY command in DOS.

Copy using one drive. To do this, after the A> prompt is displayed,

type: **diskcopy** <ENTER>†

Insert diskettes to be copied according to screen commands.

---

†Throughout these instructions, the symbol <ENTER> means "press the RETURN/ENTER key." The RETURN/ENTER key is designated on your keyboard with a bent arrow.

Copy using two drives. To do this, insert DOS in drive A. After the A> prompt is displayed,

type: **diskcopy a: b:** <ENTER>

Insert diskettes to be copied according to screen commands. For a complete description of DISKCOPY Command, see the DOS Manual.

Label diskette copies

- EXPERIMENT PROGRAM (Backup) VERSION 1.1
- EXPERIMENT DATA PROGRAM (Backup) VERSION 1.1
- WEATHER PROGRAM (Backup) VERSION 1.1
- WEATHER APPEND DATA (Backup) VERSION 1.1

Put a write-protection tape on each backup diskette made. Store the IBSNAT original diskettes in a safe place.

NEXT

Fixed-disk drive users

Go on to Chapter Two for installation of the IBSNAT System into fixed-disk drives.

Two-disk drive users

Go to Chapter Three for instructions on inputting the minimum data set.

CHAPTER TWO
INSTALLATION PROCEDURE FOR A FIXED-DISK DRIVE SYSTEM

Installation of the IBSNAT data base management system is only done once. The procedure for installation is listed.

1. Make sure that your default drive is C. That is, if the prompt on your screen is not "C>",

   type: **C:** <ENTER>

2. Insert the EXPERIMENT PROGRAM (Backup) diskette in drive A.

3. Type: **COPY A:CONFIG.SYS C:** <ENTER>

4. Type: **MKDIR\DATABASE** <ENTER>

   to create a subdirectory called DATABASE in your fixed disk.

5. Type: **CD\DATABASE**

   to go to the DATABASE subdirectory.

6. With the EXPERIMENT PROGRAM (Backup) diskette in drive A,

   type: **COPY A:*.* C:** <ENTER>

7. Remove the EXPERIMENT PROGRAM (Backup) diskette from drive A and replace it with the WEATHER PROGRAM (Backup) diskette.

8. Type: **COPY A:*.* C:** <ENTER>

9. Remove the WEATHER PROGRAM (Backup) diskette from drive A and replace it with the WEATHER APPEND PROGRAM (Backup) diskette.

10. Type: **COPY A:*.* C:** <ENTER>

The EXPERIMENT PROGRAM, the WEATHER PROGRAM, the WEATHER APPEND PROGRAM, and the CONVERT PROGRAM are now on the fixed disk. **Go to Chapter Four** for instructions on minimum data set entry.

CHAPTER THREE
EXPERIMENT DATA ENTRY WITH TWO-DISK DRIVES

EXPERIMENT DATA ENTRY

The procedure for inputting a minimum data set (MDS) using a microcomputer with two-disk drives (drive A and drive B) assumes that two original IBSNAT diskettes as described in Chapter One have been copied, and labeled EXPERIMENT PROGRAM VERSION 1.1 and EXPERIMENT DATA (Backup) VERSION 1.1. Weather data input procedures are in Chapter Six.

Diskette for new experimental data

To input the minimum data set for a new experiment, follow these procedures.

- Make another copy of the EXPERIMENT DATA (Backup) diskette by using the DISKCOPY Command in DOS.
- Label it EXPERIMENT DATA VERSION 1.1 (this diskette will be referred to as **EXPERIMENT DATA**).

Identification key codes

In the IBSNAT data base management system, the minimum data set from each experiment is stored and retrieved by a sequence of three identifications: 1) the INSTITUTE ID (two characters), 2) the SITE ID (two characters), and 3) the EXPERIMENT NUMBER (two digits).

These identification key codes and the crop code should be **marked on the EXPERIMENT DATA diskette.** For example:

Inst:	**UG**	(These keys denote the MDS for
Site:	**IN**	the second maize experiment at
Expt:	**02**	the Inarajan Experiment Station
Crop:	**MZ**	of the University of Guam.)

A listing of assigned INSTITUTE IDs and CROP CODES are given in Appendix 1. If your institute is not listed, use code "99" as the ID, and inform IBSNAT Project. The SITE ID is selected by the collaborator and should reflect the general area of the experiment. If a previous experiment at the same site is already part of the IBSNAT data base, the same SITE ID should be used but with a different EXPERIMENT NUMBER. (Experiments at the same site must have the same reference pedon number.)

PREVIOUS PAGE BLANK

Procedure for data entry

1) Boot-up[††] the system with **EXPERIMENT PROGRAM (Backup)** diskette in drive A, and **EXPERIMENT DATA** diskette in drive B.

2) After the DOS A> prompt is displayed,

   type: **DATABASE** <ENTER>

3) Follow instructions displayed on the screen. Upon inputting the the institute, site, and experiment identifications, and the crop code, the screen will display the MAIN MENU for data entry.

   You are now ready to input the MDS from FORMS A through S (except FORM C) onto the EXPERIMENT DATA diskette in drive B. **Specific instructions and examples for data entry are given in Chapter Five.** See Appendix 2 for computer sample screens of the MDS FORMS.

4) Before turning off the computer, return to the MAIN MENU and **press the "Z" key** to save the input data and return to DOS.

5) After inputting all data on the EXPERIMENT DATA diskette, make a copy of the diskette to keep for your use.

6) Mail EXPERIMENT DATA diskette in a rigid, sturdy envelope or box to:

   IBSNAT Project
   University of Hawaii
   2500 Dole Street, Krauss Hall 18
   Honolulu, Hawaii 96822 USA

[††]The process of loading and starting the operating system is called booting. Throughout these instructions, to "boot-up the system" means to insert the appropriate diskette in drive A, and press simultaneously the keys: <Ctrl> <Alt> <Del>.

CHAPTER FOUR
EXPERIMENT DATA ENTRY WITH A FIXED-DISK DRIVE

EXPERIMENT DATA ENTRY

The procedure for inputting a minimum data set (MDS) using a microcomputer with a fixed-disk drive (hard disk) and at least one diskette drive (drive A) assumes the completion of the installation procedure. If not, go back to Chapter Two. Weather data input procedures are in Chapter Seven.

Diskette for new experimental data
To input the minimum data set for a new experiment, follow these procedures.

- Make another copy of EXPERIMENT DATA (Backup) diskette by using the DISKCOPY command in DOS.
- Label it EXPERIMENT DATA VERSION 1.1 (this diskette will be referred to as **EXPERIMENT DATA**).

Identification key codes
In the IBSNAT data base management system, the minimum data set from each experiment is stored and retrieved by a sequence of three identifications: 1) the INSTITUTE ID (two characters), 2) the SITE ID (two characters), and 3) the EXPERIMENT NUMBER (two digits).

These identification key codes and the crop code should be **marked on the EXPERIMENT DATA diskette.** For example:

Inst:	**UG**	(These keys denote the MDS for
Site:	**IN**	the second maize experiment at
Expt:	**02**	the Inarajan Experiment Station
Crop:	**MZ**	of the University of Guam.)

A listing of assigned INSTITUTE IDs and CROP CODES are given in Appendix 1. If your institute is not listed use code "99" as the ID, and inform IBSNAT Project. The SITE ID is selected by the collaborator and should reflect the general area of the experiment. If a previous experiment at the same site is already part of the IBSNAT data base, the same SITE ID should be used but with a different EXPERIMENT NUMBER. (Experiments at the same site must have the same reference pedon number.)

Procedure for data entry

1) With the computer on and the DOS C> prompt displayed, insert the EXPERIMENT DATA diskette into drive A.

2) Type: **CD\DATABASE** <ENTER>

3) Type: **DATABASE** <ENTER>

4) Follow instructions displayed on the screen. Upon inputting the institute, site, and experiment identifications, and the crop code, the screen will display the MAIN MENU for data entry.

   You are now ready to input the MDS from FORMS A through S (except FORM C) to the EXPERIMENT DATA diskette in drive B. **Specific instructions and examples for data entry are given in Chapter Five.** See Appendix 2 for computer sample screens of the MDS FORMS.

5) Before turning off the computer, return to the MAIN MENU and **press the "Z" key** to save input data and return to DOS.

6) After inputting all data on the EXPERIMENT DATA diskette, make a copy of the diskette to keep for your use.

7) Mail EXPERIMENT DATA diskette in a rigid, sturdy envelope or box to:

   IBSNAT Project
   University of Hawaii
   2500 Dole Street, Krauss Hall 18
   Honolulu, HI 96822 USA

CHAPTER FIVE
EXPERIMENT DATA ENTRY HELP

MINIMUM DATA SET FORMS

The minimum data set (MDS) for each experiment is recorded on MDS FORMS that have been designed to facilitate data entry onto diskettes.

Data entry is the process of inputting information/data from a MDS FORM onto a file on a diskette. In this chapter, the "FORM" terminology will be used even though each FORM is actually a file on a diskette.

Categories of MDS FORMS

Each type of MDS FORM can be categorized.

- **Descriptive Information** FORMS A, B, D, E, and H.
- **Management Record (Data)** FORMS F, G, K, L, M, N, O, and P.
- **Response Data** FORMS C, I, J, Q, R, and S which measure crop, soil, or weather observations.

MAIN MENU

After entering the INSTITUTE ID, SITE ID, EXPERIMENT NUMBER, and the CROP CODE, the MAIN MENU is displayed on the screen, and lists the MDS FORMS by letter and name. A FORM is selected for data entry by pressing the key with the letter corresponding to a specific form.

Select "Z" to save the input data and return to DOS.

OPTIONS menu

When the user selects a FORM for data entry, the screen displays a choice of options for inputting, editing, deleting, displaying, or printing the form's descriptive information and data.

The choices on the OPTIONS Menu depend on the type of FORM selected by the user. General features of seven possible OPTIONS are discussed.

OPTION ONE

Must always be selected the first time any of the FORMS are used. A blank form is created and shaded areas on the screen indicate the space available for data entry.

After a selected FORM has been created and information/data entered, OPTION ONE should not be utilized unless the entire form is deleted.

ADD OPTION

Allows the user to input additional data to already existing Management Record (Data) FORMS F, G, K, L, M, N, O, and P; and to Response Data FORMS C, I, J, Q, R, and S.

EDIT OPTION

Allows the user to change information/data on all currently existing FORMS.

DELETE OPTION
Allows the user to erase the entire FORM and start again with OPTION ONE. For the Management Record and Response Data FORMS, portions of a form with data for a specified date or plot can be deleted using this option.

DISPLAY OPTION
Allows the user to review all the information/data on a FORM.

PRINT OPTION
Allows the user to print out all the inforamtion/data on a FORM.

EXIT OPTION
Allows the user to leave the current FORM and return to the MAIN MENU screen display.

Data entry HELP

Press the ENTER/RETURN key after inputting information/data within a shaded area. This is not needed if all space within the shaded area is utilized.

Press ESC key to exit from OPTION ONE, ADD OPTION, and EDIT OPTION.

Each shaded area is (a) **numerical and** automatically right-aligns data upon entry; or (b) **character** which includes letters or numbers or both, and reads from the left exactly as the character is entered.

The shaded areas are grouped for data input in some MDS FORMS. When inputting data, directional movement keys are only used within a group (see Directional Movement Keys). When the screen displays the next group of shaded areas, directional movement keys cannot be used to return to the previous group. Use the EDIT OPTION.

To move from one shaded area to another while editing information/data, use the ENTER/RETURN key. The directional movement keys can also be used within a group of shaded areas.

Missing data HELP
For missing or nonavailable numeric data, **enter value "-9".**

For descriptive information which is not available or not appropriate, press the ENTER/RETURN key to leaves the space blank.

Plot number HELP
Enter value "99" when a PLOT number is requested to indicate that **the information/data is the same for all PLOT(S).**

Use EDIT OPTION to delete PLOT(S) numbers previously entered on a form, and replace with value "0" (zero).

MDS FORMS and IBSNAT crop models

Data on the MDS FORMS that are indicated with blinking asterisks (*) represents the required inputs for running current IBSNAT crop models. Note that soil model inputs, however, are partially derived from a soil data base which is not described in this document.

Data of MDS that have no blinking asterisks represent the required data for validating the IBSNAT crop models, documenting the experiment, and recording other important conditions for model testing.

Cautions

Additional plot numbers cannot be added to plot and data/information previously entered on a FORM. **Use ADD OPTION** to input the additional plot numbers (repeat the data/information).

PgDn and PgUp keys cannot be used to move to the previous or to the next screen.

After entering an option number, do not press the ENTER/RETURN key.

Before turning off the computer, return to the MAIN MENU and press the "Z" key to save input data and return to DOS.

When the date is input incorrectly, an error message will display in the upper right-hand corner. Enter again with the correct date.

Make sure your diskettes are in the proper disk drives.

ERROR MESSAGES AND CORRECTIVE ACTIONS

These screen error messages may be encountered by the user. Descriptions of error messages and the corrective actions are provided.

Screen Messages	Descriptions	Actions
Invalid institute ID	Wrong INSTITUTE ID.	Refer to Appendix 1 for assigned INSTITUTE ID or write (telex) to IBSNAT.
Invalid input	Wrong option selected.	Choose an option that is in the OPTIONS Menu.
Error or invalid code	Wrong code input.	Check code tables in the Appendices of Experimental Design and Data Collection Procedures for IBSNAT (Technical Report 1).

Screen Messages	Descriptions	Actions
Record not found	Data with the input identification key codes do not exist in the data base.	Make sure you have entered the right identification key codes.
Invalid date	This error message, be unlike other error messages, appears on the upper right-hand corner of the screen.	The incorrect date will be erased automatically. Enter correct date again.
Record already exists or crop already exists	This information had previously been entered through OPTION ONE.	If you want to add data, use the ADD OPTION.
Invalid response	Information entered is not what is asked for.	Enter again with correct information.

SYSTEM ERROR MESSAGES

Whenever a system error is encountered, the system will be halted and a line of error messages with the prompt "QUIT? (Q/A/I)" at the end of the line will appear near the top of the screen. DO NOT PRESS ANY KEY. WRITE down the error message and respond to the prompt by entering "Q" to return to DOS.

An example of a system error message is the following.

proc:DATABASE line:48 DOS error 2, A:INXSTITU.NTX QUIT? (Q/A/I)

In this example "2" is the error number. It means that a file called INXSTITU.NTX cannot be found in drive A.

Many reasons may cause a system error, and the error number in the message will identify the cause. The following chart lists some of the common causes and the correct actions you should take. For other causes which are not identified in this chart, report the error mesage to IBSNAT Project immediately.

Error Numbers	Descriptions	Actions
2	File not found.	Check if diskettes are inserted in the proper drives.
4	Too many open files.	For two-disk drives users: Turn off the computer and restart with EXPERIMENT PROGRAM (Backup) diskette in drive A.

Error Numbers	Descriptions	Actions
4	Too many open files.	For fixed-disk drive users: Check to see if file CONFIG.SYS is in the root directory of your hard disk. If not, copy file CONFIG.SYS form EXPERIMENT PROGRAM (Backup) to hard disk's root directory. Turn off the computer and restart again.
19	Attempt to write on a write-protected diskette.	Check to see if data is input on the correct diskette (and not on the back-up diskettes). If correct, remove write-protection tape from the EXPERIMENT DATA or WEATHER DATA diskette.
28	Printer out of paper.	Load paper to your printer.

DIRECTIONAL MOVEMENT KEYS

Keys	Functions
Home	Home key takes you to the first character of the current shaded area, but will not take you to the previous shaded area or previous group.
End	End key takes you to the last character of the current shaded area, but will not take you to the next shaded area or next group.
↑	Up arrow takes you to the previous shaded area within a group, but will not take you to the previous group.
↓	Down arrow takes you to the next shaded area within a group, but will not take you to the previous group.
→	Right arrow takes you one character to the right in the current shaded area, but will not take you to the next shaded area or next group.
←	Left arrow takes you back one character in the current shaded area, but will not take you to the previous shade area or group.

CHAPTER SIX
WEATHER DATA ENTRY WITH TWO-DISK DRIVES

WEATHER DATA ENTRY

The procedure for inputting weather station data using a microcomputer with two-disk drives (drive A and B) assumes that the IBSNAT DBMS WEATHER PROGRAM (Original) diskette described in Chapter One has been copied and labeled WEATHER PROGRAM (Backup) Version 1.1.

Weather Data (Master) diskette

The Weather Data (Master) diskette stores the Master File which contains all permanent data for a particular weather station. Each weather station, therefore, will have one Master File. Each time a new set of weather data is entered and sent to the IBSNAT Project headquarters, it is appended (added) to this Master File which is a copy for your own use. This file will be stored in metric units (solar radiation in MJ/m^2).

For a **new weather station** input, follow these procedures.

- Format a blank diskette. (Refer to FORMAT Command in the DOS Manual.)
- Label it WEATHER DATA (MASTER) Version 1.1 [this diskette will be referred to as **WEATHER DATA (MASTER)**].

Weather Data diskette

Each time a **new set of weather data** is input, the following procedures are needed.

- Format a blank diskette. (Refer to FORMAT Command in the DOS Manual.)
- Label it WEATHER DATA VERSION 1.1 (this diskette will be referred to as **WEATHER DATA**).

Identification key codes

In the IBSNAT data base management system, the weather data from each weather station is stored and retrieved by a sequence of two identifications: 1) the INSTITUTE ID (two characters) and 2) the WEATHER STATION ID (two characters). Label the **WEATHER DATA (Master)** and **WEATHER DATA** diskettes as follows.

Institute:	**UG**	(These keys denote the weather
Station:	**IN**	data for the weather station at the Inarajan Experiment Station of the University of Guam.)

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When there is only one weather station, the **same WEATHER STATION ID** can be used as the SITE ID for the EXPERIMENT DATA diskettes (see Chapter Two). For a site with more than one weather station, assign each weather station a separate two-character WEATHER STATION ID.

A listing of assigned INSTITUTE IDs is given in Appendix 1. If your institute is not listed, use code "99" and inform IBSNAT Project.

Procedure for data entry

1) Boot-up the system with the **WEATHER PROGRAM (Backup)** diskette in drive A and the **WEATHER DATA** diskette in drive B.

2) After the DOS A> prompt is displayed,

   type: **WEATHER** <ENTER>

3) Follow instructions displayed on the screen. After INSTITUTE ID, WEATHER STATION ID, and the beginning date are entered, the screen will display the MAIN MENU for data entry. Follow the instructions and input weather data onto the WEATHER DATA diskette in drive B. For additional HELP, see Chapter Five. See Appendix 3 for computer sample screens of weather data FORMS C-1 and C-2.

4) Before turning off the computer, return to the MAIN MENU and **select 5** to EXIT, save input data, and return to DOS.

5) When all weather data have been entered, check for errors. Prior to sending the WEATHER DATA diskette to IBSNAT Project:

   (a) If the data are in metric units, and solar radiation is entered in MJ/m^2 units, go on to "Running Weather Append Program."

   (b) If other units were used, go to "Running Conversion Program."

Running Weather Append Program

If needed, run the Conversion Program before the Weather Append Program.

1) Boot-up the system with the **WEATHER APPEND PROGRAM (Backup)** diskette in drive A and the **WEATHER DATA** diskette in drive B.

2) Type: **APPEND** <ENTER>

3) Follow instructions displayed on the screen.

4) Make a copy of the **WEATHER DATA** diskette. Label the diskettes with INSTITUTE ID and WEATHER STATION ID, and include the time period on the diskette label.

5) Mail WEATHER DATA diskette in a rigid, sturdy envelope or box to:

   IBSNAT Project
   University of Hawaii
   2500 Dole Street, Krauss Hall 18
   Honolulu, Hawaii 96822 USA

Running Conversion Program

If data were inputted on the WEATHER DATA diskette in English units, or if solar radiation data are in cal/cm^2 units, the following steps are needed to convert the data to metric units (MJ/m^2 for solar radiation).

If the conversion program is being used immediately after the Weather Program and the computer has not been turned off, start with #2.

1) Boot-up the system with the **WEATHER PROGRAM (Backup)** diskette in drive A, and the **WEATHER DATA** diskette in drive B.

2) When the A> prompt is displayed,

   type: **CONVERT** <ENTER>

3) Follow instructions displayed on the screen.

4) Go to "Running Weather Append Program."

CHAPTER SEVEN
WEATHER DATA ENTRY WITH A FIXED-DISK DRIVE

WEATHER DATA ENTRY

The procedure for inputting weather station data using a microcomputer with a fixed-disk drive (hard disk) and at least one diskette drive (drive A) assumes that the IBSNAT DBMS WEATHER PROGRAM (Original) diskette described in Chapter One has been copied to your fixed disk.

Weather Data (Master) diskette

The Weather Data (Master) diskette stores the Master File which contains all permanent data for a particular weather station. Each weather station, therefore, will have one Master File. Each time a new set of weather data is entered and sent to IBSNAT Project headquarters, it is appended (added) to this Master File which is the copy for your own use. This file will be stored in metric units (solar radiation in MJ/m^2).

This Master File can be stored on your fixed disk (drive C).

Weather Data diskette

Each time a **new set of weather data** is input, follow these procedures.

- Format a blank diskette. (Refer to FORMAT Command in the DOS Manual.)
- Label it WEATHER DATA VERSION 1.1 (this diskette will be referred to as **WEATHER DATA**).

Identification key code

In the IBSNAT data base management system, the weather data from each weather station is stored and retrieved by a sequence of two identifications: 1) the INSTITUTE ID (two characters) and 2) the WEATHER STATION ID (two characters). Label the **WEATHER DATA** diskette as follows.

Institute:	**UG**	(These keys denote the weather data for the weather staton at the Inarajan Experiment Station of the University of Guam.)
Station:	**IN**	

When there is only one weather station, the **same WEATHER STATION ID** can be used as the SITE ID for the EXPERIMENT DATA diskette (see Chapter Two). For a site with more than one weather station, assign each weather station a separate two-character WEATHER STATION ID.

A listing of assigned INSTITUTE IDs is given in Appendix 1. If your institute is not listed, use code "99" and inform IBSNAT Project.

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Procedures for Data Entry
The installation procedure of Chapter Two should be completed before inputting data on a fixed disk.

1) With the computer on and the DOS C> prompt displayed, insert the **WEATHER DATA** diskette in drive A

2) Type: **CD\DATABASE** <ENTER>

3) Type: **WEATHER** <ENTER>

4) Follow instructions displayed on the screen. After the INSTITUTE ID and WEATHER STATION IDs and the beginning date are entered, the screen displays the MAIN MENU for data entry. Follow the instructions and input weather data on the WEATHER DATA diskette in drive A. For additional HELP, see Chapter Five. See Appendix 2 for computer sample screens of weather data MDS FORMS.

5) Before turning off the computer, return to the MAIN MENU and **select 5** to EXIT, save input data, and return to DOS.

6) When all weather data have been entered, check for errors. Prior to sending the WEATHER DATA diskette to IBSNAT Project:

   (a) If the data are stored in metric units, and solar radiation is entered in MJ/m^2 units, go on to "Running Weather Append Program."

   (b) If other units were used, go to "Running Conversion Program."

Running Weather Append Program
If needed, run the Conversion Program before the Append Program. When the Append Program is used immediately after the Weather or Conversion Program and the computer has not been turned off, start with #4.

1) With the computer on and running under DOS, the screen should display the C> prompt.

2) Type: **CD\DATABASE** <ENTER>

   to go to the DATABASE subdirectory.

3) Insert the WEATHER DATA diskette in Drive A.

4) Type: **APPEND** <ENTER>

5) Follow instructions displayed on the screen.

6) Make a copy of the **WEATHER DATA** diskette. Label the diskette with INSTITUTE ID and WEATHER STATION ID, and include the time period on the diskette label.

7) Mail WEATHER DATA diskette in a rigid, sturdy envelope or box to:

   IBSNAT Project
   University of Hawaii
   2500 Dole Street, Krauss Hall 18
   Honolulu, Hawaii 96822 USA

Running Conversion Program

If data were input on the WEATHER DATA diskette in English units, or if solar radiation data are in cal/cm^2 units, the following steps are needed to convert the data to metric units (MJ/m^2 for solar radiation).

When the Conversion Program is used immediately after the Weather Program and the computer has not been turned off, start with #2.

1) With the computer on and the DOS C> prompt displayed, insert the **WEATHER DATA** diskette in drive A and

   type: **CD\DATABASE** <ENTER>

2) Type: **CONVERT** <ENTER>

3) Follow instructions displayed on the screen.

4) Go to "Running Weather Append Program."

APPENDIX 1
INSTITUTE AND CROP CODES FOR IBSNAT EXPERIMENTS

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ID	INSTITUTE
99	Other
AC	Arab Center for Studies of Arid Zones and Dry Lands, Syria
AI	Agency for Agricultural Research and Development, Jakarta, Indonesia
AT	Asian Vegetable Research and Development Center, Taiwan
CA	Centro Agronómico Tropical de Investigación y Enseñanza, Turrialba, Costa Rica
CC	Centro Internacional de Agricultura Tropical, Cali, Columbia
CO	Cornell University, Ithaca, New York, USA
CP	Centro Internacional de la Papa (International Potato Center), Lima, Peru
CR	Center for Soil Research, Bogor, Indonesia
CS	Commonwealth Scientific and Industrial Research Organization, Brisbane, Australia
CV	Centro Nacional de Investigaciones Agropecuarias, Maracay, Venezuela
DN	Department of Scientific and Industrial Research, Lower Hutt, New Zealand
EB	Empresa Brasileira de Pesquisas Agropecuária, Brasília, Brazil
ER	Economic Research Service, Temple, Texas, USA
FA	Food and Agriculture Organization, United Nations, Rome, Italy
FF	Food and Fertilizer Technology Center for the Asian and Pacific Region, Taipei, Taiwan
FN	Fondo Nacional de Investigaciones Agropecuarias, Caracas, Venezuela
GT	Grassland, Soil and Water Research Laboratory, Temple, Texas, USA
IA	Institut de la Recherche Agronomique, Yaounde, Cameroon
IB	International Benchmark Sites Network for Agrotechnology Transfer, Honolulu, Hawaii, USA
IC	Indian Council of Agricultural Research, New Delhi, India
ID	Instituto de Investigación Agropecuária de Panamá, Panamá
IF	International Fertilizer Development Center, Muscle Shoals, Alabama, USA
IN	Institut National de la Recherche Agronomique, Toulouse, France
IR	International Rice Research Institute, Manila, Philippines
IS	International Soybean Program, Taiwan
IT	International Crops Research Institute for the Semi-Arid Tropics, Hyderabad, India
IU	Iowa State University, Ames, Iowa, USA
LC	Lincoln College, Canterbury, New Zealand
LU	Louisiana State University, Baton Rouge, Louisiana, USA
MA	Malaysian Agricultural Research and Development Institute, Kuala Lumpur, Malaysia
MP	Ministry of Primary Industries, Suva, Fiji

ID	INSTITUTE
MS	Michigan State University, East Lansing, Michigan, USA
NB	National Bureau of Soil Survey and Land Use Planning, Bangalore, India
NI	Nitrogen Fixation by Tropical Agricultural Legumes, Honolulu, Hawaii, USA
NO	National Oceanographic and Atmospheric Administration, Columbia, Missouri, USA
OR	Office de la Recherché Scientifique et Technique Outre-Mer, Paris, France
PA	Pakistan Agricultural Research Council, Islamabad, Pakistan
PC	Philippine Council for Agriculture and Resources Research and Development, Manila, Philippines
SC	Soil and Crop Evaluation Project, Suva, Fiji
TA	Texas A & M University, College Station, Texas, USA
TH	Thailand Land Development Department
UB	University of Burundi, Bujumbura, Burundi
UC	University of Guelph, Guelph, Ontario, Canada
UF	University of Florida, Gainesville, Florida, USA
UG	University of Guam, Mangilao, Guam
UH	University of Hawaii, Honolulu, Hawaii, USA
UJ	University of Jordan, Amman, Jordan
UP	University of Puerto Rico, Mayaguez, Puerto Rico
US	Utah State University, Logan, Utah, USA
UZ	University of Zambia, Lusaka, Zambia

Code	Crop
MZ	Maize
SG	Sorghum
WH	Wheat
RI	Rice
ML	Millet
SB	Soybean
BN	Dry beans
PN	Peanuts
AR	Aroids
CS	Cassava
PT	Potato

APPENDIX 2
COMPUTER SAMPLE SCREENS OF MDS FORMS

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Computer Sample Screen

```
DATA BASE MANAGEMENT SYSTEM -- DATA INPUT                          02/27/86
==========================================================================

        * INSTITUTE ID  :  IB

        * SITE ID       :  WA

        * EXPERIMENT NO.:  01

        * CROP CODE     :  MZ

          Is the above input correct? (Y/N)  Y

     Is this a new experiment? (Y/N)
```

Computer Sample Screen

```
FORM A -- INSTITUTIONAL INFORMATION                                    01/27/86
==============================================================================

     INSTITUTE ID :     IB

     Institute name:    International Benchmark Sites Network for Agrotechnology
                        Transfer, Honolulu, Hawaii, U.S.A.

     Mailing address:   2500 Dole Street, Krauss 22
                        Honolulu
                        Hawaii  96822

     Country:           USA

     Telex:             8423 UHBSP HR

     Telephone:         (808) 948-6604

==============================================================================

Press any key to continue...
```

Computer Sample Screen

```
FORM B -- NEARBY LONG-TERM CLIMATIC STATIONS                          01/27/86
==============================================================================

 INSTITUTE ID: IB        Climatic station name: WAIPIO

 Address of        IBSNAT Project
    responsible    2500 Dole Street, Krauss 22
    organization   Honolulu
                   Hawaii  96822
                   USA

 Latitude  (deg.,min.):  21.25        Direction (N, S):  N
 Longitude (deg.,min.): 158.00        Direction (E, W):  W
 Elevation (m):          120

==============================================================================

Press any key to continue...
```

Computer Sample Screen

```
FORM B -- YEARS OF RECORD STORED YEARLY                               01/27/86
==============================================================================

                        YEARS OF RECORD   COMPLETE/INCOMPLETE
                                                 (C/I)
                        ---------------   -------------------
 TMin:                         7                  C
 TMax:                         7                  C
 Precipitation:                7                  C
 Solar radiation:              7                  C
 Hours of sunshine:            0
 Percent cloud cover:          0
 Humidity:                     7                  C
 Soil temperature:             7                  C
 Windrun:                      7                  C
 Rainfall intensity:           0

==============================================================================

Press any key to continue...
```

Computer Sample Screen

```
FORM D -- EXPERIMENTAL SITE                                          03/17/86
==============================================================================
INSTITUTE ID:  IB                                    SITE ID:  WA

Site name:  Waipio                                   *Pedon no.: 82p736

Soil series name: Wahiawa

*Soil classification (Family level of soil taxonomy):
     Clayey, kaolinitic, isohyperthermic, Tropeptic
     Eutrustox

Description of site (Geomorphology or position in landscape):


Natural vegetation:
     Grass and shrubby trees

Years in cultivation and past management practice:
     40 years in pineapple through 1970;
     mainly maize cultivation since 1976
==============================================================================

Press any key to continue...
```

Computer Sample Screen

```
FORM D -- EXPERIMENTAL SITE                                          03/17/86
==============================================================================
INSTITUTE ID:  IB                                    SITE ID:  WA

*Latitude  (deg.,min):  21.25        Direction (N, S):  N
*Longitude (deg.,min): 158.00        Direction (E, W):  W

Elevation (m):         120           Weather station ID:  WA

Distance from weather station (km):  0.0





==============================================================================

Press any key to continue...
```

Computer Sample Screen

```
FORM E  --  EXPERIMENT                                                  02/06/86
==============================================================================

     INSTITUTE ID:  IB        SITE ID:  WA        EXPERIMENT NO.:   1

 Experiment name: maize cultivar x applied n trial      Weather station ID: WA

*Beginning date (dd/mm/yy):  17/11/83          Ending date (dd/mm/yy): 15/05/84

 Experiment       Maize cultivar by applied nitrogen fertility experiment
    description   Cultivars are x304c and h610
                  N levels are 0, 50, and 200 n kg/ha

 Responsible
    researchers   Upendra Singh and Patrick Ching

 Distance from weather station (m):    50

==============================================================================

Press any key to continue...
```

Computer Sample Screen

```
FORM E  --  EXPERIMENT                                                  02/06/86
==============================================================================

     INSTITUTE ID:  IB        SITE ID:  WA        EXPERIMENT NO.:   1

 Experiment name: maize cultivar x applied n trial      Weather station ID: WA

 Experimental design:  Randomized complete block design with three replications
                       The treatments are factorial treatment combinations of
                       two cultivars and three n levels

 Vertical angle from horizontal to the top of hills or
    other obstructions to sun's rays (deg):    3

==============================================================================

Press any key to continue...
```

Computer Sample Screen

```
FORM F-1 -- EXPERIMENTAL FACTORS AND LEVELS                          01/27/86
==============================================================================

     INSTITUTE ID:  IB        SITE ID:  WA        EXPERIMENT NO.:   1

              DESCRIPTION OF EACH FACTOR IN THE EXPERIMENT

          FACTOR NAME          DESCRIPTION
          -----------          -----------
           FACTOR_A            applied nitrogen
           FACTOR_B            cultivar





** NOTE:  The maximum number of factor names you can input is 5.
==============================================================================
Press any key to continue...
```

Computer Sample Screen

```
FORM F-2 -- EXPERIMENTAL FACTORS AND LEVELS                          01/27/86
==============================================================================

     INSTITUTE ID:  IB        SITE ID:  WA        EXPERIMENT NO.:   1

              DESCRIPTION OF EACH LEVEL FOR EACH FACTOR

          LEVEL
       (AMOUNT OR NAME)                DESCRIPTION
       ----------------                -----------
                 0          no applied nitrogen
                50          50 kg N/ha
               200          200 Kg N/ha
              H610          cultivar H610
             X304C          cultivar X304C



==============================================================================
Press any key to continue...
```

Computer Sample Screen

```
FORM F-3 -- EXPERIMENTAL FACTORS AND LEVELS                          02/06/86
==============================================================================

     INSTITUTE ID:  IB        SITE ID:  WA        EXPERIMENT NO.:   1

                    TREATMENT AND REP NUMBER FOR EACH PLOT

    *PLOT   *TRT    REP      *PLOT   *TRT    REP      *PLOT   *TRT    REP
     NO.    NO.     NO.       NO.    NO.     NO.       NO.    NO.     NO.
    ================         ================         ================
      1      1       1        16      1       2
      3      6       1        17      1       3
      4      3       1        18      3       3
      5      2       1        19      6       3
      6      5       1        21      4       3
      8      4       1        22      2       3
      9      2       2        24      5       3
     10      5       2
     11      6       2
     12      4       2
     14      3       2
==============================================================================
Press any key to continue...
```

Computer Sample Screen

```
FORM F-4 -- EXPERIMENTAL FACTORS AND LEVELS                          01/27/86
==============================================================================

     INSTITUTE ID:  IB        SITE ID:  WA        EXPERIMENT NO.:   1

                    FACTOR AND LEVEL TREATMENT COMBINATIONS

        TRT     --------LEVELS (AMOUNTS OR NAMES) FOR EACH FACTOR--------
        NO.     FACTOR_A     FACTOR_B
==============================================================================
         1          0        X304C
         2         50        X304C
         3        200        X304C
         4          0         H610
         5         50         H610
         6        200         H610



==============================================================================
Press any key to continue...
```

Computer Sample Screen

```
FORM H  --  EXPERIMENTAL PLOTS                                          02/28/86
==========================================================================

     INSTITUTE ID:  IB        SITE ID:  WA        EXPERIMENT NO.:  1

 Plot area (m^2):            48              Slope (%):                    2

 Slope length (m):           100             Aspect (deg. from north):   180

 Depth of soil drain (cm):   -9              Distance between drains (m):  -9

*Amt. of weed/crop residue incorporated during land preparation(kg/ha):   500

*Depth of residual incorporated during land preparation (cm):              -9

 Was residue burned (Y/N)?  N
 Specific comments:
 The treatments were superimposed over old experimental plots with varying
 applied p rates.possibility of residual p effects but doubtful.

==========================================================================
Press any key to continue...
```

Computer Sample Screen

```
FORM H  --  EXPERIMENTAL PLOTS                                          02/28/86
==========================================================================

     INSTITUTE ID:  IB        SITE ID:  WA        EXPERIMENT NO.:  1

 TYPE OF RESIDUE:

     CROP                    PERCENT (%)      CROP                    PERCENT (%)
     ----                    -----------      ----                    -----------

     Other                                    Aroids
     Cassava                                  Dry broad leaf weeds
     Dry grass weeds              80          Field beans
     Green broad leaf weeds                   Green Grass weeds
     Grain Sorghum                            Maize
     Peanuts                                  Potato
     Rice                                     Soybean
     Shrubs/trees                 20          Wheat

==========================================================================

Press any key to continue...
```

Computer Sample Screen

```
FORM I-1  --  PREPLANT SOIL FERTILITY MEASUREMENTS                    02/06/86
==============================================================================

     INSTITUTE ID:  IB        SITE ID:  WA        EXPERIMENT NO.:   1
     Method of  P   extraction:  MODIFIED TRUOG
------------------------------------------------------------------------------
  DATE                      *UPPER*LOWER  ----pH----  *NO3-N*NH4-N  P   K    Al
dd/mm/yy      *PLOT(S)      (----cm---)   *H2O   KCl  (-------g/Mg-------)   %
------------------------------------------------------------------------------
18/11/83  99                   0    10     5.2   4.8      4     6   27   -9 -9.00
18/11/83  99                  10    30     5.0   4.6      3     3   25   -9 -9.00
18/11/83  99                  30    50     4.8   4.3      3     3   10   -9 -9.00
18/11/83  99                  50    70     4.8   4.2      2     3   10   -9 -9.00
18/11/83  99                  70    90     4.5   4.1      2     2    5   -9 -9.00

==============================================================================
Press any key to continue...
```

Computer Sample Screen

```
FORM I-2  --  OTHER SOIL FERTILITY MEASUREMENTS                       03/17/86
==============================================================================

     INSTITUTE ID:  IB        SITE ID:  WA        EXPERIMENT NO.:   1
     Method of  P   extraction:  MODIFIED TRUOG
------------------------------------------------------------------------------
  DATE                      UPPER LOWER  ----pH----  NO3-N NH4-N  P   K    Al
dd/mm/yy      PLOT(S)       (----cm---)   H2O   KCl  (-------g/Mg-------)   %
------------------------------------------------------------------------------
15/05/84  99                   0    10     5.0   4.7     -9    -9   -9   -9 -9.00
15/05/84  99                  10    30     5.0   4.6     -9    -9   -9   -9 -9.00
15/05/84  99                  30    50     4.9   4.2     -9    -9   -9   -9 -9.00
15/05/84  99                  50    70     4.9   4.2     -9    -9   -9   -9 -9.00
15/05/84  99                  70    90     4.4   4.1     -9    -9   -9   -9 -9.00

==============================================================================
Press any key to continue...
```

Computer Sample Screen

```
FORM J-1  --  PREPLANT SOIL WATER CONTENTS                                  02/28/86
==============================================================================

     INSTITUTE ID:  IB          SITE ID:  WA          EXPERIMENT NO.:   1
LAYERS            1   2   3   4   5
                 ------------------------------------------------------------
*UPPER (cm)       0  10  30  50  70
*LOWER (cm)      10  30  50  70  90
------------------------------------------------------------------------------
 *DATE                          --------  VOLUMETRIC WATER CONTENT (%)  --------
dd/mm/yy          *PLOT(S)      * 1    * 2    * 3    * 4    * 5
------------------------------------------------------------------------------
16/11/83    99                  26.0   30.0   37.0   32.0   29.0

==============================================================================
Press any key to continue...
```

Computer Sample Screen

```
FORM J-2  --  OTHER SOIL WATER CONTENTS                                     03/03/86
==============================================================================

     INSTITUTE ID:  IB          SITE ID:  WA          EXPERIMENT NO.:   1
LAYERS            1   2   3   4   5
                 ------------------------------------------------------------
 UPPER (cm)       0  10  30  50  70
 LOWER (cm)      10  30  50  70  90
------------------------------------------------------------------------------
  DATE                          --------  VOLUMETRIC WATER CONTENT (%)  --------
dd/mm/yy          PLOT(S)         1      2      3      4      5
------------------------------------------------------------------------------
02/01/84     1 16 17  8 12 21    24.0   34.0   35.0   39.0   39.0
02/01/84     4 14 18  3 11 19    24.0   31.0   37.0   38.0   38.0
02/01/84     5  9 22  6 10 24    27.0   34.0   35.0   39.0   39.0
07/02/84     1 16 17  8 12 21    27.0   32.0   34.0   36.0   37.0
07/02/84     4 14 18  3 11 19    27.0   30.0   32.0   36.0   35.0
07/02/84     5  9 22  6 10 24    28.0   32.0   35.0   36.0   37.0

==============================================================================
Press any key to continue...
```

Computer Sample Screen

FORM K -- TILLAGE 01/27/86

INSTITUTE ID: IB SITE ID: WA EXPERIMENT NO.: 1

DATE dd/mm/yy	PLOT(S)	IMP. CODE	DEPTH (cm)	OTHER INFORMATION
10/11/83	99	99	0	cut and removed dry weeds manually
17/11/83	99	15	15	rototilled with walking tiller
22/11/83	99	99	0	smoothed surface with hand rake
29/11/83	99	15	15	rototilledfertilizer-walking tiller

Press any key to continue...

Computer Sample Screen

```
FORM L  --  CULTIVAR                                                    01/27/86
==========================================================================

          INSTITUTE ID:  IB      SITE ID:  WA      EXPERIMENT NO.:   1

--------------------------------------------------------------------------
  CULTIVAR       OTHER                                BACKGROUND AND
    NAME         NAMES        TYPE                 SPECIAL CHARACTERISTICS
--------------------------------------------------------------------------
 H610                       sngl cross   Developed by James Brewbaker,Univ Hawaii
                                         tropical and corn-belt(usa) parents
 X304C                      sngl cross   Wide adaptability for the tropics;commer
                                         cial hybrid;Pioneer,Des Moines,Iowa,USA

==========================================================================
Press any key to continue...
```

Computer Sample Screen

```
FORM M  --  PLANTING                                                    02/06/86
==========================================================================

          INSTITUTE ID:  IB      SITE ID:  WA      EXPERIMENT NO.:   1

--------------------------------------------------------------------------
*PLANTING OR                                        *ROW     *SEED    *SEED
TRANSPLANTING                                      SPACING    RATE     DEPTH   IMP.
  dd/mm/yy       *PLOT(S)          CULTIVAR        (cm)    (seed/m)   (cm)   CODE
--------------------------------------------------------------------------
   30/11/83     1   4   5   9     X304C            75       4.35       7      99
               14  16  17  18
               22
   30/11/83      3   6   8  10     H610             75       4.35       7      99
               11  12  19  21
               24

==========================================================================
Press any key to continue...
```

Computer Sample Screen

FORM N -- FERTILIZERS, INOCULANTS, AND AMENDMENTS 02/07/86

INSTITUTE ID: IB SITE ID: WA EXPERIMENT NO.: 1

*DATE dd/mm/yy	*PLOT(S)	*MAT. CODE	PL. CODE	METHOD CODE	*DEPTH (cm)	*N	P	K	CaCO3	Other
						(---------kg/ha---------)				
29/11/83	99	14	2	2	15	0	13	0	0	0
29/11/83	99	16	2	2	15	0	0	100	0	0
29/11/83	5 6 9 10 22 24	5	2	2	15	17	0	0	0	0
29/11/83	3 4 11 14 18 19	5	2	2	15	67	0	0	0	0
06/01/84	5 6 9 10 22 24	5	2	2	15	17	0	0	0	0
06/01/84	3 4 11 14 18 19	5	2	2	15	67	0	0	0	0
10/02/84	5 6 9 10 22 24	5	2	2	15	17	0	0	0	0

Press any key to continue...

Computer Sample Screen

FORM N -- FERTILIZERS, INOCULANTS, AND AMENDMENTS 02/07/86

INSTITUTE ID: IB SITE ID: WA EXPERIMENT NO.: 1

*DATE dd/mm/yy	*PLOT(S)	*MAT. CODE	PL. CODE	METHOD CODE	*DEPTH (cm)	*N	P	K	CaCO3	Other
						(---------kg/ha---------)				
10/02/84	3 4 11 14 18 19	5	2	2	15	67	0	0	0	0

Press any key to continue...

Computer Sample Screen

```
FORM O  --  BIOCIDES AND HORMONES                                    01/27/86
==========================================================================

     INSTITUTE ID:  IB        SITE ID:  WA        EXPERIMENT NO.:   1

--------------------------------------------------------------------------
                                                  AMOUNT
       DATE                                 PROD. ACT. INGRED.
     dd/mm/yy        PLOT(S)                CODE   (kg AI/ha)        TARGET
--------------------------------------------------------------------------
      18/11/83   99                         9999       1.2       grassey weeds
      05/12/83   99                         1001       3.0       grasses
      05/12/83   99                         9999       1.0       broadleaf weeds
      06/12/83   99                         9999       2.0       cutworms
      20/12/83   99                         2001       1.0       rose beetles
      08/03/84   99                         3003       3.5       common rust
      12/03/84   99                         2006       1.0       red spider mite


==========================================================================
Press any key to continue...
```

Computer Sample Screen

FORM P -- IRRIGATION 02/06/86

INSTITUTE ID: IB SITE ID: WA EXPERIMENT NO.: 1

*DATE dd/mm/yy	*PLOT(S)	*AMOUNT (mm)	METHOD CODE
03/12/83	99	43	5
05/12/83	99	22	5
07/12/83	99	18	5
16/12/83	99	8	5
21/12/83	99	11	5
23/12/83	99	6	5
30/12/83	99	6	5
06/01/84	99	6	5
09/01/84	99	6	5
13/01/84	99	5	5
19/01/84	99	5	5

Press any key to continue...

Computer Sample Screen

FORM P -- IRRIGATION 02/06/86

INSTITUTE ID: IB SITE ID: WA EXPERIMENT NO.: 1

*DATE dd/mm/yy	*PLOT(S)	*AMOUNT (mm)	METHOD CODE
20/01/84	99	5	5
26/01/84	99	19	5
10/02/84	99	9	5
12/02/84	99	9	5
24/02/84	99	15	5
28/02/84	99	10	5
09/03/84	99	17	5
13/03/84	99	13	5
15/03/84	99	14	5
18/03/84	99	15	5
22/03/84	99	12	5

Press any key to continue...

Computer Sample Screen

```
FORM Q  --  CROP DAMAGE                                                  01/27/86
==============================================================================

     INSTITUTE ID:  IB        SITE ID:  WA        EXPERIMENT NO.:   1

------------------------------------------------------------------------------
 DATE (dd/mm/yy):  07/12/83                PERCENT DAMAGE:      0

 PLOT(S): 99

 OBSERVATIONS:
 50% emergence - no visible signs of damage




==============================================================================
Press any key to continue...
```

Computer Sample Screen

```
FORM Q  --  CROP DAMAGE                                                  01/27/86
==============================================================================

     INSTITUTE ID:  IB        SITE ID:  WA        EXPERIMENT NO.:   1

------------------------------------------------------------------------------
 DATE (dd/mm/yy):  21/12/83                PERCENT DAMAGE:      0

 PLOT(S): 99

 OBSERVATIONS:
 very few weeds, borders slightly damaged by rose beetles




==============================================================================
Press any key to continue...
```

Computer Sample Screen

```
FORM Q  --  CROP DAMAGE                                              01/27/86
==============================================================================

     INSTITUTE ID:  IB        SITE ID:  WA        EXPERIMENT NO.:   1

------------------------------------------------------------------------------
 DATE (dd/mm/yy):  08/03/84                PERCENT DAMAGE:      0

 PLOT(S): 99

 OBSEVATIONS:
 very little rust noted, mites observed in plots




==============================================================================
Press any key to continue...
```

Computer Sample Screen

```
FORM Q  --  CROP DAMAGE                                              01/27/86
==============================================================================

     INSTITUTE ID:  IB        SITE ID:  WA        EXPERIMENT NO.:   1

------------------------------------------------------------------------------
 DATE (dd/mm/yy):  21/03/84                PERCENT DAMAGE:      1

 PLOT(S): 99

 OBSEVATIONS:
 slight infestation by mites




==============================================================================
Press any key to continue...
```

Computer Sample Screen

```
FORM R-1  --  PHENOLOGICAL GROWTH STAGE COMPONENTS                    01/27/86
==========================================================================

          INSTITUTE ID:  IB      SITE ID:  WA      EXPERIMENT NO.:   1

--------------------------------------------------------------------------
             DATE                                   GROWTH
           dd/mm/yy            PLOT(S)              STAGE
--------------------------------------------------------------------------
           07/12/83     99                            VE

           03/01/84      3   6   8  10  11           V6
                        12  19  21  24

           04/01/84      1   4   5   9  14           V6
                        16  17  18  22

           13/02/84      3  11  19                    R1

           14/02/84      6  10  24                    R1

==========================================================================
Press any key to continue...
```

Computer Sample Screen

```
FORM R-1  --  PHENOLOGICAL GROWTH STAGE COMPONENTS                    01/27/86
==========================================================================

          INSTITUTE ID:  IB      SITE ID:  WA      EXPERIMENT NO.:   1

--------------------------------------------------------------------------
             DATE                                   GROWTH
           dd/mm/yy            PLOT(S)              STAGE
--------------------------------------------------------------------------
           16/02/84      4  14  18                    R1

           17/02/84      8  12  21                    R1

           17/02/84      5   9  22                    R1

           19/02/84      1  16  17                    R1

           25/02/84      3  11  19                    R2

           27/02/84      4  14  18                    R2

==========================================================================
Press any key to continue...
```

Computer Sample Screen

```
FORM R-1  --  PHENOLOGICAL GROWTH STAGE COMPONENTS                    01/27/86
==========================================================================

          INSTITUTE ID:  IB       SITE ID:  WA       EXPERIMENT NO.:   1

--------------------------------------------------------------------------
             DATE                                        GROWTH
           dd/mm/yy              PLOT(S)                 STAGE
--------------------------------------------------------------------------
           11/04/84       3   6   8  10  11              R6
                         12  19  21  24

           13/04/84       5   9  22                      R6

           14/04/84       4  14  18                      R6

           17/04/84       1  16  17                      R6


==========================================================================
Press any key to continue...
```

Computer Sample Screen

```
FORM R-2  --  GROWTH ANALYSIS HARVEST AND FINAL YIELD COMPONENTS        01/27/86
==============================================================================

          INSTITUTE ID:  IB      SITE ID:  WA      EXPERIMENT NO.:   1

------------------------------------------------------------------------------
  DATE                GROWTH
dd/mm/yy    PLOT      STAGE      ---------------  CODE / AMT.  ---------------
------------------------------------------------------------------------------
15/05/84    1           R7    3/  694.0  5/  255.0

15/05/84    3           R7    3/ 1200.0  5/  744.0

15/05/84    4           R7    3/ 1309.0  5/  676.0

15/05/84    5           R7    3/  978.0  5/  479.0

15/05/84    6           R7    3/  898.0  5/  463.0

15/05/84    8           R7    3/  751.0  5/  319.0

==============================================================================
Press any key to continue...
```

Computer Sample Screen

```
FORM R-2  --  GROWTH ANALYSIS HARVEST AND FINAL YIELD COMPONENTS        01/27/86
==============================================================================

          INSTITUTE ID:  IB      SITE ID:  WA      EXPERIMENT NO.:   1

------------------------------------------------------------------------------
  DATE                GROWTH
dd/mm/yy    PLOT      STAGE      ---------------  CODE / AMT.  ---------------
------------------------------------------------------------------------------
15/05/84    9           R7    3/ 1264.0  5/  607.0

15/05/84   10           R7    3/ 1054.0  5/  567.0

15/05/84   11           R7    3/ 1316.0  5/  759.0

15/05/84   12           R7    3/  636.0  5/  243.0

15/05/84   14           R7    3/ 1322.0  5/  655.0

15/05/84   16           R7    3/  735.0  5/  275.0

==============================================================================
Press any key to continue...
```

Computer Sample Screen

```
FORM S  --  PLANT NUTRIENT CONCENTRATIONS                                  03/10/86
==============================================================================

          INSTITUTE ID:  IB      SITE ID:  WA      EXPERIMENT NO.:   1

------------------------------------------------------------------------------
                                  ----------  NUTRIENT CONCENTRATION  ------------
  DATE                  COMPONENT N
dd/mm/yy  PLOT(S)          CODE   (%)
------------------------------------------------------------------------------
15/05/84   1               15    0.94
15/05/84   3               15    1.54
15/05/84   4               15    1.57
15/05/84   5               15    1.01
15/05/84   6               15    1.01
15/05/84   8               15    0.95
15/05/84  10               15    0.93
15/05/84  11               15    1.55
15/05/84  12               15    0.86
15/05/84  14               15    1.46
15/05/84  16               15    0.86
==============================================================================
Press any key to continue...
```

Computer Sample Screen

```
FORM S  --  PLANT NUTRIENT CONCENTRATIONS                                  03/10/86
==============================================================================

          INSTITUTE ID:  IB      SITE ID:  WA      EXPERIMENT NO.:   1

------------------------------------------------------------------------------
                                  ----------  NUTRIENT CONCENTRATION  ------------
  DATE                  COMPONENT N
dd/mm/yy  PLOT(S)          CODE   (%)
------------------------------------------------------------------------------
15/05/84  17               15    0.98
15/05/84  18               15    1.52
15/05/84  19               15    1.54
15/05/84  21               15    0.92
15/05/84  22               15    1.00
15/05/84  24               15    1.06
15/05/84   9               15    0.93



==============================================================================
Press any key to continue...
```

APPENDIX 3
COMPUTER SAMPLE SCREENS OF WEATHER DATA FORMS

PREVIOUS PAGE BLANK

Computer Sample Screen

```
DAILY WEATHER -- DATA INPUT                                          03/18/86
==============================================================================

     Data Collected by:

          1) Metric System
          2) English System

     Select choice by number --> 1

     Unit of measure used for Solar Radiation:

          1) MJ/m2
          2) Cal/cm2

     Select choice by number --> 1

==============================================================================

     Is the above input correct? (Y/N)
```

Computer Sample Screen

```
DAILY WEATHER -- DATA INPUT                                          03/18/86
==============================================================================



          INSTITUTE ID:  IB

          WEATHER STATION ID:  WA

               STARTING DATE (dd/mm/yy):  17/11/83

                       OBSERVATION TIME: 0600 AM

==============================================================================

          Would you like to change the Observation Time?
```

Computer Sample Screen

```
FORM C-1 -- DAILY WEATHER (REQUIRED DATA)                                  03/18/86
==============================================================================

INSTITUTE ID:  IB                                WEATHER STATION ID:  WA
STARTING DATE: 17/11/83          TIME OF NORMAL WEATHER OBSERVATION:  0600 AM

---------------------------------  REQUIRED  -------------------------------
Date     *TMIN*TMAX*PRECIP.*SOL.RAD.          Date     *TMIN*TMAX*PRECIP.*SOL.RAD.
dd/mm/yy  (C)  (C)  (mm)   (MJ/m^2)          dd/mm/yy  (C)  (C)  (mm)   (MJ/m^2)
------------------------------------------------------------------------------
01/01/84 31.5 17.5     0      13.60           12/01/84 26.5 17.5     9      12.30
02/01/84 30.0 20.0     0      15.82           13/01/84 28.5 18.0     1      10.75
03/01/84 24.5 18.5     0      10.59           14/01/84 29.0 18.5     0      10.75
04/01/84 26.5 16.5     0      12.01           15/01/84 27.0 19.0     0      10.75
05/01/84 31.5 15.0     0      10.84           16/01/84 28.0 20.5     0      11.88
06/01/84 29.0 17.0     0      15.19           17/01/84 31.0 19.0     0      10.38
07/01/84 29.0 16.0     0      15.19           18/01/84 32.0 18.0     0       9.29
08/01/84 28.0 16.5     0      15.19           19/01/84 29.5 20.0     0      13.97
09/01/84 29.0 16.0     0      17.45           20/01/84 30.0 18.0     0      16.99
10/01/84 27.0 17.5     0       9.50           21/01/84 29.0 18.0     0      16.99
11/01/84 27.0 18.0     0      12.30           22/01/84 29.0 20.5     0      16.99
==============================================================================
Press any key to continue...
```

Computer Sample Screen

```
FORM C-1 -- DAILY WEATHER (REQUIRED DATA)                                  03/18/86
==============================================================================

INSTITUTE ID:  IB                                WEATHER STATION ID:  WA
STARTING DATE: 17/11/83          TIME OF NORMAL WEATHER OBSERVATION:  0600 AM

---------------------------------  REQUIRED  -------------------------------
Date     *TMIN*TMAX*PRECIP.*SOL.RAD.          Date     *TMIN*TMAX*PRECIP.*SOL.RAD.
dd/mm/yy  (C)  (C)  (mm)   (MJ/m^2)          dd/mm/yy  (C)  (C)  (mm)   (MJ/m^2)
------------------------------------------------------------------------------
```

ERRATA

The computer sample screen FORM C-1 of IBSNAT Technical Report 3 should be corrected by transposing the columns of temperature data so that larger values are under TMax, and smaller values under TMin. Computer sample screen FORM C-2 should be corrected by transposing the DryBulb over the lower temperature values and WetBulb over the higher values.

Computer Sample Screen

```
FORM C-1 -- DAILY WEATHER (REQUIRED DATA)                                  03/18/86
==========================================================================================

 INSTITUTE ID:    IB                                WEATHER STATION ID:  WA
 STARTING DATE:   17/11/83       TIME OF NORMAL WEATHER OBSERVATION:  0600 AM
------------------------------------------------------------------------------------

 Month:     1
 Year:     84

 COMMENTS:
Observer error - Thermometer not reset 29/01/84 - missing data



Press any key to continue...
==========================================================================================
```

Computer Sample Screen

FORM C-2 -- DAILY WEATHER (OPTIONAL DATA) 03/18/86

INSTITUTE ID: IB WEATHER STATION ID: WA
STARTING DATE: 17/11/83 TIME OF NORMAL WEATHER OBSERVATION: 0600 AM

OPTIONAL

Date dd/mm/yy	WetBulb (C)	DryBulb (C)	Windrun (km)	Date dd/mm/yy	WetBulb (C)	DryBulb (C)	Windrun (km)
01/01/84	21.0	26.0	4.84	12/01/84	19.0	21.5	4.43
02/01/84	19.5	21.0	4.46	13/01/84	-9.0	-9.0	-9.00
03/01/84	20.0	24.0	5.91	14/01/84	21.0	26.0	5.04
04/01/84	19.0	21.0	5.04	15/01/84	19.0	20.0	4.80
05/01/84	21.0	25.0	5.31	16/01/84	19.0	20.0	4.12
06/01/84	19.0	20.0	4.23	17/01/84	19.5	21.0	4.70
07/01/84	19.0	20.0	5.49	18/01/84	21.0	25.0	5.34
08/01/84	19.0	20.0	3.30	19/01/84	19.0	20.0	6.05
09/01/84	20.5	23.0	4.55	20/01/84	19.0	20.0	6.05
10/01/84	20.0	22.0	3.89	21/01/84	21.0	24.0	4.89
11/01/84	21.0	24.0	4.89	22/01/84	20.5	23.0	4.96

Press any key to continue...

Computer Sample Screen

FORM C-2 -- DAILY WEATHER (OPTIONAL DATA) 03/18/86

INSTITUTE ID: IB WEATHER STATION ID: WA
STARTING DATE: 17/11/83 TIME OF NORMAL WEATHER OBSERVATION: 0600 AM

OPTIONAL

Date dd/mm/yy	WetBulb (C)	DryBulb (C)	Windrun (km)	Date dd/mm/yy	WetBulb (C)	DryBulb (C)	Windrun (km)
23/01/84	20.0	22.0	4.39				
24/01/84	20.0	22.0	5.09				
25/01/84	21.0	24.0	4.62				
26/01/84	21.0	24.0	4.31				
27/01/84	20.0	24.0	4.72				
28/01/84	20.0	24.0	6.08				
29/01/84	20.5	23.0	5.94				
30/01/84	21.0	25.0	4.33				
31/01/84	21.0	24.0	4.55				

Press any key to continue...

Computer Sample Screen

```
FORM C-2 -- DAILY WEATHER (OPTIONAL DATA)                                03/18/86
==============================================================================

 INSTITUTE ID:    IB                          WEATHER STATION ID:  WA
 STARTING DATE:   17/11/83      TIME OF NORMAL WEATHER OBSERVATION:  0600 AM
------------------------------------------------------------------------------

 Month:     1
 Year:     84

 COMMENTS:
Missing Data - 13/01/84



Press any key to continue...
==============================================================================
```

Your Turn

If you have comments about ***DSSAT Level 1: User's Guide To Minimum Data Set Entry, Version 1.1****, please let us know by writing your ideas in the space below. If you include your name and address, we will reply to you.*

Please return this sheet to IBSNAT Project

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