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SOIL MOISTURE & TEMPERATURE REGIMES OF SOUTHERN INDIA

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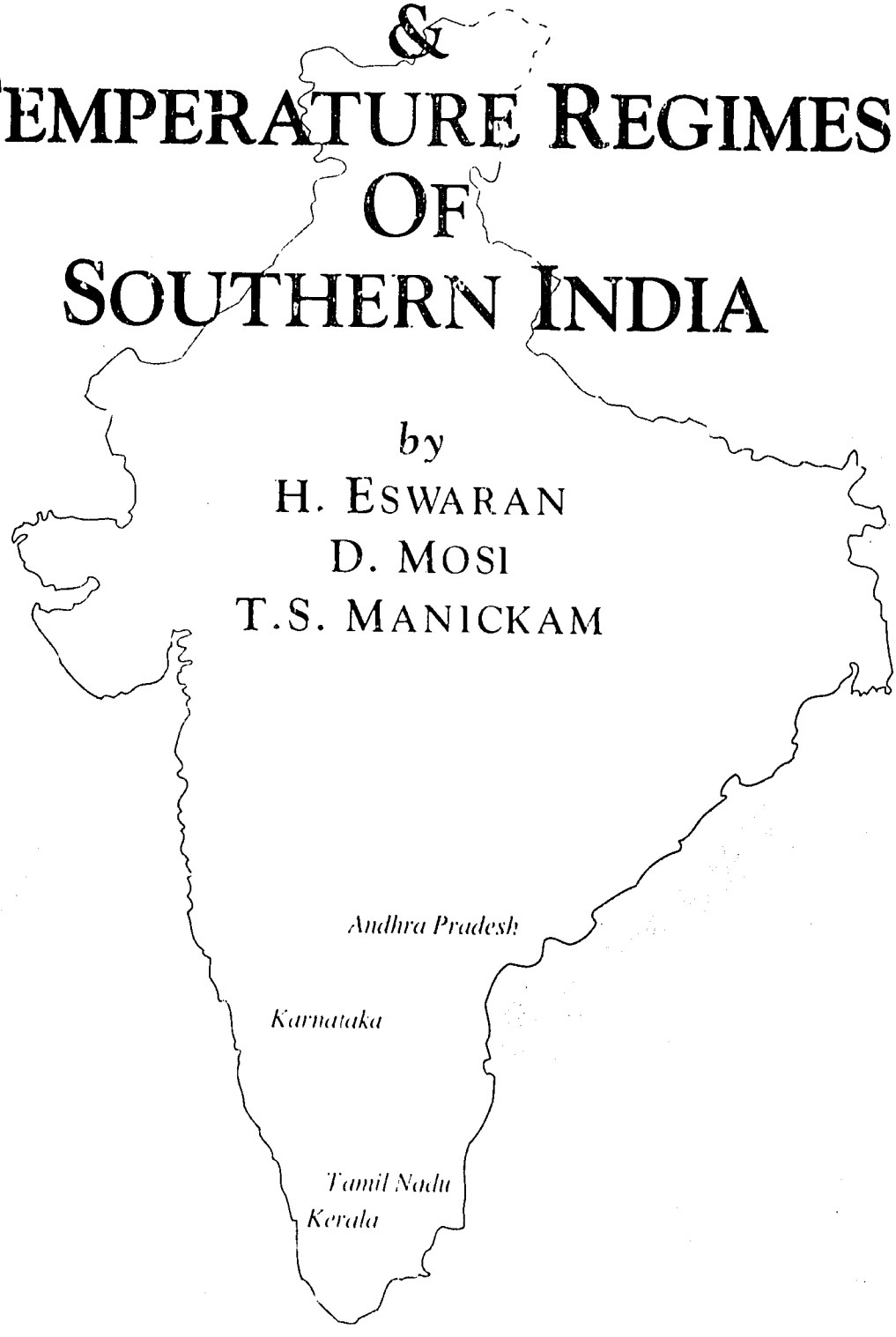

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Chapter 1

INTRODUCTION

SOIL TEMPERATURE AND MOISTURE ARE PROPERTIES of the soil which can be measured and quantified. These properties are however, not measured on a systematic basis as in the past, when more emphasis was given to atmospheric temperature and precipitation. This is one of the major limitations today and due to the absence of measured values, we have to rely on simulation models which are never as accurate as actual measurements. Agroclimatologists use models to predict and evaluate agroclimatic parameters. These models are one means of characterizing the agroenvironment. However, in these models, the soil is considered a constant with a water holding capacity of about 1 mm per 1 cm of soil. But soil plays a more important role than merely storing water, it is also a buffer, and even though the rains have ceased, the soil may contain sufficient moisture to permit crop growth, particularly for deep rooted crops.

It is not implied that agroclimatology has no function, but rather that pedoclimatology must be given greater emphasis. The soil moisture and temperature regimes (SMR and STR) permit an evaluation of the pedoclimate. It should be stressed that the information provided for Southern India is based on a simulation model. Though the model has been tested and is reliable, it is not a substitute for actual measurements and every soil survey organization must endeavor to make such measurements for their survey area. Monitoring of SMR and STR will also assist in improving the model.

The computation of soil climatic parameters and classification of soil moisture and temperature regimes are based on climatic data provided by the India Meteorological Department (1983). In some instances other sources of data are included and these are referred to separately. The climatological normals presented by the India Meteorological Department (1983) are based on records for the 30-year period between 1931 and 1960. A norm of a climatalogical element is the arithmetic mean computed over a time period spanning three consecutive decades. Homogeneity of instrument exposure and station location is assumed. If no exposure changes have occurred at a station, the norm is estimated by simply averaging the 30 values from the 1951–1980 record. Additional data is taken from Hargreaves et al. (1985) whose source is not indicated.

Soil moisture and temperature regimes are defined in *Soil Taxonomy* (1975) and recently, Van Wambeke (1981, 1982, 1985) has proposed subdivisions of the regimes. Chapters 2, 3, and 4, extracted from Van Wambeke (1985) explain the details of the procedure and the criteria employed. Chapter 5, explains the Newhall model and its modifications.

The soil moisture and temperature regimes were computed using a pc-based software developed by Van Wambeke and his colleagues at Cornell University. We wish to express our appreciation to them for providing us with this software.

Chapter 2

Soil Moisture Regimes

The definitions of the taxa in *Soil Taxonomy* (1975) include a number of soil climatic parameters which are used at different categorical levels.

The primary reason for using soil climates is that they are the causes of many other properties. Climate is one of the major pedogenic factors. Furthermore, some soil characteristics are only meaningful when they are considered in a limited area restricted to a defined soil climate; therefore it has a powerful differentiating effectiveness and climatic regimes are often more suitable than other properties for creating kingdoms within the classification system.

Another but no less important reason for the use of soil climatic data is to make the taxa meaningful for interpretation purposes by defining units in such a way that major soil limitations for plant growth are implied in the system.

A third advantage of introducing soil climate into the classification is that uniform, extensive geographic areas may be recognized on small scale maps. This facilitates the preparation of generalized soil maps that can be easily interpreted, particularly for crops which are climatically restricted to certain areas.

In spite of these reasons to introduce soil climatic properties into the system, many disadvantages exist. The difficulties are mainly operational and relate to the limited amount of information on climate usually available to soil surveyors. Field observations of soil temperature and moisture conditions are often lacking and many criteria for differentiating soil climatic regimes depend on seasonally changing variables which require observations for extended periods of time.

The lack of precision in the data on soil moisture regimes should not be a barrier to prevent existing information, although sketchy, from reaching users who must make decisions on land use. The purpose of using incomplete data is to reduce the risks of making errors, not to eliminate them completely. Information with known limitations may perhaps lead to better decisions than those made with no information at all. The objective of this study is to extract from climatic observations what is useful for predicting soil moisture regimes and to delineate the geographic areas where comparable soil climatic conditions may occur. One of the methods used to achieve this purpose is based on mathematical models which simulate the water movement in soils under changing weather.

2.1 CLASSES OF SOIL MOISTURE REGIMES

The following descriptions of the soil moisture regime classes are taken verbatim from *Soil Taxonomy* (1975).

"The moisture regimes are defined in terms of the groundwater level and in terms of the presence or absence of water held at a tension <15 bars in the moisture control section by periods of the year. It is assumed in the definitions that the soil supports whatever vegetation it is capable of supporting. In other words, it is in crops, grass, or native vegetation; it is not being fallowed to increase the amount of stored moisture, nor is it being irrigated by man. These cultural practices affect the soil moisture condition as long as they are continued.

It has been conventional to think in terms of three soil moisture regimes. In one, the soil is saturated. In another, the amount of water is enough to cause leaching and, in the third, no leaching occurs. In the leaching regime some water moves through the soil at some time during the year and moves on down to the moist substratum. In the nonleaching regime, water moves into the soil but is withdrawn by evapotranspiration, leaving precipitated carbonates and more soluble salts. Between these two regimes there is another possible one in which there is alternation from year to year; leaching occurs in some years but not in all. For consideration of the losses of soluble materials or their accumulation in ca, cs, or sa horizons, these concepts are adequate. For the understanding of biological processes, they leave much to be desired. A soil can be subject to leaching in the winter when it is too cold for optimum biologic activity, and it can be too dry in most of the summer for significant biologic activity. The result is a relatively wide carbon-nitrogen ratio.

The soil moisture regime, as the term is used here, refers to the presence or absence either of ground water or of water held at a tension <15 bars in the soil or in specific horizons by periods of the year. Water held at a tension of 15 bars or more is not available to keep most mesophytic plants alive. The availability of water is also affected by dissolved salts. A soil may be saturated with water that is too salty to be available to most plants, but it

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would seem better to call such a soil salty rather than dry. Consequently, we consider a horizon to be dry when the moisture tension is 15 bars or more. If water is held at a tension of <15 bars but more than zero, we consider the horizon to be moist. A soil may be continuously moist in some or all horizons throughout the year or for some part of the year. It may be moist in winter and dry in summer or the reverse. In the northern hemisphere, summer refers to the months of June, July, and August, and winter means December, January and February. A soil or a horizon is considered to be saturated with water when water stands in an unlined borehole close enough to the soil surface or to the horizon in question that the capillary fringe reaches the surface or the top of the horizon."

2.2 KEY TO SOIL MOISTURE REGIMES

All the moisture conditions in this key are assumed to occur at least six years out of ten. The aquic moisture regime is not included in the key.

1. The moisture control section is completely dry more than half of the time (cumulative) that the soil temperature is over 5 degrees C.

   true....2
   false...3

2. When the soil temperature is over 8 degrees C, the moisture control section is partly or completely moist for 90 consecutive days or more.

   true....3
   false: ARIDIC

3. The mean and annual soil temperature is less than 22 degrees C.

   true...4
   false...7

4. The difference between winter and summer[1] soil temperatures at 50 cm depth is equal or higher than 5 degrees C.

   true....5
   false...7

5. Within the four months that follow the summer solstice[2] the moisture control section is completely dry for at least 45 consecutive days.

   true....6
   false...7

6. Within the four months that follow the winter solstice the moisture control section is completely dry or partly dry for 90 cumulative days or more.

   true: XERIC
   false...7

7. The moisture control section is completely dry or partly dry for 90 cumulative days or more.

   true....4
   false...9

8. The soil temperature regime is warmer than cryic.

   true:USTIC
   false:UNDEFINED

9. The precipitation exceed evapotranspiration in all months.

   true:PERUDIC
   false:UDIC

2.3 AQUIC

Although the aquic moisture regime is not considered in this study, its definition in *Soil Taxonomy* (1975) is given below. "The aquic (L. *aqua*, water) moisture regime implies a reducing regime that is virtually free of dissolved oxygen because the soil is saturated by ground water or by water of the capillary fringe. An aquic regime must be a reducing one. Some soil horizons, at times, are saturated with water while dissolved oxygen is present, either because the water is moving or because the environment is unfavorable for microorganisms, for example, if the temperature is <1 degree C such a regime is not considered aquic."

2.4 ARIDIC AND TORRIC

"(L. *aridus*, dry, and L. *torridus*, hot and dry) These terms are used for the same moisture regime but in different categories of the taxonomy. In the aridic (torric) mois-

[1] *Winter or summer temperatures refer to averages of December, January, February or June, July, August.*

[2] *The four months period begins the first of the month after the solstice occurs.*

ture regime, the moisture control section in most years is

1. Dry in all parts more than half of the time (cumulative) that the soil temperature at a depth of 50 cm is above 5 degrees C; and

2. Never moist in some or all parts for as long as 90 consecutive days when the soil temperature at a depth of 50 cm is above 8 degrees C.

Soils that have an aridic or a torric moisture regime are normally in arid climates. A few are in semiarid climates and either have physical properties that keep them dry, such as a crusty surface that virtually precludes infiltration of water, or they are very shallow over bedrock. There is little or no leaching in these moisture regimes, and soluble salts accumulate in the soil if there is a source for them.

The limits of soil temperature exclude from these moisture regimes the very cold and dry regions of Greenland and adjacent islands. Such fragmentary data are available on the soils of those regions that no provision is made for their moisture regimes in this taxonomy."

2.5 UDIC

"The udic (L. *udus*, humid) moisture regime implies that in most years the soil moisture control section is not dry in any part for as long as 90 days (cumulative). If the mean annual soil temperature is lower than 22 degrees C and if the mean winter and mean summer soil temperatures at a depth of 50 cm differ by 5 degrees C or more, the soil moisture control section is not dry in all parts for as long as 45 consecutive days in the 4 months that follow the summer solstice in 6 or more years out of 10. In addition, the udic moisture regime requires, except for short periods, a three-phase system, solid-liquid gas, in part, but not necessarily in all, of the soil when the soil temperature is above 5 degrees C. The udic moisture regime is common to the soils of humid climates that have well-distributed rainfall or that have enough rain in summer that the amount of stored moisture plus rainfall is approximately equal to or exceeds the amount of evapotranspiration. Water moves down through the soil at some time in most years.

If precipitation exceeds evapotranspiration in all months of most years, there are occasional brief periods when some stored moisture is used, but the moisture tension rarely becomes as great as 1 bar in the soil moisture control section. The water moves through the soil in all months that it is not frozen. This extremely wet moisture regime is called perudic (L. *per*, throughout in time, L. *udus*, moist). The formative element "ud" is used in the names of most taxa to indicate either a udic or a perudic regime. The term perudic is not used in names of taxa, but is used in the text if it is relevant to the genesis of the soils. Note that on the monthly basis, the perudic regime shows a surplus every month of the year. Obviously, if calculations were made on a daily basis, there would be short periods of withdrawal."

2.6 USTIC

"The ustic (L. *ustus*, burnt, implying dryness) moisture regime is intermediate between the aridic and the udic regime. The concept is one of limited moisture, but the moisture is present at a time when conditions are suitable for plant growth. The ustic moisture regime is not applied to soils that have cryic or pergelic temperature regimes, which are defined later.

If the mean annual soil temperature is 22 degrees C or higher or if the mean summer and winter soil temperatures differ by <5 degrees C at a depth of 50 cm, the soil moisture control section in the ustic moisture regime is dry in some or all parts for 90 or more cumulative days in most years. But the moisture control section is moist in some part for more than 180 cumulative days, or it is continuously moist in some part for at least 90 consecutive days.

If the mean annual soil temperature is lower than 22 degrees C and if the mean summer and winter soil temperatures differ by <5 degrees C or more at a depth of 50 cm, the soil moisture control section in the ustic regime is dry in some or all parts for more than half the time that the soil temperature is higher than 5 degrees C at a depth of 50 cm (the aridic and torric regimes). Also, it is not dry in all parts for as long as 45 consecutive days in the 4 months that follow the summer solstice in 6 or more years out of 10 if the moisture control section is moist in all parts for 45 or more consecutive days in the 4 months that follow the summer solstice in 6 or more years out of 10 if the moisture control section is moist in all parts for 45 or more consecutive days in the 4 months that follow the winter solstice in 6 or more years out of 10 (xeric regime).

In tropical and subtropical regions that have either one or two dry seasons, summer and winter have little meaning. In those regions, the ustic regime is that typified in a monsoon climate that has at least one rainy season of 3 months or more. In temperate regions of subhumid or semiarid climates, the rainy seasons are usually spring and summer or spring and fall, but never winter. Native plants are mostly annuals or they have a dormant period while the soil is dry."

2.7 XERIC

"The xeric moisture regime (Gr. *xeros* dry) is that typified in Mediterranean climates, where winters are moist and cool and summers are warm and dry. The moisture, com-

ing in winter when potential evapotranspiration is at a minimum, is particularly effective for leaching. In a xeric moisture regime, the soil moisture control section is dry in all parts for 45 or more consecutive days within the 4 months that follow the summer solstice in 6 or more years out of 10. The moisture control section is moist in some part more than half the time, cumulative, that the soil temperature at a depth of 50 cm is higher than 5 degrees C, or in 6 or more years out of 10 it is moist in some part for at least 90 consecutive days when the soil temperature at a depth of 50 cm is continuously higher than 8 degrees C. In addition, the mean annual soil temperature is lower than 22 degrees C, and mean summer and mean winter soil temperatures differ by 5 degrees C or more at a depth of 50 cm or at a lithic or paralithic contact, whichever is shallower."

Chapter 3

Classes of Soil Temperature Regimes

The following soil temperature regimes are used in defining classes at various categorical levels in the taxonomy. All definitions are taken verbatim from *Soil Taxonomy* (1975).

Pergelic (L. *per*. throughout in time and space, and L. *gelare*, to freeze; connoting permanent frost). Soils with a pergelic temperature regime have a mean annual temperature lower than 0 degrees C. These are soils that have permafrost if they are moist, or dry frost if excess water is not present.

Cyric (Gr. *kryos*, coldness; connoting very cold soils). In this regime soils have a mean annual temperature higher than 0 degrees C (32 degrees F) but lower than 8 degrees C (47 degrees F).

1. In mineral soils, the mean summer temperature for June, July, and August in the northern hemisphere and December, January and February in the southern hemisphere at a depth of 50 cm or at a lithic or paralithic contact, whichever is shallower, is as follows:
   a) If the soil is not saturated with water during some part of the summer and 1) There is no O horizon, lower than 15 degrees C (59 degrees F); 2) There is an O horizon, lower than 8 degrees C (47 degrees F);
   b) If the soil is saturated with water during some part of the summer and 1) There is no O horizon, lower than 8 degrees C (47 degrees F).
2. In organic soils either:
   a) The soil is frozen in some layer within the control section in most years about 2 months after the summer solstice; that is, the soil is very cold in winter but warms up slightly in summer: or;
   b) The soil is not frozen in most years below a depth of 5 cm; that is, the soil is cold throughout the year but, because of marine influence, does not freeze in most years.

Cryic soils that have an aquic moisture regime commonly are churned by frost.

Frigid.— The frigid regime and some of the others that follow are chiefly in defining classes of soils in the low categories. In the frigid regime the soil is warmer in summer than the one in the cryic regime, but its mean annual temperature is lower than 8 degrees C (47 degrees F), and the difference between mean winter and mean summer soil temperature is more than 5 degrees C (9 degrees F) at a depth of 50 cm or at a lithic or paralithic contact, whichever is shallower.

Mesic.— The mean annual soil temperature is 8 degrees C or higher but lower than 15 degrees C (59 degrees F) and the difference between mean summer and mean winter soil temperature is more than 5 degrees C at a depth of 50 cm or at a lithic or paralithic contact, whichever is shallower.

Thermic.— The mean annual soil temperature is 15 degrees C (59 degrees F) or higher but lower than 22 degrees C (72 degrees F), and the difference between mean summer and mean winter soil temperature is more than 5 degrees C at a depth of 50 cm or at a lithic or paralithic contact, whichever is shallower.

Hyperthermic.— The mean annual soil temperature is 22 degrees C (72 degrees F) or higher, and the difference between mean summer and mean winter soil temperature is more than 5 degrees C at a depth of 50 cm or at a lithic or paralithic contact, whichever is shallower.

If the name of a soil temperature regime has the prefix "iso" the mean summer and winter soil temperature in June, July, and August and for December, January, and February differ by less than 5 degrees C at a depth of 50 cm or at a lithic or paralithic contact, whichever is shallower.

Isofrigid.— The mean annual soil temperature is lower than 8 degrees C (47 degrees F).

Isomesic.— The mean annual soil temperatures 8 degrees C or higher but lower than 15 degrees C (59 degrees F).

Isothermic.— The mean annual soil temperature is 15 degrees C or higher, but lower than 22 degrees C (72 degrees F).

Isohyperthermic.— The mean annual soil temperature is 22 degrees C or higher.

Chapter 4

Tentative Subdivision of Moisture Regimes

4.1 NEED FOR SUBDIVISIONS

Claims have been made that the five moisture regime classes recognized in *Soil Taxonomy* are not sufficiently uniform for interpretation purposes.

A tentative subdivision of moisture regimes was developed in 1976 and included in the Fortran computer program. A map showing the distribution of these subdivisions is attached. The map provides a means to examine new critical limits and test new definitions on the basis of possible correlations with vegetation or cropping areas.

The tentative key for the subdivision accepts without any changes the criteria used for defining the five highest level classes. No attempt has been made to change the present definitions of the five moisture regimes: aridic, xeric, ustic, udic, and perudic. The subdivisions, therefore, are to be evaluated keeping this restriction in mind. Perhaps better approaches to soil climatic regimes could be made if major modifications to *Soil Taxonomy* were considered.

The subdivisions have no official status in *Soil Taxonomy*. The names are not to be used as such to designate taxa, and each case should be examined separately, particularly when new subgroups are created.

The key leading to subdivisions of the existing moisture regimes is given on a tentative basis. The criteria that are used are assumed to occur in most years, that is, at least six out of ten.

The ustic moisture regime has been separated into two subclasses, depending on whether or not an iso-temperature regime is present. Thus, tropustic and tempustic regimes, respectively, are recognized. The tempustic and tropustic regimes are subdivided following different sets of criteria. In tempustic subclass the concentration of rainfall in summer or winter is taken into account, as well as the wetness of the seasons.

The udic moisture regime is separated into tempudic and tropudic only when the period of dryness in the moisture control section exceeds one month. All other udic regimes, except perudic, are called typic udic.

4.2 KEY TO TENTATIVE SUBDIVISION OF MOISTURE REGIMES

In this key, all climatic requirements are assumed to occur in most years (at least six out of ten).

KEY TO SUBDIVISION OF ARIDIC

1) Soils with aridic moisture regimes in which the moisture control section (MCS) is completely dry during the whole year:

EXTREME ARIDIC

2) Other soils with aridic moisture regimes in which the MCS is moist in some or all parts for 45 consecutive days or less during the period that the soil temperature at 50 cm depth is more than 8 degrees C:

TYPIC ARIDIC

3) Other soils with aridic moisture regimes.

WEAK ARIDIC

KEY TO SUBDIVISION OF XERIC

1) Soils with xeric moisture regimes in which the MCS is dry in all parts for more than 90 consecutive days during the four months following the summer solstice:

DRY XERIC

2) Other soils with xeric moisture regimes:

TYPIC XERIC

KEY TO SUBDIVISION OF USTIC

1) Soils with an ustic moisture regime and an iso-temperature regime in which the number of consecutive days that the MCS is completely or partly moist when the soil temperature at 50 cm depth is more than 8 degrees C, is as follows:
   a) less than 180 days:

ARIDIC TROPUSTIC

   b) 180 or more but less than 270 days:

TYPIC TROPUSTIC

   c) 270 or more days:

UDIC TROPUSTIC

2) Other soils with an ustic moisture regime and without an iso-temperature regime:
   a) soils in which the MCS is dry in all parts for

more than 45 consecutive days during 4 months following the summer solstice, *and* where the MCS is moist in all parts for more than 45 consecutive days during 4 months following the winter solstice.

XERIC TEMPUSTIC

b) other soils where the MCS is moist in all parts for more than 45 consecutive days during 4 months following the winter solstice, *and* where the MCS is not completely dry for more than 45 consecutive days during 4 months following the summer solstice:

WET TEMPUSTIC

c) other soils:

TYPIC TEMPUSTIC

KEY TO SUBDIVISION OF UDIC

1) Soils with a udic moisture regime in which the MCS is dry in some or all parts for less than 30 cumulative days:

TYPIC UDIC

2) Other soils with a udic moisture regime in which the MCS is dry in some or all parts for 30 or more days:
   a) with an iso-temperature regime:

DRY TROPUDIC

   b) without an iso-temperature regime:

DRY TEMPUDIC

BRIEF DESCRIPTION OF SUBDIVISONS

4.3.1 Aridic Tropustic

The aridic tropustic regime is an ustic moisture regime in which there is acute moisture stress lasting several months. For practically all Asian stations recorded in this study, the time that the moisture control section is completely dry varies between 3 and 9 months. The season when water is available in the moisture control section lasts from 3 to 6 months. Crops can be grown without irrigation.

The temperature regimes in Asia in this moisture range are mainly isohyperthermic.

Examples of stations in the isohyperthermic region which belong to this moisture regime are Yamethin (Burma), Coimbatore, Mysore, Sholapur (India) and Tak (Thailand).

4.3.2 Dry Tempudic

This is a udic moisture regime with at least nine months in one year that the moisture control section is completely moist. However, there is a minimum of one month that the moisture control section is dry in some parts.

The dry tempudic moisture regimes have a seasonal temperature variation exceeding 5 degrees C in the soil at 50 cm depth.

Stations which belong to this subdivision are Myitkyina (Burma), Jessore (Bangladesh).

4.3.3 Dry Tropudic

The soils with this soil moisture regime have at least 9 months in one year that the moisture control section is completely moist. However at least one month has some dryness; some soils dry out completely in the control section.

In soils with a dry tropudic moisture regime the difference between winter and summer soil temperatures at 50 cm depth is less than 5 degrees C. The stations recorded in Asia are either isohyperthermic, isothermic or isomesic.

According to the results of calculations for Asia, the moisture control section never dries out completely during the four months following the summer solstice. In isohyperthermic regimes there is almost always some moisture in the control section for approximately 10 consecutive months.

Stations in the isohyperthermic region which belong to this class are Chittagong (Bangladesh), Chiangrai (Thailand).

4.3.4 Dry Xeric

These are soils with wet winters and dry summers.

The dry xeric moisture regime is a xeric moisture regime in which the moisture control section is dry in all parts for more than 3 months during summer.

The stations included in this study have a thermic or a mesic temperature regime. The maximum number of consecutive days that the moisture control section has some available moisture when the soil temperature is above 8 degrees C varies from 90 to 103 when the temperature regime is mesic. In thermic soils this number varies from 94 to 269.

The following stations are examples: Kabul (Afghanistan), Chiraz (Iran), Tel-Aviv, Haif, Jerusalem (Israel), Amman Airport (Jordan), Aleppo, Damascus, Homs (Syria).

4.3.5 Extreme Aridic

The extreme aridic moisture regime is an aridic moisture regime in which the moisture control section is always

completely dry.

No cultivation is possible without irrigation.

Examples of soils with this moisture regime occur in Jeddah, Kuwait Airport, Medina, Riyadh on the Arab Peninsula, Al Hudaydah in the Yemen Arab Republic, Aden in South Yemen.

4.3.6 Perudic

The perudic moisture regime is a moisture regime defined by properties of the atmospheric climate. For each month the rainfall exceeds the potential evapotranspiration. When considered on a monthly basis the moisture control section is always completely moist and crops should not suffer at any time from drought. This does not mean, however, that short periods of moisture stress may not occur in the surface layers of the soil.

Bogor (Indonesia), Singapore, Ratnapura (Sri Lanka), Kuantan (Malaysia) are examples of the perudic moisture regimes.

4.3.7 Typic Aridic

The typic aridic moisture regime is an aridic moisture regime in which there are no more than 45 consecutive days in one year that there is some moisture in the control section when the soil temperature at 50 cm depth is more than 8 degrees C.

The stations grouped in this class in Asia seldom have moisture for more than one month when the temperature is high enough for crop growth. Cultivation is not possible without irrigation in soils with typic aridic moisture regimes.

Jodhpur (India), Karachi, Lahore (Pakistan), Taizz (Yemen Arab Republic), are examples of stations with soils having a typic aridic moisture regime.

4.3.8 Typic Tempustic

The typic tempustic moisture regime by definition has marked seasonal variations both in temperature and moisture. Almost all stations recorded in this study have an hyperthermic temperature regime, with summer soil temperatures above 29 degrees C and winter soil temperature not below 17. Soil temperatures never drop below 8 degrees C.

In India and Bangladesh no records indicate that the moisture control section is completely dry for more than 20 days from July to October. Summer rainfall during the monsoon characterizes this moisture regime. This is not the case for the few stations located elsewhere close to desert areas, for example in Iran and Iraq.

Dacca (Bangladesh), Mandalay (Burma), Calcutta, Jaipur, Bhopa, New Dehli (India) are examples of stations which belong to this moisture regime.

4.3.9 Typic Tropustic

The soils with a tropustic moisture regime are dry in some or in all parts for more than 3 months during one year. The rainy season is long enough to grow a crop without supplemental irrigation. In soils with a typic tropustic moisture regime the time that the moisture control section is completely or partly moist without interruption, and the soil temperature is more than 8 degrees C, varies between 6 and 9 months.

The seasonal variation in soil temperature at 50 cm depth does not exceed 5 degrees C. Almost all stations are isohyperthermic.

Stations which have soils with a typic tropustic moisture regime are Rangoon (Burma), Bombay, Hyderabad, Nagpur (India), Bangkok, Khon Kaen (Thailand). Soils with a isothermic temperature regime are found around Sanaa (Yemen Arab Republic).

4.3.10 Typic Udic

The moisture control section in soils with a typic udic moisture regime is moist in all parts for at least 11 months in one year. The moisture control section does not dry out completely. This regime differs from the perudic regime because there is at least one month during which the evapotranspiration is higher than the precipitation.

Typic udic moisture regimes may have both iso- and non-iso- temperature regimes. The following stations are mentioned in non-iso areas: HongKong, Hanoi (Vietnam), Darjeeling (India), Kathmandu (Nepal). For regions with soils having an iso-temperature regime: Bandung (Indonesia), Kuala-Lumpur (Malaysia), Colombo (Sri Lanka) are examples.

4.3.11 Typic Xeric

Soils with a typic xeric moisture regime are those soils in which the moisture control section is completely moist during more than 45 consecutive days during the four months following the winter solstice. The moisture control section dries out completely between 45 and 90 days in the summer.

The soil temperature regimes vary from cryic to thermic.

Typical stations are Les Cedres (Lebanon), and Sivas (Turkey).

4.3.12 Udic Tropustic

In this regime, the moisture control section is dry in some or in all parts for more than 90 cumulative days. The number of consecutive days that there is available water in the moisture control section is 270 or more.

The difference between the summer and winter soil temperatures at 50 cm depth is less than 5 degrees C.

Stations which belong to this regime are Phnom-Penh (Cambodia), Manila (Philippines), Djakarta (Indonesia), Vientiane (Laos), Chaiang Mai (Thailand), Ho Chi Minh (Vietnam).

4.3.13 Weak Aridic

The soils with weak aridic moisture regimes are moist in some or in all parts of the moisture control section for more than 45 consecutive days during the time that the soil temperature at 50 cm depth is more than 8 degrees C. By the definition of aridic, however, the maximum length of time that some water is available in the moisture control section is less than 3 months.

In some years some crops may be grown without supplemental irrigation primarily in areas of temperature regimes cooler than hyperthermic and isohyperthermic. However, rainfall is very erratic and irrigation is usually required to minimize the risks of failure.

Isfahan, Yazd (Iran), Herat (Afghanistan), Basrah (Iraq), Deir Essor (Syria) are stations where soils with weak aridic regimes occur.

4.3.14 Wet Tempustic

The wet tempustic moisture regime is found in Asia in soils with a mesic, thermic and hyperthermic temperature regimes. The seasonal variation of soil temperature between winter and summer is larger than 5 degrees C. Soils with wet tempustic moisture regimes suffer from moisture stress in the moisture control section for more than 90 cumulative days, but they do not dry out completely during the four months following the summer solstice for more than 45 days in the four months following the winter solstice. The conditions are such that some leaching of salts should occur during the winter.

Erzurum, Samsun (Turkey), Rawalpindi (Pakistan) are examples of locations with soils having a wet tempustic moisture regime.

4.3.15 Xeric Tempustic

The xeric tempustic moisture regime is a moisture regime that has all the characteristics of a xeric moisture regime except for the hyperthermic temperature regime which is too high for xeric.

The stations identified in this study with xeric tempustic moisture regimes are located in Ahwaz (Iran), Kirkuk (Iraq), Beruit (Lebanon), Tartous (Syria). The moisture conditions are very similar to the dry xeric conditions.

Chapter 5

THE NEWHALL SIMULATION MODEL

5.1 PRELIMINARY ASSUMPTIONS

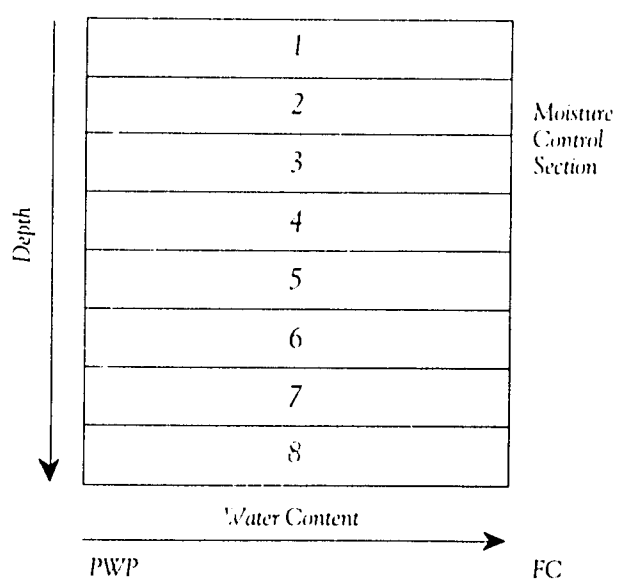
5.1.1 The Soil Moisture Profile

The soil moisture profile considered by the model extends from the surface down to the depth of an available water holding capacity (AWC) of 200 mm (8 inches).

The profile is divided into 8 layers with each retaining 25 mm of available water; the second and the third layer form the moisture control section (Fig. 5). It is defined as the layer having an upper boundary at the depth to which a dry (tension of more than 1500 kPa) but not air dry soil will be moistened by 25 mm of water moving downward from the surface within 24 hours. The lower boundary is the depth to which a dry soil will be moistened by 75 mm of water moving downward from the surface within 48 hours.

Figure 5.1 represents a soil. The vertical axis indicates the depth of the eight layers, and the horizontal axis scales the percentages of available water present in each of them. The tension at which water is held in the profile decreases from left (permanent wilting point, PWP) to right (field capacity FC). Each layer can be divided into eight slots to form an eight by eight square matrix of 64 slots, which is designated as the soil moisture diagram shown in Table 5.1. Each slot can be filled with a value corresponding to an amount of water which can vary between 0 and 1/64th part of the total available water holding capacity, or 3.125 mm.

Figure 5.1
The Soil Moisture Profile



5.1.2 Water Uptake and Water Removal

The model simulates the **downward movement of moisture** into the soil as the progression of a wetting front; it is further referred to as **accretion**. The distance that the wetting front moves downward depends on the amount of water needed to bring all the soil above it to field capacity.

When the wetting front reaches the bottom of the profile and all the soil above is at field capacity, the excess water is lost either by percolation or by runoff.

The rate of removal of water out of the soil, or **depletion** depends on the energy available for moisture extraction, expressed in terms of **potential evapotranspiration (PE)**, which acts on the soil and the plants growing in the soil. The energy required to remove moisture from the soil depends on the amount of water (AW) present and the force exerted by the soil to retain it. Water is removed more readily when the soil water is at low tensions than when the water content in the profile is at a minimum.

Less energy is used by the model to remove water from the upper layers of a soil than from the lower layers. The **depth** at which moisture is located in the profile influences the time needed to extract it from the soil; this is

Table 5.1
Soil Moisture Diagram & Slot Sequence During Accretion

01	02	03	04	05	06	07	08
09	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56
57	58	59	60	61	62	63	64

also in line with the fact that roots are more abundant near the surface than in deeper layers.

Depletion continues until the soil is at wilting point, that is when the soil moisture tension is 1500 kPa. The amount of water held in the soil is assumed not to be reduced below the amount held at 1500 kPa.

5.1.3 The Climatic Factors

The distribution of rainfall—The monthly precipitation (MP) is assumed to be distributed within each month according to the following sequence:

a) One half of the monthly precipitation (HP for **heavy precipitation** falls during one storm in the middle of the month; this moisture enters the soil immediately without losses, except when the available water capacity is exceeded.

b) One half of the monthly precipitation (LP for **light precipitation**) occurs in several light falls, and is partly lost by evapotranspiration before it can enter the soil; it can only infiltrate into the soil when LP exceeds the potential evapotranspiration.

The **potential evapotranspiration** (PE) is assumed to be uniformly distributed during each month. Not all its energy is used to extract water from the soil. A part is used to dissipate as much light precipitation as possible before it reaches the soil. If there is surplus energy, it is used for water extraction from the profile.

5.2 THE TIME-STEP PROGRESSION OF THE MODEL

Each month, all of which have 30 days, is divided into three parts. The first is a 15-day period of light precipitation (LP), the second is the heavy rainfall (HP) which occurs at midnight between the 15th and 16th of the month, and the third corresponds to another fortnight of light precipitation.

For each of these events water is either added to the soil or extracted from it. At the completion of each step, the *moisture condition* of the soil is determined, and if it changed, the model computes the number of days that each condition prevailed in the moisture control section.

The **starting** soil moisture condition of the profile is determined by running the simulation program for a number of consecutive iterations using the same input each year until the moisture content for December 30th does not differ by more than one hundredth of the content found at the same date in the immediately preceding iteration. The program then starts the diagnostic processing of monthly data with an initial amount of diagnostic processing of monthly data with an initial amount of water in each slot equal to the one found on December 30th.

When all months are processed the soil moisture conditions for each day are combined into the **moisture condition calender** which forms the data base for the determination of the soil moisture regime according to the definitions of *Soil Taxonomy*.

5.2.1 Processing Sequence During One Year

Each half-month interval is processed using the following inputs: monthly precipitation (MP) and monthly potential evapotranspiration (PE). The steps are as follow:

a) compute light precipitation (LP), where

$$LP = MP/2$$

b) compute the net potential evapotranspiration (NPE):

$$NPE = (LP-PE)/2$$

if NPE>0, accertion will take place during the period being processed; if NPE <0, the profile will be depleted.

All heavy precipitations in the middle of each month are processed using the following inputs:

a) compute heavy precipitation (HP), where

$$HP = MP/2$$

b) enter this amount in the profile as accretion.

5.2.2 Changes in Water Content During Each Period

5.2.2.1 Accretion

To simulate the additions of moisture to the profile, water is entered in the soil in each non-full slot following a specific order as shown in the soil moisture diagram of Table 5.1.

The sequence starts with the left slot in the top row. Water is added to each successive slot in a row until the row is filled, or until the water supply is exhausted; when a layer of slots is filled the program proceeds with the immediately underlying layer, starting again with the left side of the moisture diagram.

By following the specified order and withholding the accretion of moisture into one layer until the layer above is completely filled, the arithmetic model approximates a downward advancing wetting front.

5.2.2.2 Depletion

In simulating the extraction of water from the profile, the slots are processed in a different order. The sequence starts with the top right-handed slot and scans the slots in successive right-downward diagonals (Table 5.2).

During the sequence each slot is examined, and if water is present, it is removed from it. The depletion stops when the potential evapotranspiration, or the energy it represents for the period being processed, is exhausted.

The rate of depletion is inversely proportional to the tension under which the water is held. It also varies with

Table 5.2
Sequence of Slots During Depletion

29	22	16	11	07	04	02	01
37	30	23	17	12	08	05	03
44	38	31	24	18	13	09	06
50	45	39	32	25	19	14	10
55	51	46	40	33	26	20	15
59	56	52	47	41	34	27	21
62	60	57	53	48	42	35	28
64	63	61	58	54	49	43	36

the depth of the layer. Both factors are taken into account in the calculations by means of the *depletion requirement diagram* which indicates the value by which a unit of energy (expressed as evapotranspiration) has to be multiplied to extract one unit of water from the soil. This matrix of values is given in Table 5.3.

The processing continues until the entire evapotranspiration potential has been used, or until all slots have been set to zero. In the latter case any remaining depletion amount is not carried forward but is discarded.

5.2.2.3 Definitions of Soil Moisture Conditions

Soil Taxonomy recognizes three soil moisture conditions. They are diagnostic for compiling the moisture regime of a pedon, and are evaluated in the moisture control section.

a) The moisture control section is *dry in all parts*. It is also called *completely dry*.

The Newhall model accepts this conditions when the leftmost slots numbered 09,17, and 25 in Table 5.1 are all empty.

b) The moisture control section is moist in all parts, or **completely moist**.

The Newhall model considers this condition only when the moisture control section does not fulfill the requirements for a) nor b) when it is either **dry in some parts** or **moist in some parts**. It is also called **partly dry or partly moist**

The Newhall model uses slot 25 which is located outside the moisture control section (MCS) to determine the soil moisture condition. In an accretion step this slot signals that the MCS is completely filled. In a depletion sequence it increases the amount of water to be extracted from the soil before a change to the completely dry condition is recorded. The inclusion of slot 25, and the diagonal extraction pattern, compensate in part for the fact that the model ignores all upward movements of water in the soil which in reality participates in the moisture supply to the MCS.

Table 5.3
Depletion Requirement Diagram

1.65	1.40	1.23	1.13	1.05	1.00	1.00	1.00
2.07	1.69	1.43	1.26	1.15	1.07	1.02	1.00
2.68	2.14	1.74	1.46	1.28	1.17	1.09	1.00
3.58	2.80	2.22	1.78	1.49	1.31	1.19	1.11
4.98	3.80	2.93	2.30	1.84	1.53	1.34	1.21
5.00	5.00	4.03	3.07	2.38	1.89	1.57	1.37
5.00	5.00	5.00	4.31	3.22	2.47	1.95	1.61
5.00	5.00	5.00	5.00	4.62	3.39	2.57	2.01

5.2.3 Number of Days of Moisture Conditions in Each Period

If the moisture condition changes during a period of light precipitation, the relative durations of each moisture condition is computed. The following equations are used:

$$DX = 15 * RPEX/NPE$$

where DX is the duration in days of condition X, and RPEX is the amount of potential evapotranspiration needed to change this condition into the next one (for example from completely moist to partly moist). NPE is the potential evapotranspiration which was available during the half-month is calculated by difference, or

$$DE = 15 - DX - DX2$$

where DE is the duration of the soil moisture condition which ends the half-month, and where DX and DX2 are the durations of the preceding conditions.

The same equations are used when the conditions change from dry conditions into more humid conditions. In this case rainfall instead of evapotranspiration is used to compute the number of days.

5.2.4 Changes in Soil Temperature

The beginning and ending dates of the time when the soil temperature is above or below a given critical value, i.e., 5 or 8 degrees C, is approximated from the sequence of mean monthly temperatures.

The onset of a period when the soil temperature rises above a critical level is obtained by linear interpolation between the 15th of each month; 21 days are then added to this date to compensate for the time lag between air and soil temperature.

The date at which the soil temperature falls below a critical level is calculated following a similar process, except that ten days are added to the result.

5.3 DETERMINATION OF THE MOISTURE AND TEMPERATURE REGIMES

The computer model developed for this study processes for each station the climatic record of one average year, which only provides input for 12 months. For the calculations of periods of soil conditions extending across calendar years, the model attaches an identical second year to the input.

The two-year calendars are then scanned and the number of consecutive or cumulative days during which given soil climatic conditions prevail are calculated. These are included in the output, and listed in the tables.

Chapter 6

Discussion

In the tables listed in Appendix I, the SMR data is presented. Several SMR classes are present in Southern India and Table 1 groups the stations according to similar SMR's. For most practical purposes, these are homologous classes and if the area representing the stations have similar soils, the information could be used to recommend farming systems. The driest area in the region is around Bellary with three stations reporting as typic aridic SMR. Previous studies of the climate of this part of Karnataka have remarked it as being different from the rest but did not express its extreme dryness. The SMR data indicate that there is no period during the year when the soil is moist. The precipitation received is only sufficient to partly moisten the soil moisture control section.

There are many stations which have a weak aridic SMR. This was also not anticipated though the region in the central part of Southern India was expected to be dry. The south eastern coast of Tamil Nadu is also very dry, lying in the rain shadow of Sri Lanka. These large areas with aridic SMR imply the need for extensive irrigation in order to promote successful agriculture. The farming systems will also be distinctly different from the ustic SMR areas.

Information on the SMR and STR is vital for soil survey and soil classification. Traditionally, the soils in the whole of southern India have been considered as ustic and the present study shows that this is not completely valid. To support soil surveys, more climatic stations must be evaluated, and the SMR must be monitored at benchmark locations.

Figures 1 and 2, illustrate the water balance for two sites. Figure 1 is for Madras, using data for an Alfisol, and Figure 2, is for a Vertisol near Kovilpatti, Tamil Nadu. In Madras the SMR (Fig. 3) shows that the soil moisture control section is moist from September to March; however, there is sufficient moisture in the soil from mid-June for planting. Rainfed agriculture can be successfully practiced and is practiced here. Kovilpatti, also in Tamil Nadu and located south of Madras, has a totally different moisture picture (Fig. 4). The growing season is only about two months in November and December; the residual moisture in January is usually insufficient for a successful crop. In this area, the probability of crop failure due to drought is around seven out of ten years. Supplementary irrigation is crucial to assure a harvest.

Figures 5 and 6, are illustrations of other stations. In each, the period when the moisture control section is moist gives the reliable growing period for the area. The length of this period and the amount of rainfall received during the period determines if one or two crops may be obtained. The total precipitation in comparison to storage and evapotranspiration losses is also a relevant parameter. If the surplus is excessive and lasts for a significant period, special soil management techniques are needed. For example, grass furrow would be needed to drain away the excess water to reduce erosion. If during the moist period there is no or little surplus water or if the moist period is short, an important practice is soil water conservation. Bunding of the field to enable the rain to percolate the soil is essential.

These SMR evaluations are very valuable tools to determine not only the choice of farming systems but also the selection of cultivars for the area. The SMR's presented in this report are based on 30-year average rainfall and temperature data. Particularly in transitional areas, there may be years when the SMR is drier or moister than other years. This is illustrated with the data for Hyderabad for which data from 1894 to 1960 were computed. Figure 7, shows the average soil moisture status for Hyderabad. The growing season starts in mid-June and ends in early January. Figure 8 shows the soil moisture status yearly from 1900 to 1960. The fluctuations in SMR are very evident. In the 60 years, the SMR was aridic in only seven years, the remaining years being consistently ustic. On a probability basis, the SMR for the Hyderabad area is ustic but for practical management considerations, one must be aware of the possible variability. Figures 9 and 10, are included to illustrate what happens when data is averaged. Figure 9 shows the soil moisture status when data for five years is averaged and, Figure 10, when ten years of data is averaged. The 1960 to recent data was not readily available to the authors. With about 100 years data, trend analysis can be performed and such statistical analysis is useful for general predictions.

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Appendix I

NAME OF STATIONS AND TEMPERATURE REGIMES

NAME OF STATION	TEMPERATURE REGIME
a. TYPIC ARIDIC	
2. Karnataka	
Bellary	Isohyperthermic
Hubli	Isohyperthermic
Kotturu	Isohyperthermic
b. WEAK ARIDIC	
1. Andhra Pradesh	
Anantapur	Isohyperthermic
Cuddapah	Isohyperthermic
Cumbum	Isohyperthermic
Kadiri	Isohyperthermic
Kurnool	Isohyperthermic
Nagaram	Isohyperthermic
Rentachintala	Isohyperthermic
2. Karnataka	
Bagalkot	Isohyperthermic
Bijapur	Isohyperthermic
Haveri	Isohyperthermic
Ilkal	Isohyperthermic
Yadgir	Isohyperthermic
4. Tamil Nadu	
Aruppukottai	Isohyperthermic
Kovilpatti	Isohyperthermic
Paramakudi	Isohyperthermic
c. ARIDIC TROPUSTIC	
1. Andhra Pradesh	
Adoni	Isohyperthermic
Arogyavaram	Isohyperthermic
Bhongir	Isohyperthermic
Gannavaram	Isohyperthermic
Hindupur	Isohyperthermic
Hyderabad	Isohyperthermic
Kavali	Isohyperthermic
Nalgonda	Isohyperthermic
Nandyal	Isohyperthermic
Nellore	Isohyperthermic
Ongole	Isohyperthermic
Polavaram	Isohyperthermic
Srikakulam	Isohyperthermic
Tandur	Isohyperthermic
Udayagiri	Isohyperthermic
2. Karnataka	
Chitradurga	Isohyperthermic
Gadag	Isohyperthermic

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Gulbarga	Isohyperthermic
Raichur	Isohyperthermic
Sira	Isohyperthermic

4. Tamil Nadu

Coimbatore	Isohyperthermic
Dharmapuri	Isohyperthermic
Erode	Isohyperthermic
Kallakkurichi	Isohyperthermic
Madurai	Isohyperthermic
Nagapattanam	Isohyperthermic
Nagercoil	Isohyperthermic
Palayamkottai	Isohyperthermic
Pamban	Isohyperthermic
Periyakulam	Isohyperthermic
Pudukkotai	Isohyperthermic
Salem	Isohyperthermic
Tenkasi	Isohyperthermic
Tiruchirapalli	Isohyperthermic
Tiruppattur	Isohyperthermic
Vellore	Isohyperthermic
Vilathikulam	Isohyperthermic

d. TYPIC TROPUSTIC

1. Andhra Pradesh

Adilabad	Isohyperthermic
Begampet	Isohyperthermic
Hanamkonda	Isohyperthermic
Jagtial	Isohyperthermic
Kakinada	Isohyperthermic
Kalahasti	Isohyperthermic
Kalingapatnam	Isohyperthermic
Khamnam	Isohyperthermic
Konta	Isohyperthermic
Mahbubnagar	Isohyperthermic
Masulipatam	Isohyperthermic
Medak	Isohyperthermic
Nirmal	Isohyperthermic
Nizambad	Isohyperthermic
Ramagundam	Isohyperthermic

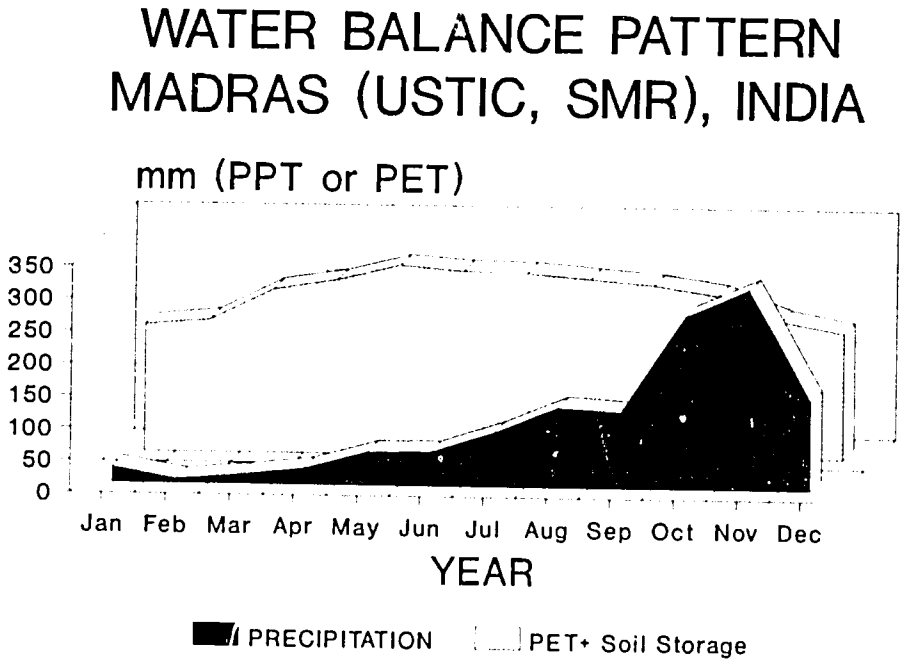
2. Karnataka

Bangalore	Isohyperthermic
Bidar	Isohyperthermic
Channapatna	Isohyperthermic
Coondapoor	Isohyperthermic
Honavar	Isohyperthermic
Karwar	Isohyperthermic
Kolar	Isohyperthermic
Mangalore	Isohyperthermic
Mysore	Isohyperthermic
Shimoga	Isohyperthermic
Vengurla	Isohyperthermic

3. Kerala	
Cannanore	Isohyperthermic
Palghat	Isohyperthermic
Ponnani	Isohyperthermic
4. Tamil Nadu	
Chingleput	Isohyperthermic
Cuddalore	Isohyperthermic
Madras	Isohyperthermic
Tiruvannamalai	Isohyperthermic
e. UDIC TROPUSTIC	
1. Andhra Pradesh	
Salur	Isohyperthermic
2. Karnataka	
Balehonnur	Isohyperthermic
Belgaum	Isohyperthermic
Hassan	Isohyperthermic
3. Kerala	
Alleppey	Isohyperthermic
Calicut	Isohyperthermic
Cochin	Isohyperthermic
Quilon	Isohyperthermic
Trivandrum	Isohyperthermic
f. DRY TROPUDIC	
2. Karnataka	
Mercara	Isohyperthermic
g. TYPIC UDIC	
4. Tamil Nadu	
Coonoor	Isothermic
Kodaikanal	Isothermic
Otacamund	Isothermic

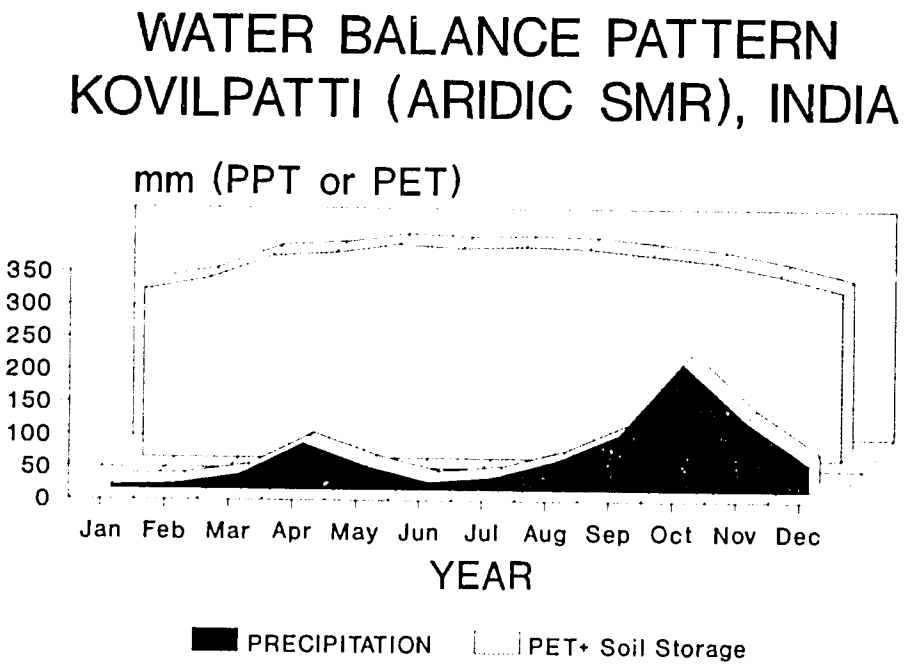
Table 1. Stations with iso-SMRs

Figure 1



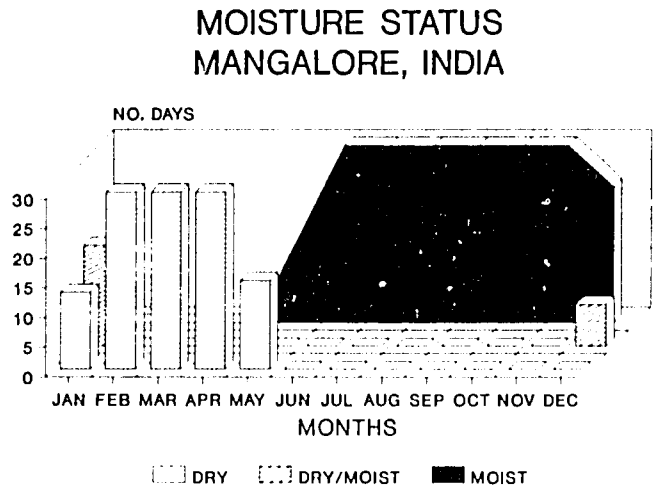
ALFISOLS

Figure 2

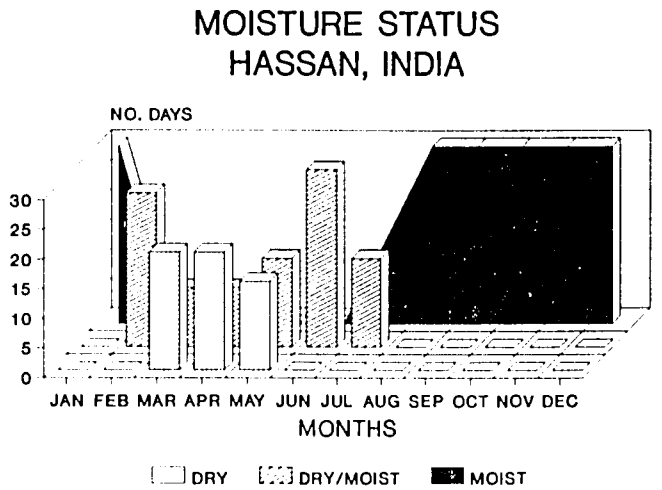


VERTISOLS

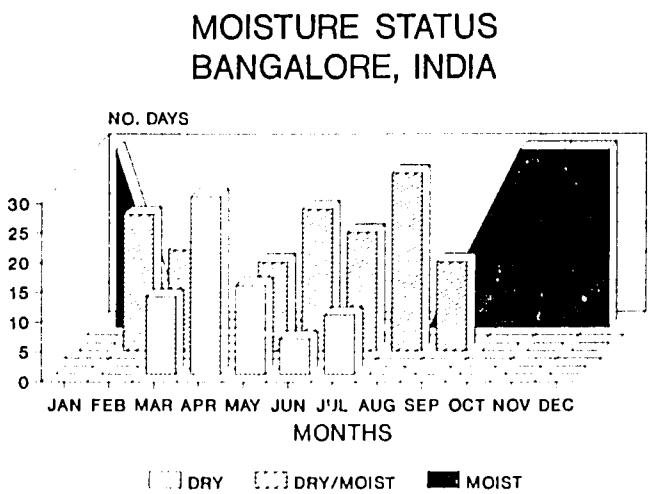
Figure 3



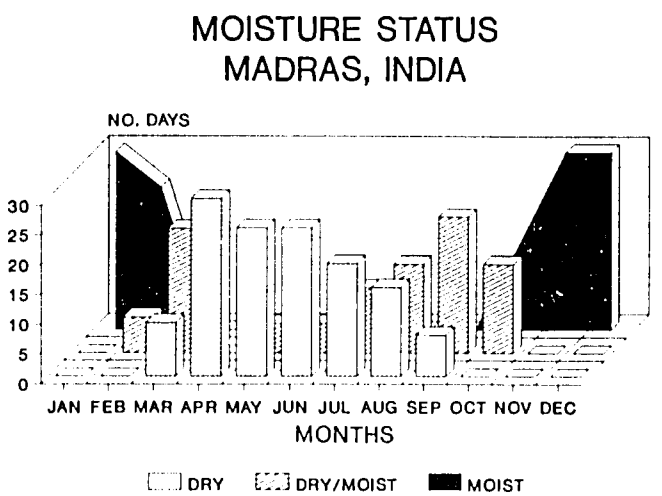
USTIC, ISOHYPERTHERMIC



USTIC, ISOHYPERTHERMIC

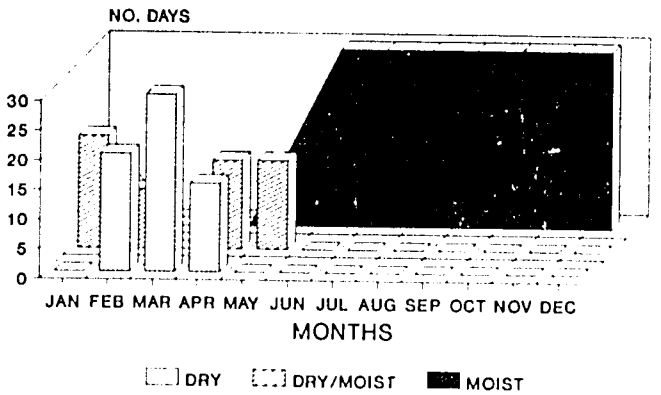


USTIC, ISOHYPERTHERMIC

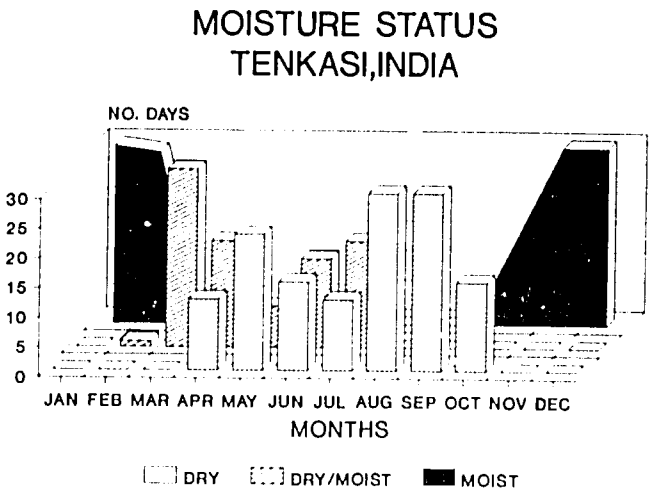


USTIC, ISOHYPERTHERMIC

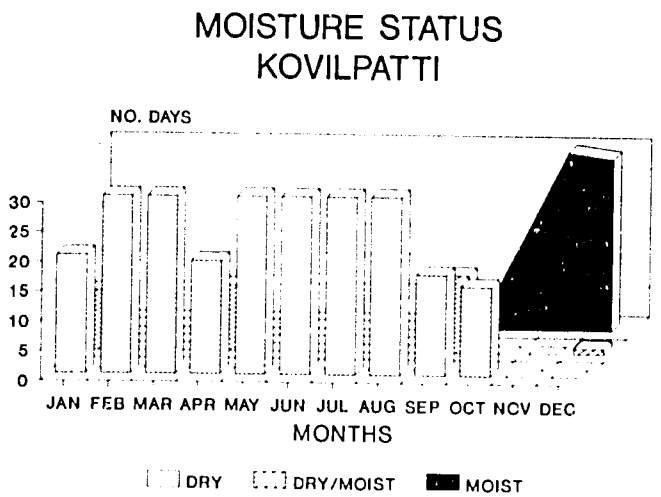
Figure 4



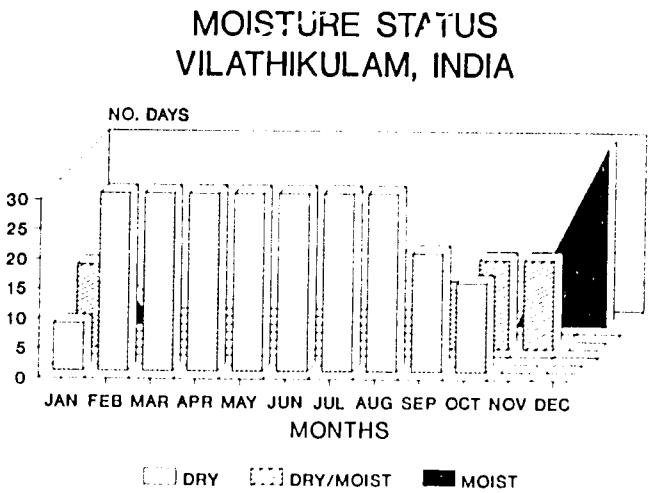
USTIC, ISOHYPERTHERMIC



USTIC, ISOHYPERTHERMIC

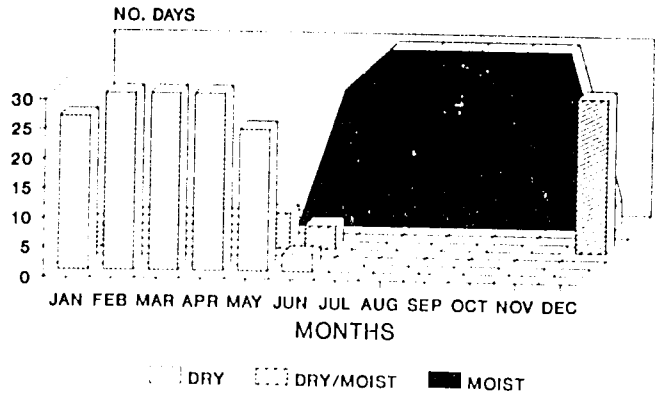


ARIDIC, ISOMEGATHERMIC

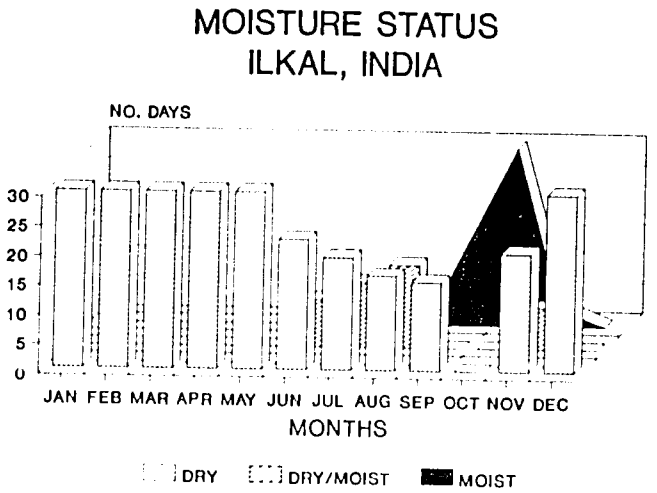


USTIC, ISOMEGATHERMIC

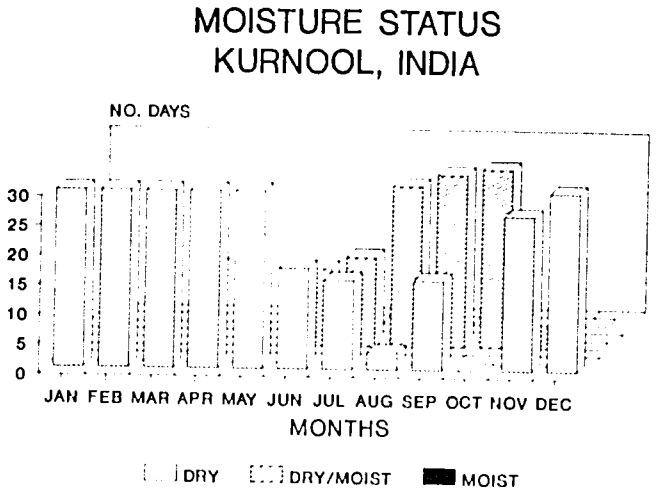
Figure 5



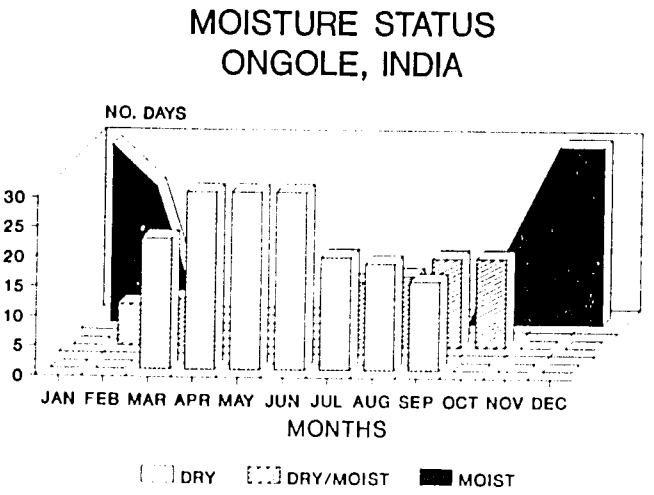
USTIC, ISOHYPERTHERMIC



ARIDIC, ISOHYPERTHERMIC

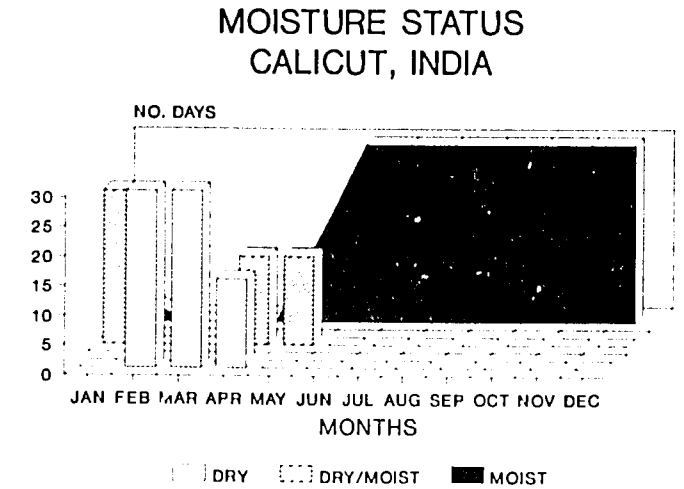


ARIDIC, ISOHYPERTHERMIC

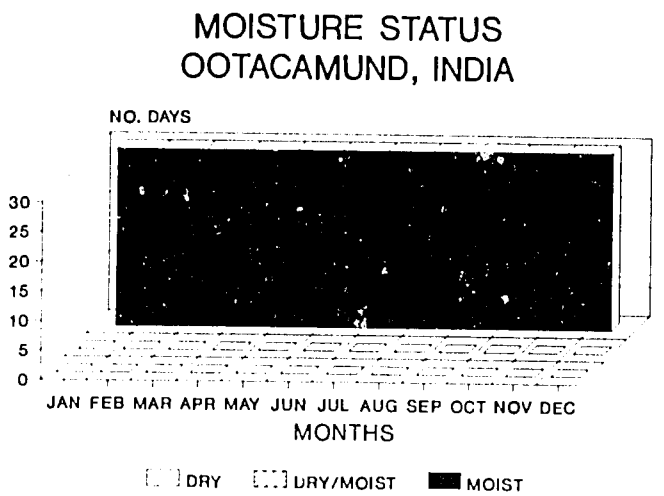


USTIC, ISOHYPERTHERMIC

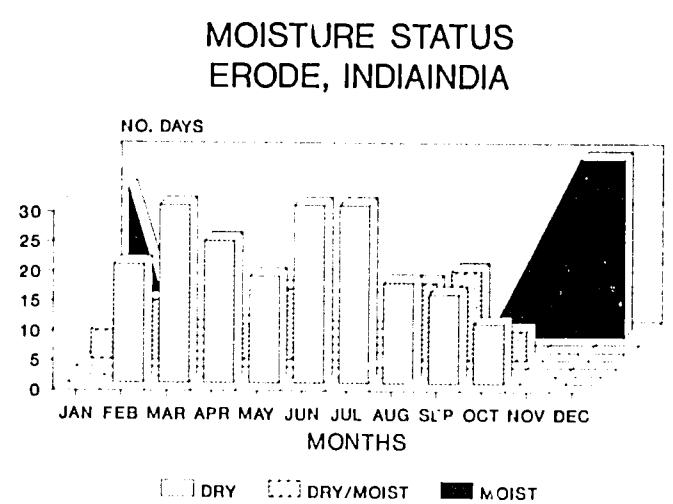
Figure 6



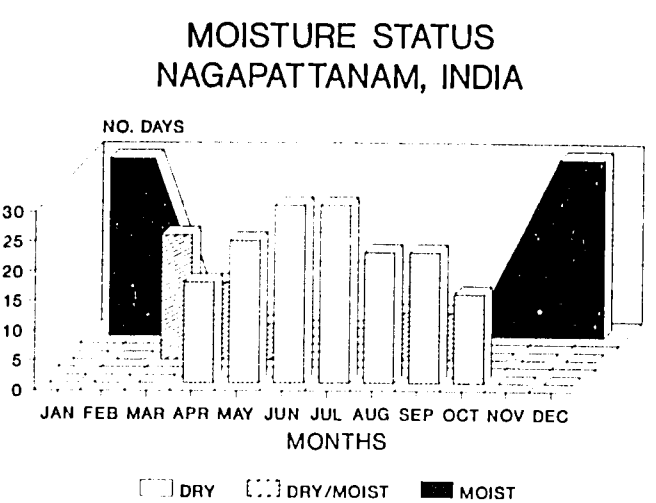
USTIC, ISOHYPERTHERMIC



UDIC, ISOTHERMIC

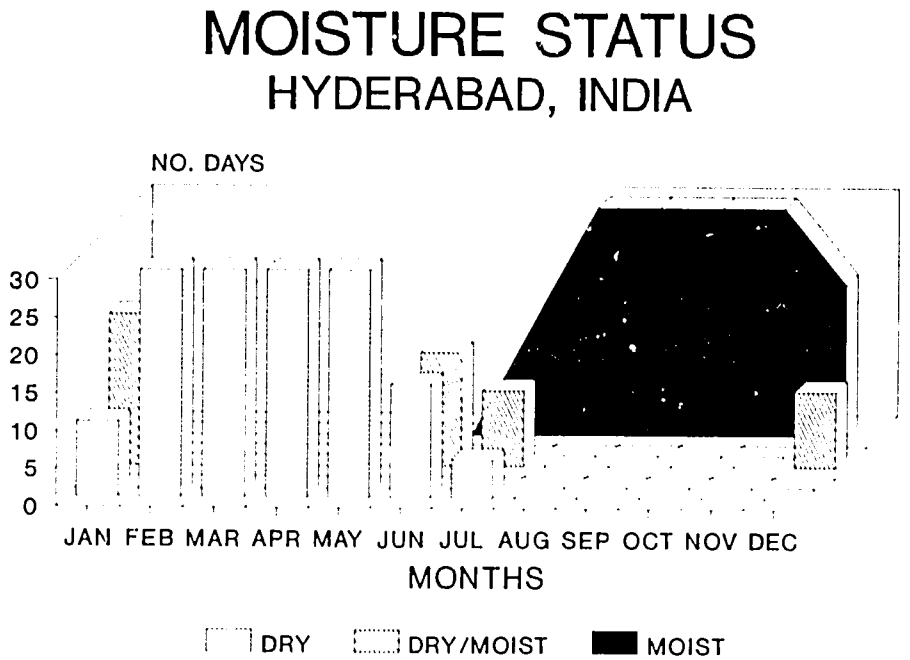


USTIC, ISOHYPERTHERMIC



USTIC, ISOMEGATHERMIC

Figure 7



USTIC, ISOHYPERTHERMIC

Figure 8

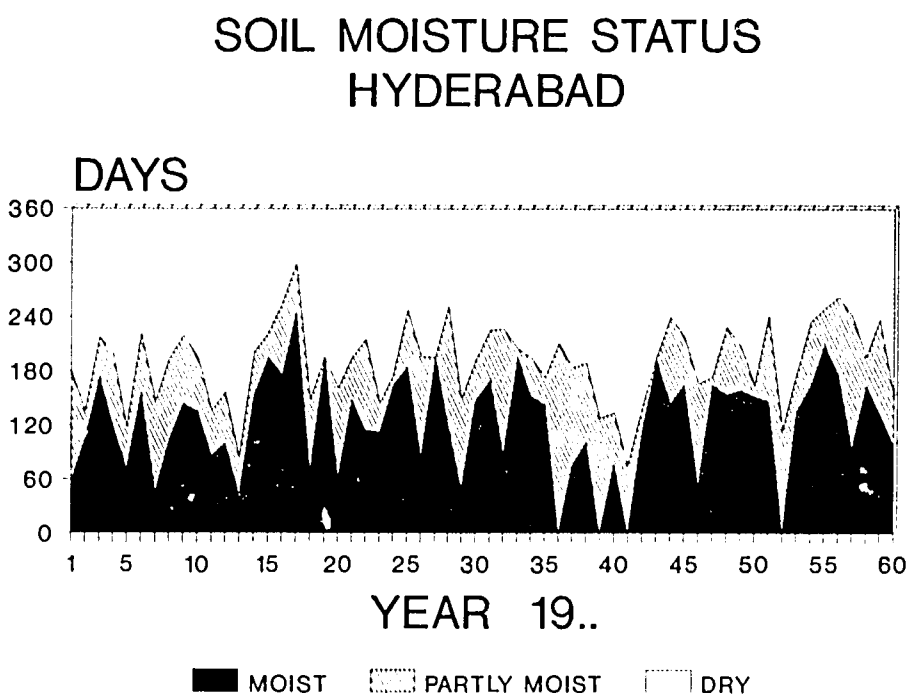
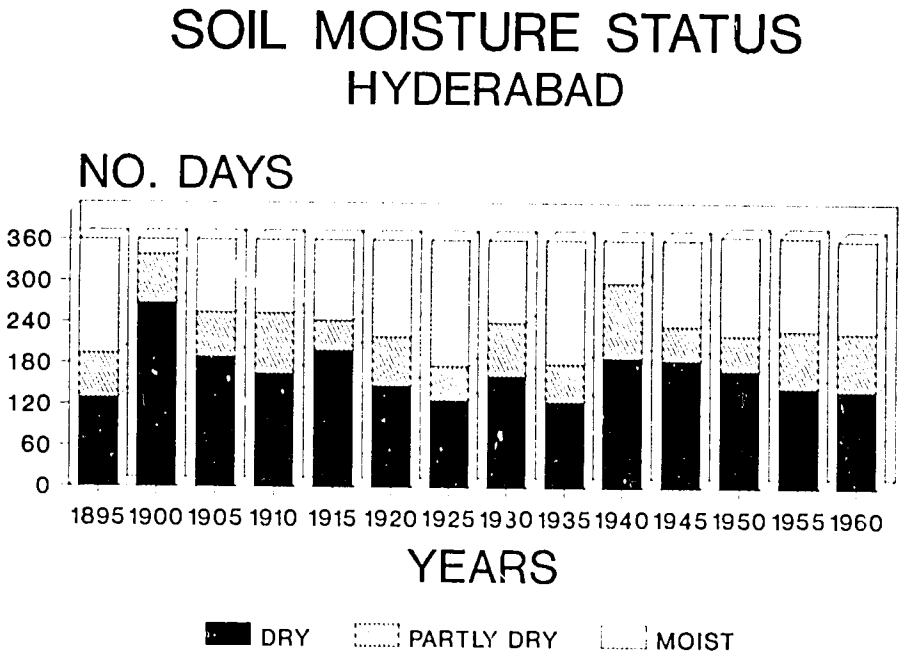
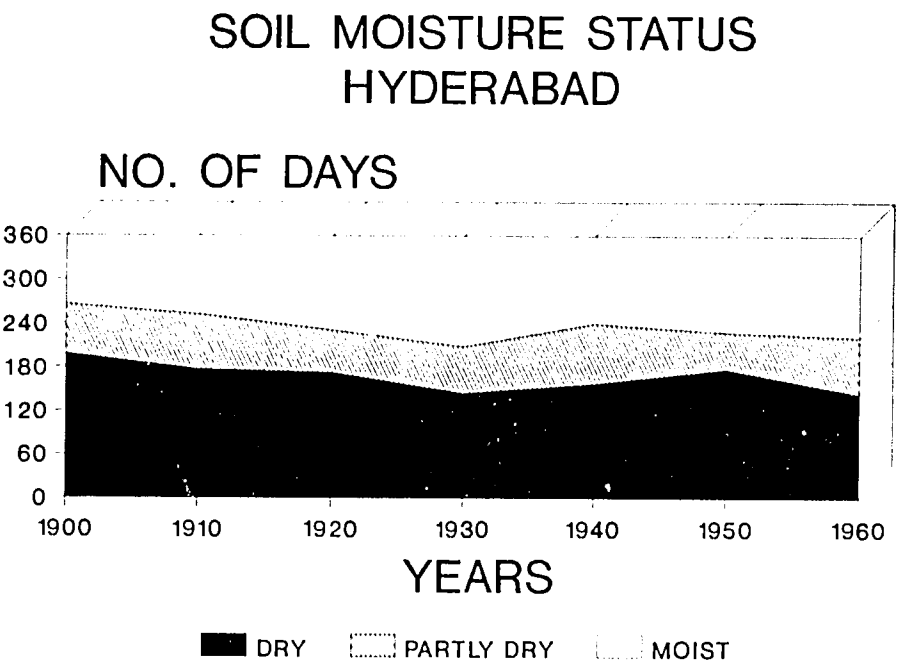


Figure 9



FIVE YEAR AVERAGES

Figure 10



TEN YEAR AVERAGES

SOIL MOISTURE AND TEMPERATURE REGIMES OF ANDRHA PRADESH

Station:adilabad Country:INDIA Latit: 19 40 N
Elevation: -100 Longit: 78 32 E

Annual rainfall 1072 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	6.0	18.0	13.0	28.0	14.0	182.0	323.0	222.0	189.0	51.0	23.0	3.0
monthly air temperatures (Celcius)	22.0	24.0	28.0	32.0	36.0	32.0	28.0	27.0	27.0	26.0	22.0	20.0
monthly evapotranspiration (Thornthwaite), mm.	61.0	80.8	152.2	180.0	204.6	186.9	165.5	150.7	142.3	123.1	59.7	41.8

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  222222222222222222222222222222
FEB  222222222222222222222222222211
MAR  111111111111111111111111111111
APR  111111111111111111111111111111
MAY  111111111111111111111111111111
JUN  111111111111111133333333333333
JUL  333333333333333333333333333333
AUG  333333333333333333333333333333
SEP  333333333333333333333333333333
OCT  333333333333333333333333333333
NOV  333333333333333333333333333333
DEC  333333333333333333333333333222
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
107	61	192	107	61	192	253	253	0	0

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:ADONI Country:INDIA Latit: 15 38 N
Elevation: -100 Longit: 77 17 E

Annual rainfall 664 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	3.0	10.0	5.0	18.0	39.0	75.0	101.0	106.0	175.0	92.0	36.0	4.0
monthly air temperatures (Celcius)	26.0	26.0	27.0	28.0	28.0	27.0	26.0	26.0	26.0	25.0	26.0	26.0
monthly evapotranspiration (Thornthwaite), mm.	120.4	112.9	143.7	153.7	164.1	150.7	139.0	134.0	126.6	125.3	117.9	120.4

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

```
     1************15**************30

JAN  111111111111111111111111111111
FEB  111111111111111111111111111111
MAR  111111111111111111111111111111
APR  111111111111111111111111111111
MAY  111111111111111111111111111111
JUN  111111111111112222222222222211
JUL  111111111111112222222222222222
AUG  222222211111112222222222222222
SEP  222222222222222333333333333333
OCT  333333333333333333333333333333
NOV  333333333333333333333322222222
DEC  222211111111111111111111111111
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
216	77	67	216	77	67	109	109	15	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:ANANTAPUR Country:INDIA Latit: 14 41 N
Elevation: -100 Longit: 77 37 E

Annual rainfall 583 mm
Temperature regime: Isohyperthermic Moisture regime: Aridic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	5.0	6.0	3.0	15.0	53.0	50.0	52.0	85.0	150.0	99.0	58.0	7.0
monthly air temperatures (Celcius)	24.0	26.0	29.0	32.0	32.0	30.0	28.0	28.0	28.0	27.0	25.0	23.0
monthly evapotranspiration (Thornthwaite), mm.	85.7	109.0	160.1	178.3	186.9	171.8	159.6	158.1	150.8	142.3	99.6	71.0

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  111111111111111111111111111111
FEB  111111111111111111111111111111
MAR  111111111111111111111111111111
APR  111111111111111111111111111111
MAY  111111111111111222222111111111
JUN  111111111111111111111111111111
JUL  111111111111111222222211111111
AUG  111111111111111222222222222221
SEP  111111111111111222222222222222
OCT  222222222222222222222222222222
NOV  222222222222221222222222222222
DEC  111111111111111111111111111111
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
259	101	0	259	101	0	59	59	23	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Weak Aridic

Station:AROGYAVARAM Country:INDIA Latit: 13 31 N
Elevation: 701 Longit: 78 30 E

Annual rainfall 697 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	5.0	2.0	4.0	36.0	59.0	54.0	86.0	75.0	113.0	166.0	61.0	36.0
monthly air temperatures (Celcius)	21.0	23.0	26.0	28.0	29.0	27.0	26.0	26.0	26.0	26.0	24.0	22.0
monthly evapotranspiration (Thornthwaite), mm.	61.8	76.3	130.4	152.2	167.8	147.9	136.7	135.4	129.1	129.1	94.8	71.5

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   333333322222222222222222222222
FEB   111111111111111111111111111111
MAR   111111111111111111111111111111
APR   111111111111111111111111111111
MAY   111111111111111222222221111111
JUN   111111111111111222222221111111
JUL   111111111111111222222222222222
AUG   221111111111111222222222222222
SEP   111111111111111222222222222222
OCT   222222222222222333333333333333
NOV   333333333333333333333333333333
DEC   333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
177	101	82	177	101	82	135	135	15	7

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:BEGAMPET Country:INDIA Latit: 17 30 N
Elevation: 545 Longit: 78 30 E

Annual rainfall 790 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	6.0	10.0	14.0	23.0	30.0	101.0	168.0	149.0	173.0	83.0	28.0	5.0
monthly air temperatures (Celcius)	22.0	25.0	28.0	31.0	33.0	30.0	27.0	26.0	26.0	26.0	23.0	21.0
monthly evapotranspiration (Thornthwaite), mm.	64.1	97.2	152.2	174.7	196.7	175.1	156.2	133.7	126.3	125.0	74.2	53.8

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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          1************15**************30

JAN       222222222222222222222222222222
FEB       111111111111111111111111111111
MAR       111111111111111111111111111111
APR       111111111111111111111111111111
MAY       111111111111111111111111111111
JUN       111111111111111222222222222222
JUL       111111111111111333333333333333
AUG       333333333333333333333333333333
SEP       333333333333333333333333333333
OCT       333333333333333333333333333333
NOV       333333333333333333333333333333
DEC       333333333333333333322222222222
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
150	56	154	150	56	154	195	195	15	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station: BHONGIR Country: INDIA Latit: 17 31 N
Elevation: -100 Longit: 78 53 E

Annual rainfall 684 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	1.0	11.0	11.0	34.0	31.0	109.0	118.0	130.0	135.0	72.0	27.0	5.0
monthly air temperatures (Celcius)	22.0	24.0	27.0	30.0	32.0	29.0	26.0	26.0	26.0	26.0	25.0	22.0
monthly evapotranspiration (Thornthwaite), mm.	65.6	84.6	143.7	168.6	192.1	167.8	139.5	134.5	127.1	125.8	102.5	65.6

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   111111111111111111111111111111
FEB   111111111111111111111111111111
MAR   111111111111111111111111111111
APR   111111111111111111111111111111
MAY   111111111111111111111111111111
JUN   111111111111111222222222222222
JUL   222222111111111222222222222222
AUG   222222222222222222222222222222
SEP   222222222222222333333333333333
OCT   333333333333333333333333333333
NOV   333322222222222222222211111111
DEC   111111111111111111111111111111
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8.		
212	99	49	212	99	49	127	127	9	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:CUDDAPAH Country:INDIA Latit: 14 29 N
Elevation: 130 Longit: 78 50 E

Annual rainfall 629 mm
Temperature regime: Isohyperthermic Moisture regime: Aridic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	7.0	5.0	8.0	16.0	35.0	49.0	99.0	69.0	104.0	125.0	98.0	14.0
monthly air temperatures (Celcius)	25.0	27.0	29.0	31.0	34.0	33.0	31.0	31.0	30.0	29.0	26.0	25.0
monthly evapotranspiration (Thornthwaite), mm.	91.6	126.9	160.1	173.0	194.9	187.8	181.4	179.8	165.3	158.5	108.7	90.7

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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        1************15**************30

JAN     111111111111111111111111111111
FEB     111111111111111111111111111111
MAR     111111111111111111111111111111
APR     111111111111111111111111111111
MAY     111111111111111111111111111111
JUN     111111111111111111111111111111
JUL     111111111111111222222222222221
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SEP     111111111111111222222222222222
OCT     222111111111111222222222222222
NOV     222222222222222222222222222222
DEC     222222222222222222211111111111
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is				
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
256	104	0	256	104	0	63	63	21	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Weak Aridic

Station:CUMBUM Country:INDIA Latit: 15 35 N
Elevation: -100 Longit: 79 7 E

Annual rainfall 629 mm
Temperature regime: Isohyperthermic Moisture regime: Aridic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	7.0	5.0	8.0	16.0	35.0	49.0	99.0	69.0	104.0	125.0	98.0	14.0
monthly air temperatures (Celcius)	25.0	27.0	29.0	31.0	34.0	33.0	31.0	31.0	30.0	29.0	26.0	25.0
monthly evapotranspiration (Thornthwaite), mm.	88.9	126.9	160.1	174.7	200.4	191.4	188.2	181.4	165.3	157.0	105.4	88.9

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  111111111111111111111111111111
FEB  111111111111111111111111111111
MAR  111111111111111111111111111111
APR  111111111111111111111111111111
MAY  111111111111111111111111111111
JUN  111111111111111111111111111111
JUL  111111111111111222222222222211
AUG  111111111111111222222222111111
SEP  111111111111111222222222222222
OCT  222111111111111222222222222222
NOV  222222222222222222222222222222
DEC  222222222222222222221111111111
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is				
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
255	105	0	255	105	0	65	65	21	0

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Weak Aridic

Station:GANNAVARAM Country:INDIA Latit: 16 33 N
Elevation: 24 Longit: 80 48 E

Annual rainfall 937 mm
Temperature regime: Isohyperthermic oisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	6.0	10.0	14.0	17.0	45.0	109.0	198.0	174.0	161.0	120.0	77.0	6.0
monthly air temperatures (Celcius)	25.0	26.0	29.0	32.0	34.0	32.0	29.0	29.0	29.0	28.0	26.0	24.0
monthly evapotranspiration (Thornthwaite), mm.	93.3	104.7	160.1	180.0	200.4	186.9	174.0	167.8	158.5	149.3	109.3	77.5

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

```
                1************15**************30

JAN   222222222211111111111111111111
FEB   111111111111111111111111111111
MAR   111111111111111111111111111111
APR   111111111111111111111111111111
MAY   111111111111111111111111111111
JUN   111111111111111222222222222222
JUL   222111111111111333333333333333
AUG   333333333333333333333333333333
SEP   333333333333333333333333333333
OCT   333333333333333333333333333333
NOV   333333333333333333333333333333
DEC   333333333333333333222222222222
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
167	40	153	167	40	153	175	175	12	0

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:HANAMKONDA Country:INDIA Latit: 19 1 N
Elevation: 269 Longit: 79 34 E

Annual rainfall 946 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	2.0	16.0	11.0	25.0	33.0	140.0	239.0	180.0	185.0	91.0	22.0	2.0
monthly air temperatures (Celcius)	24.0	26.0	29.0	32.0	34.0	32.0	28.0	28.0	28.0	27.0	24.0	23.0
monthly evapotranspiration (Thornthwaite), mm.	81.5	107.8	160.1	180.0	200.4	186.9	165.5	159.6	150.8	140.9	79.8	67.9

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist.

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     1************15**************30

JAN  222222222222222222222222222211
FEB  111111111111111111111111111111
MAR  111111111111111111111111111111
APR  111111111111111111111111111111
MAY  111111111111111111111111111111
JUN  111111111111111222222222222222
JUL  222222222222222333333333333333
AUG  333333333333333333333333333333
SEP  333333333333333333333333333333
OCT  333333333333333333333333333333
NOV  333333333333333333333333333333
DEC  333333333333222222222222222222
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
137	76	147	137	76	147	223	223	0	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:HINDUPUR Country:INDIA Latit: 13 49 N
Elevation: -100 Longit: 77 29 E

Annual rainfall 593 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	3.0	7.0	4.0	25.0	66.0	44.0	57.0	83.0	142.0	102.0	50.0	10.0
monthly air temperatures (Celcius)	23.0	26.0	28.0	30.0	29.0	26.0	24.0	24.0	25.0	25.0	23.0	22.0
monthly evapotranspiration (Thornthwaite), mm.	83.5	115.0	152.2	167.0	167.8	134.0	104.1	103.2	112.9	112.9	81.8	71.1

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   111111111111111111111111111111
FEB   111111111111111111111111111111
MAR   111111111111111111111111111111
APR   111111111111111111111111111111
MAY   111111111111111222222222111111
JUN   111111111111111111111111111111
JUL   111111111111111222222222222221
AUG   111111111111111222222222222222
SEP   222222222222222222222222222222
OCT   222222222222222333333333333333
NOV   333333333333333333333333333333
DEC   333333333333222222222222221111
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
206	97	57	206	97	57	131	131	16	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:JAGTIAL Country:INDIA Latit: 18 48 N
Elevation: -100 Longit: 78 56 E

Annual rainfall 945 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	4.0	24.0	12.0	23.0	16.0	146.0	265.0	186.0	174.0	69.0	24.0	2.0
monthly air temperatures (Celcius)	23.0	25.0	29.0	32.0	35.0	31.0	27.0	27.0	27.0	26.0	23.0	21.0
monthly evapotranspiration (Thornthwaite), mm.	72.1	94.4	160.1	180.0	203.0	181.4	156.2	150.7	142.3	122.7	70.6	50.0

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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        1************15**************30

JAN     222222222222222222222222222222
FEB     222222222222111111111111111111
MAR     111111111111111111111111111111
APR     111111111111111111111111111111
MAY     111111111111111111111111111111
JUN     111111111111111222222222222222
JUL     222222222222222333333333333333
AUG     333333333333333333333333333333
SEP     333333333333333333333333333333
OCT     333333333333333333333333333333
NOV     333333333333333333333333333333
DEC     333333333333333333333332222222
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
123	79	158	123	79	158	237	237	0	0

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:KADIRI Country:INDIA Latit: 14 7 N
Elevation: -100 Longit: 78 10 E

Annual rainfall 618 mm
Temperature regime: Isohyperthermic Moisture regime: Aridic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	6.0	6.0	7.0	21.0	59.0	44.0	64.0	90.0	145.0	97.0	67.0	12.0
monthly air temperatures (Celcius)	24.0	26.0	29.0	32.0	32.0	30.0	28.0	28.0	28.0	27.0	25.0	23.0
monthly evapotranspiration (Thornthwaite), mm.	85.7	109.0	160.1	178.3	186.9	171.8	159.6	158.1	150.8	142.3	99.6	71.0

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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        1************15**************30

JAN     111111111111111111111111111111
FEB     111111111111111111111111111111
MAR     111111111111111111111111111111
APR     111111111111111111111111111111
MAY     111111111111111222222211111111
JUN     111111111111111111111111111111
JUL     111111111111111222222222111111
AUG     111111111111111222222222222222
SEP     111111111111111222222222222222
OCT     222222222222222222222222222222
NOV     222222222222111222222222222222
DEC     222221111111111111111111111111
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
252	108	0	252	108	0	57	57	21	0

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Weak Aridic

Station:kakinada Country:india Latit: 16 57 N
Elevation: 8 Longit: 82 14 E

Annual rainfall 1173 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	4.0	12.0	12.0	22.0	46.0	126.0	218.0	152.0	158.0	307.0	107.0	9.0
monthly air temperatures (Celcius)	23.0	25.0	28.0	31.0	32.0	32.0	29.0	29.0	29.0	28.0	25.0	23.0
monthly evapotranspiration (Thornthwaite), mm.	68.5	91.6	152.2	174.7	192.1	186.9	174.0	167.8	158.5	149.3	95.6	68.5

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   333333333333333333333333333333
FEB   333332222222222222222222222222
MAR   222222222211111111111111111111
APR   111111111111111111111111111111
MAY   111111111111111111111111111111
JUN   111111111111111222222222222222
JUL   222222222222111333333333333333
AUG   333333333333333333333333333333
SEP   333333333333333333333333333333
OCT   333333333333333333333333333333
NOV   333333333333333333333333333333
DEC   333333333333333333333333333333
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
98	62	200	98	62	200	235	235	3	35

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:KALAHASTI Country:INDIA Latit: 13 46 N
Elevation: -100 Longit: 79 43 E

Annual rainfall 1146 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	55.0	8.0	11.0	16.0	39.0	50.0	87.0	92.0	104.0	231.0	331.0	122.0
monthly air temperatures (Celcius)	24.0	25.0	28.0	31.0	33.0	31.0	30.0	30.0	29.0	27.0	25.0	23.0
monthly evapotranspiration (Thornthwaite), mm.	83.6	90.7	152.2	173.0	191.4	178.1	175.1	173.4	158.5	142.3	97.7	68.9

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  333333333333333333333333333333
FEB  333333333333333333333333333333
MAR  333333333222222222222222222222
APR  222111111111111111111111111111
MAY  111111111111111111111111111111
JUN  111111111111111111111111111111
JUL  111111111111111222222222222111
AUG  111111111111111222222222222211
SEP  111111111111111222222222222222
OCT  222222222222222333333333333333
NOV  333333333333333333333333333333
DEC  333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
137	79	144	137	79	144	198	198	18	69

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:KALINGAPATNAM Country:INDIA Latit: 18 20 N
Elevation: 6 Longit: 84 2 E

Annual rainfall 985 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	4.0	13.0	12.0	18.0	42.0	114.0	163.0	158.0	176.0	219.0	56.0	10.0
monthly air temperatures (Celcius)	23.0	25.0	27.0	29.0	31.0	30.0	29.0	29.0	28.0	24.0	22.0	22.0
monthly evapotranspiration (Thornthwaite), mm.	75.4	97.0	143.7	161.6	186.5	175.1	174.0	167.8	150.8	92.2	62.4	63.8

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   333333333333333333333333333333
FEB   333333222222222222222222222222
MAR   222222222211111111111111111111
APR   111111111111111111111111111111
MAY   111111111111111111111111111111
JUN   111111111111111222222222222222
JUL   222222111111111333333333333333
AUG   333333333333322333333333333333
SEP   333333333333333333333333333333
OCT   333333333333333333333333333333
NOV   333333333333333333333333333333
DEC   333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
104	57	199	104	57	199	235	235	9	36

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:KAVALI Country:INDIA Latit: 14 55 N
Elevation: -100 Longit: 80 0 E

Annual rainfall 987 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	26.0	7.0	12.0	12.0	31.0	38.0	66.0	66.0	111.0	284.0	265.0	69.0
monthly air temperatures (Celcius)	25.0	27.0	29.0	31.0	34.0	33.0	31.0	31.0	30.0	29.0	26.0	25.0
monthly evapotranspiration (Thornthwaite), mm.	91.6	126.9	160.1	173.0	194.9	187.8	181.4	179.8	165.3	158.5	108.7	90.7

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   333333333333333333333333333333
FEB   333333333333333332222222222222
MAR   222222222221111111111111111111
APR   111111111111111111111111111111
MAY   111111111111111111111111111111
JUN   111111111111111111111111111111
JUL   111111111111111222222221111111
AUG   111111111111111222222221111111
SEP   111111111111111222222222222222
OCT   222222222222222333333333333333
NOV   333333333333333333333333333333
DEC   333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
168	70	122	168	70	122	176	176	22	47

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:KHAMNAM Country:INDIA Latit: 17 15 N
Elevation: 112 Longit: 80 9 E

Annual rainfall 956 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	2.0	7.0	11.0	26.0	27.0	127.0	260.0	186.0	165.0	107.0	34.0	4.0
monthly air temperatures (Celcius)	24.0	27.0	30.0	32.0	35.0	32.0	29.0	28.0	29.0	28.0	25.0	23.0
monthly evapotranspiration (Thornthwaite), mm.	77.8	126.9	167.0	180.0	203.0	186.9	174.0	159.6	158.5	149.3	91.8	64.2

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   222222222222222222222222222211
FEB   111111111111111111111111111111
MAR   111111111111111111111111111111
APR   111111111111111111111111111111
MAY   111111111111111111111111111111
JUN   111111111111111222222222222222
JUL   222222222222222333333333333333
AUG   333333333333333333333333333333
SEP   333333333333333333333333333333
OCT   333333333333333333333333333333
NOV   333333333333333333333333333333
DEC   333333333333222222222222222222
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
137	76	147	137	76	147	223	223	0	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:KONTA Country:INDIA Latit: 17 48 N
Elevation: -100 Longit: 81 23 E

Annual rainfall 1386 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	5.0	12.0	11.0	44.0	48.0	206.0	374.0	320.0	230.0	101.0	28.0	7.0
monthly air temperatures (Celcius)	24.0	27.0	30.0	32.0	35.0	32.0	29.0	28.0	29.0	28.0	25.0	23.0
monthly evapotranspiration (Thornthwaite), mm.	77.8	126.9	167.0	180.0	203.0	186.9	174.0	159.6	158.5	149.3	91.8	64.2

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   222222222222222222222222222222
FEB   222211111111111111111111111111
MAR   111111111111111111111111111111
APR   111111111111111111111111111111
MAY   111111111111111111111111111111
JUN   111111111111111333333333333333
JUL   333333333333333333333333333333
AUG   333333333333333333333333333333
SEP   333333333333333333333333333333
OCT   333333333333333333333333333333
NOV   333333333333333333333333333333
DEC   333333333333333333322222222222
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is				
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
131	45	184	131	45	184	229	229	0	0

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:KURNOOL Country:INDIA Latit: 15 50 N
Elevation: 281 Longit: 78 4 E

Annual rainfall 675 mm
Temperature regime: Isohyperthermic Moisture regime: Aridic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	0.0	5.0	10.0	22.0	44.0	91.0	130.0	122.0	147.0	79.0	22.0	3.0
monthly air temperatures (Celcius)	24.0	27.0	30.0	33.0	34.0	30.0	28.0	28.0	28.0	27.0	25.0	23.0
monthly evapotranspiration (Thornthwaite), mm.	80.6	126.9	167.0	184.3	200.4	175.1	165.5	159.6	150.8	140.9	94.2	66.9

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  111111111111111111111111111111
FEB  111111111111111111111111111111
MAR  111111111111111111111111111111
APR  111111111111111111111111111111
MAY  111111111111111111111111111111
JUN  111111111111111222222222222211
JUL  111111111111111222222222222222
AUG  222222222222111222222222222222
SEP  222222222222221222222222222222
OCT  222222222222222222222222222222
NOV  222211111111111111111111111111
DEC  111111111111111111111111111111
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
242	118	0	242	118	0	49	49	15	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Weak Aridic

Station:MAHBUBNAGAR Country:INDIA Latit: 16 44 N
Elevation: -100 Longit: 77 59 E

Annual rainfall 792 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	6.0	10.0	7.0	17.0	29.0	112.0	176.0	146.0	185.0	74.0	26.0	4.0
monthly air temperatures (Celcius)	22.0	24.0	27.0	30.0	32.0	29.0	26.0	26.0	26.0	25.0	22.0	21.0
monthly evapotranspiration (Thornthwaite), mm.	67.5	86.1	143.7	168.6	192.1	167.8	140.6	135.5	128.0	110.4	66.1	57.3

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  222222222222222222222222222222
FEB  222222111111111111111111111111
MAR  111111111111111111111111111111
APR  111111111111111111111111111111
MAY  111111111111111111111111111111
JUN  111111111111111222222222222222
JUL  222222222222111333333333333333
AUG  333333333333333333333333333333
SEP  333333333333333333333333333333
OCT  333333333333333333333333333333
NOV  333333333333333333333333333333
DEC  333333333333333333333333333333
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
132	63	165	132	63	165	201	201	3	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:MASULIPATAM Country:INDIA Latit: 16 12 N
Elevation: 3 Longit: 81 12 E

Annual rainfall 1049 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	4.0	7.0	10.0	15.0	34.0	108.0	173.0	161.0	167.0	224.0	128.0	18.0
monthly air temperatures (Celcius)	24.0	25.0	27.0	30.0	32.0	32.0	29.0	29.0	29.0	28.0	26.0	24.0
monthly evapotranspiration (Thornthwaite), mm.	81.7	91.3	143.7	168.6	192.1	186.9	174.0	167.8	158.5	149.3	112.7	81.7

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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          1************15**************30

JAN       333333333333333333333333332222
FEB       222222222222222222222222222222
MAR       222211111111111111111111111111
APR       111111111111111111111111111111
MAY       111111111111111111111111111111
JUN       111111111111111222222222222222
JUL       221111111111111333333333333333
AUG       333333333333333333333333333333
SEP       333333333333333333333333333333
OCT       333333333333333333333333333333
NOV       333333333333333333333333333333
DEC       333333333333333333333333333333
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
114	55	191	114	55	191	229	229	13	26

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:MEDAK Country:INDIA Latit: 18 3 N
Elevation: -100 Longit: 78 16 E

Annual rainfall 953 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	1.0	17.0	18.0	30.0	24.0	166.0	254.0	202.0	181.0	38.0	16.0	6.0
monthly air temperatures (Celcius)	23.0	25.0	29.0	32.0	35.0	31.0	27.0	27.0	27.0	26.0	23.0	21.0
monthly evapotranspiration (Thornthwaite), mm.	72.1	94.4	160.1	180.0	203.0	181.4	156.2	150.7	142.3	122.7	70.6	50.0

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  222222222222222222222222222221
FEB  111111111111111111111111111111
MAR  111111111111111111111111111111
APR  111111111111111111111111111111
MAY  111111111111111111111111111111
JUN  111111111111111333333333333333
JUL  333333333333333333333333333333
AUG  333333333333333333333333333333
SEP  333333333333333333333333333333
OCT  333333333333333333333333333333
NOV  333333333333333333333333333333
DEC  222222222222222222222222222222
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
136	59	165	136	59	165	224	224	0	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:NAGARAM Country:INDIA Latit: 17 21 N
Elevation: -100 Longit: 79 3 E

Annual rainfall 695 mm
Temperature regime: Isohyperthermic Moisture regime: Aridic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	3.0	10.0	14.0	29.0	32.0	98.0	117.0	107.0	159.0	88.0	30.0	8.0
monthly air temperatures (Celcius)	24.0	27.0	30.0	32.0	35.0	32.0	29.0	28.0	29.0	28.0	25.0	23.0
monthly evapotranspiration (Thornthwaite), mm.	77.8	126.9	167.0	180.0	203.0	186.9	174.0	159.6	158.5	149.3	91.8	64.2

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   111111111111111111111111111111
FEB   111111111111111111111111111111
MAR   111111111111111111111111111111
APR   111111111111111111111111111111
MAY   111111111111111111111111111111
JUN   111111111111111222222222222211
JUL   111111111111111222222222222222
AUG   222222111111111222222222222222
SEP   222222211111111333333333333333
OCT   333333333333322333333333333333
NOV   322222222221111111111111111111
DEC   111111111111111111111111111111
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
248	68	44	248	68	44	56	56	15	0

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Weak Aridic

Station:NALGONDA Country:INDIA Latit: 17 3 N
Elevation: -100 Longit: 79 16 E

Annual rainfall 764 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	6.0	9.0	6.0	21.0	32.0	102.0	138.0	129.0	171.0	105.0	37.0	8.0
monthly air temperatures (Celcius)	24.0	27.0	30.0	32.0	35.0	32.0	29.0	28.0	29.0	28.0	25.0	23.0
monthly evapotranspiration (Thornthwaite), mm.	77.8	126.9	167.0	180.0	203.0	186.9	174.0	159.6	158.5	149.3	91.8	64.2

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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        1************15**************30

JAN     111111111111111111111111111111
FEB     111111111111111111111111111111
MAR     111111111111111111111111111111
APR     111111111111111111111111111111
MAY     111111111111111111111111111111
JUN     111111111111111222222222222221
JUL     111111111111111222222222222222
AUG     222222222222211222222222222222
SEP     222222222222222333333333333333
OCT     333333333333333333333333333333
NOV     333333333222222222222222222222
DEC     222222221111111111111111111111
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
205	100	55	205	100	55	113	113	15	0

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:NANDYAL Country:INDIA Latit: 15 30 N
Elevation: -100 Longit: 78 30 E

Annual rainfall 765 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	2.0	5.0	5.0	19.0	39.0	96.0	149.0	144.0	181.0	89.0	31.0	5.0
monthly air temperatures (Celcius)	25.0	28.0	31.0	34.0	35.0	32.0	30.0	30.0	29.0	28.0	26.0	24.0
monthly evapotranspiration (Thornthwaite), mm.	88.1	134.5	173.0	187.7	203.0	186.9	181.6	175.1	158.5	149.3	104.7	72.1

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   111111111111111111111111111111
FEB   111111111111111111111111111111
MAR   111111111111111111111111111111
APR   111111111111111111111111111111
MAY   111111111111111111111111111111
JUN   111111111111111222222222222211
JUL   111111111111111222222222222222
AUG   222222222222221222222222222222
SEP   222222222222222333333333333333
OCT   333333333333333333333333333333
NOV   333333222222222222222222222111
DEC   111111111111111111111111111111
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
216	93	51	216	93	51	102	102	15	0

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:NELLORE Country:INDIA Latit: 14 27 N
Elevation: 20 Longit: 79 59 E

Annual rainfall 1034 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	8.0	5.0	7.0	15.0	54.0	41.0	73.0	83.0	98.0	267.0	293.0	90.0
monthly air temperatures (Celcius)	25.0	27.0	29.0	31.0	34.0	33.0	31.0	31.0	30.0	29.0	26.0	25.0
monthly evapotranspiration (Thornthwaite), mm.	91.6	126.9	160.1	173.0	194.9	187.8	181.4	179.8	165.3	158.5	108.7	90.7

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  333333333333333333333333333333
FEB  333333333333222222222222222222
MAR  222222221111111111111111111111
APR  111111111111111111111111111111
MAY  111111111111111222222111111111
JUN  111111111111111111111111111111
JUL  111111111111111222222222211111
AUG  111111111111111222222222221111
SEP  111111111111111222222222222222
OCT  222211111111111333333333333333
NOV  333333333333333333333333333333
DEC  333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
171	71	118	171	71	118	143	143	20	43

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:NIRMAL Country:INDIA Latit: 19 6 N
Elevation: -100 Longit: 78 21 E

Annual rainfall 1025 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	6.0	16.0	12.0	13.0	17.0	156.0	325.0	210.0	192.0	51.0	23.0	4.0
monthly air temperatures (Celcius)	23.0	25.0	29.0	32.0	35.0	31.0	27.0	27.0	27.0	26.0	23.0	21.0
monthly evapotranspiration (Thornthwaite), mm.	72.1	94.4	160.1	180.0	203.0	181.4	156.2	150.7	142.3	122.7	70.6	50.0

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   222222222222222222222222222222
FEB   222222222111111111111111111111
MAR   111111111111111111111111111111
APR   111111111111111111111111111111
MAY   111111111111111111111111111111
JUN   111111111111111333333333333333
JUL   333333333333333333333333333333
AUG   333333333333333333333333333333
SEP   333333333333333333333333333333
OCT   333333333333333333333333333333
NOV   333333333333333333333333333333
DEC   333333333333333332222222222222
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is				
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
126	52	182	126	52	182	234	234	0	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:NIZAMBAD Country:INDIA Latit: 18 4 N
Elevation: 381 Longit: 78 6 E

Annual rainfall 1089 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	5.0	17.0	14.0	21.0	20.0	149.0	317.0	261.0	203.0	65.0	14.0	3.0
monthly air temperatures (Celcius)	23.0	25.0	29.0	32.0	35.0	31.0	27.0	27.0	27.0	26.0	23.0	21.0
monthly evapotranspiration (Thornthwaite), mm.	72.1	94.4	160.1	180.0	203.0	181.4	156.2	150.7	142.3	122.7	70.6	50.0

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   222222222222222222222222222222
FEB   222222222211111111111111111111
MAR   111111111111111111111111111111
APR   111111111111111111111111111111
MAY   111111111111111111111111111111
JUN   111111111111111222222222222222
JUL   222222222222222333333333333333
AUG   333333333333333333333333333333
SEP   333333333333333333333333333333
OCT   333333333333333333333333333333
NOV   333333333333333333333333333333
DEC   333333333333333333332222222222
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Number of cumulative days that the moisture control section			Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C		Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
125	80	155	125	80	155	235	235	0	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:ONGOLE Country:INDIA Latit: 15 34 N
Elevation: 12 Longit: 80 3 E

Annual rainfall 844 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	10.0	8.0	13.0	13.0	35.0	49.0	82.0	87.0	135.0	212.0	174.0	26.0
monthly air temperatures (Celcius)	24.0	26.0	28.0	30.0	33.0	33.0	30.0	30.0	28.0	26.0	26.0	24.0
monthly evapotranspiration (Thornthwaite), mm.	80.1	106.8	152.2	168.6	196.7	191.4	181.6	175.1	150.8	118.5	111.5	80.1

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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          1************15**************30

JAN       333333333333333333333333333333
FEB       333333222222222222222222222222
MAR       222222211111111111111111111111
APR       111111111111111111111111111111
MAY       111111111111111111111111111111
JUN       111111111111111111111111111111
JUL       111111111111111222222222221111
AUG       111111111111111222222222222111
SEP       111111111111111222222222222222
OCT       222222222222222333333333333333
NOV       333333333333333333333333333333
DEC       333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
164	84	112	164	84	112	173	173	19	37

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station: POLAVARAM Country: INDIA Latit: 17 24 N
Elevation: -100 Longit: 82 49 E

Annual rainfall 881 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	7.0	24.0	7.0	21.0	47.0	94.0	109.0	110.0	152.0	188.0	110.0	12.0
monthly air temperatures (Celcius)	24.0	27.0	30.0	32.0	35.0	32.0	29.0	28.0	29.0	28.0	25.0	23.0
monthly evapotranspiration (Thornthwaite), mm.	77.8	126.9	167.0	180.0	203.0	186.9	174.0	159.6	158.5	149.3	91.8	64.2

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  333333333333333333333333222222
FEB  222222222221111111111111111111
MAR  111111111111111111111111111111
APR  111111111111111111111111111111
MAY  111111111111111111111111111111
JUN  111111111111111222222222222111
JUL  111111111111111222222222222222
AUG  222211111111111222222222222222
SEP  222222221111111333333333333333
OCT  333333333333333333333333333333
NOV  333333333333333333333333333333
DEC  333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
160	71	129	160	71	129	146	146	15	24

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:RAMAGUNDAM Country:INDIA Latit: 18 46 N
Elevation: 156 Longit: 79 26 E

Annual rainfall 1069 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	2.0	2.0	14.0	10.0	29.0	194.0	305.0	256.0	172.0	78.0	6.0	1.0
monthly air temperatures (Celcius)	24.0	26.0	30.0	34.0	36.0	33.0	28.0	28.0	28.0	28.0	24.0	23.0
monthly evapotranspiration (Thornthwaite), mm.	77.6	104.8	167.0	187.7	204.6	191.4	165.5	159.6	150.8	149.3	76.0	63.9

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  222222222222222221111111111111
FEB  111111111111111111111111111111
MAR  111111111111111111111111111111
APR  111111111111111111111111111111
MAY  111111111111111111111111111111
JUN  111111111111111333333333333333
JUL  333333333333333333333333333333
AUG  333333333333333333333333333333
SEP  333333333333333333333333333333
OCT  333333333333333333333333333333
NOV  333333333333333333333333333222
DEC  222222222222222222222222222222
```

Number of cumulative days that the moisture control section			Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			
DRY	M/D	MOIST	DRY	M/D	MOIST	Moist in some parts YEAR	Moist in some parts T>8	Dry after summer solstice	Moist after winter solstice
148	50	162	148	50	162	212	212	0	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:RENTACHINTALA Country:INDIA Latit: 16 33 N
Elevation: 106 Longit: 79 33 E

Annual rainfall 718 mm
Temperature regime: Isohyperthermic Moisture regime: Aridic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	0.0	10.0	6.0	20.0	41.0	86.0	116.0	115.0	146.0	124.0	41.0	13.0
monthly air temperatures (Celcius)	24.0	27.0	30.0	33.0	35.0	33.0	30.0	30.0	29.0	28.0	25.0	23.0
monthly evapotranspiration (Thornthwaite), mm.	74.9	126.9	167.0	184.3	203.0	191.4	181.6	175.1	158.5	149.3	89.0	61.3

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  111111111111111111111111111111
FEB  111111111111111111111111111111
MAR  111111111111111111111111111111
APR  111111111111111111111111111111
MAY  111111111111111111111111111111
JUN  111111111111111222222222221111
JUL  111111111111111222222222222222
AUG  222211111111111222222222222222
SEP  222222211111111222222222222222
OCT  222222222222222222222222222222
NOV  222222222222222222222222222222
DEC  222211111111111111111111111111
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
229	131	0	229	131	0	79	79	15	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Weak Aridic

Station:SALUR Country:INDIA Latit: 18 31 N
Elevation: -100 Longit: 83 12 E

Annual rainfall 1120 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	10.0	15.0	16.0	45.0	84.0	144.0	166.0	182.0	192.0	181.0	74.0	11.0
monthly air temperatures (Celcius)	22.0	24.0	28.0	32.0	36.0	32.0	28.0	27.0	27.0	26.0	22.0	20.0
monthly evapotranspiration (Thornthwaite), mm.	61.0	80.8	152.2	180.0	204.6	186.9	165.5	150.7	142.3	123.1	59.7	41.8

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  333333333333333333333333333333
FEB  333333333333333333333333333333
MAR  322222222222222222222222221111
APR  111111111111111111111111111111
MAY  111111111111111222222222211111
JUN  111111111111111222222222222222
JUL  222222222222222333333333333333
AUG  333333333333333333333333333333
SEP  333333333333333333333333333333
OCT  333333333333333333333333333333
NOV  333333333333333333333333333333
DEC  333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
69	65	226	69	65	226	281	281	0	61

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Udic Tropustic

Station:SRIKAKULAM Country:INDIA Latit: 18 18 N
Elevation: -100 Longit: 83 54 E

Annual rainfall 939 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	4.0	16.0	9.0	22.0	54.0	105.0	124.0	163.0	188.0	174.0	69.0	11.0
monthly air temperatures (Celcius)	23.0	24.0	27.0	29.0	31.0	31.0	29.0	29.0	29.0	28.0	25.0	23.0
monthly evapotranspiration (Thornthwaite), mm.	71.5	79.7	143.7	161.6	186.5	181.4	174.0	167.8	158.5	149.3	98.2	71.5

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   3333332222222222222222222222
FEB   2222222222111111111111111111
MAR   1111111111111111111111111111
APR   1111111111111111111111111111
MAY   1111111111111112222221111111
JUN   1111111111111112222222222222
JUL   2111111111111112222222222222
AUG   2222222222111113333333333333
SEP   3333333333333333333333333333
OCT   3333333333333333333333333333
NOV   3333333333333333333333333333
DEC   3333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is				
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
138	81	141	138	81	141	175	175	14	6

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:TANDUR Country:INDIA Latit: 17 14 N
Elevation: -100 Longit: 77 35 E

Annual rainfall 757 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	2.0	6.0	7.0	23.0	28.0	112.0	172.0	147.0	196.0	48.0	15.0	1.0
monthly air temperatures (Celcius)	23.0	26.0	29.0	32.0	33.0	29.0	27.0	27.0	26.0	26.0	24.0	22.0
monthly evapotranspiration (Thornthwaite), mm.	73.2	111.2	160.1	180.0	196.7	167.8	156.2	150.7	124.7	123.5	84.8	61.5

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   211111111111111111111111111111
FEB   111111111111111111111111111111
MAR   111111111111111111111111111111
APR   111111111111111111111111111111
MAY   111111111111111111111111111111
JUN   111111111111111222222222222222
JUL   222222222111111333333333333333
AUG   333333333333333333333333333333
SEP   333333333333333333333333333333
OCT   333333333333333333333333333333
NOV   333333333333333333333333322222
DEC   222222222222222222222222222222
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
170	60	130	170	60	130	166	166	6	0

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:UDAYAGIRI Country:INDIA Latit: 14 53 N
Elevation: -100 Longit: 79 18 E

Annual rainfall 918 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	38.0	13.0	20.0	29.0	58.0	37.0	69.0	62.0	102.0	199.0	230.0	61.0
monthly air temperatures (Celcius)	25.0	27.0	31.0	34.0	35.0	32.0	30.0	30.0	29.0	28.0	26.0	24.0
monthly evapotranspiration (Thornthwaite), mm.	91.4	126.9	173.0	185.9	197.5	183.5	175.1	173.4	158.5	150.8	108.5	74.2

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1***********15**************30

JAN  333333333333333333333333333333
FEB  333333333333333333333332222222
MAR  222222222222222222111111111111
APR  111111111111111111111111111111
MAY  111111111111111222222111111111
JUN  111111111111111111111111111111
JUL  111111111111111222222222111111
AUG  111111111111111222222221111111
SEP  111111111111111222222222222222
OCT  222222111111111333333333333333
NOV  333333333333333333333333333333
DEC  333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
163	69	128	163	69	128	153	153	22	53

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

SOIL MOISTURE AND TEMPERATURE REGIMES OF KARNATAKA

Station:BAGALKOT Country:INDIA Latit: 16 12 N
Elevation: -100 Longit: 75 42 E

Annual rainfall 546 mm
Temperature regime: Isohyperthermic Moisture regime: Aridic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	1.0	5.0	6.0	20.0	42.0	68.0	71.0	63.0	144.0	84.0	34.0	8.0
monthly air temperatures (Celcius)	27.0	27.0	28.0	29.0	29.0	27.0	26.0	26.0	26.0	27.0	27.0	27.0
monthly evapotranspiration (Thornthwaite), mm.	135.3	126.9	152.2	161.6	172.5	150.7	136.6	131.7	124.4	140.9	132.5	135.3

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  111111111111111111111111111111
FEB  111111111111111111111111111111
MAR  111111111111111111111111111111
APR  111111111111111111111111111111
MAY  111111111111111111111111111111
JUN  111111111111111222222222221111
JUL  111111111111111222222222222221
AUG  111111111111111222222222222111
SEP  111111111111111222222222222222
OCT  222222222222222222222222222222
NOV  222222111111111111111111111111
DEC  111111111111111111111111111111
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
272	88	0	272	88	0	51	51	18	0

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Weak Aridic

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Station:BALEHONNUR Country:INDIA Latit: 16 22 N
Elevation: 889 Longit: 75 27 E

Annual rainfall 2747 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	2.0	4.0	22.0	108.0	129.0	427.0	943.0	595.0	220.0	220.0	66.0	11.0
monthly air temperatures (Celcius)	21.0	23.0	24.0	25.0	24.0	22.0	21.0	21.0	21.0	22.0	21.0	21.0
monthly evapotranspiration (Thornthwaite), mm.	72.7	86.0	108.5	121.6	116.9	91.1	84.0	81.0	76.5	85.2	71.2	72.7

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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        1************15**************30

JAN     333333333333333333333333333333
FEB     333222222222222222222222222222
MAR     222222222222111111111111111111
APR     111111111111111222222222222222
MAY     222222222222222222222222222222
JUN     222222223333333333333333333333
JUL     333333333333333333333333333333
AUG     333333333333333333333333333333
SEP     333333333333333333333333333333
OCT     333333333333333333333333333333
NOV     333333333333333333333333333333
DEC     333333333333333333333333333333
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
33	92	235	33	92	235	327	327	0	33

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Udic Tropustic

Station: BANGALORE Country: INDIA Latit: 12 58 N
Elevation: 921 Longit: 77 35 E

Annual rainfall 889 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	7.0	9.0	11.0	45.0	107.0	71.0	111.0	137.0	164.0	153.0	61.0	13.0
monthly air temperatures (Celcius)	21.0	23.0	26.0	27.0	27.0	24.0	28.0	23.0	23.0	23.0	22.0	21.0
monthly evapotranspiration (Thornthwaite), mm.	67.8	80.9	132.1	143.7	150.7	107.0	159.6	95.2	90.7	90.7	76.3	67.1

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1**********15**************30

JAN  333333333333333333333333333333
FEB  333333333222222222222222222222
MAR  222222222222222221111111111111
APR  111111111111111111111111111111
MAY  111111111111111222222222222222
JUN  222222222111111222222222222222
JUL  222111111111111222222222222222
AUG  222222222222222222222222222222
SEP  222222222222222333333333333333
OCT  333333333333333333333333333333
NOV  333333333333333333333333333333
DEC  333333333333333333333333333333
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
76	140	144	76	140	144	242	242	12	39

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:BELGAUM Country:INDIA Latit: 15 51 N
Elevation: 753 Longit: 74 32 E

Annual rainfall 1551 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	1.0	2.0	12.0	58.0	93.0	223.0	519.0	303.0	121.0	175.0	37.0	7.0
monthly air temperatures (Celcius)	22.0	24.0	26.0	28.0	27.0	24.0	23.0	23.0	23.0	24.0	23.0	22.0
monthly evapotranspiration (Thornthwaite), mm.	75.3	91.7	132.0	153.7	154.8	108.9	99.4	95.8	90.5	101.8	84.3	75.3

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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          1************15**************30

JAN       333333333333333322222222222222
FEB       222222222222222222222222221111
MAR       111111111111111111111111111111
APR       111111111111111222222222111111
MAY       111111111111111222222222222222
JUN       222222222222222333333333333333
JUL       333333333333333333333333333333
AUG       333333333333333333333333333333
SEP       333333333333333333333333333333
OCT       333333333333333333333333333333
NOV       333333333333333333333333333333
DEC       333333333333333333333333333333
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
70	79	211	70	79	211	281	281	0	16

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Udic Tropustic

Station:BELLARY Country:INDIA Latit: 15 9 N
Elevation: 449 Longit: 76 51 E

Annual rainfall 519 mm
Temperature regime: Isohyperthermic Moisture regime: Aridic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	2.0	2.0	4.0	24.0	61.0	43.0	48.0	80.0	110.0	109.0	31.0	5.0
monthly air temperatures (Celcius)	24.0	27.0	30.0	32.0	32.0	29.0	28.0	27.0	27.0	27.0	25.0	23.0
monthly evapotranspiration (Thornthwaite), mm.	83.6	126.9	167.0	180.0	192.1	167.8	165.5	150.7	142.3	140.9	97.0	70.1

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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JAN   111111111111111111111111111111
FEB   111111111111111111111111111111
MAR   111111111111111111111111111111
APR   111111111111111111111111111111
MAY   111111111111112222222211111111
JUN   111111111111111111111111111111
JUL   111111111111111111111111111111
AUG   111111111111112222222222222221
SEP   111111111111112222222222222222
OCT   222222222221112222222222222222
NOV   222222222221111111111111111111
DEC   111111111111111111111111111111
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
287	73	0	287	73	0	26	26	45	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Aridic

Station:BIDAR Country:INDIA Latit: 17 55 N
Elevation: 664 Longit: 77 32 E

Annual rainfall 977 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	2.0	7.0	17.0	27.0	29.0	147.0	243.0	186.0	212.0	74.0	30.0	3.0
monthly air temperatures (Celcius)	22.0	25.0	28.0	31.0	32.0	28.0	25.0	25.0	25.0	25.0	23.0	22.0
monthly evapotranspiration (Thornthwaite), mm.	67.1	99.2	152.2	174.7	192.1	159.6	122.1	117.8	111.2	110.1	77.0	67.1

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   333333222222222222222222222222
FEB   222222222222222222222111111111
MAR   111111111111111111111111111111
APR   111111111111111111111111111111
MAY   111111111111111111111111111111
JUN   111111111111111222222222222222
JUL   222222222222222333333333333333
AUG   333333333333333333333333333333
SEP   333333333333333333333333333333
OCT   333333333333333333333333333333
NOV   333333333333333333333333333333
DEC   333333333333333333333333333333
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
114	75	171	114	75	171	246	246	0	6

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:BIJAPUR Country:INDIA Latit: 16 49 N
Elevation: 594 Longit: 75 43 E

Annual rainfall 573 mm
Temperature regime: Isohyperthermic Moisture regime: Aridic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	3.0	1.0	9.0	26.0	39.0	68.0	79.0	85.0	135.0	97.0	26.0	5.0
monthly air temperatures (Celcius)	23.0	26.0	29.0	31.0	31.0	28.0	26.0	26.0	26.0	26.0	24.0	22.0
monthly evapotranspiration (Thornthwaite), mm.	76.0	112.8	160.1	174.7	186.5	159.6	138.8	133.8	126.4	125.1	87.2	64.3

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   111111111111111111111111111111
FEB   111111111111111111111111111111
MAR   111111111111111111111111111111
APR   111111111111111111111111111111
MAY   111111111111111111111111111111
JUN   111111111111111222222222211111
JUL   111111111111111222222222222222
AUG   111111111111111222222222222222
SEP   222211111111111222222222222222
OCT   222222222222222222222222222222
NOV   222222222222222222222222221111
DEC   111111111111111111111111111111
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is				
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
245	115	0	245	115	0	71	71	15	0

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Weak Aridic

Station:CHANNAPATNA Country:INDIA Latit: 12 39 N
Elevation: -100 Longit: 77 12 E

Annual rainfall 841 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	3.0	7.0	10.0	47.0	127.0	69.0	75.0	117.0	150.0	160.0	63.0	13.0
monthly air temperatures (Celcius)	22.0	25.0	27.0	28.0	27.0	25.0	24.0	24.0	24.0	24.0	23.0	22.0
monthly evapotranspiration (Thornthwaite), mm.	75.6	102.7	143.7	152.2	150.7	119.7	107.3	106.3	101.3	101.3	85.2	74.9

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  333333333333333333333222222222
FEB  222222222222222221111111111111
MAR  111111111111111111111111111111
APR  111111111111111111111111111111
MAY  111111111111111222222222222222
JUN  222222222222222222222222222222
JUL  221111111111111222222222222222
AUG  222222221111111222222222222222
SEP  222222222222222333333333333333
OCT  333333333333333333333333333333
NOV  333333333333333333333333333333
DEC  333333333333333333333333333333
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
107	127	126	107	127	126	182	182	13	21

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:CHITRADURGA Country:INDIA Latit: 14 14 N
Elevation: 733 Longit: 76 26 E

Annual rainfall 654 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	1.0	5.0	3.0	32.0	85.0	62.0	73.0	97.0	96.0	135.0	49.0	16.0
monthly air temperatures (Celcius)	23.0	26.0	28.0	30.0	29.0	26.0	24.0	24.0	25.0	25.0	23.0	22.0
monthly evapotranspiration (Thornthwaite), mm.	83.5	115.0	152.2	167.0	167.8	134.0	104.1	103.2	112.9	112.9	81.8	71.1

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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        1************15**************30

JAN     111111111111111111111111111111
FEB     111111111111111111111111111111
MAR     111111111111111111111111111111
APR     111111111111111111111111111111
MAY     111111111111111222222222222211
JUN     111111111111111222222222221111
JUL     111111111111111222222222222222
AUG     222222221111111222222222222222
SEP     222222222222222222222222222222
OCT     222222222222222222222222222222
NOV     222222222222222222222222222222
DEC     222222222222222222222222222111
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is				
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
181	179	0	181	179	0	132	132	15	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:COONDAPOOR Country:INDIA Latit: 13 38 N
Elevation: -100 Longit: 74 41 E

Annual rainfall 3695 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	2.0	3.0	4.0	26.0	127.0	%1038.0	%1211.0	698.0	350.0	156.0	66.0	14.0
monthly air temperatures (Celcius)	27.0	27.0	28.0	29.0	29.0	27.0	26.0	26.0	27.0	27.0	27.0	27.0
monthly evapotranspiration (Thornthwaite), mm.	139.5	126.9	152.2	160.1	167.8	147.9	131.4	130.2	142.3	142.3	136.7	138.1

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  222222222221111111111111111111
FEB  111111111111111111111111111111
MAR  111111111111111111111111111111
APR  111111111111111111111111111111
MAY  111111111111111222222222222222
JUN  222233333333333333333333333333
JUL  333333333333333333333333333333
AUG  333333333333333333333333333333
SEP  333333333333333333333333333333
OCT  333333333333333333333333333333
NOV  333333333333333333333333333333
DEC  333333333333332222222222222222
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
124	46	190	124	46	190	236	236	0	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:GADAG Country:INDIA Latit: 15 25 N
Elevation: 650 Longit: 75 38 E

Annual rainfall 663 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	2.0	2.0	7.0	35.0	82.0	73.0	70.0	83.0	133.0	130.0	37.0	9.0
monthly air temperatures (Celcius)	24.0	26.0	29.0	30.0	30.0	26.0	25.0	25.0	25.0	26.0	24.0	23.0
monthly evapotranspiration (Thornthwaite), mm.	91.0	113.8	160.1	168.6	179.9	135.1	121.6	117.3	110.8	126.3	89.1	78.1

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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          1*********15**************30

JAN       111111111111111111111111111111
FEB       111111111111111111111111111111
MAR       111111111111111111111111111111
APR       111111111111111111111111111111
MAY       111111111111112222222222221111
JUN       111111111111112222222222222221
JUL       111111111111112222222222222222
AUG       211111111111112222222222222222
SEP       222222222211112222222222222222
OCT       222222222222223333333333333333
NOV       333333333333333333333333333333
DEC       333322222222222222222221111111
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
195	116	49	195	116	49	98	98	15	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:GULBARGA Country:INDIA Latit: 17 21 N
Elevation: 458 Longit: 76 51 E

Annual rainfall 753 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	1.0	5.0	11.0	17.0	40.0	110.0	151.0	143.0	178.0	71.0	24.0	2.0
monthly air temperatures (Celcius)	23.0	26.0	29.0	32.0	33.0	29.0	27.0	27.0	26.0	26.0	24.0	22.0
monthly evapotranspiration (Thornthwaite), mm.	73.2	111.2	160.1	180.0	196.7	167.8	156.2	150.7	124.7	123.5	84.8	61.5

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   111111111111111111111111111111
FEB   111111111111111111111111111111
MAR   111111111111111111111111111111
APR   111111111111111111111111111111
MAY   111111111111111111111111111111
JUN   111111111111111222222222222222
JUL   222222211111111333333333333333
AUG   333333333333333333333333333333
SEP   333333333333333333333333333333
OCT   333333333333333333333333333333
NOV   333333333333333333333333333322
DEC   222222222222222222222222222211
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
175	52	133	175	52	133	163	163	8	0

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:HASSAN Country:INDIA Latit: 13 0 N
Elevation: 960 Longit: 76 9 E

Annual rainfall 892 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	2.0	7.0	15.0	60.0	112.0	87.0	145.0	107.0	100.0	181.0	63.0	13.0
morthly air temperatures (Celcius)	21.0	23.0	26.0	27.0	26.0	23.0	22.0	22.0	23.0	23.0	22.0	21.0
monthly evapotranspiration (Thornthwaite), mm.	70.9	83.2	132.6	143.7	139.1	96.9	87.2	86.4	93.2	93.2	79.1	70.2

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  333333333333333333333333333333
FEB  333322222222222222222222222222
MAR  222222222221111111111111111111
APR  111111111111112222222222211111
MAY  111111111111112222222222222222
JUN  222222222222222222222222222222
JUL  222222222222222333333333333333
AUG  333333333333333333333333333333
SEP  333333333333333333333333333333
OCT  333333333333333333333333333333
NOV  333333333333333333333333333333
DEC  333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is				
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
54	107	199	54	107	199	296	296	0	34

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Udic Tropustic

Station:HAVERI Country:INDIA Latit: 14 48 N
Elevation: -100 Longit: 75 24 E

Annual rainfall 768 mm
Temperature regime: Isohyperthermic Moisture regime: Aridic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	4.0	3.0	8.0	43.0	80.0	95.0	159.0	102.0	89.0	121.0	49.0	15.0
monthly air temperatures (Celcius)	24.0	27.0	30.0	32.0	32.0	29.0	28.0	27.0	27.0	25.0	25.0	23.0
monthly evapotranspiration (Thornthwaite), mm.	87.1	126.9	167.0	178.3	186.9	164.7	159.6	149.3	142.3	105.0	100.8	72.5

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  111111111111111111111111111111
FEB  111111111111111111111111111111
MAR  111111111111111111111111111111
APR  111111111111111111111111111111
MAY  111111111111111222222222211111
JUN  111111111111111222222222222222
JUL  111111111111111333333333333333
AUG  333333333333332333333333333333
SEP  333322222222211222222222222222
OCT  222221111111111222222222222222
NOV  222222222222222222222222222222
DEC  222222211111111111111111111111
```

Number of cumulative days that the moisture control section			Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C		Moist in some parts	Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
205	107	48	205	107	48	58	58	15	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Weak Aridic

Station:HONAVAR Country:INDIA Latit: 14 17 N
Elevation: 26 Longit: 74 27 E

Annual rainfall 3596 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	1.0	0.0	1.0	24.0	138.0	%1039.0	%1176.0	639.0	349.0	175.0	47.0	7.0
monthly air temperatures (Celcius)	26.0	26.0	27.0	29.0	29.0	27.0	26.0	26.0	26.0	27.0	27.0	27.0
monthly evapotranspiration (Thornthwaite), mm.	122.8	111.8	143.7	160.1	167.8	147.9	132.6	131.4	125.3	142.3	136.7	138.1

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   222222211111111111111111111111
FEB   111111111111111111111111111111
MAR   111111111111111111111111111111
APR   111111111111111111111111111111
MAY   111111111111111222222222222222
JUN   222233333333333333333333333333
JUL   333333333333333333333333333333
AUG   333333333333333333333333333333
SEP   333333333333333333333333333333
OCT   333333333333333333333333333333
NOV   333333333333333333333333333333
DEC   333333333322222222222222222222
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
128	46	186	128	46	186	232	232	0	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:HUBLI Country:INDIA Latit: 15 20 N
Elevation: -100 Longit: 75 8 E

Annual rainfall 671 mm
Temperature regime: Isohyperthermic Moisture regime: Aridic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	2.0	2.0	9.0	37.0	70.0	82.0	113.0	88.0	101.0	112.0	43.0	12.0
monthly air temperatures (Celcius)	24.0	27.0	30.0	32.0	32.0	29.0	28.0	27.0	27.0	27.0	25.0	23.0
monthly evapotranspiration (Thornthwaite), mm.	83.6	126.9	167.0	180.0	192.1	167.8	165.5	150.7	142.3	140.9	97.0	70.1

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  111111111111111111111111111111
FEB  111111111111111111111111111111
MAR  111111111111111111111111111111
APR  111111111111111111111111111111
MAY  111111111111112222222211111111
JUN  111111111111111222222222222111
JUL  111111111111111222222222222222
AUG  222222111111111222222222222222
SEP  211111111111111222222222222222
OCT  222222111111111222222222222222
NOV  222222222222211111111111111111
DEC  111111111111111111111111111111
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
254	106	0	254	106	0	28	28	15	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Aridic

Station:HYDERABAD 1911 Country:INDIA Latit: 17 27 N
Elevation: 545 Longit: 78 28 E

Annual rainfall 883 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	6.3	13.7	21.9	24.4	35.6	113.7	205.1	136.0	183.5	95.1	41.6	5.7
monthly air temperatures (Celcius)	22.0	24.8	28.4	31.4	32.6	29.5	27.0	26.3	26.6	26.2	23.8	21.2
monthly evapotranspiration (Thornthwaite), mm.	63.3	93.8	152.2	174.7	194.6	171.6	156.2	139.2	137.7	128.3	83.7	55.0

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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        1************15**************30

JAN     332222222222222222222222222222
FEB     222222221111111111111111111111
MAR     111111111111111111111111111111
APR     111111111111111111111111111111
MAY     111111111111111111111111111111
JUN     111111111111111222222222222222
JUL     222222222222111333333333333333
AUG     333333333333333333333333333333
SEP     333333333333333333333333333333
OCT     333333333333333333333333333333
NOV     333333333333333333333333333333
DEC     333333333333333333333333333333
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
130	63	167	130	63	167	203	203	3	2

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:HYDERABAD 1921 Country:INDIA Latit: 17 27 N
Elevation: 545 Longit: 78 28 E

Annual rainfall 740 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	19.2	13.0	11.3	18.4	18.0	76.1	158.4	126.1	163.2	92.1	43.1	1.4
monthly air temperatures (Celcius)	22.8	24.8	28.9	31.9	33.8	30.5	27.0	26.7	26.5	25.6	23.0	21.6
monthly evapotranspiration (Thornthwaite), mm.	71.0	92.6	156.3	177.5	198.7	178.4	156.2	145.8	137.7	116.4	72.0	57.5

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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          1************15**************30

JAN       222222222211111111111111111111
FEB       111111111111111111111111111111
MAR       111111111111111111111111111111
APR       111111111111111111111111111111
MAY       111111111111111111111111111111
JUN       111111111111111222222222211111
JUL       111111111111111333333333333333
AUG       333333333333333333333333333333
SEP       333333333333333333333333333333
OCT       333333333333333333333333333333
NOV       333333333333333333333333333333
DEC       333333333333333333322222222222
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
175	31	154	175	31	154	175	175	15	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:HYDERABAD 1951 Country:INDIA Latit: 17 27 N
Elevation: 545 Longit: 78 28 E

Annual rainfall 809 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	0.4	0.9	13.6	19.3	31.6	107.7	182.4	186.1	161.9	92.2	11.1	1.7
monthly air temperatures (Celcius)	21.6	24.0	27.3	30.5	32.4	29.3	26.0	25.5	25.8	25.0	22.2	20.8
monthly evapotranspiration (Thornthwaite), mm.	63.0	85.9	143.7	171.8	192.1	167.8	140.5	126.4	124.5	110.2	68.0	55.1

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   3333222222222222222222222222222
FEB   2222222222222111111111111111111
MAR   1111111111111111111111111111111
APR   1111111111111111111111111111111
MAY   1111111111111111111111111111111
JUN   1111111111111112222222222222222
JUL   2222222221111113333333333333333
AUG   3333333333333333333333333333333
SEP   3333333333333333333333333333333
OCT   3333333333333333333333333333333
NOV   3333333333333333333333333333333
DEC   3333333333333333333333333333333
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
128	63	169	128	63	169	208	208	6	4

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:ILKAL Country:INDIA Latit: 15 58 N
Elevation: -100 Longit: 76 7 E

Annual rainfall 581 mm
Temperature regime: Isohyperthermic Moisture regime: Aridic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	3.0	3.0	4.0	27.0	46.0	61.0	69.0	81.0	151.0	87.0	41.0	8.0
monthly air temperatures (Celcius)	24.0	27.0	30.0	32.0	32.0	29.0	27.0	27.0	27.0	27.0	25.0	23.0
monthly evapotranspiration (Thornthwaite), mm.	84.1	126.9	167.0	180.0	192.1	167.8	156.2	150.7	142.3	140.9	97.4	70.6

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  111111111111111111111111111111
FEB  111111111111111111111111111111
MAR  111111111111111111111111111111
APR  111111111111111111111111111111
MAY  111111111111111111111111111111
JUN  111111111111111222222221111111
JUL  111111111111111222222222221111
AUG  111111111111111222222222222221
SEP  111111111111111333333333333333
OCT  333333333333333333333333333333
NOV  333222222211111111111111111111
DEC  111111111111111111111111111111
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
272	40	48	272	40	48	55	55	19	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Weak Aridic

Station:KARWAR Country:INDIA Latit: 14 47 N
Elevation: -100 Longit: 74 8 E

Annual rainfall 3075 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	1.0	1.0	0.0	15.0	82.0	987.0	%1011.0	507.0	282.0	129.0	53.0	7.0
monthly air temperatures (Celcius)	27.0	27.0	28.0	29.0	29.0	27.0	26.0	26.0	26.0	27.0	27.0	27.0
monthly evapotranspiration (Thornthwaite), mm.	139.5	126.9	152.2	160.1	167.8	147.9	131.7	130.5	124.4	142.3	136.7	138.1

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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                1************15**************30

JAN   222221111111111111111111111111
FEB   111111111111111111111111111111
MAR   111111111111111111111111111111
APR   111111111111111111111111111111
MAY   111111111111111222222222222111
JUN   112222333333333333333333333333
JUL   333333333333333333333333333333
AUG   333333333333333333333333333333
SEP   333333333333333333333333333333
OCT   333333333333333333333333333333
NOV   333333333333333333333333333333
DEC   333333333222222222222222222222
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is				
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
135	42	183	135	42	183	213	213	0	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:KOLAR Country:INDIA Latit: 13 8 N
Elevation: -100 Longit: 78 8 E

Annual rainfall 712 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	10.0	6.0	11.0	37.0	91.0	46.0	64.0	99.0	129.0	119.0	82.0	18.0
monthly air temperatures (Celcius)	21.0	23.0	26.0	27.0	24.0	28.0	23.0	23.0	23.0	22.0	22.0	21.0
monthly evapotranspiration (Thornthwaite), mm.	69.5	82.2	132.4	143.7	110.3	156.7	97.6	96.7	92.1	81.1	77.9	68.8

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  333333333333333333333333333333
FEB  222222222222222222222222111111
MAR  111111111111111111111111111111
APR  111111111111111111111111111111
MAY  111111111111112222222222222222
JUN  222221111111111111111111111111
JUL  111111111111112222222222222222
AUG  222221111111112222222222222222
SEP  222222222222223333333333333333
OCT  333333333333333333333333333333
NOV  333333333333333333333333333333
DEC  333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
130	95	135	130	95	135	189	189	15	30

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:KOTTURU Country:INDIA Latit: 14 50 N
Elevation: -100 Longit: 76 13 E

Annual rainfall 502 mm
Temperature regime: Isohyperthermic Moisture regime: Aridic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	4.0	1.0	2.0	26.0	47.0	50.0	43.0	91.0	103.0	104.0	26.0	5.0
monthly air temperatures (Celcius)	24.0	26.0	29.0	32.0	32.0	30.0	28.0	28.0	28.0	27.0	25.0	23.0
monthly evapotranspiration (Thornthwaite), mm.	85.7	109.0	160.1	178.3	186.9	171.8	159.6	158.1	150.8	142.3	99.6	71.0

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   111111111111111111111111111111
FEB   111111111111111111111111111111
MAR   111111111111111111111111111111
APR   111111111111111111111111111111
MAY   111111111111111111111111111111
JUN   111111111111111111111111111111
JUL   111111111111111111111111111111
AUG   111111111111111222222222222222
SEP   111111111111111222222222222222
OCT   222221111111111222222222222222
NOV   222222221111111111111111111111
DEC   111111111111111111111111111111
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
302	58	0	302	58	0	23	23	45	0

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Aridic

Station:MANGALORE Country:INDIA Latit: 12 52 N
Elevation: 22 Longit: 74 51 E

Annual rainfall 3469 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	5.0	2.0	9.0	40.0	233.0	982.0	%1059.0	577.0	267.0	206.0	71.0	18.0
monthly air temperatures (Celcius)	27.0	27.0	28.0	29.0	29.0	27.0	26.0	26.0	26.0	27.0	27.0	27.0
monthly evapotranspiration (Thornthwaite), mm.	139.5	126.9	152.2	160.1	167.8	147.9	131.7	130.5	124.4	142.3	136.7	138.1

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  222222222222222211111111111111
FEB  111111111111111111111111111111
MAR  111111111111111111111111111111
APR  111111111111111111111111111111
MAY  111111111111111333333333333333
JUN  333333333333333333333333333333
JUL  333333333333333333333333333333
AUG  333333333333333333333333333333
SEP  333333333333333333333333333333
OCT  333333333333333333333333333333
NOV  333333333333333333333333333333
DEC  333333333333333333333222222222
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
119	25	216	119	25	216	241	241	0	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:MERCARA Country:INDIA Latit: 12 25 N
Elevation: 1152 Longit: 75 44 E

Annual rainfall 3346 mm
Temperature regime: Isohyperthermic Moisture regime: Udic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	5.0	6.0	21.0	81.0	160.0	614.0	%1106.0	724.0	332.0	204.0	78.0	15.0
monthly air temperatures (Celcius)	19.0	21.0	23.0	23.0	22.0	20.0	19.0	19.0	19.0	20.0	20.0	19.0
monthly evapotranspiration (Thornthwaite), mm.	64.9	73.6	101.8	101.8	96.8	77.0	70.1	69.5	66.2	74.1	71.2	64.3

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   333333333333333333333333333333
FEB   333333333333333332222222222222
MAR   222222222222222222222222222222
APR   221111111111111222222222222222
MAY   222222222222222333333333333333
JUN   333333333333333333333333333333
JUL   333333333333333333333333333333
AUG   333333333333333333333333333333
SEP   333333333333333333333333333333
OCT   333333333333333333333333333333
NOV   333333333333333333333333333333
DEC   333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
13	75	272	13	75	272	347	347	0	47

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Dry Tropudic

Station:MYSORE Country:INDIA Latit: 12 18 N
Elevation: 767 Longit: 76 42 E

Annual rainfall 913 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	3.0	6.0	12.0	68.0	157.0	61.0	72.0	156.0	116.0	180.0	67.0	15.0
monthly air temperatures (Celcius)	22.0	24.0	27.0	28.0	27.0	25.0	24.0	24.0	24.0	24.0	23.0	22.0
monthly evapotranspiration (Thornthwaite), mm.	76.0	90.6	143.7	152.2	150.7	119.9	107.6	106.6	101.6	101.6	85.5	75.2

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1***********15**************30

JAN  333333333333333333333333222222
FEB  222222222222222222222222222111
MAR  111111111111111111111111111111
APR  111111111111111222222222221111
MAY  111111111111111133333333333333
JUN  333333333333333333333333333333
JUL  222222222221111222222222222222
AUG  222222222222111333333333333333
SEP  333333333333333333333333333333
OCT  333333333333333333333333333333
NOV  333333333333333333333333333333
DEC  333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
74	82	204	74	82	204	192	192	4	24

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:RAICHUR Country:INDIA Latit: 16 12 N
Elevation: 400 Longit: 77 21 E

Annual rainfall 719 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	1.0	6.0	4.0	13.0	28.0	103.0	139.0	135.0	168.0	94.0	25.0	3.0
monthly air temperatures (Celcius)	24.0	27.0	30.0	32.0	33.0	30.0	27.0	27.0	27.0	27.0	25.0	24.0
monthly evapotranspiration (Thornthwaite), mm.	82.6	126.9	167.0	180.0	196.7	175.1	156.2	150.7	142.3	140.9	96.1	82.6

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   111111111111111111111111111111
FEB   111111111111111111111111111111
MAR   111111111111111111111111111111
APR   111111111111111111111111111111
MAY   111111111111111111111111111111
JUN   111111111111111222222222222222
JUL   211111111111111222222222222222
AUG   222222222222222222222222222222
SEP   222222222222222333333333333333
OCT   333333333333333333333333333333
NOV   333333333333322222222222222222
DEC   222211111111111111111111111111
```

Number of cumulative days that the moisture control section			Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C		Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
205	97	58	205	97	58	139	139	14	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:SHIMOGA Country:INDIA Latit: 13 56 N
Elevation: 571 Longit: 75 38 E

Annual rainfall 822 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	4.0	2.0	9.0	32.0	75.0	104.0	223.0	115.0	84.0	118.0	45.0	11.0
monthly air temperatures (Celcius)	23.0	25.0	27.0	29.0	28.0	25.0	24.0	24.0	25.0	25.0	23.0	22.0
monthly evapotranspiration (Thornthwaite), mm.	85.3	101.8	143.7	160.1	159.6	118.6	105.8	104.8	114.1	114.1	83.6	73.1

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  333332222222222222222222222222
FEB  222222221111111111111111111111
MAR  111111111111111111111111111111
APR  111111111111111111111111111111
MAY  111111111111111222222222222111
JUN  111111111111111222222222222222
JUL  222222222222222333333333333333
AUG  333333333333333333333333333333
SEP  333333333333333333333333333333
OCT  333333333333333333333333333333
NOV  333333333333333333333333333333
DEC  333333333333333333333333333333
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
115	75	170	115	75	170	233	233	0	5

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:SIRA Country:INDIA Latit: 13 45 N
Elevation: -100 Longit: 76 55 E

Annual rainfall 566 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	6.0	3.0	5.0	21.0	77.0	46.0	47.0	75.0	114.0	117.0	48.0	7.0
monthly air temperatures (Celcius)	21.0	23.0	26.0	27.0	27.0	24.0	28.0	23.0	23.0	23.0	22.0	21.0
monthly evapotranspiration (Thornthwaite), mm.	67.8	80.9	132.1	143.7	150.7	107.0	159.6	95.2	90.7	90.7	76.3	67.1

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   222222222222211111111111111111
FEB   111111111111111111111111111111
MAR   111111111111111111111111111111
APR   111111111111111111111111111111
MAY   111111111111111222222222222211
JUN   111111111111111111111111111111
JUL   111111111111111111111111111111
AUG   111111111111111222222222222222
SEP   222222222222222222222222222222
OCT   222222222222222333333333333333
NOV   333333333333333333333333333333
DEC   333333333333333333333333322222
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
198	92	70	198	92	70	149	149	45	0

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:YADGIR Country:INDIA Latit: 16 46 N
Elevation: -100 Longit: 77 8 E

Annual rainfall 677 mm
Temperature regime: Isohyperthermic Moisture regime: Aridic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	4.0	8.0	8.0	22.0	23.0	97.0	133.0	111.0	165.0	71.0	31.0	4.0
monthly air temperatures (Celcius)	24.0	27.0	30.0	32.0	33.0	30.0	27.0	27.0	27.0	27.0	25.0	24.0
monthly evapotranspiration (Thornthwaite), mm.	82.6	126.9	167.0	180.0	196.7	175.1	156.2	150.7	142.3	140.9	96.1	82.6

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  111111111111111111111111111111
FEB  111111111111111111111111111111
MAR  111111111111111111111111111111
APR  111111111111111111111111111111
MAY  111111111111111111111111111111
JUN  111111111111111222222222222221
JUL  111111111111111222222222222222
AUG  222222222222222222222222222222
SEP  222222222222221333333333333333
OCT  333333333333333333333333333332
NOV  222222222222211111111111111111
DEC  111111111111111111111111111111
```

Number of cumulative days that the moisture control section			Highest number of consecutive days that the MCS is				
During one year is			When soil temp is above 5 deg. C			Moist in some parts	Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR T>8		
229	87	44	229	87	44	59 59	15	0

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Weak Aridic

Station:VENGURLA Country:INDIA Latit: 15 52 N
Elevation: 9 Longit: 73 58 E

Annual rainfall 2671 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)												
	1.0	1.0	1.0	9.0	57.0	836.0	911.0	458.0	163.0	96.0	34.0	4.0
monthly air temperatures (Celcius)												
	25.0	25.0	27.0	29.0	29.0	27.0	26.0	26.0	26.0	27.0	27.0	26.0
monthly evapotranspiration (Thornthwaite), mm.												
	103.4	97.0	143.7	161.6	172.5	150.7	138.4	133.5	126.1	140.9	132.5	119.9

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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          1***********15**************30

JAN       222211111111111111111111111111
FEB       111111111111111111111111111111
MAR       111111111111111111111111111111
APR       111111111111111111111111111111
MAY       111111111111112222222111111111
JUN       111222223333333333333333333333
JUL       333333333333333333333333333333
AUG       333333333333333333333333333333
SEP       333333333333333333333333333333
OCT       333333333333333333333333333333
NOV       333333333333333333333333333333
DEC       333322222222222222222222222222
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
142	42	176	142	42	176	211	211	0	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

SOIL MOISTURE AND TEMPERATURE REGIMES OF KERALA

Station:ALLEPPEY Country:INDIA Latit: 9 33 N
Elevation: 4 Longit: 76 25 E

Annual rainfall 3098 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	42.0	52.0	66.0	139.0	314.0	686.0	513.0	381.0	268.0	309.0	265.0	63.0
monthly air temperatures (Celcius)	27.0	28.0	29.0	29.0	28.0	27.0	26.0	26.0	27.0	27.0	27.0	27.0
monthly evapotranspiration (Thornthwaite), mm.	142.3	137.5	160.1	158.5	156.7	143.7	128.6	127.4	140.9	143.7	138.1	142.3

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   333333333333333333333333332222
FEB   222222222222222222222222222222
MAR   222111111111111222222222211111
APR   111111111111111222222222222222
MAY   222222222222222333333333333333
JUN   333333333333333333333333333333
JUL   333333333333333333333333333333
AUG   333333333333333333333333333333
SEP   333333333333333333333333333333
OCT   333333333333333333333333333333
NOV   333333333333333333333333333333
DEC   333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
32	77	251	32	77	251	318	318	0	26

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Udic Tropustic

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Station:CALICUT Country:INDIA Latit: 11 15 N
Elevation: 5 Longit: 75 47 E

Annual rainfall 3283 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	6.0	11.0	21.0	111.0	323.0	871.0	860.0	405.0	215.0	290.0	140.0	30.0
monthly air temperatures (Celcius)	27.0	28.0	29.0	29.0	29.0	27.0	26.0	26.0	27.0	27.0	27.0	27.0
monthly evapotranspiration (Thornthwaite), mm.	139.5	134.5	160.1	160.1	167.8	147.9	130.7	129.5	142.3	142.3	136.7	138.1

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   3333222222222222222222222222222
FEB   1111111111111111111111111111111
MAR   1111111111111111111111111111111
APR   1111111111111112222222222222222
MAY   2222222222222223333333333333333
JUN   3333333333333333333333333333333
JUL   3333333333333333333333333333333
AUG   3333333333333333333333333333333
SEP   3333333333333333333333333333333
OCT   3333333333333333333333333333333
NOV   3333333333333333333333333333333
DEC   3333333333333333333333333333333
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
75	56	229	75	56	229	285	285	0	4

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Udic Tropustic

Station:CANNANORE Country:INDIA Latit: 11 52 N
Elevation: -100 Longit: 75 22 E

Annual rainfall 3275 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	4.0	5.0	9.0	49.0	213.0	924.0	989.0	509.0	229.0	216.0	110.0	18.0
monthly air temperatures (Celcius)	27.0	28.0	29.0	29.0	29.0	27.0	26.0	26.0	27.0	27.0	27.0	27.0
monthly evapotranspiration (Thornthwaite), mm.	139.5	134.5	160.1	160.1	167.8	147.9	130.7	129.5	142.3	142.3	136.7	138.1

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15*************30

JAN   222222222222222222222222211111
FEB   111111111111111111111111111111
MAR   111111111111111111111111111111
APR   111111111111111111111111111111
MAY   111111111111111333333333333333
JUN   333333333333333333333333333333
JUL   333333333333333333333333333333
AUG   333333333333333333333333333333
SEP   333333333333333333333333333333
OCT   333333333333333333333333333333
NOV   333333333333333333333333333333
DEC   333333333333333333333333333333
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
110	25	225	110	25	225	250	250	0	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:COCHIN Country:INDIA Latit: 9 58 N
Elevation: 3 Longit: 76 14 E

Annual rainfall 3101 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	10.0	34.0	50.0	140.0	364.0	756.0	572.0	386.0	235.0	333.0	184.0	37.0
monthly air temperatures (Celcius)	27.0	28.0	29.0	29.0	28.0	27.0	26.0	26.0	26.0	27.0	27.0	27.0
monthly evapotranspiration (Thornthwaite), mm.	142.3	137.5	160.1	158.5	156.7	143.7	129.0	127.7	122.9	143.7	138.1	142.3

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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          1************15**************30

JAN       333333222222222222222222222222
FEB       222211111111111111111111111111
MAR       111111111111111111111111111111
APR       111111111111112222222222222222
MAY       222222222222223333333333333333
JUN       333333333333333333333333333333
JUL       333333333333333333333333333333
AUG       333333333333333333333333333333
SEP       333333333333333333333333333333
OCT       333333333333333333333333333333
NOV       333333333333333333333333333333
DEC       333333333333333333333333333333
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
71	57	232	71	57	232	289	289	0	7

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Udic Tropustic

Station:PALGHAT Country:INDIA Latit: 10 47 N
Elevation: 97 Longit: 76 39 E

Annual rainfall 2116 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	11.0	11.0	23.0	60.0	132.0	429.0	605.0	334.0	155.0	210.0	116.0	30.0
monthly air temperatures (Celcius)	28.0	29.0	31.0	31.0	29.0	26.0	25.0	26.0	27.0	27.0	27.0	27.0
monthly evapotranspiration (Thornthwaite), mm.	147.8	141.4	173.0	173.0	167.8	126.7	109.5	127.9	142.3	142.3	136.7	138.1

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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                1************15**************30

JAN   3332222222222222222222222222211
FEB   1111111111111111111111111111111
MAR   1111111111111111111111111111111
APR   1111111111111122222222111111111
MAY   1111111111111122222222222222222
JUN   2222222222222223333333333333333
JUL   3333333333333333333333333333333
AUG   3333333333333333333333333333333
SEP   3333333333333333333333333333333
OCT   3333333333333333333333333333333
NOV   3333333333333333333333333333333
DEC   3333333333333333333333333333333
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
99	63	198	99	63	198	253	253	0	3

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:PONNANI Country:INDIA Latit: 10 47 N
Elevation: -100 Longit: 75 55 E

Annual rainfall 2958 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	7.0	8.0	24.0	97.0	267.0	753.0	716.0	383.0	203.0	287.0	185.0	28.0
monthly air temperatures (Celcius)	27.0	28.0	29.0	29.0	28.0	27.0	26.0	26.0	26.0	27.0	27.0	27.0
monthly evapotranspiration (Thornthwaite), mm.	139.5	134.5	160.1	160.1	159.6	147.9	131.4	130.2	124.1	142.3	136.7	138.1

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  3333322222222222222222222222
FEB  2211111111111111111111111111
MAR  1111111111111111111111111111
APR  1111111111111122222222222222
MAY  2222221111111133333333333333
JUN  3333333333333333333333333333
JUL  3333333333333333333333333333
AUG  3333333333333333333333333333
SEP  3333333333333333333333333333
OCT  3333333333333333333333333333
NOV  3333333333333333333333333333
DEC  3333333333333333333333333333
```

Station:QUILON Country:INDIA Latit: 8 53 N
Elevation: -100 Longit: 76 36 E

Annual rainfall 2398 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	18.0	23.0	50.0	140.0	267.0	531.0	378.0	246.0	195.0	294.0	209.0	47.0
monthly air temperatures (Celcius)	27.0	27.0	28.0	29.0	29.0	27.0	26.0	26.0	27.0	27.0	27.0	27.0
monthly evapotranspiration (Thornthwaite), mm.	142.3	129.7	152.2	158.5	164.7	143.7	129.0	127.7	140.9	143.7	138.1	142.3

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   333333333332222222222222222222
FEB   222222222211111111111111111111
MAR   111111111111111111111111111111
APR   111111111111111222222222222222
MAY   222222222222222333333333333333
JUN   333333333333333333333333333333
JUL   333333333333333333333333333333
AUG   333333333333333333333333333333
SEP   333333333333333333333333333333
OCT   333333333333333333333333333333
NOV   333333333333333333333333333333
DEC   333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
65	59	236	65	59	236	295	295	0	11

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Udic Tropustic

Station:TRIVANDRUM Country:INDIA Latit: 8 29 N
Elevation: 64 Longit: 76 57 E

Annual rainfall 1840 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	20.0	20.0	44.0	122.0	249.0	331.0	215.0	164.0	123.0	272.0	207.0	73.0
monthly air temperatures (Celcius)	27.0	27.0	28.0	29.0	28.0	26.0	26.0	26.0	27.0	27.0	27.0	27.0
monthly evapotranspiration (Thornthwaite), mm.	142.3	129.7	152.2	158.5	156.7	125.9	129.6	128.4	140.9	143.7	138.1	142.3

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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          1************15**************30

JAN       333333333333333333332222222222
FEB       222222222222222222222111111111
MAR       111111111111111111111111111111
APR       111111111111111222222222222222
MAY       222222222222222333333333333333
JUN       333333333333333333333333333333
JUL       333333333333333333333333333333
AUG       333333333333333333333333333333
SEP       333333333333333333333333333333
OCT       333333333333333333333333333333
NOV       333333333333333333333333333333
DEC       333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
54	61	245	54	61	245	306	306	0	20

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Udic Tropustic

SOIL MOISTURE AND TEMPERATURE REGIMES OF TAMIL NADU

Station:ARUPPUKOTTAI Country:INDIA Latit: 9 31 N
Elevation: -100 Longit: 78 3 E

Annual rainfall 723 mm
Temperature regime: Isohyperthermic Moisture regime: Aridic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	0.0	8.9	20.5	35.7	76.8	11.4	43.0	64.5	103.5	196.0	152.4	9.9
monthly air temperatures (Celcius)	25.6	27.0	29.2	30.9	31.9	31.5	30.7	30.3	29.9	28.5	27.0	25.7
monthly evapotranspiration (Thornthwaite), mm.	106.8	129.7	160.1	168.5	180.9	175.8	175.1	170.2	160.5	156.3	138.1	108.8

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

```
                1************15**************30

JAN   222222222222211111111111111
FEB   111111111111111111111111111
MAR   111111111111111111111111111
APR   111111111111111111111111111
MAY   111111111111112222222211111
JUN   111111111111111111111111111
JUL   111111111111111111111111111
AUG   111111111111112222222211111
SEP   111111111111112222222222222
OCT   222222111111113333333333333
NOV   333333333333333333333333333
DEC   333333333333333333333333322
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
231	56	73	231	56	73	89	89	45	0

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Weak Aridic

Station:CHINGLEPUT Country:INDIA Latit: 12 42 N
Elevation: -100 Longit: 79 59 E

Annual rainfall 1215 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	38.0	11.0	14.0	21.0	37.0	52.0	98.0	142.0	160.0	233.0	274.0	135.0
monthly air temperatures (Celcius)	25.0	26.0	28.0	30.0	33.0	32.0	31.0	30.0	30.0	28.0	26.0	25.0
monthly evapotranspiration (Thornthwaite), mm.	95.8	104.4	152.2	167.0	191.4	183.5	181.4	173.4	165.3	150.8	112.4	94.8

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  333333333333333333333333333333
FEB  333333333333333333333333333332
MAR  222222222222222222222222211111
APR  111111111111111111111111111111
MAY  111111111111111111111111111111
JUN  111111111111111222222111111111
JUL  111111111111111222222222222221
AUG  111111111111111222222222222222
SEP  222222222222222333333333333333
OCT  333333333333333333333333333333
NOV  333333333333333333333333333333
DEC  333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
120	76	164	120	76	164	220	220	16	59

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:COIMBATORE Country:INDIA Latit: 11 0 N
Elevation: 409 Longit: 76 58 E

Annual rainfall 612 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	11.0	7.0	9.0	61.0	69.0	34.0	42.0	34.0	37.0	149.0	125.0	34.0
monthly air temperatures (Celcius)	24.0	26.0	28.0	29.0	29.0	26.0	26.0	26.0	26.0	26.0	25.0	24.0
monthly evapotranspiration (Thornthwaite), mm.	93.2	113.5	152.2	160.1	167.8	132.2	134.7	133.4	127.2	127.2	105.9	92.2

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  333333322222222222222222211111
FEB  111111111111111111111111111111
MAR  111111111111111111111111111111
APR  111111111111112222222222111111
MAY  111111111111112222222222211111
JUN  111111111111111111111111111111
JUL  111111111111111111111111111111
AUG  111111111111111111111111111111
SEP  111111111111111111111111111111
OCT  111111111111112222222222222222
NOV  222222222222223333333333333333
DEC  333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
241	67	52	241	67	52	100	100	105	7

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:COONOOR Country:INDIA Latit: 11 21 N
Elevation: 1748 Longit: 76 48 E

Annual rainfall 1550 mm
Temperature regime: Isothermic Moisture regime: Udic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	82.0	71.0	82.0	143.0	112.0	65.0	71.0	96.0	96.0	268.0	315.0	149.0
monthly air temperatures (Celcius)	10.0	15.0	17.0	19.0	20.0	19.0	18.0	18.0	18.0	17.0	16.0	14.0
monthly evapotranspiration (Thornthwaite), mm.	25.7	46.6	65.3	78.8	90.2	81.1	75.4	74.7	71.2	64.6	56.0	45.1

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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          1************15**************30

JAN       333333333333333333333333333333
FEB       333333333333333333333333333333
MAR       333333333333333333333333333333
APR       333333333333333333333333333333
MAY       333333333333333333333333333333
JUN       333333333333333333333333333333
JUL       333333333333333333333333333333
AUG       333333333333333333333333333333
SEP       333333333333333333333333333333
OCT       333333333333333333333333333333
NOV       333333333333333333333333333333
DEC       333333333333333333333333333333
```

Number of cumulative days that the moisture control section			Highest number of consecutive days that the MCS is				
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
0	0	360	0	0	360	360	360	0	120

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Udic

Station:CUDDALORE Country:INDIA Latit: 11 46 N
Elevation: 12 Longit: 79 46 E

Annual rainfall 1307 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	42.0	15.0	27.0	38.0	71.0	35.0	69.0	110.0	113.0	242.0	362.0	183.0
monthly air temperatures (Celcius)	24.0	25.0	27.0	29.0	31.0	32.0	31.0	30.0	29.0	28.0	26.0	25.0
monthly evapotranspiration (Thornthwaite), mm.	83.2	90.4	143.7	160.1	181.4	183.5	181.4	173.4	158.5	150.8	115.5	98.4

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1***********15**************30

JAN   333333333333333333333333333333
FEB   333333333333333333333333333333
MAR   333333333222222222222222222222
APR   222222221111111111111111111111
MAY   111111111111111222222222111111
JUN   111111111111111111111111111111
JUL   111111111111111222222222111111
AUG   111111111111111222222222222222
SEP   222211111111111222222222222222
OCT   222222222222222333333333333333
NOV   333333333333333333333333333333
DEC   333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
120	96	144	120	96	144	203	203	21	69

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:DHARMAPURI Country:INDIA Latit: 12 8 N
Elevation: -100 Longit: 78 10 E

Annual rainfall 852 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	16.0	8.0	8.0	40.0	109.0	63.0	63.0	109.0	137.0	155.0	109.0	35.0
monthly air temperatures (Celcius)	24.0	26.0	29.0	32.0	32.0	30.0	28.0	28.0	28.0	27.0	25.0	23.0
monthly evapotranspiration (Thornthwaite), mm.	85.7	109.0	160.1	178.3	186.9	171.8	159.6	158.1	150.8	142.3	99.6	71.0

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  333333333333333333332222222222
FEB  222221111111111111111111111111
MAR  111111111111111111111111111111
APR  111111111111111111111111111111
MAY  111111111111111222222222222222
JUN  211111111111111222222221111111
JUL  111111111111111222222222111111
AUG  111111111111111222222222222222
SEP  222222221111111222222222222222
OCT  222222222222222333333333333333
NOV  333333333333333333333333333333
DEC  333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
164	101	95	164	101	95	140	140	21	20

Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:ERODE Country:INDIA Latit: 11 21 N
Elevation: -100 Longit: 77 43 E

Annual rainfall 795 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	16.0	14.0	19.0	51.0	92.0	42.0	48.0	91.0	101.0	176.0	110.0	35.0
monthly air temperatures (Celcius)	24.0	25.0	28.0	31.0	33.0	31.0	30.0	30.0	29.0	27.0	25.0	23.0
monthly evapotranspiration (Thornthwaite), mm.	83.6	90.7	152.2	173.0	191.4	178.1	175.1	173.4	158.5	142.3	97.7	68.9

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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          1************15**************30

JAN       333333333333333333333333322222
FEB       222222222221111111111111111111
MAR       111111111111111111111111111111
APR       111111111111112222221111111111
MAY       111111111111111222222222222111
JUN       111111111111111111111111111111
JUL       111111111111111111111111111111
AUG       111111111111111222222222222211
SEP       111111111111111222222222222222
OCT       222221111111111333333333333333
NOV       333333333333333333333333333333
DEC       333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
193	67	100	193	67	100	116	116	45	25

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:KALLAKKURICHI Country:INDIA Latit: 11 44 N
Elevation: 127 Longit: 78 56 E

Annual rainfall 1042 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	47.0	14.0	14.0	39.0	81.0	46.0	79.0	136.0	142.0	194.0	175.0	75.0
monthly air temperatures (Celcius)	25.0	27.0	29.0	31.0	33.0	32.0	30.0	30.0	30.0	28.0	26.0	25.0
monthly evapotranspiration (Thornthwaite), mm.	94.7	126.9	160.1	173.0	191.4	183.5	175.1	173.4	165.3	150.8	111.4	93.7

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  333333333333333333333333333333
FEB  333333333333333333322222222222
MAR  222222111111111111111111111111
APR  111111111111111111111111111111
MAY  111111111111111222222222211111
JUN  111111111111111111111111111111
JUL  111111111111111222222222221111
AUG  111111111111111222222222222222
SEP  222222222222211222222222222222
OCT  222222222222222333333333333333
NOV  333333333333333333333333333333
DEC  333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
140	96	124	140	96	124	171	171	19	49

Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:KODAIKANAL Country:INDIA Latit: 10 14 N
Elevation: 2344 Longit: 77 28 E

Annual rainfall 1672 mm
Temperature regime: Isothermic Moisture regime: Udic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	63.0	32.0	64.0	166.0	157.0	104.0	117.0	163.0	161.0	250.0	274.0	121.0
monthly air temperatures (Celcius)	13.0	13.0	15.0	16.0	17.0	15.0	14.0	15.0	15.0	14.0	13.0	13.0
monthly evapotranspiration (Thornthwaite), mm.	48.7	44.3	61.5	67.5	77.2	63.3	58.4	63.9	60.9	55.2	47.7	48.2

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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        1************15**************30

JAN     333333333333333333333333333333
FEB     333333333333333333333333333333
MAR     333333333333333333333333333333
APR     333333333333333333333333333333
MAY     333333333333333333333333333333
JUN     333333333333333333333333333333
JUL     333333333333333333333333333333
AUG     333333333333333333333333333333
SEP     333333333333333333333333333333
OCT     333333333333333333333333333333
NOV     333333333333333333333333333333
DEC     333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is				
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>5		
0	0	360	0	0	360	360	360	0	120

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Udic

Station:KOVILPATTI Country:INDIA Latit: 9 22 N
Elevation: 20 Longit: 77 55 E

Annual rainfall 660 mm
Temperature regime: Isohyperthermic Moisture regime: Aridic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	6.4	9.2	23.0	71.6	36.5	12.2	20.9	45.5	86.3	197.3	108.8	42.0
monthly air temperatures (Celcius)	25.6	26.8	29.0	30.1	31.3	31.2	30.8	30.8	30.3	28.4	26.7	25.7
monthly evapotranspiration (Thornthwaite), mm.	107.6	125.6	160.1	165.3	178.1	173.0	175.1	173.5	163.7	152.2	133.7	109.6

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  222222222211111111111111111111
FEB  111111111111111111111111111111
MAR  111111111111111111111111111111
APR  111111111111111222222222221111
MAY  111111111111111111111111111111
JUN  111111111111111111111111111111
JUL  111111111111111111111111111111
AUG  111111111111111111111111111111
SEP  111111111111111222222222222211
OCT  111111111111111333333333333333
NOV  333333333333333333333333333333
DEC  333333333333333333333333333332
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
250	36	74	250	36	74	86	86	75	0

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Weak Aridic

Station:MADRAS Country:INDIA Latit: 13 0 N
Elevation: 16 Longit: 80 11 E

Annual rainfall 1217 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	24.0	7.0	15.0	25.0	52.0	53.0	84.0	124.0	118.0	267.0	309.0	139.0
monthly air temperatures (Celcius)	25.0	26.0	28.0	30.0	33.0	32.0	31.0	30.0	30.0	28.0	26.0	25.0
monthly evapotranspiration (Thornthwaite), mm.	95.8	104.4	152.2	167.0	191.4	183.5	181.4	173.4	165.3	150.8	112.4	94.8

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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     1************15**************30

JAN  333333333333333333333333333333
FEB  333333333333333333333333222222
MAR  222222222222222222222111111111
APR  111111111111111111111111111111
MAY  111111111111111222221111111111
JUN  111111111111111222222111111111
JUL  111111111111111222222222221111
AUG  111111111111111222222222222222
SEP  222222221111111222222222222222
OCT  222222222222222333333333333333
NOV  333333333333333333333333333333
DEC  333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
129	102	129	129	102	129	186	186	19	54

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:MADURAI Country:INDIA Latit: 9 53 N
Elevation: 133 Longit: 78 7 E

Annual rainfall 905 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	26.0	16.0	21.0	81.0	59.0	31.0	48.0	117.0	123.0	179.0	161.0	43.0
monthly air temperatures (Celcius)	26.0	27.0	29.0	31.0	32.0	32.0	31.0	30.0	30.0	29.0	27.0	26.0
monthly evapotranspiration (Thornthwaite), mm.	113.9	129.7	160.1	171.4	183.5	178.3	178.1	170.2	163.7	160.1	138.1	113.9

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

```
     1************15**************30

JAN  333322222222222222222222221111
FEB  111111111111111111111111111111
MAR  111111111111111111111111111111
APR  111111111111111222222222222111
MAY  111111111111111222222211111111
JUN  111111111111111111111111111111
JUL  111111111111111111111111111111
AUG  111111111111111222222222222222
SEP  222222211111111222222222222222
OCT  222222222222222333333333333333
NOV  333333333333333333333333333333
DEC  333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
188	93	79	188	93	79	131	131	45	4

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:NAGAPATTANAM Country:INDIA Latit: 10 46 N
Elevation: 9 Longit: 79 51 E

Annual rainfall 1337 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	57.0	25.0	22.0	55.0	56.0	29.0	48.0	62.0	62.0	224.0	458.0	239.0
monthly air temperatures (Celcius)	25.0	26.0	28.0	30.0	31.0	32.0	31.0	30.0	30.0	28.0	26.0	25.0
monthly evapotranspiration (Thornthwaite), mm.	96.9	105.3	152.2	167.0	181.4	183.5	181.4	173.4	165.3	150.8	113.4	95.9

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

```
     1************15**************30

JAN  333333333333333333333333333333
FEB  333333333333333333333333333333
MAR  333333332222222222222222222222
APR  222222111111111222222211111111
MAY  111111111111111222222111111111
JUN  111111111111111111111111111111
JUL  111111111111111111111111111111
AUG  111111111111111222222221111111
SEP  111111111111111222222222111111
OCT  111111111111111333333333333333
NOV  333333333333333333333333333333
DEC  333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
159	57	144	159	57	144	171	171	45	69

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:NAGERCOIL Country:INDIA Latit: 8 10 N
Elevation: -100 Longit: 77 27 E

Annual rainfall 1046 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	23.0	12.0	35.0	77.0	89.0	169.0	90.0	47.0	60.0	201.0	182.0	61.0
monthly air temperatures (Celcius)	27.0	27.0	28.0	29.0	28.0	26.0	26.0	26.0	27.0	27.0	27.0	26.0
monthly evapotranspiration (Thornthwaite), mm.	142.3	129.7	152.2	158.5	156.7	126.2	129.9	128.7	140.9	143.7	138.1	125.0

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

```
     1************15**************30

JAN  333333333333222222222222222222
FEB  222211111111111111111111111111
MAR  111111111111111111111111111111
APR  111111111111111222222222222111
MAY  111111111111111222222222222222
JUN  111111111111111333333333333333
JUL  333333333333333333333333333333
AUG  333333333222222222222222222221
SEP  111111111111111222222222211111
OCT  111111111111111333333333333333
NOV  333333333333333333333333333333
DEC  333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
140	79	141	140	79	141	109	109	20	12

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:OOTACAMUND Country:INDIA Latit: 11 24 N
Elevation: 2250 Longit: 76 44 E

Annual rainfall 1378 mm
Temperature regime: Isothermic Moisture regime: Udic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	35.0	13.0	33.0	86.0	159.0	156.0	201.0	147.0	139.0	202.0	158.0	49.0
monthly air temperatures (Celcius)	13.0	13.0	15.0	16.0	17.0	15.0	14.0	14.0	14.0	14.0	14.0	13.0
monthly evapotranspiration (Thornthwaite), mm.	49.0	44.6	61.8	67.8	77.5	63.6	58.8	58.2	55.5	55.5	53.3	48.5

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   333333333333333333333333333333
FEB   333333333333333333333333333333
MAR   333333333333333333333333333333
APR   333333333333333333333333333333
MAY   333333333333333333333333333333
JUN   333333333333333333333333333333
JUL   333333333333333333333333333333
AUG   333333333333333333333333333333
SEP   333333333333333333333333333333
OCT   333333333333333333333333333333
NOV   333333333333333333333333333333
DEC   333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
0	0	360	0	0	360	360	360	0	120

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Udic

Station:PALAYAMKOTTAI Country:INDIA Latit: 8 44 N
Elevation: 51 Longit: 77 45 E

Annual rainfall 744 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	45.0	29.0	30.0	67.0	39.0	10.0	8.0	17.0	29.0	174.0	183.0	113.0
monthly air temperatures (Celcius)	26.0	28.0	30.0	31.0	32.0	31.0	30.0	31.0	31.0	30.0	27.0	26.0
monthly evapotranspiration (Thornthwaite), mm.	112.2	137.5	167.0	171.4	183.5	173.0	171.8	176.4	169.7	167.0	138.1	112.2

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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          1************15**************30

JAN       333333333333333333333333333333
FEB       333333332222222222222222222111
MAR       111111111111111111111111111111
APR       111111111111111222222222111111
MAY       111111111111111111111111111111
JUN       111111111111111111111111111111
JUL       111111111111111111111111111111
AUG       111111111111111111111111111111
SEP       111111111111111111111111111111
OCT       111111111111111333333333333333
NOV       333333333333333333333333333333
DEC       333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
219	28	113	219	28	113	132	132	105	38

Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station: PAMBAN Country: INDIA Latit: 9 16 N
Elevation: 11 Longit: 79 18 E

Annual rainfall 923 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	66.0	19.0	24.0	68.0	24.0	6.0	9.0	12.0	16.0	175.0	308.0	196.0
monthly air temperatures (Celcius)	26.0	27.0	28.0	29.0	30.0	30.0	29.0	29.0	29.0	28.0	27.0	26.0
monthly evapotranspiration (Thornthwaite), mm.	120.0	129.7	152.2	158.5	171.8	167.0	164.7	163.2	157.0	152.2	138.1	120.0

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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          1************15**************30

JAN       333333333333333333333333333333
FEB       333333333333333333333333333222
MAR       222222222222222222222222211111
APR       111111111111112222222222211111
MAY       111111111111111111111111111111
JUN       111111111111111111111111111111
JUL       111111111111111111111111111111
AUG       111111111111111111111111111111
SEP       111111111111111111111111111111
OCT       111111111111111333333333333333
NOV       333333333333333333333333333333
DEC       333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
190	38	132	190	38	132	160	160	105	57

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station: PARAMAKUDI Country: INDIA Latit: 9 32 N
Elevation: -100 Longit: 78 37 E

Annual rainfall 552 mm
Temperature regime: Isohyperthermic Moisture regime: Aridic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	13.0	7.0	14.0	42.0	44.0	12.0	29.0	57.0	68.0	68.0	110.0	88.0
monthly air temperatures (Celcius)	25.5	25.7	28.5	31.0	31.5	31.5	30.5	30.0	29.0	28.7	28.0	25.2
monthly evapotranspiration (Thornthwaite), mm.	106.5	100.7	156.3	171.4	180.9	175.8	175.1	170.2	157.0	156.3	146.3	100.8

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30
                     .
JAN   222222221111111111111111111111
FEB   111111111111111111111111111111
MAR   111111111111111111111111111111
APR   111111111111111111111111111111
MAY   111111111111111111111111111111
JUN   111111111111111111111111111111
JUL   111111111111111111111111111111
AUG   111111111111111222222211111111
SEP   111111111111111222222222221111
OCT   111111111111111222222222221111
NOV   111111111111111222222222222222
DEC   222222222222222222222222222222
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is				
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
278	82	0	278	82	0	53	53	45	0

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Weak Aridic

Station:PERIYAKULAM Country:INDIA Latit: 10 7 N
Elevation: -100 Longit: 77 32 E

Annual rainfall 882 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	43.0	37.0	57.0	99.0	69.0	18.0	29.0	50.0	74.0	191.0	157.0	58.0
monthly air temperatures (Celcius)	24.0	26.0	28.0	29.0	34.0	26.0	26.0	26.0	26.0	26.0	25.0	24.0
monthly evapotranspiration (Thornthwaite), mm.	91.1	112.3	152.2	160.1	194.9	130.8	133.3	132.1	125.9	125.9	104.2	90.2

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   333333333333333333333333333333
FEB   333333333333333333333322222222
MAR   222222222222111222222221111111
APR   111111111111111222222222222222
MAY   211111111111111222222221111111
JUN   111111111111111111111111111111
JUL   111111111111111111111111111111
AUG   111111111111111111111111111111
SEP   111111111111111222222222222222
OCT   222211111111111333333333333333
NOV   333333333333333333333333333333
DEC   333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
162	71	127	162	71	127	147	147	75	52

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:PUDUKKOTAI Country:INDIA Latit: 10 23 N
Elevation: -100 Longit: 78 49 E

Annual rainfall 985 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	39.0	13.0	16.0	48.0	69.0	52.0	73.0	136.0	133.0	158.0	158.0	90.0
monthly air temperatures (Celcius)	25.0	27.0	29.0	31.0	32.0	31.0	31.0	30.0	30.0	28.0	26.0	25.0
monthly evapotranspiration (Thornthwaite), mm.	95.3	126.9	160.1	173.0	186.9	178.1	181.4	173.4	165.3	150.8	112.0	94.3

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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          1************15**************30

JAN       333333333333333333333333333333
FEB       333333333222222222222222222111
MAR       111111111111111111111111111111
APR       111111111111111111111111111111
MAY       111111111111111222222222111111
JUN       111111111111111222222211111111
JUL       111111111111111222222222211111
AUG       111111111111111222222222222222
SEP       222222222222111222222222222222
OCT       222222222222222333333333333333
NOV       333333333333333333333333333333
DEC       333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
146	99	115	146	99	115	162	162	20	40

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:SALEM Country:INDIA Latit: 11 39 N
Elevation: 278 Longit: 78 10 E

Annual rainfall 966 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	9.0	12.0	15.0	55.0	93.0	82.0	105.0	143.0	142.0	186.0	90.0	34.0
monthly air temperatures (Celcius)	25.0	27.0	29.0	31.0	31.0	30.0	29.0	28.0	28.0	27.0	26.0	25.0
monthly evapotranspiration (Thornthwaite), mm.	100.0	126.9	160.1	173.0	181.4	171.8	167.8	158.1	150.8	142.3	116.0	99.0

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   322222222222222222222211111111
FEB   111111111111111111111111111111
MAR   111111111111111111111111111111
APR   111111111111111222222211111111
MAY   111111111111111222222222222211
JUN   111111111111111222222222222111
JUL   111111111111111222222222222222
AUG   222211111111111222222222222222
SEP   222222222222222333333333333333
OCT   333333333333333333333333333333
NOV   333333333333333333333333333333
DEC   333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
152	102	106	152	102	106	157	157	15	0

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:TENKASI Country:INDIA Latit: 8 57 N
Elevation: -100 Longit: 77 19 E

Annual rainfall 1172 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	65.0	39.0	74.0	84.0	60.0	108.0	93.0	38.0	39.0	191.0	246.0	135.0
monthly air temperatures (Celcius)	26.0	28.0	30.0	31.0	32.0	31.0	30.0	31.0	31.0	30.0	27.0	26.0
monthly evapotranspiration (Thornthwaite), mm.	112.2	137.5	167.0	171.4	183.5	173.0	171.8	176.4	169.7	167.0	138.1	112.2

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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          1************15**************30

JAN       333333333333333333333333333333
FEB       333333333333333333333333333332
MAR       222222222222222222222222222222
APR       222222111111111222222222222111
MAY       111111111111111222222211111111
JUN       111111111111111222222222222222
JUL       222111111111111222222222222221
AUG       111111111111111111111111111111
SEP       111111111111111111111111111111
OCT       111111111111111333333333333333
NOV       333333333333333333333333333333
DEC       333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
138	88	134	138	88	134	171	171	76	59

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:TIRUCHIRAPALLI Country:INDIA Latit: 10 46 N
Elevation: 88 Longit: 78 43 E

Annual rainfall 869 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	18.0	8.0	8.0	70.0	80.0	34.0	41.0	105.0	108.0	170.0	156.0	71.0
monthly air temperatures (Celcius)	25.0	27.0	29.0	31.0	32.0	31.0	31.0	30.0	30.0	28.0	26.0	25.0
monthly evapotranspiration (Thornthwaite), mm.	95.3	126.9	160.1	173.0	186.9	178.1	181.4	173.4	165.3	150.8	112.0	94.3

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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          1************15**************30

JAN       333333333333333333333333333333
FEB       322222222222222211111111111111
MAR       111111111111111111111111111111
APR       111111111111111222222222211111
MAY       111111111111111222222222211111
JUN       111111111111111111111111111111
JUL       111111111111111111111111111111
AUG       111111111111111222222222222222
SEP       221111111111111222222222222222
OCT       222222221111111333333333333333
NOV       333333333333333333333333333333
DEC       333333333333333333333333333333
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is				
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
179	75	106	179	75	106	121	121	45	31

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:TIRUPPATTUR Country:INDIA Latit: 12 29 N
Elevation: -100 Longit: 78 35 E

Annual rainfall 871 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	14.0	5.0	10.0	37.0	100.0	66.0	93.0	136.0	155.0	139.0	85.0	31.0
monthly air temperatures (Celcius)	24.0	25.0	28.0	31.0	33.0	31.0	30.0	30.0	29.0	27.0	25.0	23.0
monthly evapotranspiration (Thornthwaite), mm.	83.6	90.7	152.2	173.0	191.4	178.1	175.1	173.4	158.5	142.3	97.7	68.9

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   333322222222222222222222111111
FEB   111111111111111111111111111111
MAR   111111111111111111111111111111
APR   111111111111111111111111111111
MAY   111111111111112222222222222211
JUN   111111111111111222222222111111
JUL   111111111111111222222222222211
AUG   111111111111111222222222222222
SEP   222222222222222333333333333333
OCT   333333333333333333333333333333
NOV   333333333333333333333333333333
DEC   333333333333333333333333333333
```

Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
166	85	109	166	85	109	159	159	17	4

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:TIRUVANNAMALAI Country:INDIA Latit: 12 14 N
Elevation: -100 Longit: 79 5 E

Annual rainfall 1041 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	40.0	15.0	13.0	27.0	79.0	54.0	82.0	151.0	170.0	175.0	173.0	62.0
monthly air temperatures (Celcius)	24.0	25.0	28.0	31.0	33.0	31.0	30.0	30.0	29.0	27.0	25.0	23.0
monthly evapotranspiration (Thornthwaite), mm.	83.6	90.7	152.2	173.0	191.4	178.1	175.1	173.4	158.5	142.3	97.7	68.9

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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        1************15**************30

JAN     333333333333333333333333333333
FEB     333333333333333333333333333333
MAR     332222222222222222222222111111
APR     111111111111111111111111111111
MAY     111111111111111222222222211111
JUN     111111111111111222222111111111
JUL     111111111111111222222222222111
AUG     111111111111111133333333333333
SEP     333333333333333333333333333333
OCT     333333333333333333333333333333
NOV     333333333333333333333333333333
DEC     333333333333333333333333333333
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is				
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
113	49	198	113	49	198	219	219	18	63

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Typic Tropustic

Station:VELLORE Country:INDIA Latit: 12 55 N
Elevation: 214 Longit: 79 9 E

Annual rainfall 969 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	19.0	6.0	8.0	25.0	80.0	77.0	90.0	106.0	152.0	169.0	160.0	77.0
monthly air temperatures (Celcius)	24.0	25.0	28.0	31.0	33.0	31.0	30.0	30.0	29.0	27.0	25.0	23.0
monthly evapotranspiration (Thornthwaite), mm.	83.6	90.7	152.2	173.0	191.4	178.1	175.1	173.4	158.5	142.3	97.7	68.9

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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      1************15**************30

JAN   333333333333333333333333333333
FEB   333333333333333333333332222222
MAR   222222222221111111111111111111
APR   111111111111111111111111111111
MAY   111111111111111222222222211111
JUN   111111111111111222222222211111
JUL   111111111111111222222222222211
AUG   111111111111111222222222222222
SEP   222111111111111333333333333333
OCT   333333333333333333333333333333
NOV   333333333333333333333333333333
DEC   333333333333333333333333333333
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer solstice	Moist after winter solstice
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8		
133	69	158	133	69	158	176	176	17	53

*
Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic

Station:VILATHIKULAM Country:INDIA Latit: 9 10 N
Elevation: -100 Longit: 78 11 E

Annual rainfall 580 mm
Temperature regime: Isohyperthermic Moisture regime: Ustic

SOIL CLIMATIC REGIME ACCORDING TO NEWHALL COMPUTATION
(soil temp.=air temp.+2.5 C; amplit. reduced by 1/3)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
monthly rainfall (mm)	13.2	10.3	13.7	25.0	35.1	2.5	20.4	18.5	69.5	144.4	149.8	77.8
monthly air temperatures (Celcius)	26.2	26.8	28.8	30.9	31.9	31.2	30.4	30.3	30.1	29.4	27.4	25.7
monthly evapotranspiration (Thornthwaite), mm.	118.7	125.6	156.3	168.5	180.9	173.0	171.8	170.2	163.7	160.1	138.1	108.3

MOISTURE CALENDAR
1 = dry ; 2 = m/d ; 3 = moist

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          1************15**************30

JAN       333333332222222222222211111111
FEB       111111111111111111111111111111
MAR       111111111111111111111111111111
APR       111111111111111111111111111111
MAY       111111111111111111111111111111
JUN       111111111111111111111111111111
JUL       111111111111111111111111111111
AUG       111111111111111111111111111111
SEP       111111111111111222222222211111
OCT       111111111111111222222222222222
NOV       222222222222222333333333333333
DEC       333333333333333333333333333333
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Number of cumulative days that the moisture control section						Highest number of consecutive days that the MCS is			
During one year is			When soil temp is above 5 deg. C			Moist in some parts		Dry after summer	Moist after winter
DRY	M/D	MOIST	DRY	M/D	MOIST	YEAR	T>8	solstice	solstice
253	54	53	253	54	53	97	97	75	8

*

Computed by BASIC program NSM, November 1986
Tentative subdivision: Aridic Tropustic