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UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT GENETICS AND GERMPLASM INSTITUTE

GERMPLASM RESOURCES INFORMATION NETWORK (GRIN)

GRIN DATABASE DICTIONARY

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ACRONYMS

ARS Agricultural Research Service, (USDA) CAC Crop Advisory Committee DBMS DataBase Management System DBMU DataBase Management Unit, Beltsville, MD FORTRAN FORmula TRANslation, a computer programming language standardized in 1966, with additional standards set in 1977. Prime implementation are referred to as FTN and F77, respectively GRIN Germplasm Resources Information Network NPGS National Plant Germplasm System, USDA, ARS NSGC National Small Grain Collection, USDA, ARS NSSL National Seed Storage Laboratory, Fort Collins CO, USA ΡI Plant Inventory number (assigned by PIO only) PIO Plant Introduction Office, Beltsville, MD SCS Soil Conservation Service, USDA TSS Taxonomic Support Staff, USDA, ARS

The terms in this dictionary follow the order of the GRIN-2 Schema. An alphabetic listing of the capitalized terms is found in the adjoining index. Other terms are defined at the end of the database dictionary.

AREA DICTIONARY

ACCESSION-PIO-AREA

Area for storing accessions originally documented by the PIO and to record any name changes for accessions due to reidentification or nomenclature changes.

ACCESSION-SITES-AREA

Area for storing accessions not documented originally by the PIO. These accessions will not have a PI number but will have a specific site identification attached to them.

ACC-ACCESSORIES-AREA

Area of the database for storing accession acquisition (range) information and secondary accession identifiers.

COOPERATOR-AREA

Area of the database for storing information about individuals or institutes considered as cooperators, suppliers or otherwise involved in the NPGS.

DESCRIPTORS-AREA

Area of the database for storing definitions of the variables used for descriptor states as well as the definition of the descriptor. This area can be thought of as a dynamic data dictionary for descriptor definitions.

GERMINATION-RULES-AREA Area of the database for storing germination rules for seed testing.

INVENTORY-SITES-AREA

Area of the database for storing supply site inventory information for all collections with the exception of NSSL and the NSGC.

INVENTORY-NSSL-AREA

Area of the database for storing NSSL inventory information.

INVENTORY-NSGC-AREA Area of the database for storing supply site inventory information for the NSGC.

OBSERVATION-AREA

OBS-1-AREA Area of the database for storing single-descriptor observation records as opposed to multiple-descriptor observation records. OBS-2-AREA Area of the database for storing single-descriptor observation records as opposed to multiple-descriptor observation records. This area is identical with OBS-1-AREA. Its purpose is to create space for additional OBSERVATION-RECORDs.

OBS-3-AREA Area of the database for storing single-descriptor observation records as opposed to multiple-descriptor observation records. This area is identical with OBS-1-AREA and OBS-2-AREAs. Its purpose is to create space for additional OBSERVATION-RECORDs.

COMPOSITE-OBSERVATION-AREA

COMPOSITE-OBS-1-AREA Area of the database for storing observation records that contain more than one descriptor as opposed to single-descriptor observation records.

COMPOSITE-OBS-2-AREA Area of the database for storing observation records that contain more than one descriptor as opposed to single-descriptor observation records. This area is identical with COMPOSITE-OBS-1-AREA. Its purpose is to create space for additional COMPOSITE-OBS-RECORDs.

COMPOSITE-OBS-3-AREA Area of the database for storing observation records that contain more than one descriptor as opposed to single-descriptor observation records. This area is identical with COMPOSITE-OBS-1-AREA and COMPOSITE-OBS-2-AREAs. Its purpose is to create space for additional COMPOSITE-OBS-RECORDs.

ORDERS-AREA Area of the database for storing information on germplasm requests or orders to the germplasm collection sites.

STANDARDS-AREA Area of the database for storing common names and geographic information.

STUDY-AREA Area of the database for storing information on environments where germplasm evaluations were conducted as well as published literature citations and abstracts concerning these evaluations.

TAXONOMY-AREA Area of the database containing all taxonomic information.

ACCESSION-AREA DICTIONARY

ACCESSION-RECORD This is the major identification construct in the database. Within the record the ACC-ID-NUMBER and the ACC-ID-PREFIX form a unique identifier used throughout the database to identify each unique accession. Duplicates of this number and prefix are not allowed. ACC-ID-PREFIX Prefix for the unique accession identifier. All accessions documented by PIO have a prefix of 'PI'. Character 4. ACC-ID-NUMBER Numeric part of the unique accession identifier. Integer. ACC-CULTIVAR Name given to those members of a subvarietal group which exhibit a particular growth characteristic (e.g. Essex, Miles, Pixie). May or may not be a registered cultivar name. Character 40. ACC-COMMON-NAME The common name for the accession. This name should match at least one of the common names in the COMMON-NAME-RECORD. Character 30. ACC-TAXONOMY-PENDING-FLAG A flag to indicate whether the accession has been satisfactorily identified or is still in question. If the identification is tentative the codes are 'cf' for compare and 'af' for affinity to. Character 2. ACC-RESTRICTED A flag to indicate whether the accession is designated as poisonous, noxious, or narcotic (codes are: POIS, NOX, or NARC, respectively). Character 4. ACC-LIFE-FORM Life form or growth characteristics of the accession (e.g. annual, biennial, tree, etc.) Character 10. ACC-FORM-RECD The form of the plant material when received by the initial documenting germplasm collection site. (e.g. seeds, tubers, spores, etc.) Character 6. ACC-IMPROVEMENT-STATUS Used to indicate the extent of development of the accession from wild to cultivated. Character 10. ACC-PRIMARY-SUPPLY-SITE

The principle germplasm collection site where the accession is to be held or is presently maintained and distributed from. Character 6.

ACC-DISTRIBUTION-SAMPLE-PREFIX The prefix of the inventory sample available for distribution at the germplasm collection site given in ACC-PRIMARY-SUPPLY-SITE. Character 4.

ACC-DISTRIBUTION-SAMPLE-NUMBER A number that identifies the inventory sample available for distribution at the germplasm collection site given in ACC-PRIMARY-SUPPLY-SITE. Integer.

ACC-DISTRIBUTION-SAMPLE-SUFFIX A suffix of the inventory sample available for distribution from the germplasm collection site given in ACC-PRIMARY-SUPPLY-SITE. Character 4.

ACC-DISTRIBUTION-SAMPLE-TYPE The type inventory sample available for distribution from the germplasm collection site given in ACC-PRIMARY-SUPPLY-SITE. Character 2.

ACC-INV-AVAILABLE-FLAG A field (flag) indicating whether inventory information is loaded in the database for the accession. Will be YES or the reason why not. Software supplied.

ACC-OBS-AVAILABLE-FLAG A field (flag) indicating whether observation information is loaded in the database for the accession. Indicates whether it is

in single-observations, composite-observations or both types of observation records. Software supplied.

ACC-YEAR-SITE-RECD Year that the germplasm collection site received the accession. Character 4.

ACC-MONTH-SITE-RECD Month that the germplasm collection site received the accession. Character 2.

ACC-DAY-SITE-RECD Day that the germplasm collection site received the accession. Character 2.

ACC-YEAR-RELEASED Year the accession was made available to the public. Character 4.

ACC-MONTH-RELEASED

The month the accession was made available to the public. Character 2. ACC-DAY-RELEASED The day the accession was made available to the public. Character 2. ACC-SENT-TO-NSSL Flag to indicate that the accession has been sent to NSSL for base storage. Character 2. ACC-YEAR-COLLECTED Year that the accession was collected from its native habitat. Character 4. ACC-MONTH-COLLECTED Month that the accession was collected from its native habitat. Character 2. ACC-DAY-COLLECTED Day that the accession was collected from its native habitat. Character 2. ACC-OUANTITY-RECD Indicates the quantity and units of the accession received. Character 10. ACC-INSTITUTE-OF-ORIGIN Name of the institute within the ACC-COUNTRY-OF-ORIGIN from which the accession originated or where it was developed (if a cultivar). This field should not be used if the accession was collected in the wild. Character 40. ACC-STATE-OF-ORIGIN State name in which the accession was originally collected from its native habitat or the state of the institute where the cultivar was originally developed (for a cultivar, the ACC-INSTITUTE-OF-ORIGIN should be given). Character 20. ACC-COUNTRY-OF-ORIGIN Country name from which the accession was originally collected from its native habitat or the country of the institute where the cultivar was originally developed (for a cultivar, the ACC-INSTITUTE-OF-ORIGIN should be given). Character 26. ACC-LAT-DEG The latitude degrees where the accession was collected. The value range is 00-90. Character 2. ACC-LAT-MIN The latitude minutes where the accession was collected. The value

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range is 00-59. Character 2.
ACC-LAT-HEMI
The hemisphere (North or South of O latitude) where the accession
was collected. The software will accept an N, S, or a blank.
Character 2.
ACC-LONG-DEG
The longitude degrees where the accession was collected. The
value range is 00-180. Character 4.
ACC-LONG-MIN
The longitude minutes where the accession was collected. The
value range is 00-59. Character 2.
ACC-LONG-HEMI
The longitude hemisphere (East or West of Greenwich) where the
accession was collected. The software will accept E, W, or a
blank. Character 2.
ACC-ELEVATION-LOW
The lowest elevation (in meters) where the accession was
collected. If only one elevation is given on collection records,
it is recorded here, with ACC-ELEVATION-HIGH left blank.
Character 6.
ACC-ELEVATION-HIGH
The highest elevation (in meters) where the accession was
collected. If only one elevation is given on collection records,
this elevation is recorded in the ACC-ELEVATION-LOW field.
Character 6.
ACC-UPD-SITE
Germplasm collection site of the individual who entered or last
updated the ACCESSION-RECORD. Software supplied.
ACC-UPD-LOGON
Login ID of the individual who entered or last updated the
ACCESSION-RECORD. Software supplied.
ACC-YEAR-UPD
Year the ACCESSION-RECORD was entered or last updated. Software
supplied.
ACC-MONTH-UPD
Month the ACCESSION-RECORD was entered or last updated. Software
supplied.
ACC-DAY-UPD
Day the ACCESSION-RECORD was entered or last updated. Software
supplied.
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ACC-LINES-OF-PEDIGREE The number of 60 character lines of data for describing the pedigree of the accession. Software supplied. ACC-LINES-OF-LOCAL-NAMES The number of 60 character lines required for local names of the accession. Software supplied. ACC-LINES-OF-LOC-HAB The number of 60 character lines of text describing the locality and habitat (physical line attributes) in which the accession was found. Software supplied. ACC-LINES-OF-NARRATIVE The number of 60 character lines of text narrative for describing the accession. Software supplied. ACC-ADDRESS1-OF-ORIGIN First line of the mailing address of the institute of origin of the accession. The address here is intended to give a more detailed location of the origin of the accession than just the country and state names. Character 60. ACC-ADDRESS2-OF-ORIGIN Second line of the mailing address of the institute of origin of the accession. This reasoning follows that given in ACC-ADDRESS1-OF-ORIGIN. Character 60. ACC-CITY-OF-ORIGIN City name of the place of origin of the accession. This reasoning follows that given in ACC-ADDRESS1-OF-ORIGIN. Character 60. ACC-ZIP-OF-ORIGIN Zip code of the address of origin of the accession. This reasoning follows that given in ACC-ADDRESS1-OF-ORIGIN. ACC-CULTIVAR-NAME-SOURCE The source of the name given in ACC-CULTIVAR. Character 30. ACC-PEDIGREE This field will be repeated the ACC-LINES-OF-PEDIGREE times. The record of the parentage of the accession. Character 60. ACC-LOCAL-NAMES The field below will be repeated the ACC-LINES-OF-LOCAL-NAMES times. The local name of the accession where it was collected. NOT a cultivar name. Character 60. ACC-LOCALITY-HABITAT This field will be repeated ACC-LINES-OF-LOC-HAB times. A general text used to identify the area where the accession was found (e.g.

5km E. of Pittsburg). Character 60. ACC-NARRATIVE Each field below will occur the ACC-LINES-OF-NARRATIVE times. ACC-NARRATIVE-LABEL A label or abbreviation that can be used to designate a consistent entry into the narrative field. Character 10. ACC-NARRATIVE-LINE This is used to specify traits, conditions, descriptions, and any other information not stored elsewhere including soil conditions, horticultural traits, special uses, etc. Character 60. PREVIOUS-NAMES-RECORD This record stores information concerning the details of accession name changes that occur due to a reidentification of an accession or a recognized change in the taxonomic name previously assigned. PN-TYPE A field designating the reason for the taxonomic name change (i.e. initial incorrect identification or a recognized taxonomic name change). Character 10. PN-UPD-SITE Germplasm collection site affiliation of the individual that entered or last updated the PREVIOUS-NAMES-RECORD. Software supplied. PN-YEAR-UPD Year that the PREVIOUS-NAMES-RECORD was entered or last updated. Software supplied. PN-MONTH-UPD Month that the PREVIOUS-NAMES-RECORD was entered or last updated. Software supplied. PN-DAY-UPD Day that the PREVIOUS-NAMES-RECORD was entered or last updated. Software supplied. PN-NOMEN-NUMBER The nomenclature code number of the taxonomic name before it was changed. Integer. PN-LINES-OF-PREVIOUS-NAME Number of lines that previous names occupy for a given accession. Software supplied. PN-REQUESTOR

The name of the individual asking for the accession scientific name change or reidentification. Character 60.

PN-AUTHORITY Individual responsible for approving the requested scientific name change. Character 60.

PN-PREVIOUS-NAME The complete, previous name of the accession. This field occurs PN-LINES-OF-PREVIOUS-NAME times. Character 60. RANGE-RECORD A record that stores information in the database concerning a given group of accessions. These groups were usually received by the initial documenting plant introduction station at one time, and consist of a single taxonomic grouping that were assigned a group of contiguous accession primary identification numbers. The donor information will remain constant for a given range. R-ID-PREFIX A prefix given to the entire range upon creation. Basically for identification purposes. Character 4. R-LOW-ID-NUMBER The lowest identification number for the range. Together with the R-ID-PREFIX, a unique low identification number for the range is created. Integer. R-HIGH-ID-NUMBER The highest identification number for the range. Together with the R-ID-PREFIX, a unique high identification number for the range is created. Integer. **R-NUMBER-OF-ACCESSIONS** The number of accessions in the range. Integer. R-NOMEN-NUMBER This field gives the code for the species nomenclature of the range at the time of introduction. Integer. **R-COMMON-NAME** This field gives the common name assigned to the range at the time of introduction. Character 30. R-CROP-CATEGORY A general category assigned by documenting introduction station describing the general category to which the crop belongs (e.g. cereal, vegetable, fruit, etc.). Character 8. R-INSTITUTE-OF-ACQ The name of the organization from which the range of accessions was acquired. Character 40. R-STATE-OF-ACO The name of the state or province from which the range of accessions was acquired. Character 20. R-COUNTRY-OF-ACO The country name from which the range of accessions was acquired. Character 26.

R-YEAR-USA-RECD The year the United States received the accession range. Character 4. R-MONTH-USA-RECD Month that the United States received the range. Character 2. R-DAY-USA-RECD Day that the United States received the range. Character 2. R-RESPONSIBLE-SITE The germplasm collection site responsible for maintaining the information in this RANGE-RECORD. Character 6. R-NUMBER-OF-INSTITUTES-OF-ACO The number of institutes from which the range was acquired. Software supplied. **R-NUMBER-OF-DESTINATIONS** The number of places that were sent part of the accession range or accession records after documentation. Software supplied. R-LINES-OF-NARRATIVE The number of lines of narrative that describe the range. Software supplied. R-INSTITUTES-OF-ACQ The individuals and their institute affiliations from which the accession range was acquired. The following statements are repeated R-NUMBER-OF-INSTITUTES-OF-ACQ times. R-IOA-DCB-TYPE Coded field describing whether the range was acquired from a donor or collector. Character 4. R-IOA-INST-LNAME Individuals last name at the institute from which the range was acquired. Character 30. R-IOA-INST-FNMAE Individuals first name at the institute from which the range was acquired. Character 10. R-IOA-INSTITUTE Name of the organization or institute name from which the range was acquired. Character 40. R-IOA-ADDRESS1 First line of the address of the institute from which the range was acquired. Character 40.

R-IOA-ADDRESS2 Second line of the address of the institute from which the range was acquired. Character 40. R-IOA-CITY City of the institute from which the range was acquired. Character 20. R-IOA-STATE State or province of the institute from which the range was acquired. Character 20. R-IOA-COUNTRY Country of the institute from which the range was acquired. Character 26. **R-DESTINATIONS** Recipients of the germplasm after initial documentation by the receiving plant introduction station. The following statements occur R-NUMBER-OF-DESTINATIONS times. There are a maximum of 6R-NUMBER-OF-DESTINATIONS. R-DEST-CODE Code of the recipients site (or SITE-QUERY-NAME) to which the range will be sent after documentation. Character 6. **R-DEST-WHAT-SENT** Description of shipment of the range to the recipient. This will include either records or samples and records. Character 4. R-DEST-LNAME Last name of the recipient of the range. Character 30. **R-DEST-FNAME** First name of the recipient of the range. Character 10. R-DEST-ORGANIZATION Organization name as a recipient or organizational affiliation of the DEST-LNAME and DEST-FNAME. Character 40. R-DEST-ADDRESS1 First line of the address of the recipient. Character 40. **R-DEST-ADDRESS2** Second line of the address of the recipient. Character 40. R-DEST-CITY City in which the recipient is located. Character 40. R-DEST-STATE

State in which the recipient is located. Character 20. R-DEST-ZIP Zip code of the address of the recipient. Character 10. RANGE-NARRATIVE A line of text describing the material in the range. The following statements occur R-LINES-OF-NARRATIVE times. There are a maximum of 6 R-LINES-OF-NARRATIVE. **R-NARRATIVE-LABEL** Labels or abbreviations for consistently identifying information found in the narrative. Could be a project title, etc. Character 10. **R-NARRATIVE-LINE** The narrative text. Character 60. ACCGROUP-RECORD A top level record used for grouping accession secondary identifiers into logical units or 'collections'. Groups do not have to be mutually exclusive. AG-NAME. Name given to a particular unit used for grouping particular accessions. Character 20. AG-RESPONSIBLE-UPD-SITE Site identification of the personnel that grouped the accessions. This also identifies the only site allowed to update this record (that is, for this particular grouping). Software supplied. AG-NARRATIVE A narrative description of the group characteristics. Character 60. SECONDARY-ID-RECORD A record used to store information concerning a second accession identifier. This information may be used by a storage site (i.e. NSL, COR numbers) or by PIO for additional collector's numbers or donating institute numbers. SID-ID Includes any and all secondary (or alternate) identifiers. A primary identifier is described in ACC-ID-PREFIX and ACC-ID-NUMBER. This field is calced using the SID-ID field. An additional SECONDARY-ID-RECORD is created for each secondary identifier known for the accession. Character 30. SID-TYPE This field indicates the type of identifier used for the SID-ID.

It could be an institute, collectors field number, collection site identifier, country name, etc. Character 4.

SID-RESPONSIBLE-UPD-SITE The germplasm collection site of the individual entering or last updating the secondary identifier. Software supplied.

SID-SOURCE

The source of the second accession identifier (e.g., collectors's name, institute name, etc.). Character 60.

COOPERATOR-AREA DICTIONARY

COOPERATOR-RECORD This record is the master record for each cooperator in the system. The last name is not a unique key. This means that all individuals having the same last name will be selected when a query is made on the last name. Cooperators are individuals or organizations that are, in one way or another, active or interested in plant germplasm. Germplasm collection sites will be able to update only the records or cooperators which are owned by them, but may read all cooperator information. COOP-SITE The collection site responsible for this record occurrence. Character 6. COOP-TYPE Field to indicate whether the cooperator is an individual or organization. Character 4. COOP-ID A unique phrase given to a particular COOPERATOR-RECORD. This identifier can be used as a code by collection sites and PIO to retrieve a full name and address. Character 6. COOP-LOGON Login ID of the cooperator, if one exists. Character 6. COOP-LNAME Last name of the cooperator. Uppercase for first letter, lowercase for all others. Character 30. COOP-FNAME First name of the cooperator. Uppercase for first letter, lowercase for all others. Character 10. COOP-ORGANIZATION Organization name to which the cooperator belongs. Character 40. COOP-ADDRESS1 First line of the cooperator's address. Character 40. COOP-ADDRESS2 Second line of the cooperator's address. Character 40. COOP-CITY City for the cooperator's address given in COOP-ADDRESS1 and COOP-ADDRESS2. Character 20. COOP-STATE State or province of cooperator's address given in COOP-ADDRESS1 and COOP-ADDRESS2. Character 20.

COOP-ZIP Zip code of the cooperator's address given in COOP-ADDRESS1 and COOP-ADDRESS2. Character 10. COOP-COUNTRY Country of cooperator's address given in COOP-ADDRESS1 and COOP-ADDRESS2. Character 26. COOP-PHONE Complete cooperator's telephone number in the format XXX-XXX-XXXX. Character 12. COOP-REGION The USDA region within the United States in which the cooperator is located. Character 6. COOPERATOR-YEAR-UPD Year the cooperator information was entered or last updated. Software supplied. COOP-MONTH-UPD Month the cooperator information was entered or last updated. Software supplied. COOP-DAY-UPD Day the cooperator information was entered or last updated. Software supplied. COOP-COMMENT A short comment concerning the cooperator record. Character 60. COPGROUP-RECORD This is a top level record keyed on group name. It allows construction of cooperator sets, such as mailing lists. An interest group is a collection of cooperators interested in a specific topic. CG-NAME Name of the interest group, assigned by the manager. Character 20. CG-RESPONSIBLE-UPD-SITE Germplasm collection site of the individual that entered or last updated the COP-GROUP-RECORD and any MEMBERSHIP-RECORDS attached to it. Character 6. CG-COMMENT A short comment describing the cooperator group. Character 60. MEMBERSHIP-RECORD This record provides the 'link' between the COOPERATOR record and the COPGROUP record. There is no unique key; it is retrieved by group

name and a particular cooperator. This record indicates that a cooperator belongs to a specific cooperator group. MBR-ROLE This item allows classification of members within a group. It indicates the type of membership a cooperator has within a group. Normally the MBR-ROLE is left blank. Character 10. SITE-RECORD This record describes the contact information for each germplasm collection site found in the database. These refer to 'sites' within the NPGS. A germplasm collection site is responsible for maintaining a working collection of germplasm and the distribution of that germplasm. Several 'sites' however are only responsible for germplasm information management (i.e. PIO and TSS) but are also referred to as germplasm collection sites. Duplicate SITE-QUERY-NAMES for germplasm collection sites are not allowed. SITE-QUERY-NAME A six character germplasm collection site code. This code is verified by the computer. Character 6. SITE-DISTRIBUTION-FLAG A flag to indicate whether or not the germplasm collection fills orders or not. Character 4. SITE-NAME The formal NPGS germplasm collection site name. Character 40. SITE-ORGANIZATION This is the complete organizational name of the germplasm collection site. Character 40. SITE-ADDRESS1 First line of the germplasm collection site mailing address. Character 40. SITE-ADDRESS2 Second line of the germplasm collection site mailing address. Character 40. SITE-CITY City name for the germplasm collection site mailing address. Character 20. SITE-STATE State name for the germplasm collection site mailing address. Character 20. SITE-ZIP Zip code for the germplasm collection site mailing address.

Character 10.

SITE-COUNTRY Country where the germplasm collection site is located. Character 26.

SITE-PHONE Complete telephone number of the germplasm collection site coordinator's office. Character 12.

SITE-REGION USDA-National Plant Germplasm System's region in which the germplasm collection site is located (e.g. W-6, NC-7, etc.). Character 6.

SITE-CURATOR-LNAME Germplasm collection sites curator (or coordinator's) last name. Character 30.

SITE-CURATOR-FNAME Germplasm collection sites curator (or coordinator's) first name. Character 10.

SITE-LAST-ORDER Original number of the last GRIN seed order assigned to a supply site. This indicates how many seed orders have been requested from a particular collection site. Integer.

DESCRIPTOR-AREA DICTIONARY

RESCROP-RECORD The purpose of this record is to allow grouping of germplasm into meaningful units that will or have undergone description or evaluation as distinct crop. The grouping is done at the discretion of the germplasm collection site personnel or other individuals that have or will evaluate/describe the crop units. RC-QUERY-NAME The name of the dataset as defined by the individual that loads it into the database. This name is used to select the dataset during queries. Character 20. RC-NUMBER A three digit number that identifies the particular RESCROP-RECORD. Integer. RC-RESPONSIBLE-SITE The germplasm collection site which maintains observations for this particular research crop. Character 6. RC-OBS-FLAG A flag to indicate if there is or is not an OBSERVATION-RECORD for this crop. Character 4. RC-COBS-STORAGE-AREA The specific COMPOSITE-OBSERVATION area (either 1, 2, or 3) where the observations for this research crop are stored. Character 2. RC-NUMBER-OF-DESCRIPTORS The number of descriptors that exist for this particular research crop. Integer. RC-LINES-OF-NARRATIVE Number of lines composing the RC-NARRATIVE. Lines are 60 characters long. Software supplied. RC-NARRATIVE This occurs RESCROP-NARR-COUNT number of times. The purpose of this is to describe, possibly in paragraph fashion, the contents of the RESCROP-RECORD (i.e. who created the set, who to contact for additional information, etc.). Character 60. DESCRIPTOR-RECORD A record that stores one of each item which is a component of a certain RESCROP-RECORD. A group of all the unique descriptors for a given RESCROP-RECORD is called a dataset. This information is retrieved through the RESCROP-DESCRIPTOR-SET based on a unique DESC-QUERY-NAME or DESC-NUMBER.

DESC-OUERY-NAME A valid FORTRAN name, used to select this descriptor record while querying. This name acts as a unique key by which the DESCRIPTOR-RECORD is linked to the RESCROP-DESCRIPTOR set. Character 20. DESC-NUMBER A unique number identifying the particular DESCRIPTOR-RECORD. Integer. DESC-NAME This name is used to describe in greater detail the name of the descriptor. Character 60. DESC-CAC-APPROVED A code or flag indicating whether the DESCRIPTOR-RECORD has been approved by the RESCROP-RECORD's Crop Advisory Committee (CAC). Character 2. DESC-CATEGORY An arbitrary category, defined by the dataset originator, used for grouping descriptors of similar nature for use in querying and reporting. Character 12. DESC-COBS-ITEMNAME The COBS-VALUE (1-120) that identifies the position of this DESCRIPTOR-RECORD in the corresponding COMPOSITE-OBS-RECORD. Character 6. DESC-OBS-FLAG A flag used to indicate whether the descriptor applies to OBSERVATION-RECORDs or COMPOSITE-OBS-RECORDs. Character 4. DESC-OBS-STORAGE-AREA Storage area of a particular descriptor of a single observation. Character 6. DESC-AVG-CHAR-LENGTH Average character length of possible descriptor values found in the dataset. Integer. DESC-MAX-CHAR-LENGTH Longest character length descriptor found in the dataset. Integer. DESC-LOW-VALUE The inclusive lower bound of a range by which numeric descriptors are edited with a 'RANGE'. Real.

DESC-HIGH-VALUE The inclusive upper bound of a range by which numeric descriptors

DESC-NUMBER-OF-CODES The number of CODE-RECORDs stored for this descriptor. It may not be the total number of codes. Storing codes 1,5 and 7 from a range of 1-9 is possible since the other codes are intermediate to the above and need no further clarification. Software supplied. DESC-LINES-OF-DEF The number of 'lines' (occurrences) of the DESC-DEFINITION stored. Software supplied. DESCRIPTOR-DEFINITION The definition will occur DESCRIPTOR-DEF-COUNT times. This could be a free form paragraph describing the descriptor in detail. Details are: what specific trait is observed, what units (if any) of measurement are used, what environmental or assay constraints were involved, any clarification of coding that can't be described well (or is not appropriate) in the CODE-RECORDs, etc. Character 60. CODE-RECORD Stores in the database descriptions of each state that a coded descriptor may assume. The information is retrieved through the DESCRIPTOR-CODE set based on unique code value. CODE-VALUE One of the alphanumeric code values the descriptor may assume. Character 10. CODE-LINES-OF-DEF This contains the number of lines (occurrences) of the CODE-DEFINITION that are stored. Software supplied. CODE-DEFINITION This occurs CODE-LINES-OF-DEF times. It describes the meaning of each CODE-VALUE in detail. Character 60.

are edited with a 'RANGE'. Real.

OBSERVATION-AREA DICTIONARY

DESCSTUDIED-RECORD

This record stores the following information concerning a particular descriptor used in a given study.

DS-RESPONSIBLE-SITE

The germplasm collection site affiliation of the individual entering or last updating the DS-RECORD and the corresponding OBSERVATION-RECORDS. Character 6.

DS-DESC-NUMBER

A unique number given a particular descriptor with a research crop. The RC-NUMBER precedes the DS-DESC-NUMBER to create a unique identifier. This is an alternative to using only the DS-DESC-NUMBER. Software supplied.

DS-ENV-NUMBER

A unique number given to a particular environment within a given study. The SD-NUMBER precedes the ENV-NUMBER to create a unique identifier. Software supplied.

DS-QUALIFIER-NUMBER

A code used to identify specific qualifiers and subqualifiers for a given descriptor in a given environment. This code is used to retrieve information from the database, because it is not possible to retrieve on the variable length DESCSTUDIED-SUBQUALIFIER. The search must be conducted on this code. Software supplied.

DS-QUALIFIER

A field that allows additional qualification between descriptors that are similar. This could include resistance to particular strains of a rust pathogen. The type of strain would be included in this field. Character 26.

DS-LINES-OF-QUALIFIER-COMMENT Number of lines of DS-QUALIFIER-COMMENT. There is a maximum of 5 DS-LINES-OF-QUALIFIER-COMMENT. Software supplied.

DS-QUALIFIER-COMMENT

A comment or definition of the qualifier. See the definition for the DESCSTUDIED-QUALIFIER. This field cannot be retrieved because of its variable length. This field occurs DS-LINES-OF-QUALIFIER-COMMENT times. Character 60.

OBSERVATION-RECORD

This record links the ACCESSION and DESCSTUDIED records. It contains the observed value for a single characteristic/observation in a particular study for a single accession. This is in contrast to the COMPOSITE-OBS-RECORD which contains 120 strongly defined fields for larger and or more complete studies.

OBS-ACC-ID-PREFIX Prefix to the accession identifier for which the particular OBSERVATION-RECORD refers. Character 4.

OBS-ACC-ID-NUMBER The number portion composing the accession identifier for which the particular OBSERVATION-RECORD refers.

OBS-REPLICATE-NUMBER

A number that increments by one each time another OBSERVATION-RECORD is created for the particular ACCESSION-RECORD within the particular research crop and STUDY-ENVIRONMENT-RECORD. The OBS-REPLICATE-NUMBER will usually be 01. Software supplied.

OBS-DESC-NUMBER

A unique number given to a particular descriptor within the RESCROP-RECORD. Used for identification. Integer.

OBS-ENV-NUMBER

The ENV-NUMBER that identifies the environment within which the OBSERVATION-RECORD results were taken. Integer.

OBS-QUALIFIER-NUMBER

A field that is used to identify which DESCSTUDIED-RECORD within the descriptor to which this observation belongs (e.g. a particular race of a pathogen). Integer.

OBS-STANDARD-VALUE

The observation value for any code that has been standardized to fit within a defined range other than the range under which it was originally taken. This situation could occur if data was taken with a unique set of descriptors but needed to fit in a pre-defined set. The descriptors and descriptor states are then converted, with the converted code value put in this field. Character 4.

OBS-ORIGINAL-VALUE

This field is used to store the original value of a converted descriptor (see the OBS-STD-CODE-VALUE for further clarification). This field only holds numeric data. If the original value is of a character type, this information will be placed in the OBS-COMMENT field. Real.

OBS-SAMPLE-ID

The inventory sample identification for the particular accession. This is included so subsets of an original accession may have evaluation records tied to them. Character 60.

OBS-COMMENT

A field to store original observation data if this data is in a character format and hence will not fit into the OBS-ORIG-VALUE. This field can also be used to store statistical information on this data (i.e. mean, standard deviations, variances, sample sizes, etc.). If the original data was alphabetic instead of numeric, this information could be stored here. Character 60.

COMPOSITE-OBSERVATION-AREA DICTIONARY

COMPOSITE-OBS-RECORD This record contains the observed values for characteristic/observation data. It differs from the OBSERVATION-RECORD in that it contains 120 rigidly defined fields each of which represents a separate descriptor. The OBSERVATION-RECORD however, contains values for only one descriptor. COBS-ACC-ID-PREFIX The accession primary identifier prefix for the accession. Character 4. COBS-ACC-ID-NUMBER The accession primary identifier number for the accession. Integer. COBS-REPLICATE-NUMBER A number increased by one each time a new COMPOSITE-OBS record is created for an accession. Software supplied. COBS-UPD-SITE The germplasm collection site of the individual entering or last updating the COMPOSITE-OBS-RECORD. Software supplied. COBS-VALUE-001 to COBS-VALUE-015 A block of integer*2 observations. COBS-VALUE-016 to COBS-VALUE-017 A block of integer*4 observations. COBS-VALUE-018 to COBS-VALUE-052 A block of real*4 observations. COBS-VALUE-053 to COBS-VALUE-087 A block of character 2 observations. COBS-VALUE-088 to COBS-VALUE-097 A block of character 4 observations. COBS-VALUE-098 to COBS-VALUE-107 A block of character 6 observations. COBS-VALUE-108 to COBS-VALUE-117 A block of character 10 observations. COBS-VALUE-118 to COBS-VALUE-120 A block of variable length character fields. COBS-SAMPLE-ID

A field that stores the inventory sample identifier for the accession evaluated. Character 60.

STUDY-AREA DICTIONARY

STUDY-RECORD A record used for storing the specific details of evaluation studies. This information includes location information and researcher information. SD-OUERY-NAME A short name describing the particular study as designated by the researcher in charge. This allows each study to be identified with each observation and is used to retrieve on in the database. Character 20. SD-NUMBER A number assigned to each particular STUDY-RECORD for software and user identification. Software supplied. SD-PSCI-LNAME The last name of the principle investigator of the study. Character 30. SD-PSCI-FNAME The first name of the principle investigator of the study. Character 10. SD-EXPERIMENT-TYPE A field to describe the type of experiment (i.e., field, greenhouse, growth chamber). Character 16. SD-YEAR Year the evaluations were conducted. Character 4. SD-RESPONSIBLE-SITE The germplasm collection site of the individual entering or last updating the STUDY-RECORD. Software supplied. SD-NUMBER-OF-ENV The number of environments under which the study was conducted. Software supplied. SD-NUMBER-OF-RESEARCHERS The number of researchers that conducted the study and are responsible for its results. Software supplied. SD-NAME A name describing the particular study as designated by the researcher in charge. This name affords a better description of the study than that given in the SD-QUERY-NAME field. Character 60.

SD-COMMENT Text citing abnormal or additional information concerning the study. Character 60. SD-RESEARCHERS Data on the researcher(s) that conducted the experiment, explained by the following fields. These fields will be used once for each researcher involved with the study. This group of fields (SD-RESEARCHERS) will be repeated SD-NUMBER-OF-RESEARCHERS times. SD-RES-LNAME Last name of the researcher involved. Character 30. SD-RES-FNAME First name of the researcher involved. Character 10. SD-RES-ORGANIZATION Organization to which the researcher belong. Character 40. SD-RES-ADDRESS1 First line of the mailing address of the researcher. Character 40. SD-RES-ADDRESS2 Second line of the mailing address of the researcher. Character 40. SD-RES-CITY City of the mailing address of the researcher. Character 20. SD-RES-STATE State or province of the mailing address of the researcher. Character 20. SD-RES-ZIP Zip code of the mailing address of the researcher. Character 10. SD-RES-COUNTRY The country of the mailing address of the researcher. Character 26. SD-RES-COMMENT Brief comment for additional information concerning the researchers involved with the study. Character 60. ENVIRONMENT-RECORD This record describes each specific environment (or location) and gives the time the study was conducted.

ENV-QUERY-NAME

This is a unique, short phrase describing the environment. It is used for record identification. Character 20. ENV-NUMBER A number assigned to each particular ENVIRONMENT-RECORD for software and user identification. This number refers to a particular environment within a given study. The first four digits composing this identification are the STUDY-NUMBER, the second three are those unique to a particular environment. Software supplied. ENV-EVAL-INSTITUTE The name of the particular location (i.e. farm name, institute name, etc.) where this environment is located. Character 40. ENV-EVAL-CITY The city name in which the environment is located. Character 20. ENV-EVAL-STATE The state or province name in which the environment is located. Character 20. ENV-COUNTRY Country in which the environment is located. Character 26. ENV-CHIEF-EVALUATOR The evaluator that was in charge of the study at this particular environment. Character 40. ENV-EXPERIMENT-TYPE The type of experiment in this environment (i.e. field, greenhouse, growth chamber etc.) Character 16. ENV-EXPERIMENTAL-DESIGN A description of the statistical experimental design of the study. Character 20. ENV-LOCATION The specific location within the overall location in which the experiment was conducted (plot number, etc.). Character 12. ENV-LAT-DEG Latitude degrees for the environment (0-90). Character 2. ENV-LAT-MIN Latitude minutes for the environment (0-59) Character 2. ENV-LAT-HEMI Latitude hemisphere for the environment (North or South of O latitude) The software will accept N, S, or a blank. Character 2.

ENV-LONG-DEG Longitude degrees for the environment (0-179). Character 2. ENV-LONG-MIN Latitude minutes for the environment (0-59). Character 2. ENV-LONG-HEMI Hemisphere for the longitude for the environment (East or West of Greenwich) The software will accept E, W, or a blank. Character 2. ENV-ELEVATION-LOW Elevation of lowest study plot (meters). Integer. ENV-ELEVATION-HIGH Elevation of highest study plot (meters). Integer. ENV-HARDI-ZONE Hardiness zone at which the study was conducted. Character 6. ENV-HARDI-ZONE-SOURCE The citation (source) of the hardiness zone given in ENV-HARDI-ZONE. Character 16. ENV-TOPOGRAPHY A topographical description of the experimental area. Character 12. ENV-DRAINAGE Soil drainage characteristics for the experimental area. Character 10. ENV-SCS-CLASS Soil Conservation Service soil classification of the field soil. Character 6. ENV-SOIL-TEXT The soil texture class (using the percentages of sand, silt, and clay) from a soil texture triangle of the study area. Character 30. ENV-PCT-ORGN Percent organic matter in the environment soil. Integer. ENV-PCT-SAND Percent sand in the environment soil. Integer. ENV-PCT-SILT Percent silt in the environment soil. Integer. ENV-PCT-CLAY

Percent clay in the environment soil. Integer. ENV-SOIL-PH Soil pH of the study field or greenhouse soil. Real. ENV-K-PPM Amount of potassium in the environment soil (ppm). Real. ENV-P-PPM Amount of phosphorus in the environment soil (ppm). Real. ENV-CA-PPM Amount of calcium in the environment soil (ppm). Real. ENV-MG-PPM Amount of magnesium in the environment soil (ppm). Real. ENV-N-PPM Amount of nitrogen in the environment soil (ppm). Real. ENV-SOL-SALT-MMHOS Amount of soluble salts in the environment soil (micromhos). Real. ENV-MIN-PHOTO-PERIOD Minimum photoperiod of the environment during the study period. Integer. ENV-MAX-PHOTO-PERIOD Maximum photoperiod of the environment during the study period. Integer. ENV-MIN-TEMP The lowest temperature recorded during the study period (degrees C). Integer. ENV-MAX-TEMP The highest temperature recorded during the study period (degrees C). Integer. ENV-AVG-TEMP The mean temperature during the study period (found using the mean of the mean daily temperatures of each study day, degrees C). Integer. ENV-DEGREE-DAYS Number of days that the temperature of the environment exceeded the ENV-AVG-TEMP. Integer. ENV-CHILLING-UNITS Number of hours where the temperature fell between 0-10 C.

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Integer.
ENV-SOLAR-RADIATION
Average number of units of radiation (photon flux) (microE/sec/m
squared) received per day during the study period. Character 16.
ENV-WIND
Average wind velocity measured during the study period for this
environment (m/sec). Integer.
ENV-WATER-TYPE
The type of water application to the experimental area. Character
2.
ENV-TOTAL-RAINFALL
Total rainfall during the study period (mm). Character 8.
ENV-MEAN-DAILY-RAINFALL
Mean daily rainfall that occurred during the study period
(mm/day). Character 8.
ENV-IRRIGATION-TYPE
Description of the type of irrigation used during the study.
Character 6.
ENV-IRRIGATION-DAYS
The number of days the irrigation was employed. Integer.
ENV-IRRIGATION-TOTAL
Amount of irrigation (in mm) applied to the study. Character 8.
ENV-FERTILIZER-TYPE
Fertilizer chemical composition applied to the study area.
Character 6.
ENV-FERTILIZER-AMOUNT
Amount of fertilizer applied to the study area (kg/ha). Character
8.
ENV-YEAR-STARTED
Year that the study was started. Character 4.
ENV-MONTH-STARTED
Month that the study was started. Character 2.
ENV-DAY-STARTED
Day that the study was started. Character 2.
ENV-YEAR-SEEDED
Year that the plants were seeded in the study area. Character 4.
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ENV-MONTH-SEEDED Month that the plants were seeded in the study area. Character 2. ENV-DAY-SEEDED Day that the plants were seeded in the study area. Character 2. ENV-YEAR-PLANTED Year that the plants were planted in the study area (if not by seed). Character 4. ENV-MONTH-PLANTED Month that the plants were planted in the study area (if not by seed). Character 2. ENV-DAY-PLANTED Day that the plants were planted in the study area (if not by seed). Character 2. ENV-YEAR-TRANSPLANTED Year that the plants were transplanted in the study area (if not seeded or originally planted). Character 4. ENV-MONTH-TRANSPLANTED Month that the plants were transplanted in the study area (if not seeded or originally planted). Character 2. ENV-DAY-TRANSPLANTED Day that the plants were transplanted in the study area (if not seeded or originally planted). Character 2. ENV-YEAR-TEST Year that the plants were tested. Character 4. ENV-MONTH-TEST Month that the plants were tested. Character 2. ENV-DAY-TEST Day that the plants were tested. Character 2. ENV-YEAR-ENDED Year that the study ended or final results taken. Character 4. ENV-MONTH-ENDED Month that the study ended or final results taken. Character 2. ENV-DAY-ENDED Day that the study ended or final results taken. Character 2. ENV-LENGTH-OF-TEST The length of the test period for the study (years, months, and days). Character 12.

ENV-PEST-PROTECTION-FLAG A flag to indicate that pest protection was employed. Character 2. ENV-PUBLICATIONS-FLAG A flag to indicate whether there are none, manuscripts, publications, available on the study environment. Software supplied. ENV-LINES-OF-COMMENT The number of comment lines present for this environment. Software supplied. ENV-COMMENT A space for comments relating to the particular study environment. ENV-LINES-OF-COMMENT times. Character 60. PUBLICATION-RECORD This record gives information needed to find each published and otherwise available information related to the particular study. PUB-SENIOR-AUTHOR-LNAME The last name of the senior author of the publication. Character 30. PUB-SENIOR-AUTHOR-FNAME The first name of the senior author of the publication. Character 10. PUB-YEAR The year of publication. Character 4. PUB-MONTH The month of publication. Character 2. PUB-JOURNAL-CODE Abbreviated name for the journal in which the article concerning the study was published. Character 12. PUB-LINES-OF-TITLE Number of 60 character title lines of the article. Software supplied. PUB-LINES-OF-ABSTRACT Number of 60 character lines in the abstract. Software supplied. PUB-NUMBER-OF-AUTHORS The number of authors of the article. Software supplied. PUB-JOURNAL-NAME The complete name of the journal in which the article appears.

Character 60. PUB-JOURNAL-REFERENCE The volume and page numbers of the citation. The format should be 'volume:page-range(inclusive)'. Character 60. PUB-TITLE Complete title of the article. This field occurs PUB-LINES-OF-TITLE number of times. Character 60. PUB-AUTHORS Contains the names of all authors of the publications. The following fields occur PUB-NUMBER-OF-AUTHORS times. PUB-JUNIOR-AUTHOR-LNAME Last name of each junior author of the publication. Character 30. PUB-JUNIOR-AUTHOR-FNAME First name of each junior author of the publication. Character 10. PUB-ABSTRACT The individual lines of the abstract. This field occurs PUB-LINES-OF-ABSTRACT times. Character 60. GLOSSARY-RECORD This record contains the keywords that are deemed important by the researchers for a study. KEYWORD Field that holds keywords for the study. Character 30. KEYWORD-RECORD This record links the keywords found in the GLOSSARY-RECORD, KEYWORD field, to publications which may contain the specific keyword, to provide a means to retrieve all publications with the same keyword or all keywords for a given publication. KEYWORD-SITE Germplasm collection site affiliation of the individual that entered or last updated the KEYWORD-RECORD. Software supplied.

STANDARDS-AREA DICTIONARY

GEOGRAPHIC-RECORD This record stores the geographic names for distribution, origin and source countries. Information within this record is the responsibility of the DBMU, PIO, and TSS. GEO-COUNTRY The country or geographic region. Character 26. GEO-STATE The state or province within a country or region. Character 20. GEO-NUMBER A three digit number unique to a geographic name. This code is useful to PIO and TSS for data entry purposes. Software supplied. GEO-COUNTRY-FLAG This flag indicates whether the name is that of a country or geographic region. Character 2. GEO-UPD-SITE The name of the unit of the individual entering or last updating the GEOGRAPHIC-RECORD. Software supplied. GEO-YEAR-UPD Year that the GEOGRAPHIC-RECORD was entered or last updated. Software supplied. GEO-MONTH-UPD Month the GEOGRAPHIC-RECORD was entered or last updated. Software supplied. GEO-DAY-UPD Day the GEOGRAPHIC-RECORD was entered or last updated. Software supplied. GEO-FORMER-NAMES Former names of the country or state. Character 60. DISTRIBUTION-RECORD This record stores the presence of a species in a geographic region. DIST-NUMBER Unique number for a distribution record of a species. This can be used as a unique identification for the particular distribution. Software supplied. DIST-RESPONSIBLE-SITE Germplasm collection site affiliation of the individual that

entered or last updated the DISTRIBUTION-RECORD. Only PIO and TSS will be able to update the DISTRIBUTION-RECORD. Software supplied. DIST-COMMENT Appropriate distribution comments. These comments may include information concerning a species within a country or region. Character 60. COMMON-NAME-RECORD Record that contains common names that will be linked to individual accessions as well as the SPECIES-RECORD. CN-CODE Code used for identification of the common name. In XXXXXX.XXX format. Software supplied. CN-NAME The common name. Character 30. CN-SOURCE Reference source for the common name. This could be a literature citation or an individual. Character 20. CN-RESPONSIBLE-UPD-SITE Collection site code for individual that entered or last changed the COMMON-NAME-RECORD. This collection site is then responsible for this record. Software supplied.

GERMINATION-RULES-AREA DICTIONARY

GERMRULE-RECORD Record that stores germination rules and requirements for a species. GU-OUERY-NAME A phrase for describing the specific GERMRULE-RECORD. This is a unique phrase for each record. Character 30. GU-NUMBER A unique number assigned to each GERMRULE-RECORD for software identification and query purposes. Software supplied. GU-CNAME The common name of the species or group of taxa that follow the rules stored in this GERMRULE-RECORD. Character 30. GU-SUBSTRATA The substrata (or media) used for germination testing. This is a coded field. Character 2. GU-TEMP-C The temperature (in degrees C) used for germination testing of this particular group. Character 12. GU-COUNTDAYS The number of days for this group before seed is examined for germination results. Character 20. GU-RESPONSIBLE-SITE The germplasm collection site of the individual entering or last updating the secondary identifier. Character 6. GU-YEAR-UPD Year that the GERMRULE-RECORD was entered or last updated. Software supplied. GU-MONTH-UPD Month the GERMRULE-RECORD was entered or last updated. Software supplied. GU-DAY-UPD Day the GERMRULE-RECORD was entered or last updated. Software supplied. GU-LINES-OF-SPEC The number of lines of germination specific requirements for this GERMRULES-RECORD. There are 60 characters per line. Integer. GU-LINES-OF-AD The number of lines of additional germination directions needed

for the tested seed. Integer.

GU-SPEC The specific requirements for germination for this record. The following statement occurs GR-LINES-OF-SPEC number of times.

GU-AD

The additional germination directions needed for the tested seed. The following statement occurs GRULE-AD-COUNT number of times.

GU-AUTHORITY-RECORD

A record used for linking together a particular SPECIES-RECORD with the appropriate GERMRULE-RECORD.

GUAU-AUTHORITY A reference for the appropriate germination rule for a given species. This is necessary if there are multiple germination rules for a species. Authorities may be the American Official Seed Association (AOSA), the International Seed Testing Association (ISTA) or rules developed by the NSSL. Character 6.

GUAU-OPTION The authority followed for germination rules for the particular species. Either the AOSA, ISTA, or the NSSL. Character 4. TAXONOMY-AREA DICTIONARY

GENUS-RECORD Record that contains the genus and family names. Maintained by the TSS. GENUS-NAME Current name for a genus. Character 24. GENUS-HYBRID-CODE Flag to indicate that the genus name represents a hybrid of two or more genera. The genus name will also contain an 'X'. Character 2. GENUS-FAMILY-NAME Currently accepted family name for a genus. Character 22. GENUS-ALT-FAMILY-NAME Accepted alternate family name(s). Character 36. GENUS-AUTHORITY The nomenclature author for a genus. Character 60. GENUS-RESPONSIBLE-SITE The unit name affiliation of the individual responsible for maintaining this GENUS-RECORD and all the nomenclature records associated with it. Character 6. GENUS-UPD-LOGON The logon ID of the individual entering or last updating the GENUS-RECORD. Software supplied. GENUS-YEAR-UPD Year that the GENUS-RECORD was entered or last updated. Software supplied. GENUS-MONTH-UPD Month the GENUS-RECORD was entered or last updated. Software supplied. GENUS-DAY-UPD Day the GENUS-RECORD was entered or last updated. Software supplied. GENUS-COMMENT Comment concerning the given GENUS-NAME. Character 60. SPECIES-RECORD Record containing species and infraspecific taxonomic information.

SPECIES-NAME Current name for the species. Character 26. SPECIES-SUBTAXA-NAME Current last infraspecific epithet. Character 26. SPECIES-SUBTAXA-RANK Current rank of the last infraspecific epithet. Character 8. SPECIES-NOMEN-NUMBER A six digit number code unique to a given record. This is assigned by the computer. Integer. SPECIES-PRIMARY-SUPPLY-SITE The collection site for the taxon. Character 6. SPECIES-RESTRICTED A flag to indicate if the species is considered noxious, poisonous, or otherwise detrimental. Character 4. SPECIES-HYBRID-CODE A flag to indicate a specific hybrid. The species name will also contain a 'X'. Character 2. SPECIES-USDA-INTRODUCED-CODE Field to indicate if this is a foreign species introduced to the United States by the USDA. Character 4. SPECIES-TSS-VERIFIED Initials of TSS personnel that verified the taxon listed. Character 4. SPECIES-UPD-LOGON The logon ID of the individual entering or last updating the SPECIES-RECORD. Software supplied. SPECIES-YEAR-UPD Year that the SPECIES-RECORD was entered or last updated. Software supplied. SPECIES-MONTH-UPD Month the SPECIES-RECORD was entered or last updated. Software supplied. SPECIES-DAY-UPD Day the SPECIES-RECORD was entered or last updated. Software supplied. SPECIES-AUTHORITY The nomeclatural authority of this species. Character 60.

SPECIES-SUBTAXA-AUTHORITY The nomenclatural authority of the last infraspecific epithet. Character 60. SPECIES-MIDTAXA Any scientific names and authorities between the species and the last epithet. Character 60. SPECIES-PROTOLOG-LINE1 First line of the citation for the original description of the infraspecific name description. Character 60. SPECIES-PROTOLOG-LINE2 Second line of the citation. Character 60. SPECIES-COMMENT Field for nomenclatural comments on the scientific name. Character 60. TAXSYN-RECORD Record containing the taxonomic synonym. TAXSYN-NOMEN-NUMBER A number for the TAXSYN-RECORD for unique identification. Integer. TAXSYN-GENUS Genus name in the synonym record. Character 24. TAXSYN-SPECIES Species name in the synonym record. Character 26. TAXSYN-SUBTAXA-NAME The last epithet of the trinomial (synonym trinomial). Character 26. TAXSYN-SUBTAXA-RANK The rank of the last epithet. Character 8. TAXSYN-CODE A code indicating that the name is a basionym or synonym of the currently accepted taxonomic name. Character 2. TAXSYN-GENUS-HYBRID-CODE A flag indicating that the name is a generic hybrid. Character 2. TAXSYN-SPEC-HYBRID-CODE A flag indicating the name is a species hybrid. Character 2. TAXSYN-NOMEN-NUDUM A flag indicating the name is a nomen nudum (i.e. a name without

a valid description). Character 2. TAXSYN-NOMEN-ILLEGIT Flag indicating the name is a nomen illegit (i.e., an illegal name applied to a species). Character 2. TAXSYN-NOMEN-DUBIA Flag indicating a dubious name. Character 2. TAXSYN-RESPONSIBLE-UPD-SITE The unit name or germplasm collection site of the individual entering or last updating the TAXSYN-RECORD. Character 6. TAXSYN-UPD-LOGON The logon ID of the individual entering or last updating the TAXSYN-RECORD. Software supplied. TAXSYN-YEAR-UPD Year the the TAXSYN-RECORD was entered or last updated. Software supplied. TAXSYN-MONTH-UPD Month the TAXSYN-RECORD was entered or last updated. Software supplied. TAXSYN-DAY-UPD Day the TAXSYN-RECORD was entered or last updated. Software supplied. TAXSYN-GENUS-AUTHORITY Generic authority for the synonym. Character 60. TAXSYN-SPECIES-AUTHORITY Specific authority for the synonym. Character 60. TAXSYN-SUBTAXA-AUTHORITY Authority of last epithet in a trinomial. Character 60. TAXSYN-MIDTAXA Any names, ranks, and authorities of any levels between the species and the last epithet. Character 60. TAXSYN-PROTOLOG1 First line for the protolog for the synonym. Character 60. TAXSYN-PROTOLOG2 Second line for the protolog for the synonym. Character 60. TAXSYN-COMMENT Taxonomic comments on the synonym. Character 60.

TAXLIT-RECORD Record containing the full name of the current taxonomic references (floras, monographs, etc.). TAXLIT-ABBREV An abbreviation for the taxonomic reference. Character 10. TAXLIT-RESPONSIBLE-UPD-SITE The unit name or germplasm collection site of the individual entering or last updating the TAXLIT-RECORD. Software supplied. TAXLIT-FULL-LINE1 First line of the full title of the reference. Character 60. TAXLIT-FULL-LINE2 Second line of the full title of the reference. Character 60. TAXLIT-AUTHOR First author of the reference. Character 60. SP-CITATION-RECORD Citation of a current species in the taxonomic reference (not protolog). SPCIT-NUMBER A number code used to identify a particular reference. Software supplied. SPCIT-VOL-PG The volume number and page numbers of the citation (the volume should be listed first, separated from the page (start:end) range by a colon (:). Character 16. SPCIT-UPD-LOGON The logon ID of the individual entering or last updating the SP-CITATION-RECORD. Software supplied. SPCIT-YEAR-UPD Year the SP-CITATION-RECORD was entered or last updated. Software supplied. SPCIT-MONTH-UPD Month the SP-CITATION-RECORD was entered or last updated. Software supplied. SPCIT-DAY-UPD Day the SP-CITATION-RECORD was entered or last updated. Software supplied. SPCIT-COMMENT Comment concerning the occurrence of a species in a particular

reference. Character 60. SYN-CITATION-RECORD Reference citation for names used as synonyms. SYNCIT-NUMBER A number used to identify a particular reference. Software supplied. SYNCIT-VOL-PG The volume and page number of the coded citation (volume number precedes the inclusive page number range which are separated by a colon (:)). Character 16. SYNCIT-UPD-LOGON The logon ID of the individual entering or last updating the SYN-CITATION-RECORD. Software supplied. SYNCIT-YEAR-UPD Year the SYN-CITATION-RECORD was entered or last updated. Software supplied. SYNCIT-MONTH-UPD Month the SYN-CITATION-RECORD was entered or last updated. Software supplied. SYNCIT-DAY-UPD Day the SYN-CITATION-RECORD was entered or last updated. Software supplied. SYNCIT-COMMENT Comment on the occurrence of the synonym in a particular reference. Character 60.

ORDERS-AREA DICTIONARY

ORDER-RECORD Record for storing information concerning germplasm sample orders. These orders can be made only to the germplasm repository holding material for distribution. If the availability flag in the INVENTORY-RECORD (INV-AVAIL-FLAG) indicates the sample is available for distribution, then orders may be placed to the site maintaining the germplasm for distribution. ORDER-SITE The code of the germplasm collection site which receives and fills orders. Character 6. ORDER-STATUS Status of the order at the date on the computer (codes used are: NEW, OPEN, REVIEW, SPLIT, FORWRD, FILLED, CANCEL, HELD). Character 6. ORDER-NUMBER Germplasm order number assigned automatically by the computer when submitting the germplasm order. Integer. ORDER-TYPE The type of order desired (i.e. distribution (DI), transfer (TR), increase (RE), etc.) Character 2. ORDER-YEAR-DUE Year the filled order is due. Character 21 ORDER-MONTH-DUE Month the filled order is due. Character 2. ORDER-DAY-DUE Day the filled order is due. Character 2. ORDER-LNAME The requestor's last name. Character 30. ORDER-FNAME The requestor's first name. Character 10. ORDER-ORGANIZATION The organizational name with which the requestor is associated. Character 40. ORDER-ADDRESS1 First line of the requestor's mailing address. Character 40. ORDER-ADDRESS2

Second line of the requestor's mailing address. Character 40. ORDER-CITY City in which the above mailing address is located. Character 20. ORDER-STATE State or province in which the above mailing address in located. Character 20. ORDER-ZIP Nine digit zip code of the above mailing address. Character 10. ORDER-COUNTRY Country in which the above mailing address is located. Character 26. ORDER-PHONE Telephone number of the person placing the order. Character 12. ORDER-REQUESTOR-REFERENCE Invoice number or other information providing a cross-reference between the GRIN order number (ORDER-NUMBER, as above) and the requestor's data. Character 10. ORDER-ACCESSION-COUNT Number of accessions ordered. Integer. ORDER-ACCESSION-SHIPPED Number (out of the total requested) that were shipped to the requestor. Integer. ORDER-ACCESSION-SPLIT Number of accessions split from original order for additional processing. Integer. ORDER-YEAR-SHIPPED Year that the order was shipped. Character 2. ORDER-MONTH-SHIPPED Month that the order was shipped. Character 2. ORDER-DAY-SHIPPED Day that the order was shipped. Character 2. ORDER-UPD-LOGON Logon ID of the individual entering or last updating the ORDER-RECORD. Software supplied. ORDER-YEAR-UPD Year that the ORDER-RECORD was entered. Software supplied.

ORDER-MONTH-UPD Month the ORDER-RECORD was entered. Software supplied. ORDER-DAY-UPD Day the ORDER-RECORD was entered. Software supplied. ORDER-LINES-OF-TEXT Number of 60 character lines in the order. Software supplied. ORDER-ORIGINAL-REQUESTOR-NAME The last and first name of the original requestor of the germplasm sample. Character 60. ORDER-ORIGINAL-REQUESTOR-ORG Organization affiliation of the original requestor. Character 60. ORDER-ORIGINAL-REQUESTOR-ADD1 First line of the address of the original requestor. Character 60. ORDER-ORIGINAL-REQUESTOR-ADD2 Second line of the address of the original requestor. ORDER-ORIGINAL-REQUESTOR-CITY The city name to which the requestor's address is located. Character 60. ORDER-ORIGINAL-REOUESTOR-STAT The state name in which the requestor's address in located. Character 60. ORDER-ORIGINAL-REQUESTOR-ZIP The zip code of the original requestor. Character 60. ORDER-ORIGINAL-REQUESTOR-CTRY The country name in which the requestor's address is located. ORDER-ORIGINAL-REQUESTOR-PHON The telephone number of the original requestor. Character 60. ORDER-TEXT Order text entered automatically by a public requestor when submitting an order. This field will occur ORDER-LINES-OF-TEXT times. Character 60. ORDER-CURATOR-COMMENT Any comments made by the curator relative to the individual order. Character 60.

ORDER-ITEM-RECORD

A record that stores the exact contents of the order. OI-ACC-ID-PREFIX Prefix of the accession primary identifier assigned by the PIO or the germplasm collection site. Character 4. OI-ACC-ID-NUMBER Number part of the accession primary identifier assigned by the PIO or the germplasm collection site. Integer. **OI-SAMPLE-PREFIX** Sample identification prefix. These characters refer to an inventory number prefix that the germplasm collection site assigns to the sample. This is usually the collection site code (NSSL, W-6, AI-7, etc.) but could be another collection site assigned code. Character 4. **OI-SAMPLE-NUMBER** Sample identification number. This number refers to an inventory number that the germplasm collection site assigns to the sample. It may or may not be the accession primary identification number. Integer. **OI-SAMPLE-SUFFIX** Sample identification suffix. These characters refer to an inventory number suffix that the germplasm collection site assigns to subsequent generations of a sample. Character 4. **OI-SAMPLE-TYPE** This is the last element of the inventory identifier. It contains a germplasm type (form, or stock status) code (i.e., S=seed, PL=plant, etc.). **OI-SUPPLY-SITE** Germplasm maintenance site responsible for maintenance and distribution of the sample. Character 6. **OI-COMMENT** Short comment describing specific accession/inventory information about an order item. Character 16. **OI-MEASMENT-UNIT-ORDERED** The measurement unit used for the requested accession (sample). Character 2. OI-QTY-ORDERED The quantity of material ordered in OI-MEASMENT-UNIT-ORDERED units. Real. OI-MEASMT-UNIT-SHIPPED The units of the quantity of material shipped in

OI-MEASMENT-UNIT-SHIPPED units. OI-OTY-SHIPPED The quantity of the accession shipped. The units can be normal measurement units used at the germplasm collection site (i.e. scoops, grams, ounces, etc.) Integer. OI-NUMBER Sequential number assigned to every order item (accession/sample) for software identification and faster access. Software supplied. **OI-GENUS** Genus name of the accession ordered. Character 24. **OI-SPECIES** Species name of the accession ordered. Character 26. OI-SUBTAXA-RANK Subtaxa rank of the accession nomenclature ordered. Character 60. OI-SUBTAXA Subtaxa of the accession ordered. OI-CULTIVAR The cultivar name (given in ACC-CULTIVAR field, ACCESSION-RECORD, ACCESSION-AREA). OI-COUNTRY-OF-ORIGIN The country of origin of the accession ordered (given in the GEO-COUNTRY field, GEO-RECORD). Character 60. OI-STATE-OF-ORIGIN The state of province within the OI-COUNTRY-OF-ORIGIN of the accession ordered. Character 60. O1-COUNTRY-OF-ACO The country of acquisition of the accession ordered as stored in the RANGE-RECORD, R-COUNTRY-OF-ACQ field). Character 60. OI-STATE-OF-ACQ The state or province within the OI-COUNTRY-OF-ACQ (as given in the RANGE-RECORD, R-STATE-OF-ACQ field). Character 60. ITEM-SHIPPED-RECORD The purpose of this record is to keep track of inventory shipped, who ordered the inventory, and the location to which the inventory was shipped. IS-MEASMT-UNIT-SHIPPED The measurement unit used for the shipping of the samples (e.g. ct=count, gm=grams, pkt=packets). Character 2.

IS-QTY-SHIPPED The quantity (using units given in the IS-MEASMT-UNIT-SHIPPED field) of each sample shipped. Integer.

INVENTORY-AREA DICTIONARY

INVENTORY-RECORD Record containing information on spatial locations, physical requirements on seed germination, germination testing, accession supplier, and other information useful to germplasm collection site personnel and daily germplasm management. Items in this area are CALCulated on the combination of INV-SAMPLE-NUMBER, INV-SAMPLE-PREFIX, INV-SAMPLE-SUFFIX, and INV-SAMPLE-TYPE. Duplicates of this identifier are not allowed. INV-ACC-ID-PREFIX Accession identification prefix assigned by the PIO or the germplasm collection site. Character 4. INV-ACCID-NUMBER Accession number assigned by the PIO or the germplasm collection site. Integer. INV-SAMPLE-PREFIX Sample identifier prefix given by the germplasm collection site for the internal management of germplasm samples. Character 4. INV-SAMPLE-NUMBER Unique sample identifier given by the germplasm collection site for the internal site management of the germplasm. Integer. INV-SAMPLE-SUFFIX Sample identifier suffix given by the germplasm collection site for the internal site management of the germplasm. Character 4. INV-SAMPLE-TYPE The last element of the inventory identifier. It contains a germplasm type code (PL=plant, S=seed, CT=cutting, RH=rhizome, RT=root, PO=pollen, CE=cell, TI=tissue culture, etc.) Character 2. INV-AVAIL-FLAG Flag indicating whether the accession is available for distribution. YES or NO are the responses. Character 4. INV-REASON-NOTAVAIL Coded reason for non-availability if INV-AVAIL-FLAG is set to NO. Character 4. INV-YEAR-RECEIVED Year the inventory sample was established at the germplasm collection site. Character 2.

INV-MONTH-RECEIVED

Month the inventory sample was established at the germplasm collection site. Character 2. INV-DAY-RECEIVED Day the inventory sample was established at the germplasm collection site. Character 2. INV-YEAR-RELEASED Year of release of the inventory sample for distribution to the general public. Character 2. INV-MONTH-RELEASED Month of release of the inventory sample for distribution to the general public. Character 2. INV-DAY-RELEASED Day of release of the inventory sample for distribution to the general public. Character 2. INV-YEAR-PLANTED Year that the inventory sample was planted for increase. Character 4. INV-MONTH-PLANTED Month that the inventory sample was planted for increase. Character 2. INV-DAY-PLANTED Day that the inventory sample was planted for increase. Character 2. INV-YEAR-HARVESTED Year that the increased sample was harvested. Character 4. INV-MONTH-HARVESTED Month that the increased sample was harvested. Character 2. INV-DAY-HARVESTED Day that the increased sample was harvested. Character 2. INV-STATUS Viability or status of the germplasm (e.g. dead, virus infected, being propagated, under quarantine). Character 4. INV-POLLINATION-CODE A code designating the pollination method (i.e. self, cross, caged, self-incompatable, etc.). Character 4. INV-MAINTENANCE-TECHNIQUE Code given to the type of maintenance needed to maintain the accession. (CT=(count) automatic inventory update, FL (flag)

manual inventory update). Character 2. INV-HUNDRED-SEED-WEIGHT Weight of 100 seeds of the inventory sample. Real. INV-CRITICAL-REPLENISHMENT The amount of seed (units variable) in storage at which point the inventory sample should be regenerated. Real. INV-CRITICAL-DISTRIBUTION The amount of seed (units variable) before which the inventory sample may still be distributed. Real. INV-CRITICAL-GERMINATION The lowest germination level above which storage of the inventory sample is not considered harmful. Integer. INV-MEASMT-UNIT Units of measure by which inventory is maintained (CT=count, GM=grams, PK=packets, BK=bulk). Character 2. INV-OTY-SHIP Default standard (e.g. 250 seed, 1 packet) by which orders are filled. Integer. INV-REPLENISH-DUE-FLAG Flag indicating the need for replenishment of the germplasm. Codes are 'YS' and 'NO'. Character 2. INV-RESPONSIBLE-SITE Germplasm collection site affiliation of the personnel that entered or last updated the INVENTORY-RECORD. Software supplied. INV-UPD-LOGON Logon ID of the individual that entered or last updated the INVENTORY-RECORD. Software supplied. INV-YEAR-UPD Year the INVENTORY-RECORD was entered or last updated. Software supplied. INV-MONTH-UPD Month the INVENTORY-RECORD was entered or last updated. Software supplied. INV-DAY-UPD Day that INVENTORY-RECORD was entered or last updated. Software supplied. INV-PARENT-OR-MISC The inventory identifier of the parent of the inventory sample or

miscellaneous comments about its parentage. Character 60. INV-ON-HAND Total quantity of the inventory sample on hand (in INV-MEASMT-UNIT units) at the germplasm collection site. Integer. INV-LOCATION Major location of the inventory sample (e.g. field, greenhouse, screenhouse, cold room, etc.) Character 4. INV-SUB-LOCATION1 A location within the INV-LOCATION where the sample is located (i.e. row, shelf number, etc.). Character 4. INV-SUB-LOCATION2 A location within the INV-LOCATION1 where the sample is located (tray, position in the row, etc.). Character 4. INV-COMMENT Comment concerning any aspect of the inventory. Character 60. GERMRESULTS-RECORD A record for storing information concerning results of germination tests for the accession. GR-GERMINATION-ID The germination results record identifier (I=initial (original), P=previous, etc.). Character 2. **GR-YEAR-GERMINATION** Year the accession was last tested for germination results. Character 4. **GR-MONTH-GERMINATION** Month the accession was last tested for germination results. Character 2. **GR-DAY-GERMINATION** Day the accession was last tested for germination results. Character 2. GR-PCT-NORMAL-SEEDLING Percent of seeds tested with well developed seedlings. Integer. **GR-PCT-HARD-SEED** Percent of seeds tested with hard seed coats that failed to germinate. Integer, GR-PCT-ABNORMAL-SEEDLING Percent of the seeds tested that produced abnormal seedlings. Integer.

GR-PCT-GERMINATION Percent of seeds tested that germinated (or total germination). Integer. GR-GRULE-NUMBER A unique number given to each GERMRESULTS-RECORD for software identification and query purposes. Software supplied. GR-UPD-SITE Identification code of the individual's germplasm collection site that entered or last updated the GERMRESULTS-RECORD. Software supplied. GR-COMMENT Comments on germination results. Character 60. INVGROUP-RECORD This record represents the site grouping of inventory records in the database. These groups are collections of inventory samples as defined by the germplasm collection site data manager (or curator). IG-NAME The name of the inventory group assigned by the group manager. Character 20. IG-RESPONSIBLE-SITE The germplasm collection site affiliation of the individual that entered or last updated the INVGROUP-RECORD. Character 6. IG-COMMENT Comment concerning the inventory groups. Character 60. INVGROUP-MEMBER-RECORD Record that provides a 'link' between an INVENTORY-GROUP-RECORD and its inventory sample record members. IGM-COMMENT Identification for each INVGROUP-MEMBER-RECORD not being used at the present time. Character 60. SUPPLIER-RECORD A record used to maintain suppliers of all germplasm accessions with listing in an inventory area. SUP-ROLE The role of the germplasm supplier. Character 4. SUP-NAME The name of the supplier of the germplasm. Character 60. SITE-CROP-RECORD

Record containing information that is useful in 'grouping' inventory records for distribution, replenishment, inventory maintenance, and control.

SC-QUERY-NAME A name assigned at the germplasm maintenance site to the SITE-CROP-RECORD describing its contents. Character 20.

SC-CRITICAL-REPLENISHMENT Number of units of germplasm above which replenishment is not needed. Real.

SC-CRITICAL-DISTRIBUTION Number of units of germplasm above which distribution can be carried out. Real.

SC-CRITICAL-RETEST-INTERVAL Time interval between necessary germination tests for the crop (units are years or months). Integer.

SC-CRITICAL-GERMINATION The percentage germination of the crop below which attention should be drawn to the crop. Integer.

SC-MEASUREMENT-UNIT The units of germplasm by which orders are filled (packets, number of seeds, grams, etc.). Character 2.

SC-SHIP-QTY Number of units of the crop normally shipped (e.g. 250 seed, 1 packet). Real.

SC-RESPONSIBLE-SITE Germplasm collection site of the individual that entered or last updated the SITECROP-RECORD. Character 6.

SORT-SETS DICTIONARY

AREAS

These are defined as groups of related records by the information they contain.

SETS

These are defined relationships between records. These are used to maintain database pointers and references.

RECORDS

These are collections of related data fields.

FIELDS

These are smallest unit of data such as an observation value, a name, or a code. Fields are equivalent to an 'item' in INFO.

OWNER-MEMBER-SET

This is a structure that links an owner record occurrence to one or more member records occurrences. The member records may be in a sorted or unsorted order. In the GRIN data model, the arrows represent sets. The arrows point from the owner record to its member records. The records at the top of the model are owned by the system through sort-sets.

SORT-SETS or SYSTEM-OWNED-SETS

These have an index (key) containing pointers to all occurrences. These sets provide reasonably fast access to records when all or part of the value for the indexed field(s) is given. The sort-sets are represented by pentagon structure in the GRIN data model. In order to avoid an 'area walk' (or a long query), the query should be written to include at least the first sort (search) key. All sort (search) keys may be used in the query, but the order they are used should be as given for each SORT-SET definition. All the sort (search) keys are given in the respective SORT-SET definitions. ACCGROUP-SORT-SET This sort set provides fast/direct access to the ACCGROUP-RECORD through the AG-NAME field. CN-SORT-SET This sort set provides fast/direct access to the COMMON-NAME-RECORD through the CN-NAME field or CN-CODE. COPGROUP-SORT-SET This sort set provides fast/direct access to the COPGROUP-RECORD through the CG-NAME field. COOPERATOR-SORT-SET This sort set provides fast/direct access to the COOPERATOR-RECORD through the COOP-LNAME, COOP-FNAME, COOP-SITE, and COOP-ID fields. DESCRIPTOR-SORT-SET This sort set provides fast/direct access to the DESCRIPTOR-RECORD through the DESC-NUMBER field. DESCSTUDIED-SORT-SET This sort set provides fast/direct access to the DESCSTUDIED-RECORD through the DS-DESC-NUMBER, DS-ENV-NUMBER, AND DS-OUALIFIER-NUMBER fields. ENV-SORT-SET This sort set provides fast/direct access to the ENVIRONMENT-RECORD through the ENV-NUMBER field. GENUS-SORT-SET This sort set provides fast/direct access to the GENUS-RECORD through the GENUS-NAME field. GEO-SORT-SET This sort set provides fast/direct access to the GEOGRAPHIC-RECORD through the GEO-COUNTRY, GEO-STATE, and GEO-NUMBER fields. GERMRULES-SORT-SET This sort set provides fast/direct access to the GERMRULES-RECORD through the GRULE-NUMBER or GU-QUERY-NAME fields. GLOSSARY-SORT-SET This sort set provides fast/direct access to the GLOSSARY-RECORD through the KEYWORD field. INVGROUP-SORT-SET This sort set provides fast/direct access to the INVGROUP-RECORD

through the IG-NAME and IG-RESPONSIBLE-SITE fields.

SORT SETS

NOMEN-SORT-SET This sort set provides fast/direct access to the SPECIES-RECORD through the SPECIES-NOMEN-NUMBER field. ORDER-SORT-SET This sort set provides fast/direct access to the ORDER-RECORD through the ORDER-SITE and ORDER-NUMBER fields. PUB-SORT-SET This sort set provides fast/direct access to the PUBLICATION-RECORD through the PUB-SENIOR-AUTHOR-LNAME, PUB-YEAR, and PUB-MONTH fields. RANGE-SORT-SET This sort set provides fast/direct access to the RANGE-RECORD through the R-ID-PREFIX, R-LOW-ID-NUMBER field or R-COUNTRY-OF-ACQ and R-STATE-OF-ACQ fields. RESCROP-SORT-SET This sort set provides fast/direct access to the RESCROP-RECORD through the RC-QUERY-NAME or RC-NUMBER fields. SITE-SORT-SET This sort set provides fast/direct access to the SITE-RECORD through the SITE-QUERY-NAME field. SITECROP-SORT-SET This sort set provides fast/direct access to the SITECROP-RECORD through the SC-QUERY-NAME and SC-UPD-SITE fields. STUDY-SORT-SET This sort set provides fast/direct access to the STUDY-RECORD through the SD-QUERY-NAME or SD-NUMBER fields. TAXLIT-SORT-SET This sort set provides fast/direct access to the TAXLIT-RECORD through the TAXLIT-ABBREV field. TAXSYN-SORT-SET This sort set provides fast/direct access to the TAXSYN-RECORD through the TAXSYN-GENUS and TAXSYN-SPECIES or TAXSYN-NOMEN-NUMBER fields.

GENERAL TERMS DICTIONARY

ASCII American Standard Code for Information Interchange. It is a standard 7-bit code for data communications. The Prime computer uses this code. BIT BInary digiT. A digit in the binary numeration system, either a '1' (1-bit) or a '0' (0-bit). BYTE A standard length binary string that is the smallest unit of access in many computers, typically eight bits in length. CAC Crop Advisory Committee. These committees were formed concurrently with GRIN to establish and update policy concerning specific aspects of crop species. They are of interest to GRIN users because they establish and update some descriptor lists for use in the database. CALC A way in which a record can be found very quickly. A record located in storage by an algorithm applied to its key. CHARACTER Generally means a field into which any ASCII character code can be placed without error occurring. COBOL COmmon Business-Oriented Language. A high level programming language widely used in commerce and industry. A variable name in COBOL may not exceed 32 characters in length. COLLECTION SITE Any of the NPGS units designated to maintain and store plant germplasm. Here, these sites include those that participate in germplasm information handling also (e.g. PIO and TSS). FLAG An indicator that shows the existence of a certain condition when 'set' and the absence of the condition when 'clear. FORTRAN FORmula TRANslation. A high level programming language designed for scientific and mathematical applications. A variable name in FORTRAN may not exceed 6 characters in length. However, Prime implementation of the 1977 ANSI standard allows for variable names up to 32 characters in length.

HISTORICAL Data that is no longer valid through check with a constantly updated standard. This data may still be maintained even though it is no longer formally accepted. INTEGER A data item that can contain only numbers (Characters 0-9). Also, a whole number, without a fractional part. INTEGER*2 A data item whose value may not exceed + 32,767. INTEGER*4 A data item whose value may not exceed + 2,147,483,647. KEY A value that identifies a record and is used to locate it in storage. LINK To use pointers or a table to establish access paths between records of one file and records of another file. NON-HISTORICAL Data that is considered current. This is established through a standard. OUERY An enquiry. Also, to request a programmed search. A fast search program that produces a selected output interactively (GRIN). REAL A term indicating that numeric values are represented by decimal digits, a decimal point (possibly assumed) and optionally, a sign (+ or -). **SCHEMA** A description of the overall logical structure of a database. This includes all of the realms, set occurrences, record occurrences, and associated data items and data aggregates as they exist in the database. SHELL A set of user oriented customized programs responsible for data security, user menus, and overall control over application software. SUBSCHEMA A subset of a schema that specifies those facilities of a database that is accessible with a particular utility (DISCOVER) application program or group of programs.

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