जैवप्रौद्योगिकी विभाग
DEPARTMENT OF BIOTECHNOLOGY
सत्यमेव जयते

Indian Biological Data Centre

United Nations Educational, Scientific and Cultural Organization
क्षेत्रीय जैव प्रौद्योगिकी केन्द्र
Regional Centre for Biotechnology

INDIAN CROP PHENOME DATABASE

Advancing Crop Research Through Open Phenomic Data

ICPD

Presented by: Dr. Sonia Balyan
On behalf of Team ICPD

CONTACT US

Mail
icpdsupport@ibdc.rcb.res.in

Website:
https://ibdc.dbtindia.gov.in/icpd/

AgBioData

Toward enhanced genomics, genetics, and breeding research outcomes through standardization of practices and protocols across agricultural databases

Biocuration 2025

जैवप्रौद्योगिकी विभाग
DEPARTMENT OF
BIOTECHNOLOGY

सत्यमेव जयते

International Centre for Genetic Engineering and Biotechnology

NATIONAL INFORMATICS CENTRE

National Institute of Immunology

United Nations Educational, Scientific and Cultural Organization

क्षेत्रीय जैव प्रौद्योगिकी केन्द्र
Regional Centre for Biotechnology

Indian Biological Data Centre

Regional Centre for Biotechnology,
NCR Biotech Science Cluster, 3rd Milestone,
Faridabad-Gurugram Expressway,
Faridabad – 121 001

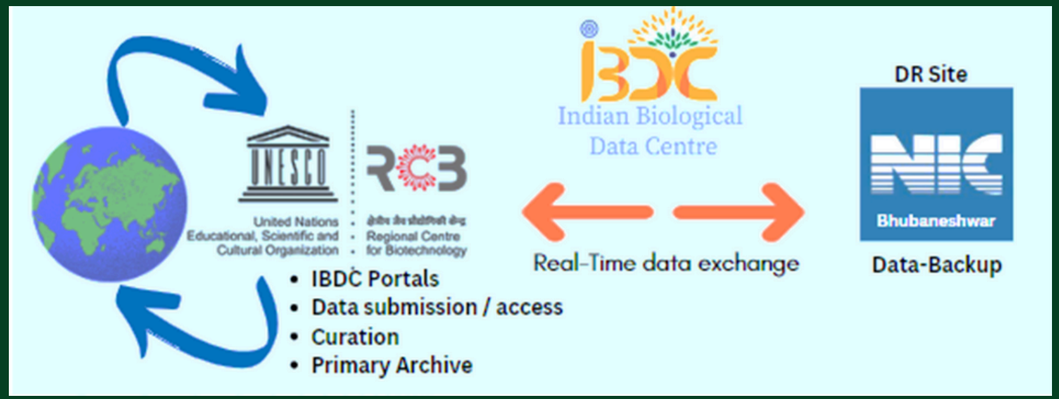
https://ibdc.dbtindia.gov.in/

support@ibdc.rcb.res.in

@ibdctweets

Indian Biological Data Centre

- IBDC is the first National life science data repository in India.
- It is supported by the **Government of India (GOI)** through the **Department of Biotechnology (DBT)**.
- It enables the implementation of the “**Biotech-Pride Guidelines”.**
- It is a joint project of **Regional Centre for Biotechnology, National Institute of Immunology, International Centre for Genetic Engineering & Biotechnology** and **National Informatics Centre.**



LOCATION

The IBDC was dedicated to the nation by **Dr. Jitendra Singh**, Honorable Minister for Science and Technology, GOI on Nov 10, 2022.

Indian Biological Data Center,
Regional Centre for Biotechnology,
NCR Biotech Science Cluster, 3rd Milestone,
Faridabad-Gurugram Expressway,
Faridabad – 121 001

https://ibdc.dbtindia.gov.in/

support@ibdc.rcb.res.in

It is housed at Regional Centre of Biotechnology, an academic institution established by the Department of Biotechnology, Govt. of India with regional and global partnerships synergizing with the programmes of UNESCO as a Category II Centre.

DEDICATION

The IBDC was dedicated to the nation by **Dr. Jitendra Singh**, Honorable Minister for Science and Technology, GOI on Nov 10, 2022.

Business Standard

Saturday, December 3, 2022 | 13:54 IST English | Hindi

Centre unveils India's first national repository for life science data

Data submission and access portals for other data types are under development and would be launched shortly

Data

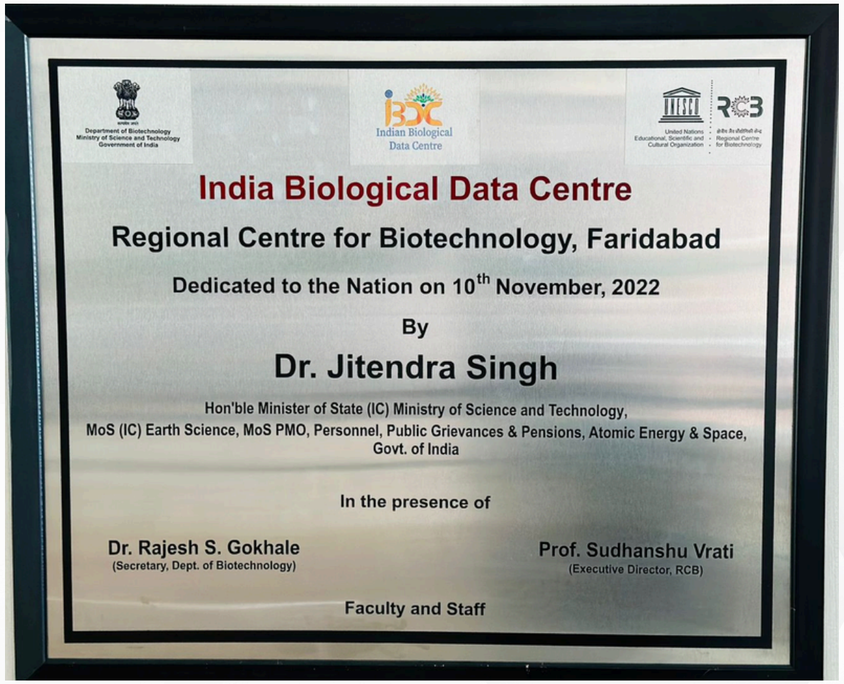
The 'Indian Biological Data Centre' is established at Regional Centre of Biotechnology in Faridabad

India News | Press Trust of India | Updated: November 13, 2022 11:17 am IST

JAGRAN Josh

IBDC: Government launches India's first national repository for life science data

As per the BIOTECH-PRIDE guidelines of the Government of India, IBDC is mandated to archive all life science data generated from publicly-funded research in India.



MISSION

Indian Biological Data Centre

- Archive
- Curate
- Dissipate
- Training
- International Collaboration

WHAT WE DO?

Biological Data Archive Resources

High Performance Computational Facility

Support to Project of National Importance

Big Data Analytics

User Resources

Trainings: Data Submission & Data Analysis

IBDC Portals

07 Indian Biological Images Archive

- An online repository of biological images generated from multiple imaging modalities, e.g., histopathology, X-ray, etc.
- Total submissions: 241020 Total data size: 557.25 GB
- No. of registered users: 67 from 47 organizations.
- https://ibdc.dbtindia.gov.in/ibia/

06 Indian Proteome Databank

- IPD is a MS-Proteomics data submission and archival portal.
- Total submissions: 118 Total data size: 6200GB
- No. of registered users: 58 from 41 organizations.
- https://ibdc.dbtindia.gov.in/ipd/

05 Indian Metabolome Data Archive

- Catalogue metabolomics data and associated metadata generated through the analytical techniques MS and NMR.
- Total submissions: 1264 Total data size: 10.6 GB
- No. of registered users: 56 from 51 organizations.
- https://ibdc.dbtindia.gov.in/imda/

04 Indian Structural Data Archive

- ISDA is an archive of three-dimensional structures of biological macromolecules with function annotations from various sources.
- Total submissions: 239492 Total data size: 30000GB
- No. of Indian entries: 7145 from 65 organizations.
- https://ibdc.dbtindia.gov.in/isda/

03 Indian Crop Phenome Database

- Central portal for the archival and access of crop phenotype data.
- Total submissions: 367 Total data size: 317MB
- No. of registered users: 74 from 42 organizations.
- https://ibdc.dbtindia.gov.in/icpd/

02 INDA-Controlled Access

- The Indian Nucleotide Data Archive- Controlled access (INDA-CA), is a controlled access platform for archiving nucleotide sequencing data.
- Total submissions: 295666 Total data size: 1012 TB
- No. of registered users: 414 from 200 organizations.
- https://ibdc.dbtindia.gov.in/indasecure/

01 Indian Nucleotide Data Archive

- The Indian Nucleotide Data Archive (INDA), is an open-access platform for archival of nucleotide sequencing data which provides Internationally recognized INSDC and IBDC accessions.
- Total submissions: 23099 Total data size: 44.7 TB
- No. of registered users: 325 from 105 organizations.
- https://ibdc.dbtindia.gov.in/inda/

Projects of National Importance

260,448 submissions from 60 institutes

9768 samples with (gvcf,phenotype and raw data of ~900TB of data size)

9833 samples submitted

557 samples submitted

Major Mission Projects

Triticum aestivum

Germplasm Characterization and Trait Discovery in Wheat using Genomics Approaches and its Integration for Improving Climate Resilience, Productivity and Nutritional quality.

Oryza sativa

Mainstreaming rice landraces diversity in varietal development through genome-wide association studies: A model for large-scale utilization of gene bank collections of rice.

Linum usitatissimum

Leveraging genetic resources for accelerated genetic improvement of Linseed using comprehensive genomics and phenotyping approaches.

Cicer arietinum

Characterization of Chickpea Germplasm Resource to Accelerate Genomics-assisted Crop Improvement.

Carthamus tinctorius

Exploiting Genetic Diversity for Improvement of Safflower through Genomics Assisted Discovery of QTLs/Genes Associated with Agronomic Traits.

Sesamum indicum

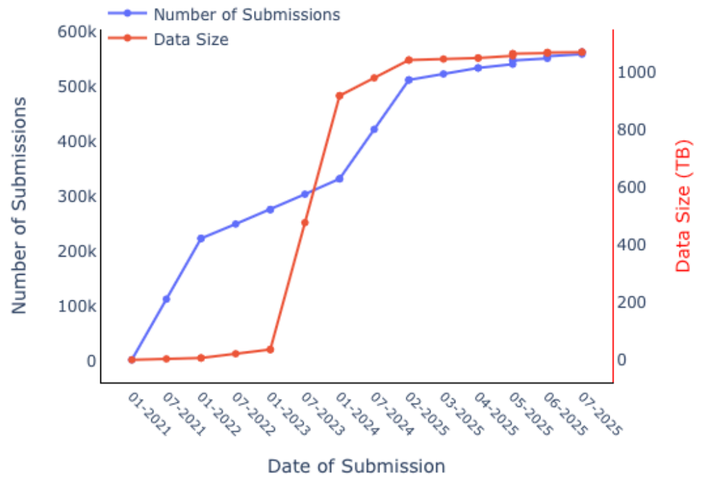
Mainstreaming sesame germplasm for productivity enhancement and sustainability through genomics assisted core development and trait discovery.

BIONODE
Decode | Analyze | Discover

Trainings

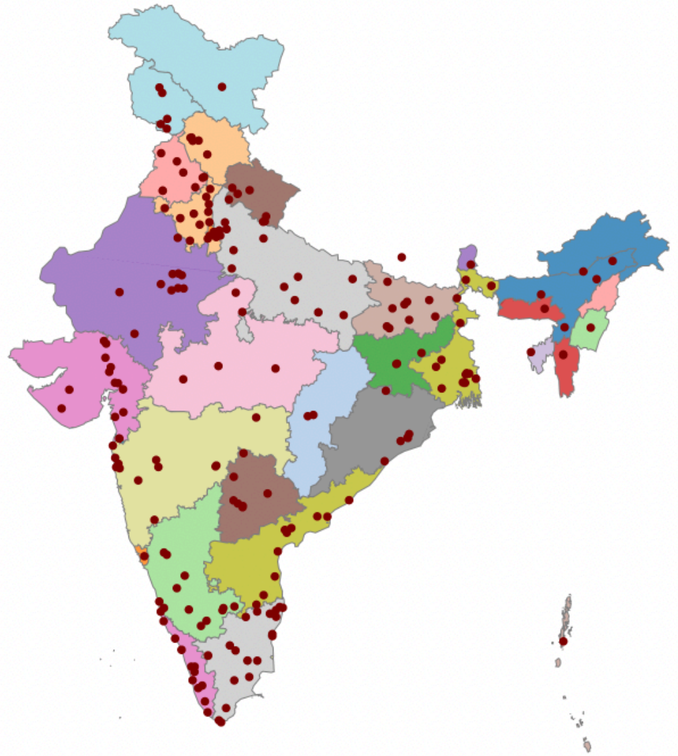
Conferences

IBDC - Data Trend



Overall Data	Value
No. of Users	1003
No. of Submission	576607
Total Downloads	23746684
Total Visitors	448107
No. of Open Access	265400
No. of Restricted Access	9833
No. of Managed Access	301374

Portal User Registrations



Data Portal Diversity @IBDC

ICPD

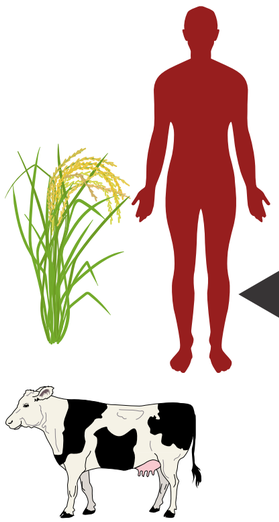
IAPD
Indian Animal Phenome Database

IHPD
Indian Human Phenome Database

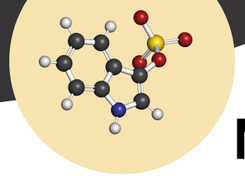
IMPD
Indian Microrganisms Phenome Database

IGR
Indian GWAS Repository

Phenotype

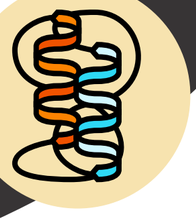


Images IBIA
Indian Biological Images Archive

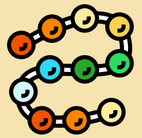


Metabolomics
IMDA
Indian Metabolome Data Archive

Molecular Structures
ISDA
Indian Structural Data Archive



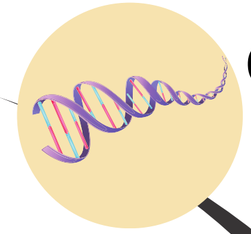
Proteomics
IPD
Indian Proteome Databank



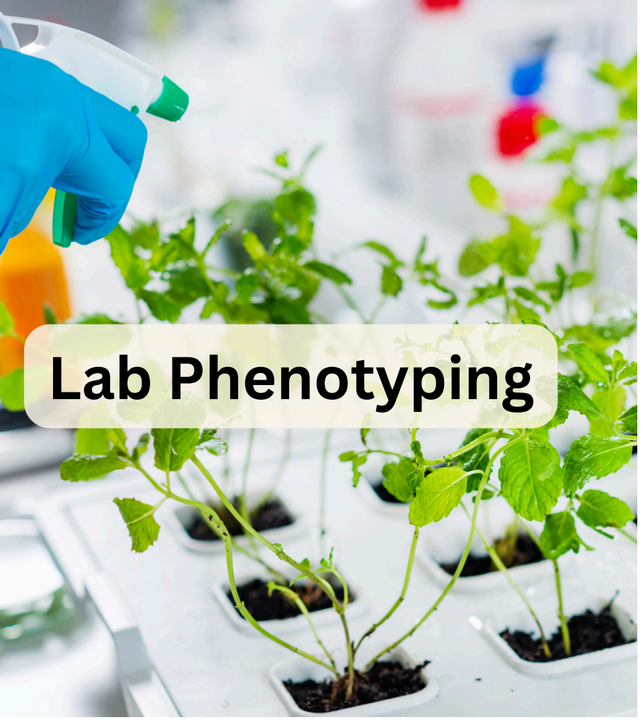
Functional Genomics
INDA
INDIAN ARRAY DATA ARCHIVE

Genes, Genomes and Variation
INSDC
Indian Nucleotide Data Archive

INSDC-CA
Indian Nucleotide Data Archive
Controlled Access



Levels of Phenotyping



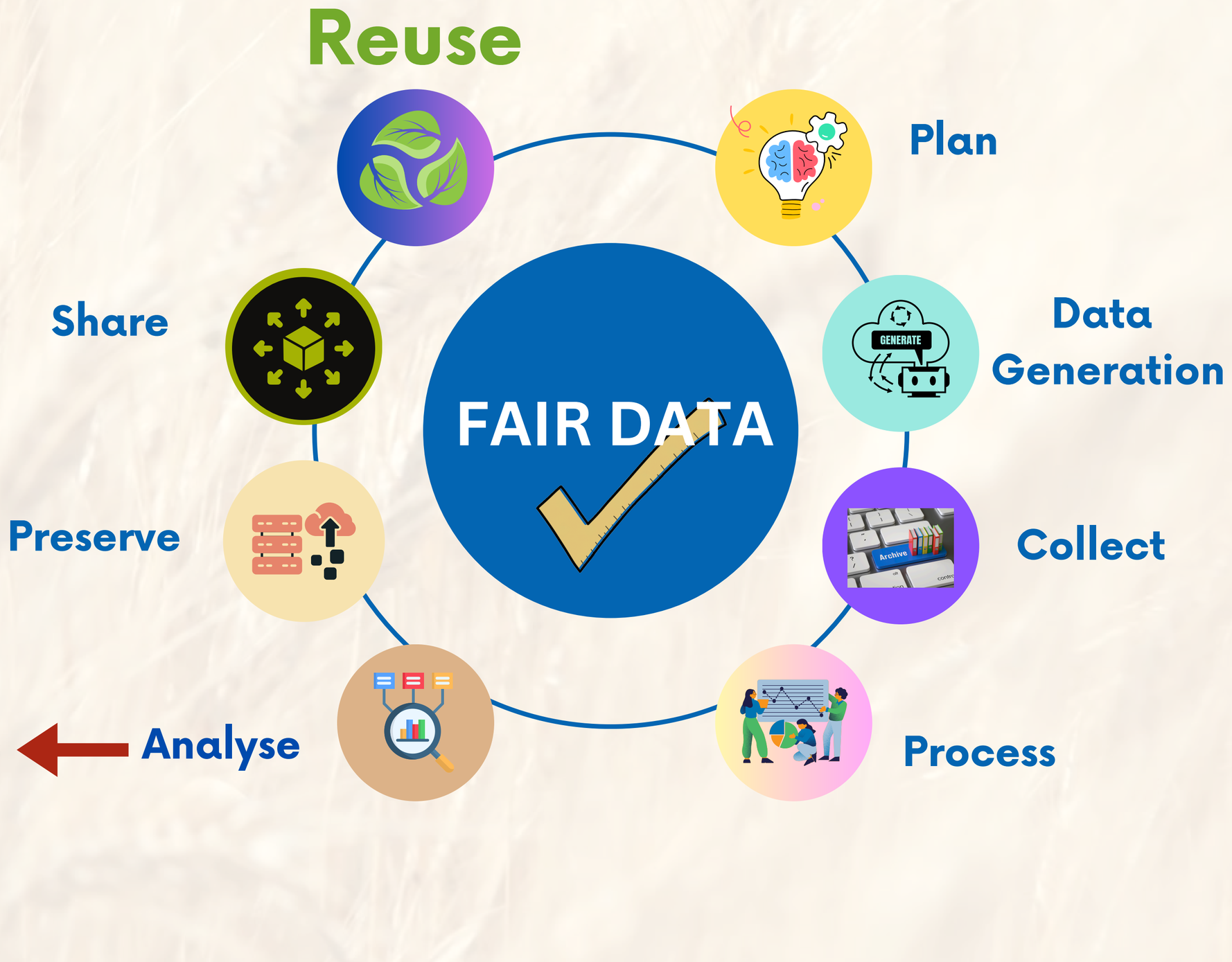
Heterogeneous data
-Indoor/outdoors
-Collaborative projects
-Manual to automated data collection
-High throughput phenotyping

Increasing with technology
-Devices
-Sensors
-Measurements

Complicated
-Different environments and ecosystems
-Different tissues and stages
-Different scales
-Different interactions
-varied names and measuring conventions

Poorly Documented
Lack of proper meta data formats and dedicated repositories

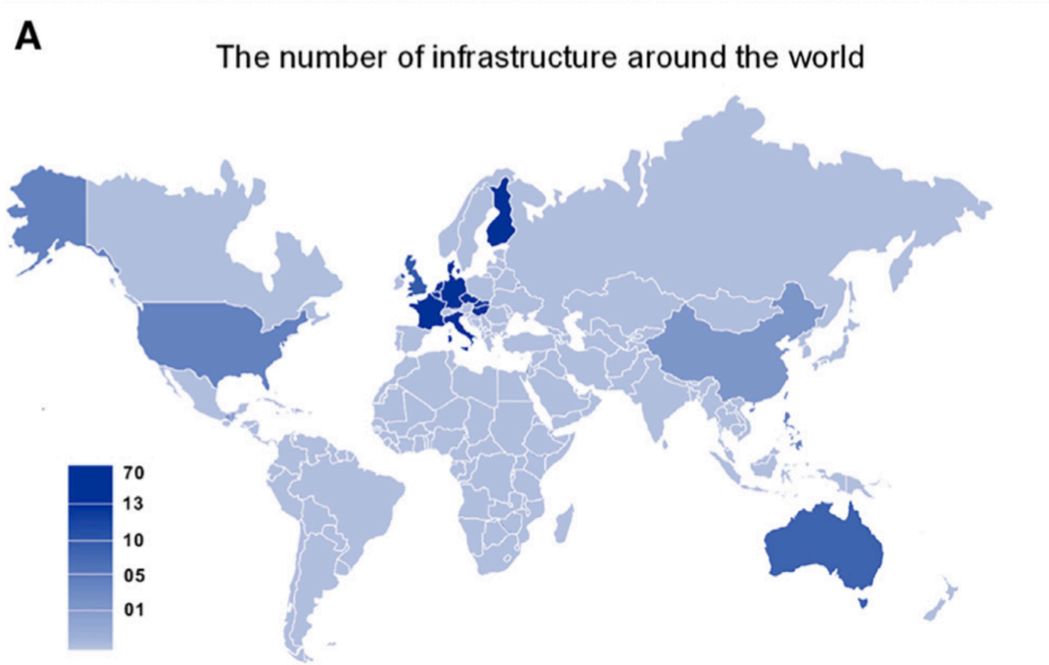
Difficult to Reuse



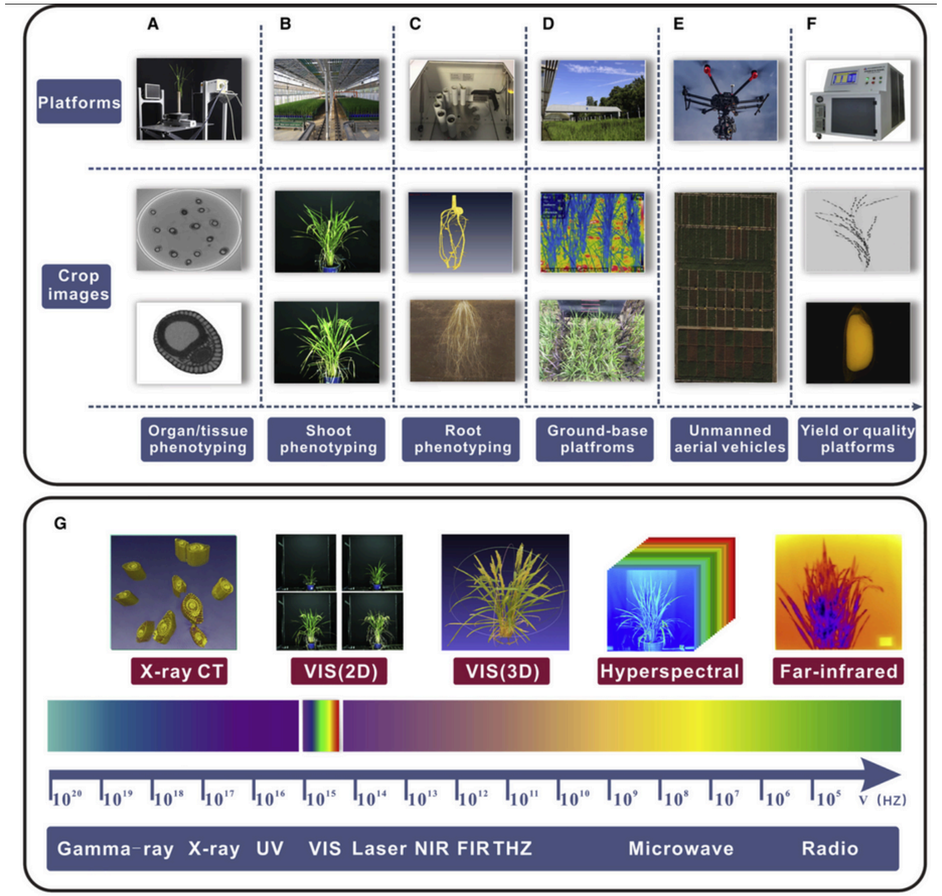
Fiorani and Schurr (2013) referred to plant phenotyping as the set of methodologies and protocols used to accurately measure plant growth, architecture, and composition at different scales.

Phenotype Data Generation | **Traditional Phenotyping**

High-Throughput Phenotyping (HTP)



Plant Phenotyping Survey



Data and Observations

High throughput phenotyping in India

- **Nanaji Deshmukh Plant Phenomics Centre (NDPPC) at Indian Agricultural Research Institute (ICAR-IARI) in New Delhi,**
- **International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)**
- **Indian Institute of Horticultural Research (IIHR): Based in Bengaluru, Karnataka**

Importance for India

1. Employment Contribution:

- **Workforce Engagement:** Approximately 45.5% of India's total workforce is employed in agriculture and related activities. Statista
- **Livelihood Support:** The agriculture sector provides livelihood support to about 42.3% of the population.

2. GDP Contribution:

- **Gross Value Added (GVA)**: In the fiscal year 2022-23, agriculture contributed **18.3%** to India's GVA.
- **Overall GDP Share:** For the fiscal year 2024-25 (provisional estimates), agriculture's share in the country's GDP is approximately **16%.** India Budget

3. Food Security:

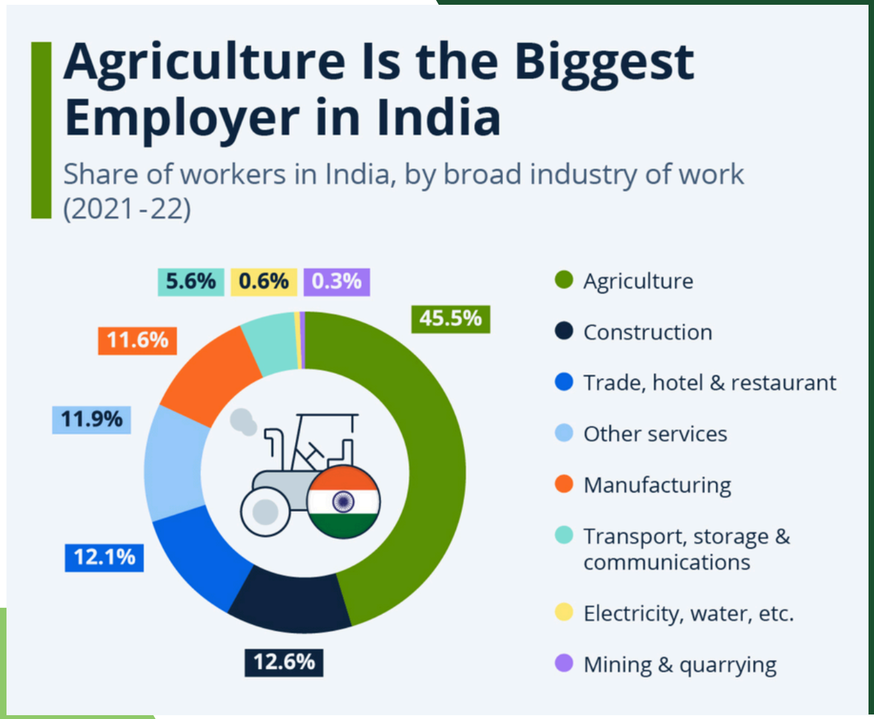
- **Undernourishment:** Despite achieving food sufficiency, India is home to over 190 million undernourished people, accounting for a quarter of the world's hungry population.

4. Growth Trends:

- **Sector Growth:** The agriculture sector has registered an average annual growth rate of 4.18% at constant prices over the last five years.

5. Budgetary Allocations:

- **Financial Year 2025-26:** The government has allocated approximately 1.75 trillion rupees (about $20 billion) to agriculture sector



WHY PHENOTYPE DATA IS IMPORTANT

Cultivars/varieties Traits Treatments

Crop Phenome data

Tissue Development stage Methods

Soil Health Location

Integration with

QTLS GWAS Other Omics Data

Food Security

Engineering high yielding and climate-resilient crop varieties

Precision Agriculture

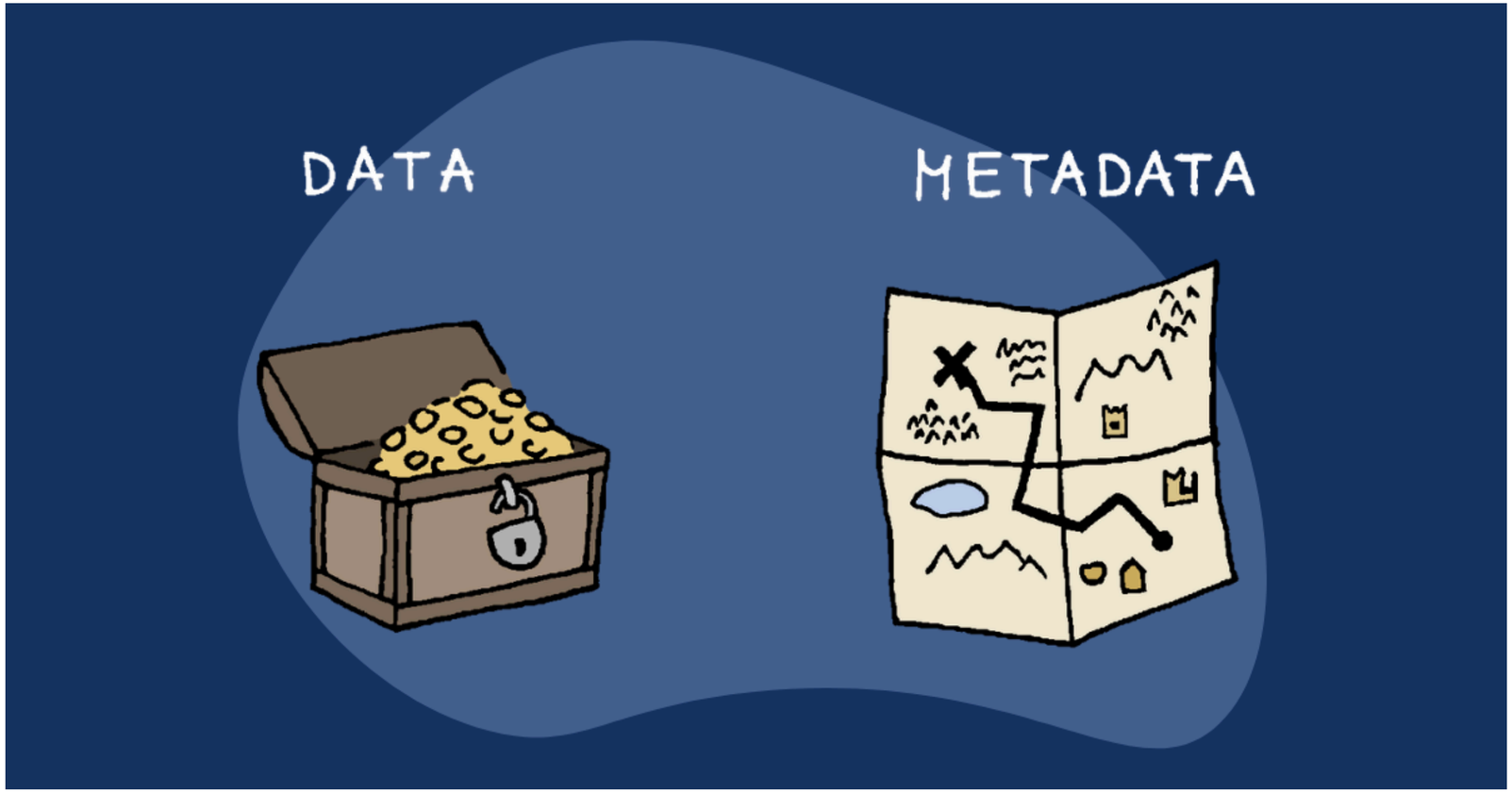
Selection of varieties based on Trait, stress response & geographical locations

Data-Driven Decision Making

Data for Comparative Studies

Bridging the Genotype-Phenotype Gap

DATA ALONE IS NOT SUFFIECIENT....



Meta-Data: Data about Data

Why Metadata Matters for Phenotype Data

🌱 Making sense of data
Metadata tells the story behind the numbers – what was measured, when, where, how, and why.
It connects phenotypic traits with the actual experiment, environment, and methods used.
Without metadata, phenotype data is incomplete and hard to trust.

Metadata Makes Data FAIR
-Findable – Clear descriptions help others discover your data easily.
-Accessible – Metadata explains how and where the data can be reached.
-Interoperable – Using shared standards and vocabularies lets data from different studies "talk" to each other.
-Reusable – With enough detail, your data can be reliably used, compared, and built upon in the future.

Why it's important
✅ Others can reproduce your work and validate findings.
✅ Studies from different sites and seasons can be compared fairly.
✅ Phenotype data can be integrated with genomic and environmental data.
✅ Good metadata turns raw data into long-lasting knowledge.

ICPD
Indian Crop Phenome Database
HOME
NEWS & UPDATE
USER RESOURCES
IBDC
CONTACT US
FAQ
Data Submission
Browse Data
User Manual's
ICPD webinar link
Indian Crop Phenome Database
(ICPD)
We empower the researcher with various digitization services for harnessing their crop phenotyping projects.
Submit Data
Browse Data
https://ibdc.dbtindia.gov.in/icpd

Indian Crop Phenome Database

ICPD

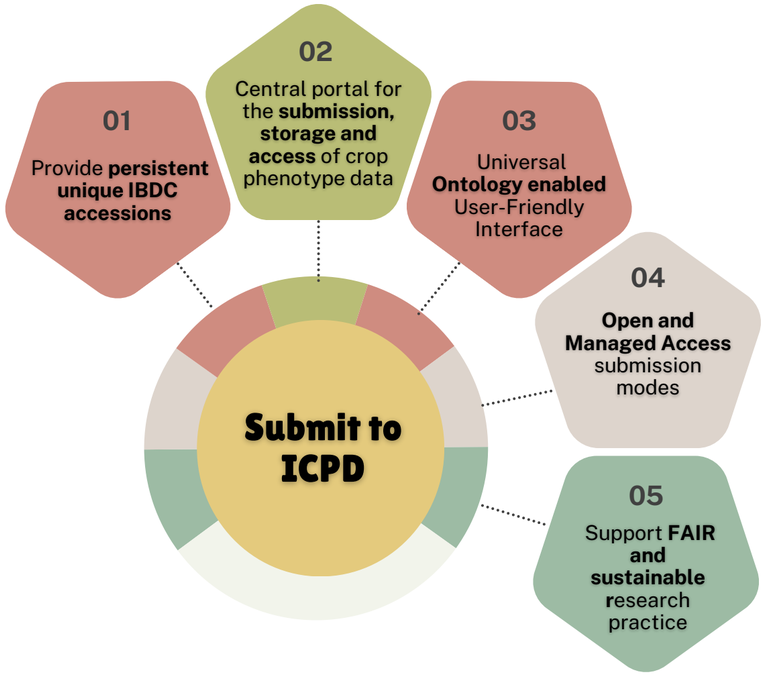
CARE Collective Benefit Authority to Control Responsibility Ethics

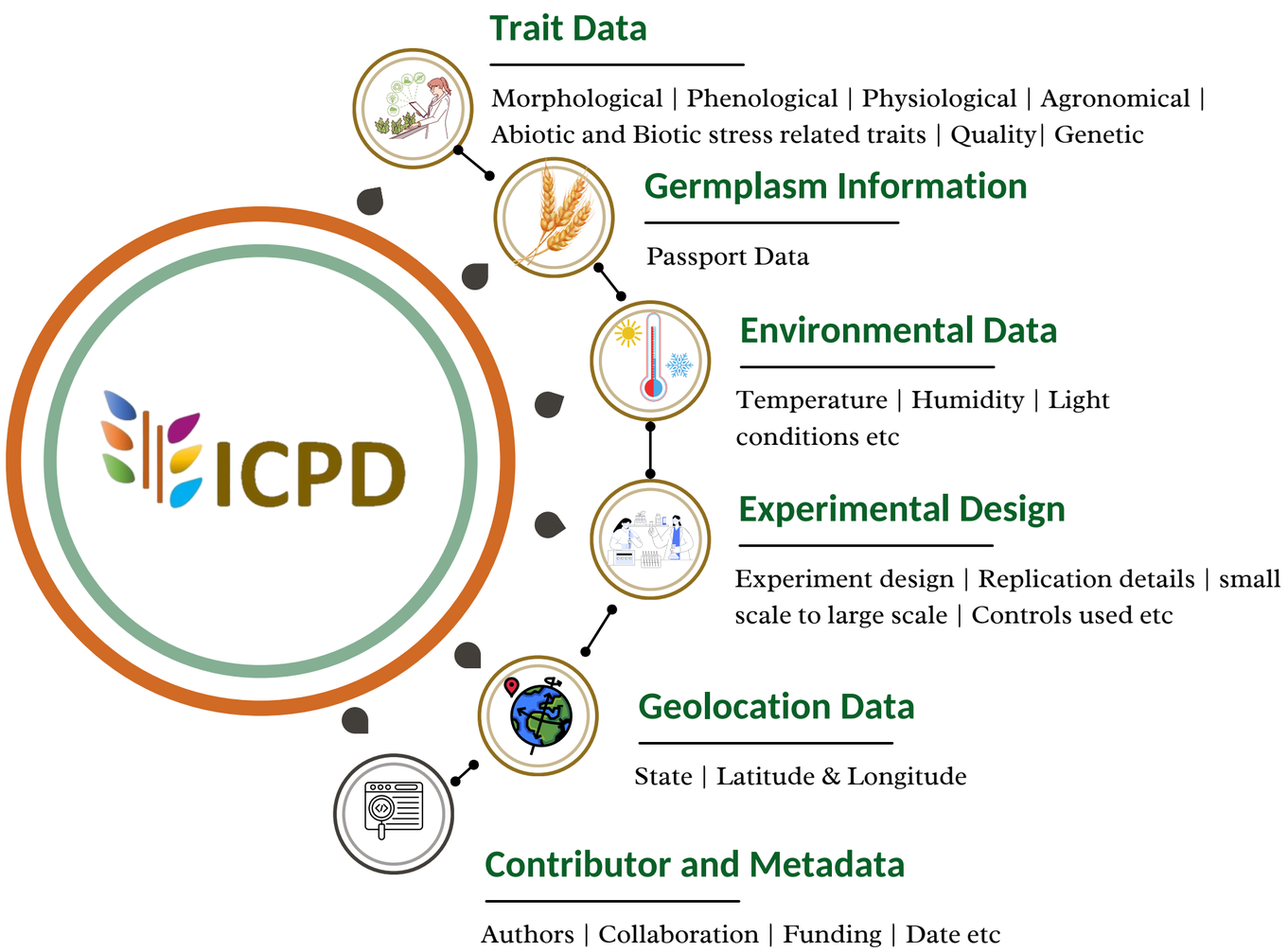
CC BY NC SA

Findable Accessible Interoperable Reusable

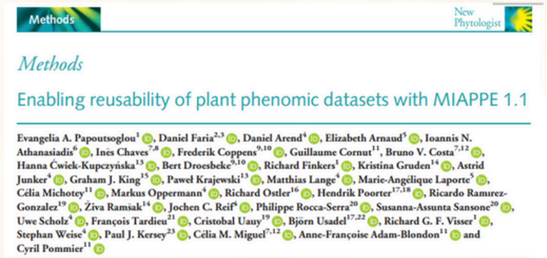
Vision

- **Biocuration of crop phenome data: To create a centralized, user-friendly platform for the systemic collection, annotation and integration of phenotype information.**
- **Aligned with the FAIR (Findable, Accessible, Interoperable, Re-usable) data principles.**
- **Ensure standardization, accessibility, and interoperability of phenome data through the utilizing structured metadata fields and ontologies to enhance findability, interoperability, and reusability of crop phenomic data, empowering research and development.**





Inspiration

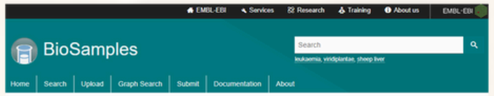

Methods

New Phytologist

Methods

Enabling reusability of plant phenomic datasets with MIAPPE 1.1

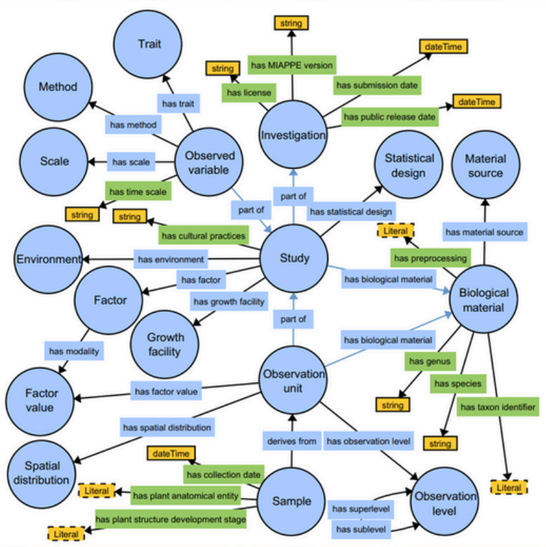
Evangelia A. Papoutsoglou[1], Daniel Faria[2,3], Daniel Arend[4], Elizabeth Arnaud[5], Ioannis N. Athanasiadis[6], Inês Chaves[7,8], Frederik Coppens[9,10], Guillaume Cornut[11], Bruno V. Costa[7,12], Hanna Ćwiek-Kupczyńska[13], Bert Droesbeke[9,10], Richard Finkers[1], Kristina Gruden[14], Astrid Junker[4], Graham J. King[15], Paweł Krajewski[13], Matthias Lange[4], Marie-Angélique Laporte[5], Célia Michotey[11], Markus Oppermann[4], Richard Ostler[16], Hendrik Poorter[17,18], Ricardo Ramirez-Gonzalez[19], Živa Ramšak[14], Jochen C. Reif[4], Philippe Rocca-Serra[20], Susanna-Assunta Sansone[20], Uwe Scholz[4], François Tardieu[21], Cristobal Uauy[19], Björn Usadel[17,22], Richard G. F. Visser[1], Stephan Weise[4], Paul J. Kersey[23], Célia M. Miguel[7,12], Anne-Françoise Adam-Blondon[11] and Cyril Pommier[11]



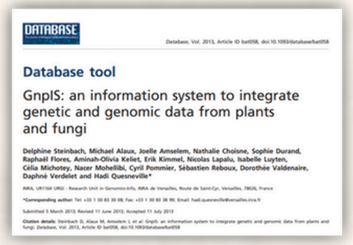
- For plant phenotyping data, **BioSamples** collaborates with the FONDUE project, https://elixir-europe.org/about-us/ commissioned-services/fondue, implements the Minimum Information About a Plant Phenotyping Experiment (MIAPPE) standards as a sample checklist, and links plant study data in European Nucleotide Archive (ENA) and EVA.

MIAPPE

Minimum Information About a Plant Phenotyping Experiment



Subset of the Plant Phenotyping Experiment Ontology representing the MIAPPE data model. Generated using WebVOWL (http://editor.visualdata web.org/) and edited manually. Circles indicate classes. Object properties are shown in blue rectangles, and data properties are shown in green rectangles. Yellow rectangles represent literals


DATABASE

Database tool

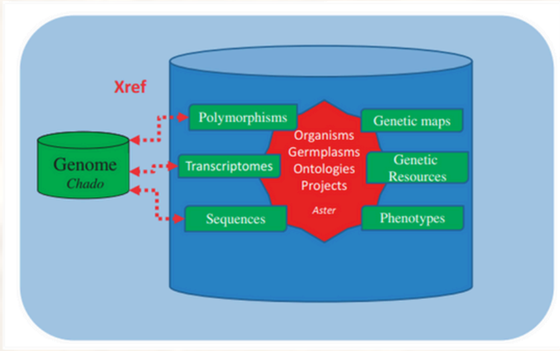
GnpIS: an information system to integrate genetic and genomic data from plants and fungi

Delphine Steinbach, Michael Alaux, Joelle Amselem, Nathalie Choisne, Sophie Durand, Raphaël Flores, Aminah-Olivia Kellet, Erik Kimmel, Nicolas Lapalu, Isabelle Luyten, Célia Michotey, Nacer Mohellibi, Cyril Pommier, Sébastien Reboux, Dorothée Valdenaire, Daphné Verdelet and Hadi Quesneville*

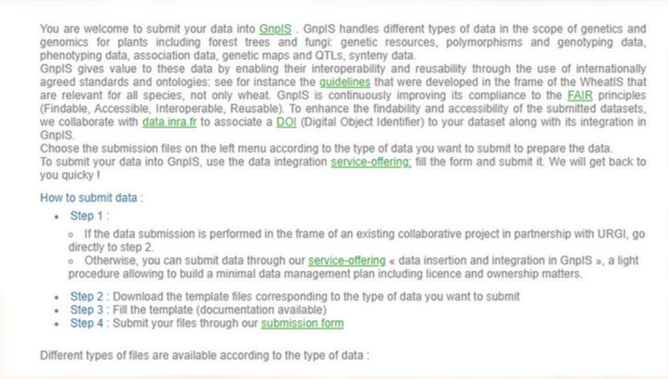
Genoplante Information System

It bridges genetic and genomic data, allowing researchers access to both genetic information (e.g. genetic maps, quantitative trait loci, markers, single nucleotide polymorphisms, germplasms and genotypes) and genomic data (e.g. genomic sequences, physical maps, genome annotation and expression data) for species of agronomical interest.

- The '**phenotype module**' is dedicated to the storage of phenotype data produced during genotype-environment (climate, soil) interaction studies. Phenotypes can be described with ontologies and linked to data with 'genetic resources' and 'polymorphisms modules'.



GnpIS integrative schema


You are welcome to submit your data into GnpIS . GnpIS handles different types of data in the scope of genetics and genomics for plants including forest trees and fungi: genetic resources, polymorphisms and genotyping data, phenotyping data, association data, genetic maps and QTLs, synteny data.
GnpIS gives value to these data by enabling their interoperability and reusability through the use of internationally agreed standards and ontologies: see for instance the guidelines that were developed in the frame of the WheatIS that are relevant for all species, not only wheat. GnpIS is continuously improving its compliance to the FAIR principles (Findable, Accessible, Interoperable, Reusable). To enhance the findability and accessibility of the submitted datasets, we collaborate with data.inra.fr to associate a DOI (Digital Object Identifier) to your dataset along with its integration in GnpIS.
Choose the submission files on the left menu according to the type of data you want to submit to prepare the data.
To submit your data into GnpIS, use the data integration service-offering: fill the form and submit it. We will get back to you quicky !

How to submit data :

- Step 1 :
  - If the data submission is performed in the frame of an existing collaborative project in partnership with URGI, go directly to step 2.
  - Otherwise, you can submit data through our service-offering « data insertion and integration in GnpIS », a light procedure allowing to build a minimal data management plan including licence and ownership matters.
- Step 2 : Download the template files corresponding to the type of data you want to submit
- Step 3 : Fill the template (documentation available)
- Step 4 : Submit your files through our submission form

Different types of files are available according to the type of data :

ICPD

Data Format

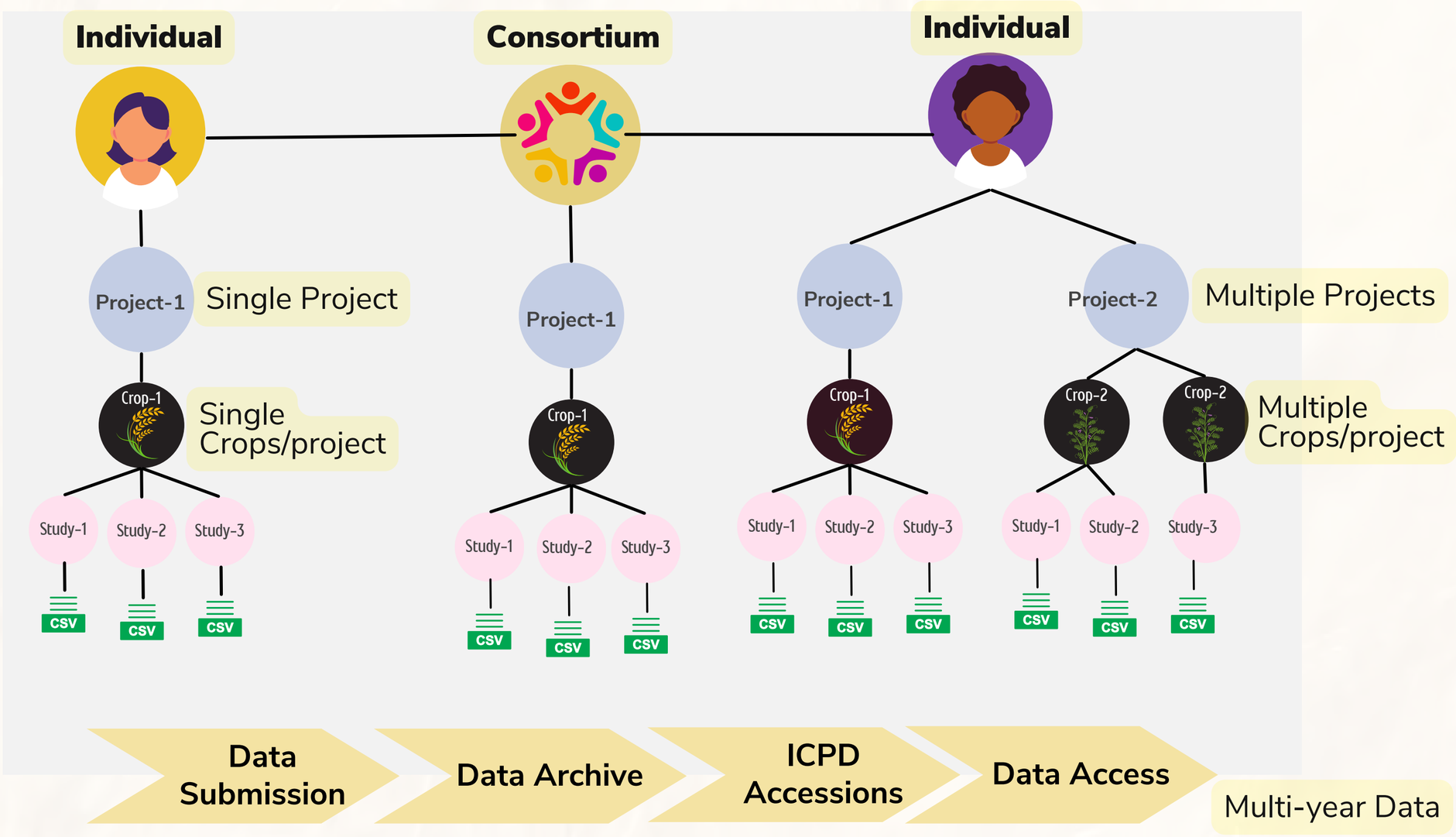
ICPD

Submitter

Project
PPJ_10000X

Study
PST_10000X

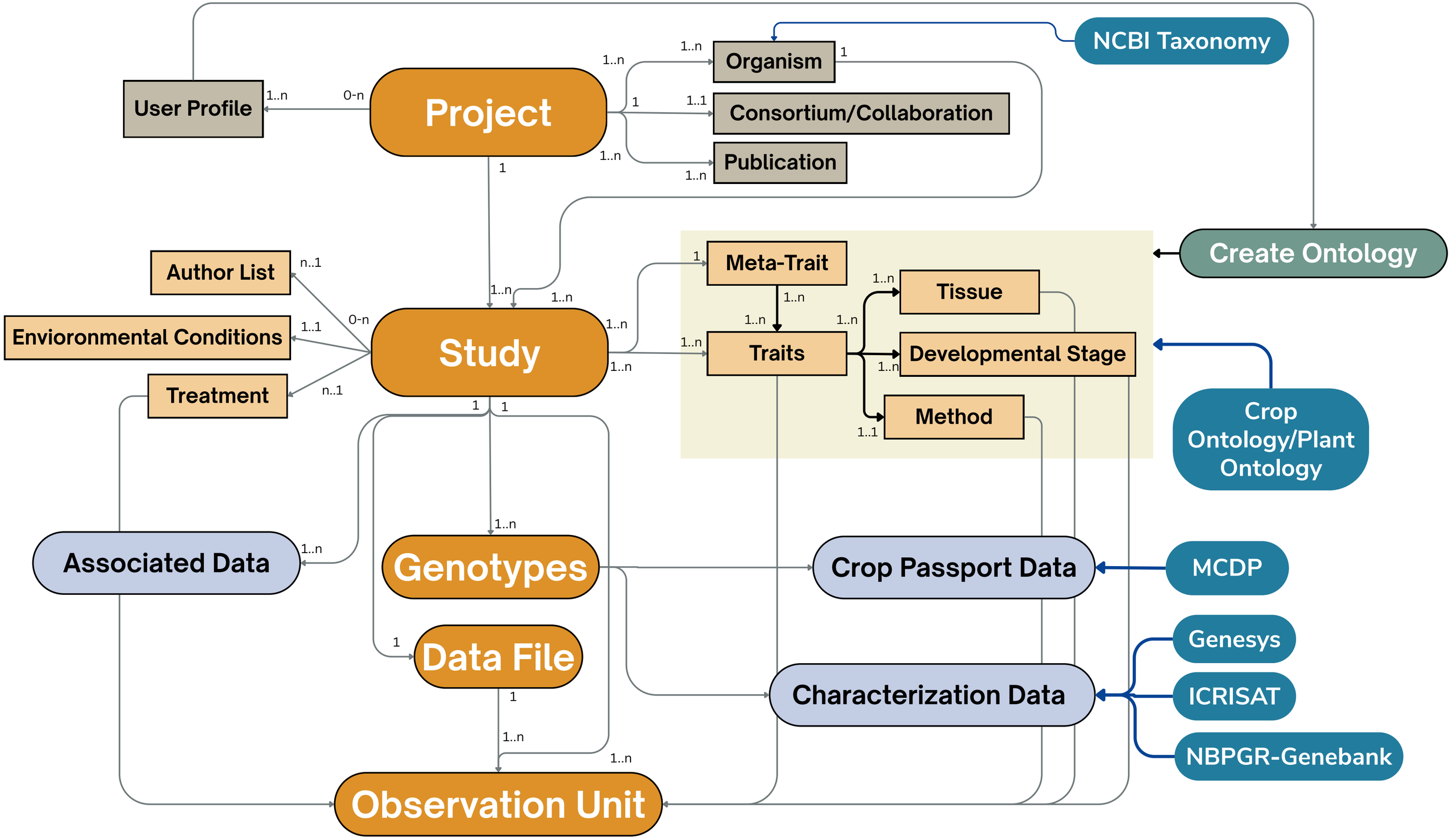
Data
PDT_1000XX



Crop Ontology
for agricultural data

Planteome

Ontology enabled data submission


NCBI Taxonomy
Organism
User Profile
Project
Consortium/Collaboration
Publication
Create Ontology
Author List
Meta-Trait
Tissue
Envioronmental Conditions
Study
Traits
Developmental Stage
Treatment
Method
Crop Ontology/Plant Ontology
Associated Data
Genotypes
Crop Passport Data
MCDP
Data File
Genesys
Characterization Data
ICRISAT
NBPGR-Genebank
Observation Unit
1..n
0-n
1..1
n..1
1

ICPD VERSION 2 META-DATA MODEL

PHENOPROJECT

Meta Data: Title, Grant Number, Funding Agency, Project Description, Associated Publication, Release date, Collaboration and **CROP/s**

STUDY

- **Basic Details:** Phenoproject, crop, meta-trait, title of study, description, start and end date, location, experimental design, growth facility, tolerant and susceptible checks
- **Growth & Environment conditions:** Temperature, light, intensity, humidity, etc
- **Treatments:** type (no treatment, biotic, abiotic), treatment agent, description, qualifier, duration and development stage (simultaneous treatment)
- **Traits:** trait name, observation development stage, plant tissue, method details
- **Person**: Authors contributed to the study

DATA FILE TEMPLATE GENERATION

- Select study
- Add accession list of cultivars/genotypes/varieties
- Biological and technical replicates

ASSOCIATED DATA SUBMISSION

- Plant Passport data
- Soil and weather data
- Other supporting data

Data submission and access flow chart of Indian crop Phenome Database (ICPD)

Biological community

Submitter

Project
PPJ_10000X

Study
PST_10000X

Data
PDT_1000XX

Data access

Login to ICPD

Browse data

Data Access

Open access data

Controlled access data:
User restriction upto 2 years

Data download
(for Open-access only)

ICPD

Data Submission

User Registration

Submitter Registration and authentication

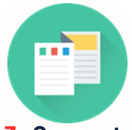
Submitter login

Submitter ICPD Dashboard

User-submitted data sync to his dashboard

Data Submission

Step 4: Populate the phenotype data in template and Upload to ICPD Database



Step 3: Generate and download data template

Step 2: Study Registration

Step 1: Phenoproject Registration

Data File Format

Automatically generated prefilled template with meta-data

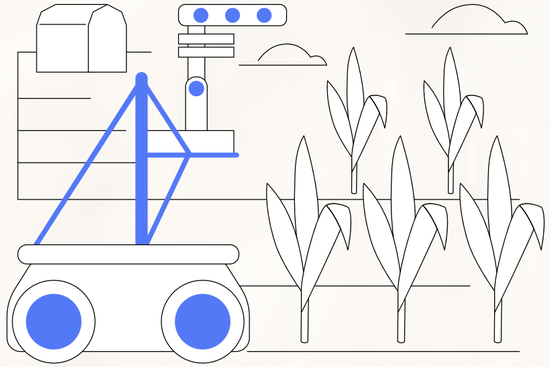
sr_no	study_id	project_id	meta_trait_name	treatment_agent	treatment_qualifier	trait_name	tissue	growthstages	accession
1	PST_100011	PPJ_100010	vegetative vigor			Culm length|Rice	vegetative shoot system	40 Day Old Plant	miR408-OE
2	PST_100011	PPJ_100010	vegetative vigor			Culm length|Rice	vegetative shoot system	40 Day Old Plant	WT
3	PST_100011	PPJ_100010	vegetative vigor			leaf length	leaf	40 Day Old Plant	miR408-OE
4	PST_100011	PPJ_100010	vegetative vigor			leaf length	leaf	40 Day Old Plant	WT
5	PST_100011	PPJ_100010	vegetative vigor			leaf width	leaf	40 Day Old Plant	miR408-OE
6	PST_100011	PPJ_100010	vegetative vigor			leaf width	leaf	40 Day Old Plant	WT
7	PST_100011	PPJ_100010	vegetative vigor			root length	root	40 Day Old Plant	miR408-OE
8	PST_100011	PPJ_100010	vegetative vigor			root length	root	40 Day Old Plant	WT
9	PST_100011	PPJ_100010	vegetative vigor			Root density	root	40 Day Old Plant	miR408-OE
10	PST_100011	PPJ_100010	vegetative vigor			Root density	root	40 Day Old Plant	WT

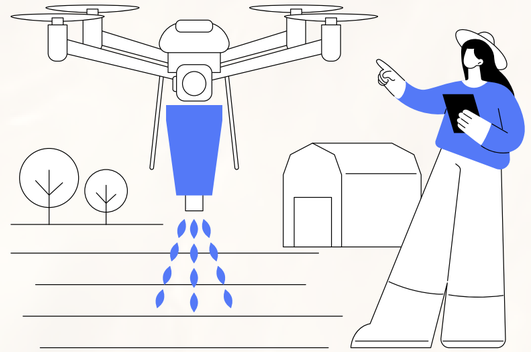
Observations

b1_t1	b2_t1	b3_t1	b4_t1	b5_t1	b6_t1	b7_t1	b8_t1	b9_t1	b10_t1
34.5	33	34	36.5	33.5	35	31	29.5	33	33
27.5	30	27.5	29.5	28.5	29	30	30	31	28
25.5	21.5	23.8	20.5	21	20.5	20.7	20	21	22.5
16.5	22	17	18	18.5	17	16	13	12	17
0.45	0.4	0.4	0.4	0.4	0.45	0.4	0.41	0.4	0.45
0.2	0.2	0.25	0.3	0.3	0.25	0.3	0.25	0.27	0.25
8.7	8	7.5	9	8	11	9	10	8	6
10	8	5	5	5	6	7	7	9	5
19	18	13	20	18	14	19	19	19	15
13	11	14	13	13	14	13	13	14	14

b = Biological replicates
t = Technical replicates

Template can be used to plan, download and document observations in a structured manner enabling data management and submission to ICPD



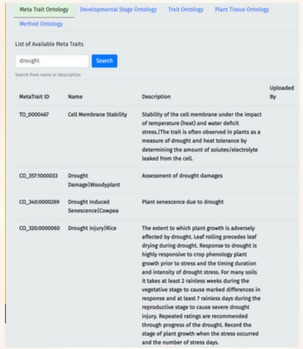


ICPD User Dashboard

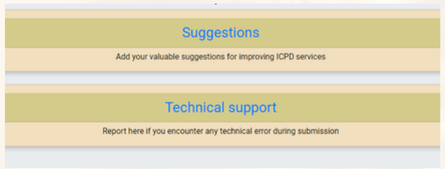
Manage all phenotype projects

Submit New Data

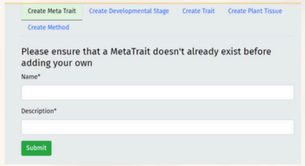
Browse Ontology



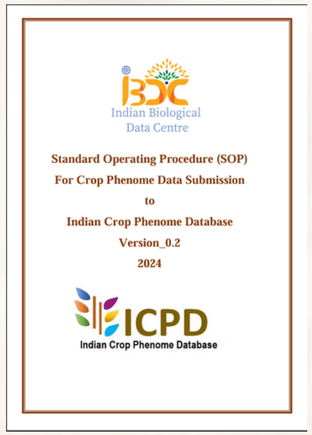
Give your feedback

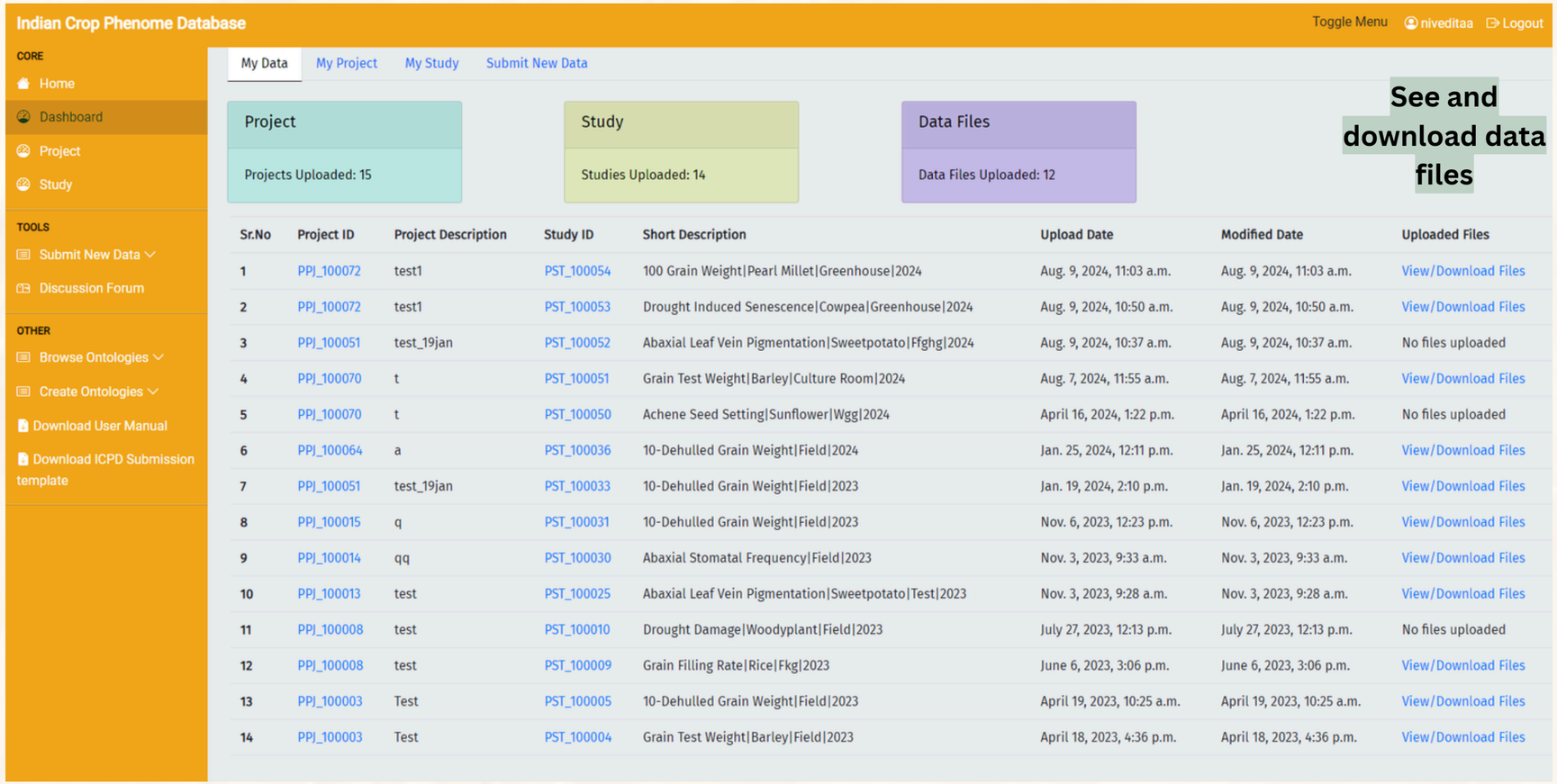


Create Ontology



See and download ICPD SOP





See and download data files

See and download the metadata of project and study

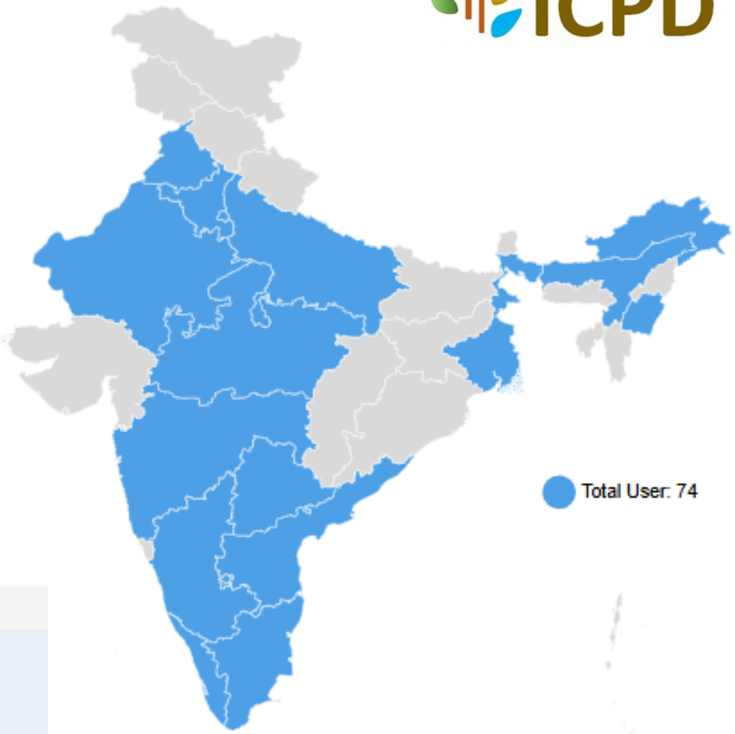
Details

Timestamp

CURRENT DATA STATS

Submitted Data Stats

74	41	39	367	325	2642	38,27,730	1740
User	Institutions	Projects	Studies	Data Files	Downloads	Sample Observations	Visitors



Crops

Triticum aestivum

Oryza sativa

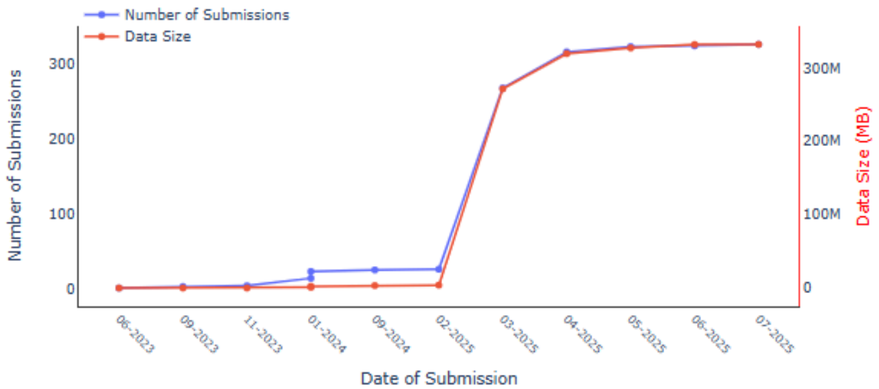
Lens culinaris

Cicer arietinum

Carthamus tinctorius

Linum usitatissimum

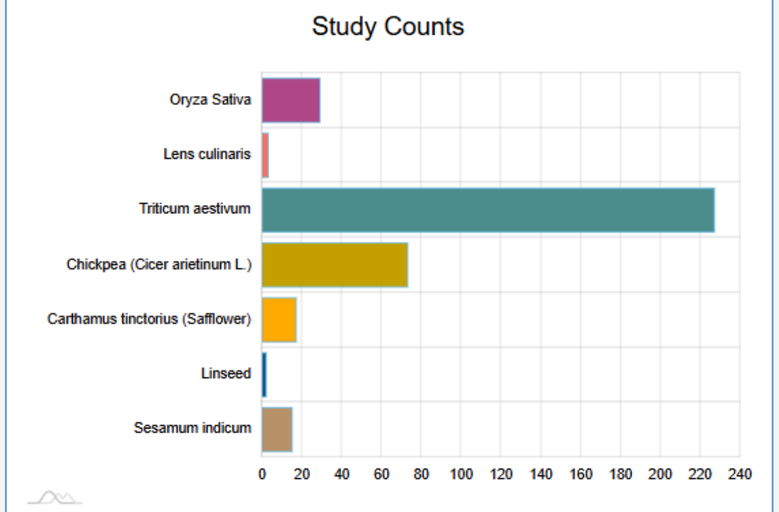
Sesamum Indicum



CURRENT DATA STATS

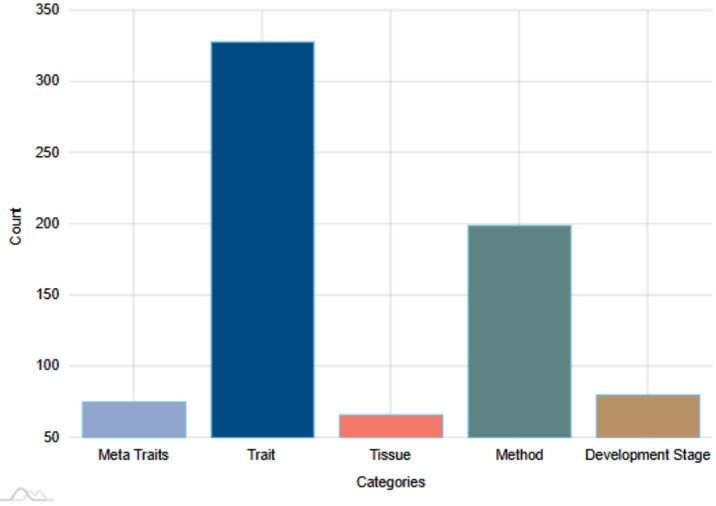
Study Distribution by Crops

The graph illustrates the number of studies submitted in ICPD for various crops

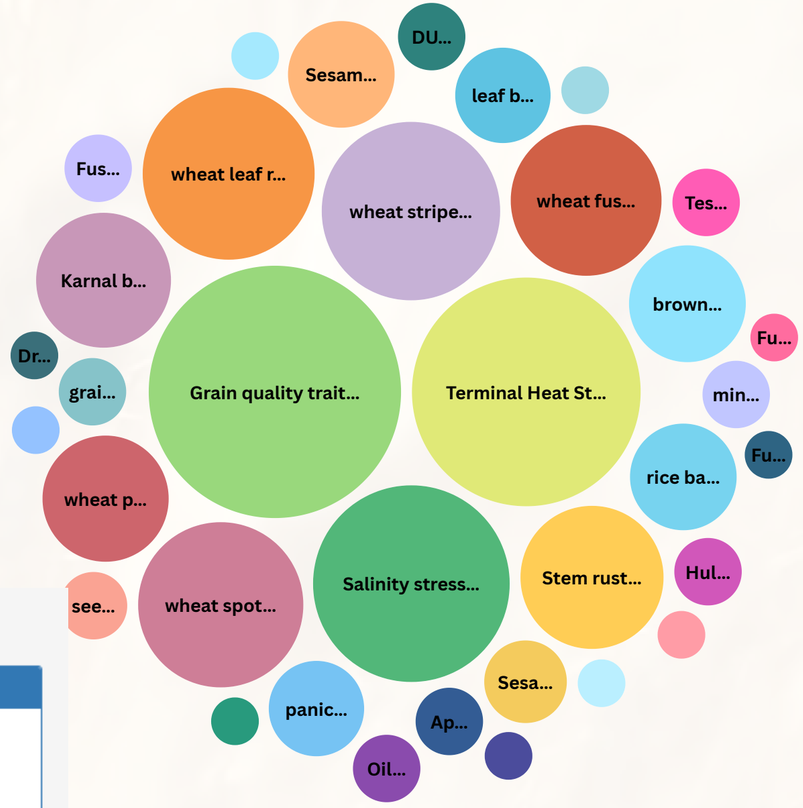


Trait Details

Submission counts for Meta Traits, Traits, Tissue, Development Stage and Method

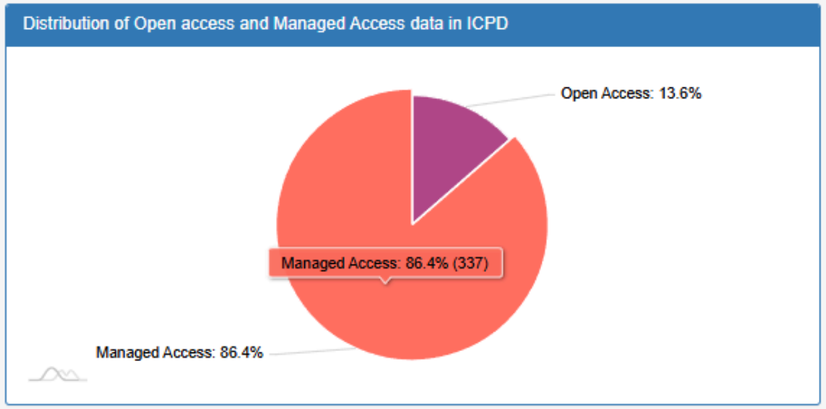


37 Meta Traits



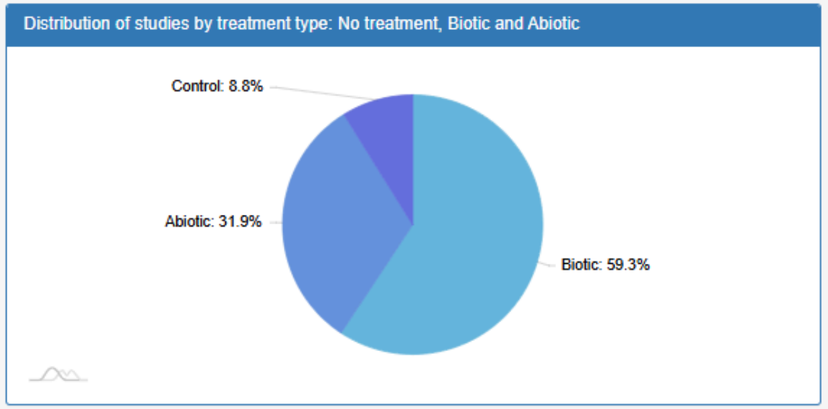
Data Access

Distribution of Open access and Managed Access data in ICPD

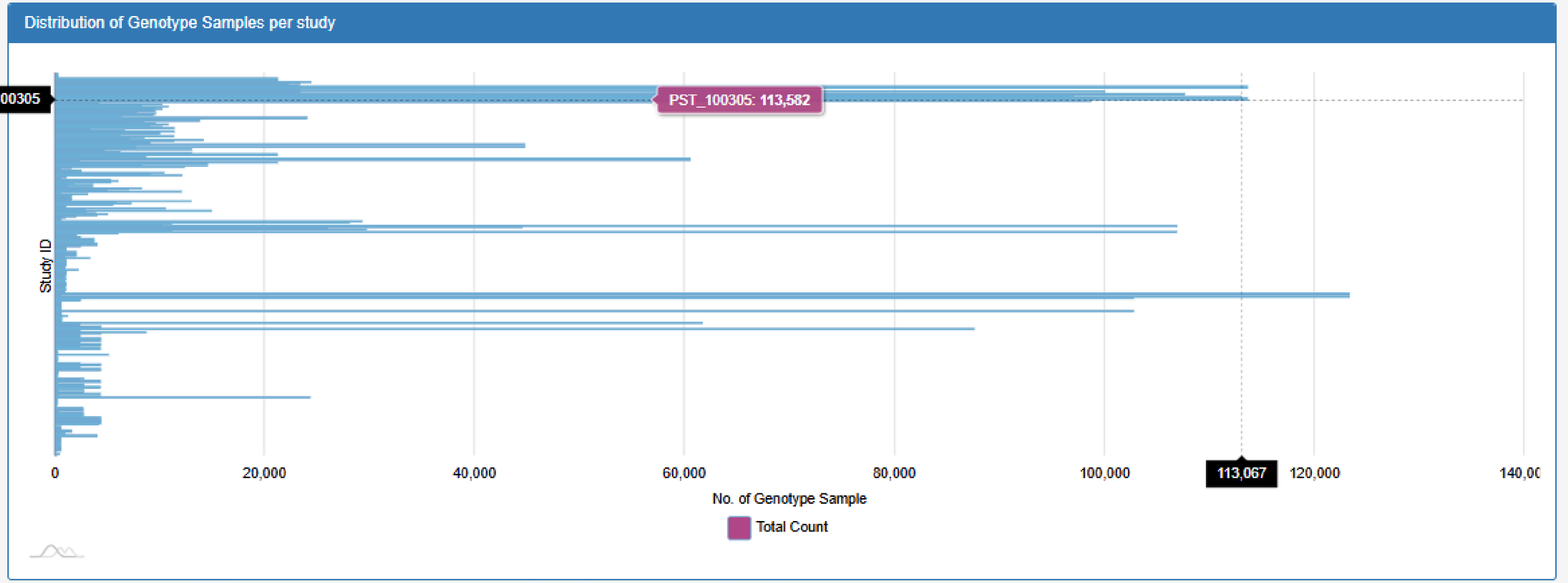


Treatment Type

Distribution of studies by treatment type: No treatment, Biotic and Abiotic



Genotype Samples



ICPD is the data hub for major mission-mode programs on "Characterization of Genetic Resources," supported by the DBT

Major Mission Projects

Triticum aestivum

Germplasm Characterization and Trait Discovery in Wheat using Genomics Approaches and its Integration for Improving Climate Resilience, Productivity and Nutritional quality.

Oryza sativa

Mainstreaming rice landraces diversity in varietal development through genome-wide association studies: A model for large-scale utilization of gene bank collections of rice.

Linum usitatissimum

Leveraging genetic resources for accelerated genetic improvement of Linseed using comprehensive genomics and phenotyping approaches.

Cicer arietinum

Characterization of Chickpea Germplasm Resource to Accelerate Genomics-assisted Crop Improvement.

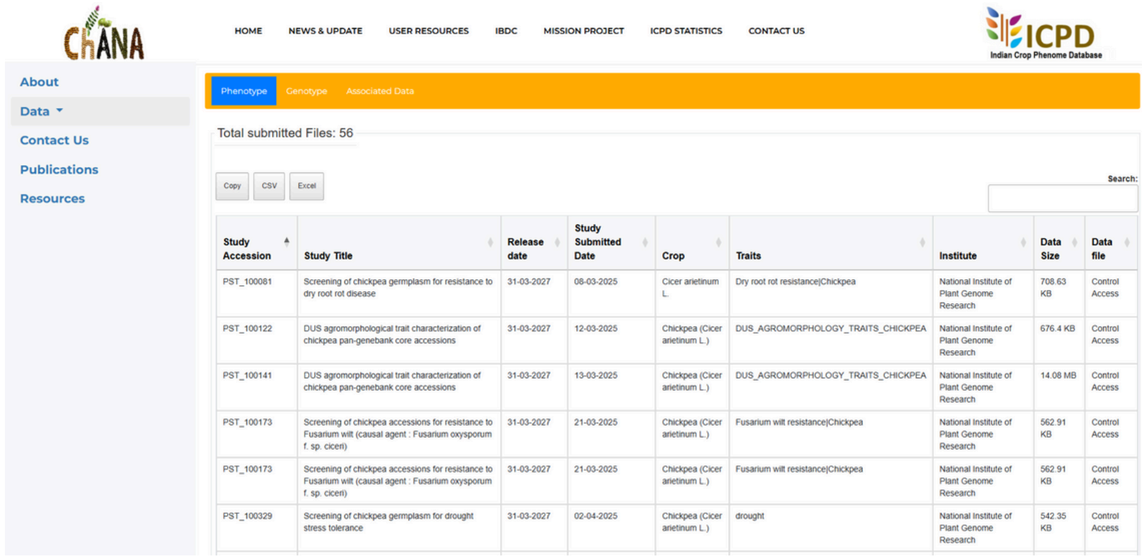
Carthamus tinctorius

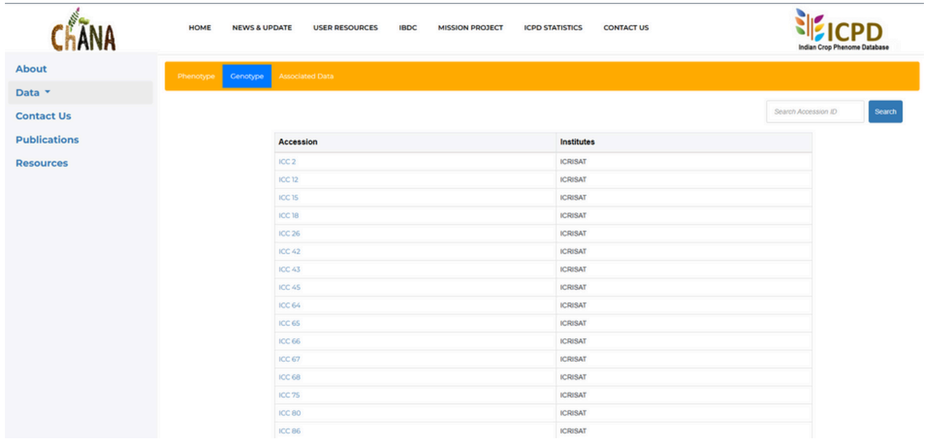
Exploiting Genetic Diversity for Improvement of Safflower through Genomics Assisted Discovery of QTLs/Genes Associated with Agronomic Traits.

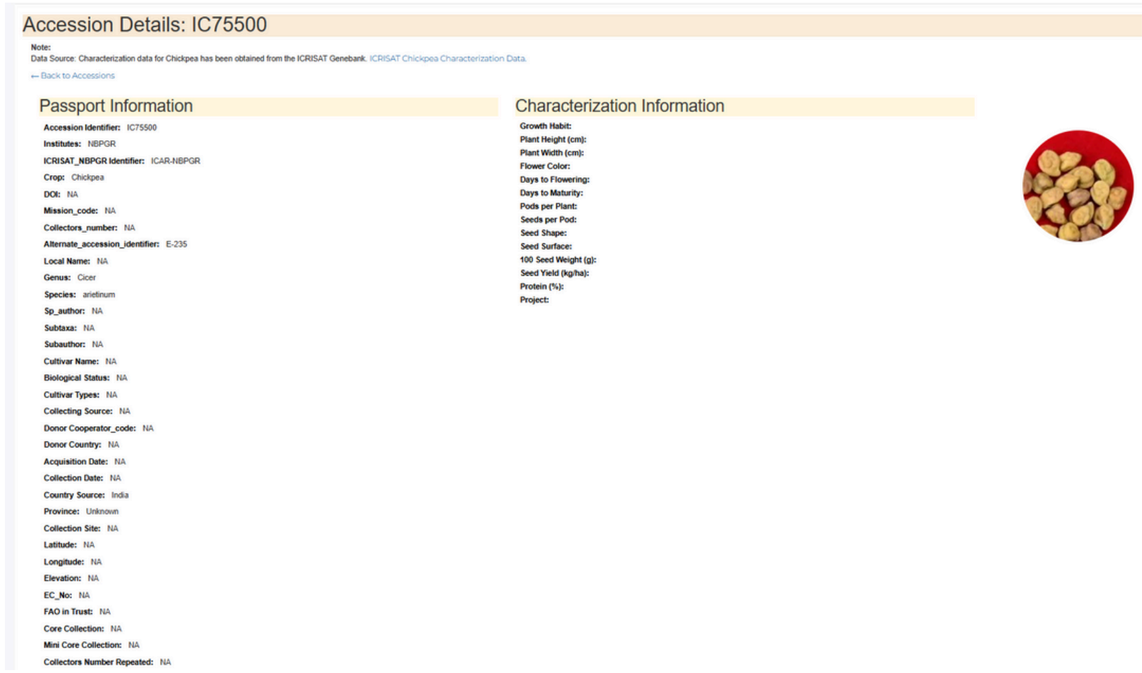
Sesamum indicum

Mainstreaming sesame germplasm for productivity enhancement and sustainability through genomics assisted core development and trait discovery.

MISSION MODE DASHBOARDS

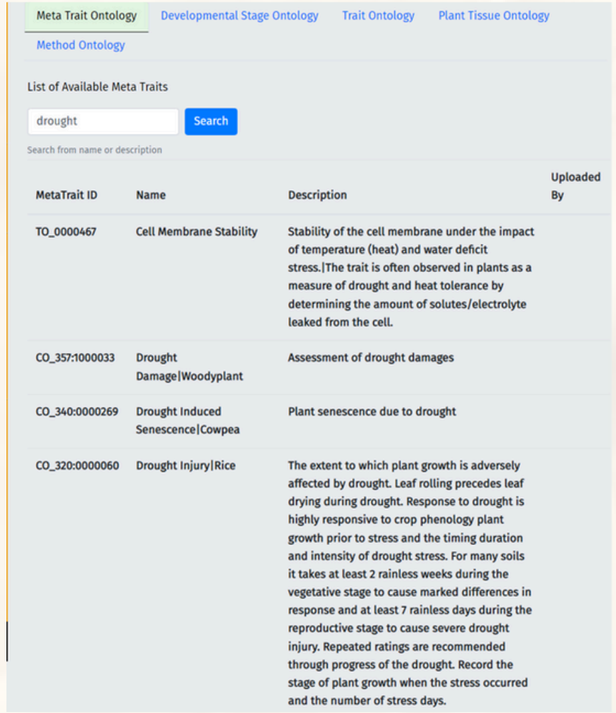






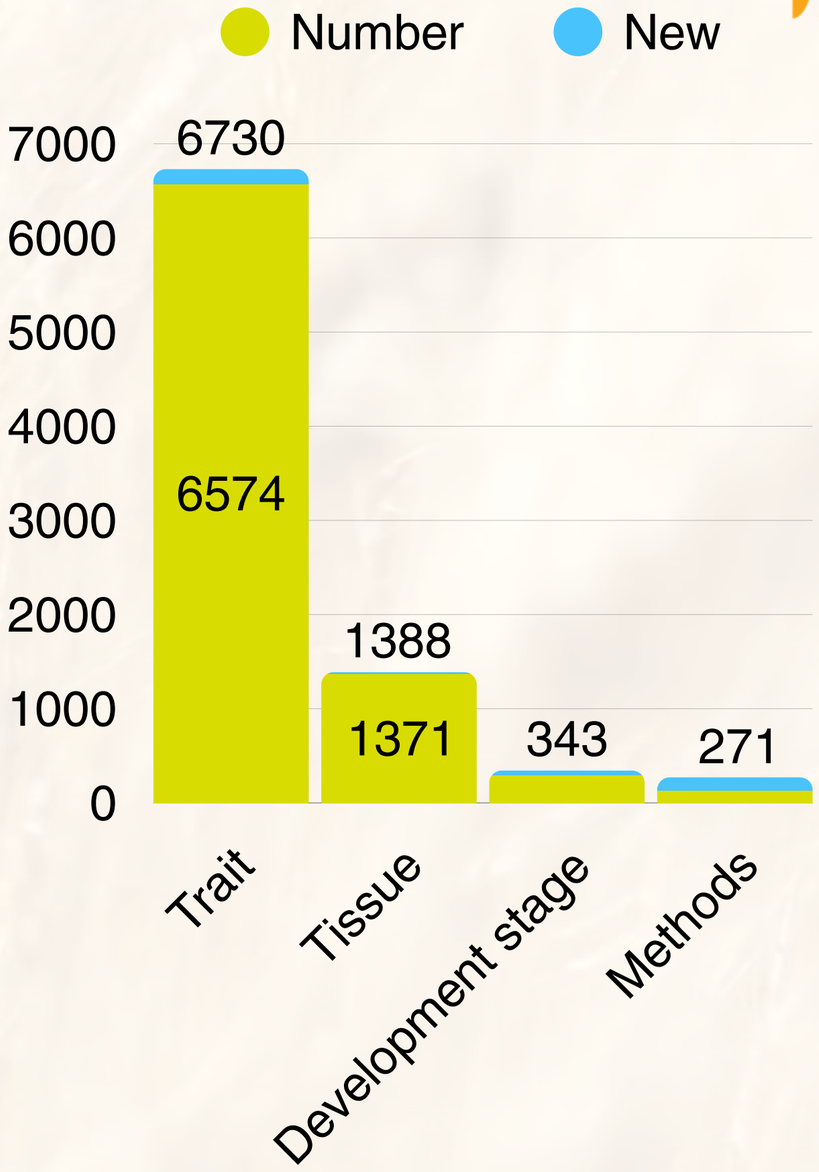
Ontology enabled data submission

Browse Ontology



Create Ontology

MCMT106562 (Meta Trait)
MCT106562 (Trait)
MCGS100297 (Stage)
MCPT101371 (Plant Tissue)
MCM100130 (Method)

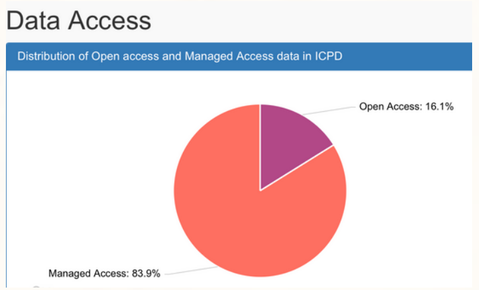


Submitter can contribute to ontology creation

Planteome

Crop Ontology
for agricultural data

Browse Data: Open and managed access



Total submitted Files: 196

Copy CSV Excel

Search:

Phenoproject Accession	Phenoproject Title	Submitted Date	Release date	Study Accession	Study Title	Crop	Traits	Institute	Data Size	Data file
PPJ_100069	"Mainstreaming rice landraces diversity in varietal development through genome wide association studies: A model for large-scale utilization of gene bank collections of rice"	30-01-2024	03-11-2023	PST_100048	Screening of rice varieties for resistance to brownplanthopper (Causal agent: Nilparvata lugens)	Oryza Sativa	brown planthopper resistance	Acharya N. G. Ranga Agricultural University, RARS	82.06 KB	View/Download Files
PPJ_100069	"Mainstreaming rice landraces diversity in varietal development through genome wide association studies: A model for large-scale utilization of gene bank collections of rice"	30-01-2024	03-11-2023	PST_100049	Screening of rice varieties for resistance to leaf blast (Causal agent: Magnaporthe grisea)	Oryza Sativa	leaf blast disease resistance	Acharya N. G. Ranga Agricultural University, RARS	169.87 KB	View/Download Files
PPJ_100069	"Mainstreaming rice landraces diversity in varietal development through genome wide association studies: A model for large-scale utilization of gene bank collections of rice"	30-01-2024	03-11-2023	PST_100059	Screening of rice varieties for resistance to leaf blast (Causal agent: Magnaporthe grisea)	Oryza Sativa	panicle blast disease resistance	Acharya N. G. Ranga Agricultural University, RARS	169.21 KB	View/Download Files
PPJ_100069	"Mainstreaming rice landraces diversity in varietal development through genome wide association studies: A model for large-scale utilization of gene bank collections of rice"	30-01-2024	03-11-2023	PST_100064	Screening of rice varieties for resistance to brown planthopper (Causal agent: Nilparvata lugens)	Oryza Sativa	brown planthopper resistance	Acharya N. G. Ranga Agricultural University, RARS	82.89 KB	View/Download Files
PPJ_100069	"Mainstreaming rice landraces diversity in varietal development through genome wide association studies: A model for large-scale utilization of gene bank collections of rice"	30-01-2024	03-11-2023	PST_100200	Screening of rice varieties for resistance to bacterial blight	Oryza Sativa	rice bacterial blight disease resistance	Acharya N. G. Ranga Agricultural University, RARS	111.48 KB	View/Download Files
PPJ_100075	Characterization of a genetically diverse reference set of lentil	23-09-2024	21-09-2026	PST_100057	Estimation of seed mineral content in a genetically diverse reference set of lentil	Lens culinaris	mineral and ion content trait	National Institute of Plant Genome Research (NIPGR), Delhi	482.16 KB	Control Access
PPJ_100075	Characterization of a genetically diverse reference set of lentil	23-09-2024	21-09-2026	PST_100058	Estimation of seed mineral content in a genetically diverse reference set of lentil (2023-24)	Lens culinaris	mineral and ion content trait	National Institute of Plant Genome Research (NIPGR), Delhi	486.85 KB	Control Access
PPJ_100086	Germplasm Characterization and Trait Discovery in Wheat using Genomics Approaches and its Integration for Improving Climate Resilience, Productivity and Nutritional quality	24-02-2025	23-02-2027	PST_100070	Characterization of wheat germplasm lines for stripe rust resistance at SKUAST, Kashmir (2020-21)	Triticum aestivum	wheat stripe rust disease resistance	ICAR-National Nureau of Plant Genetic Resources	561.71 KB	Control Access
PPJ_100086	Germplasm Characterization and Trait Discovery in Wheat using Genomics Approaches and its Integration for Improving Climate Resilience, Productivity and Nutritional quality	24-02-2025	23-02-2027	PST_100071	Characterization of wheat germplasm lines for stripe rust resistance at SKUAST, Kashmir (2020-21)	Triticum aestivum	wheat stripe rust disease resistance	ICAR-National Nureau of Plant Genetic Resources	590.67 KB	Control Access
PPJ_100086	Germplasm Characterization and Trait Discovery in Wheat using Genomics Approaches and its Integration for Improving Climate Resilience, Productivity and Nutritional quality	24-02-2025	23-02-2027	PST_100072	Characterization of wheat germplasm lines for stripe rust resistance at SKUAST, Kashmir (2021-22)	Triticum aestivum	wheat stripe rust disease resistance	ICAR-National Nureau of Plant Genetic Resources	590.67 KB	Control Access

Showing 21 to 30 of 196 entries

Previous 1 2 3 4 5 ... 20 Next

Data Sharing

Study Details

Project

Project uploaded by:	RARS MTU ,principal_investigator , Acharya N. G. Ranga Agricultural University, RARS
Created:	30-01-2024
Project ID:	PPJ_100069
Project Title:	"Mainstreaming rice landraces diversity in varietal development through genome wide association studies: A model for large-scale utilization of gene bank collections of rice"
Project Description:	Phenotyping of rice landraces for biotic stresses BPH, BLB and BLAST
Grant Number:	239
Funding Agency:	DBT
Associated Publications (Title/DOI/PMID):	NA
Release Date:	Nov. 3, 2023
Project Type:	Consortium

Study

Study uploaded by:	RARS
Created:	20-02-2024
Study ID:	PST_100048
Crop ID:	Oryza Sativa
Meta-Trait:	brown planthopper resistance
Study Title:	Screening of rice varieties for resistance to brownplanthopper (Causal agent: Nilparvata lugens)
Description:	
Start Date :	June 30, 2022
End Date:	Nov. 14, 2022
Data Type:	Phenotypic
Location :	RARS, Maruteru
Description of experimental design :	single observational plot
Growth Facility :	field
Tolerent Check :	PTB 33
Susceptible Check:	TN1

Growth and Environmental Conditions

Temperature Lower Limit (°C):	26.000
Temperature Upper Limit (°C):	31.000
Light Intensity Lower Limit (lux):	0.000
Light Intensity Upper Limit (lux):	0.000
Relative Humidity Lower Limit (%):	67.000
Relative Humidity Upper Limit (%):	89.000
Other Conditions:	

Treatments

Sr.No	Treatment Type	Treatment Developmental Stage	Treatment Name	Treatment Value	Treatment Duration	Treatment Description
1	biotic	plant tissue development stage|PO:0025423	Nilaparvatha Lugens	Biotype 4	4 months	Natural infestation of brown planthopper under field conditions

Traits

Sr.No	Trait Name	Observation Developmental Stage	Observed Plant Tissue	Method Name
1	brown planthopper resistance|TO_0000424	whole plant development stage|PO:0007033	whole plant|PO:0000003	brown planthopper injury assessment field|brown planthopper injury scale field|Ordinal

Author Details

Sr.No	First name	Last name	Email	Organization	Designation
1	Vasavi	Singareddy	singareddyvasavi@gmail.com	Acharya N. G. Ranga Agricultural University, RARS	research_scholar
2	Satish	Y	y.satish@angrau.ac.in	Acharya N. G. Ranga Agricultural University, RARS	co_principal_investigator
3	Anand kumar	ADVSLP	advslp.anandkumar@angrau.ac.in	Acharya N. G. Ranga Agricultural University, RARS	co_principal_investigator
4	Nanda Kishore	M	m.nandakishore@angrau.ac.in	Acharya N. G. Ranga Agricultural University, RARS	co_principal_investigator
5	Venkata Ramana Rao	puram	pv.ramanarao@angrau.ac.in	Acharya N. G. Ranga Agricultural University, RARS	co_principal_investigator
6	Bhuvaneswari	V	v.bhuvaneswari@angrau.ac.in	Acharya N. G. Ranga Agricultural University, RARS	co_principal_investigator
7	Ravi Kumar	BNVSR	bnvsr.ravikumar@angrau.ac.in	Acharya N. G. Ranga Agricultural University, RARS	principal_investigator

Uploaded Files

Sr.No.	Data File Accession	No. of Genotype Samples	Size of File	Download
1	PDT_100048	500	82.1 KB	Download

FUTRUE PLANS ICPD

Interoperability with international phenomics and genomics databases

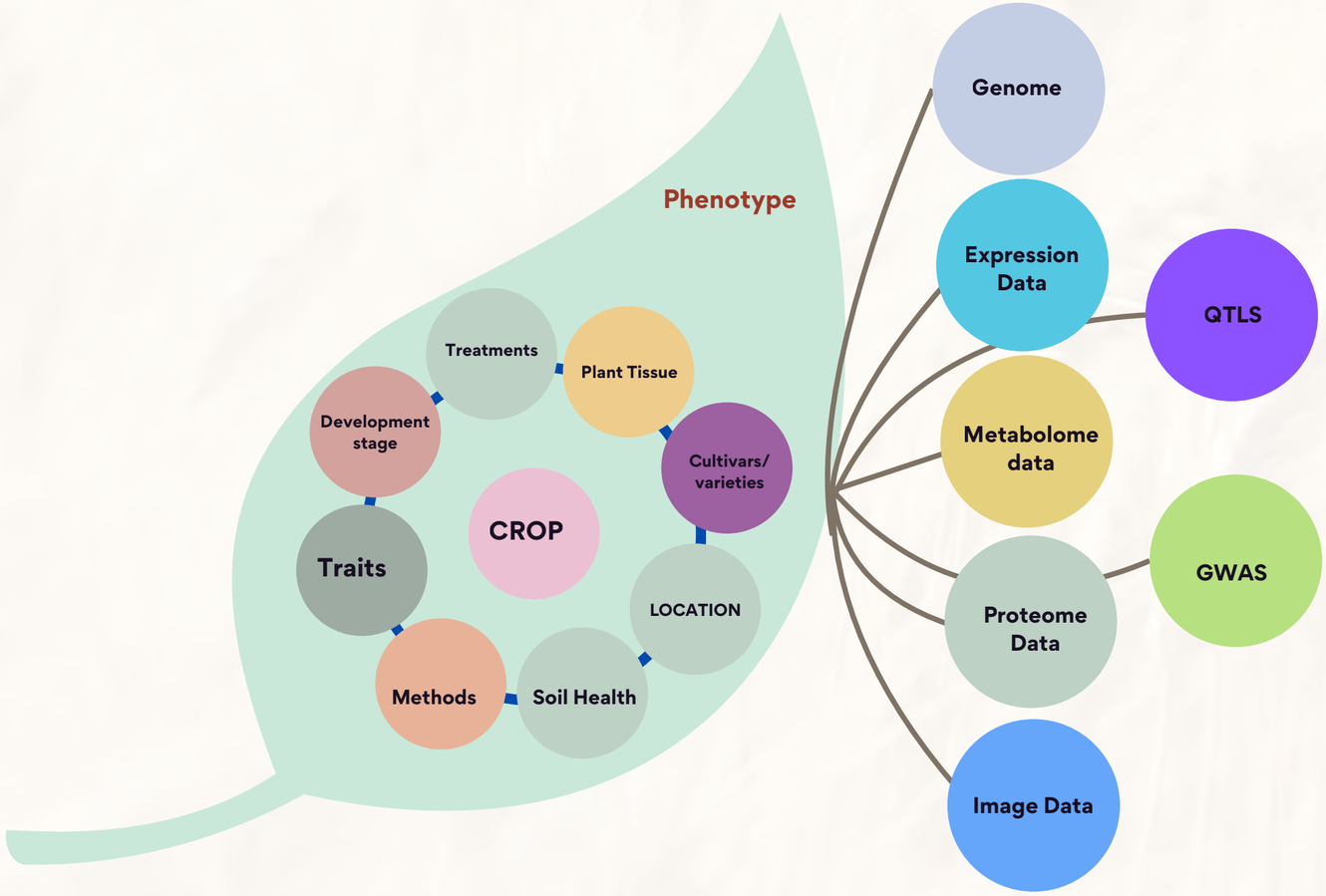
Ontology Curation, creation and submission

Provide decision-support systems for breeders and policymakers

Curated data to support climate-smart agriculture

AI/ML-Driven Phenome Discovery

Provide data analysis pipelines & visualization tools



Genome

Expression Data

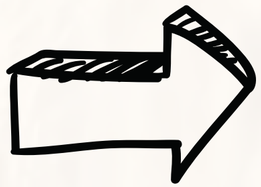
QTLS

Metabolome data

GWAS

Proteome Data

Image Data



Crop specific data resources

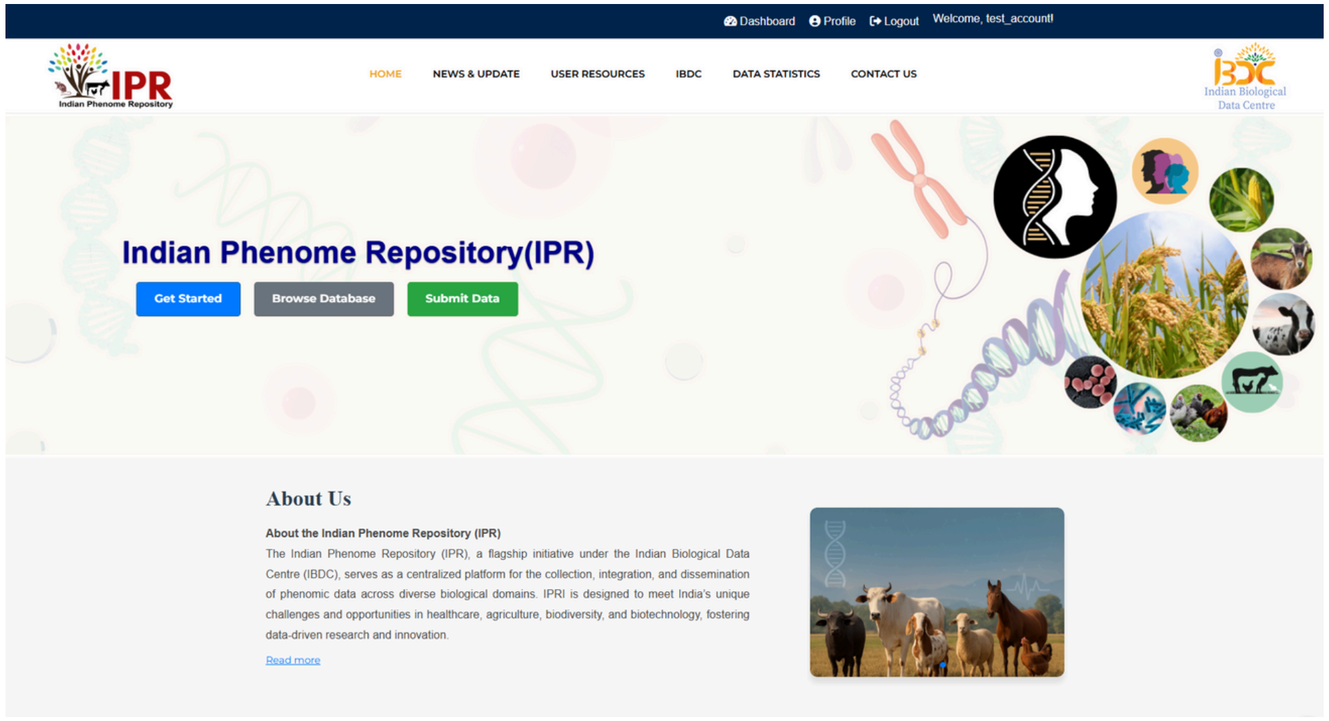
ipri

ICPD

IHPD
Indian Human Phenome Database

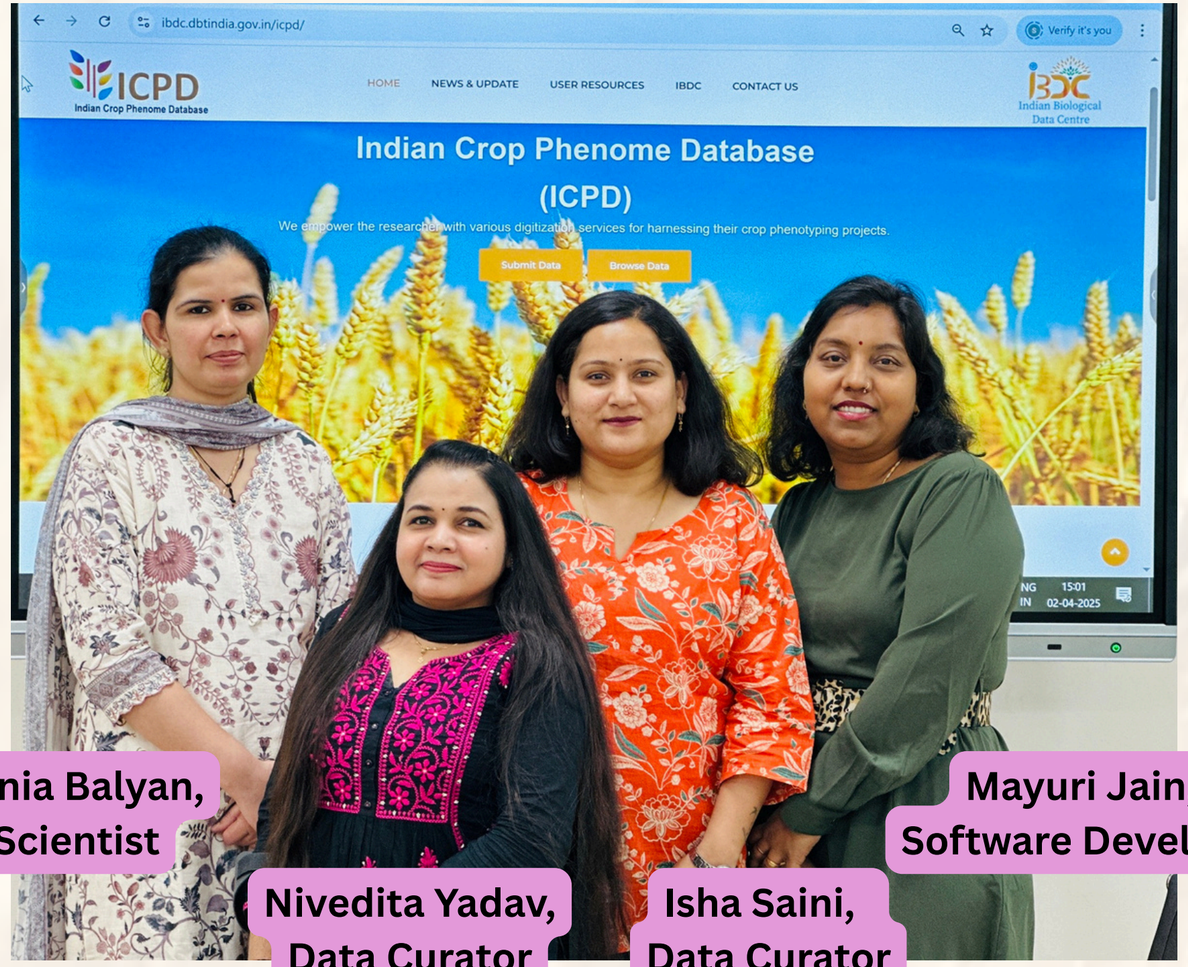
IAPD
Indian Animal Phenome Database

IMPD
Indian Microrganisms Phenome Database



Coming soon.....

ICPD Team



Sonia Balyan, Scientist

Nivedita Yadav, Data Curator

Isha Saini, Data Curator

Mayuri Jain, Software Developer

Ms. Vibha Oberoi
Software Developer, IPR Project

Acknowledgement:
Prof. Saurabh Raghuvanshi (Professor, University of Delhi and Former Lead, IBDC)
Pratush Behere (DPMB)
Abhay Shankar Pandey (IBDC)

IBDC Team

Principal Investigators

Prof. Arvind K. Sahu
Executive Director,
Regional Centre for Biotechnology (RCB); Lead Co-ordinator, IBDC Project

Dr. Debasisa Mohanty
Director
National Institute of Immunology (NII)

Dr. Dinesh Gupta
The International Centre for Genetic Engineering and Biotechnology (ICGEB), India

Prof. Deepak Nair,
Regional Centre for Biotechnology (RCB), India

Dr. Shashank Shekhar,
Head, IBDC

Acknowledgements

- Dr. Rajesh Gokhale (Secretary, DBT)
- Dr. Renu Swarup (Former Secretary, DBT)
- Dr. Arvind Sahu (Executive Director, RCB)
- Prof. Sudhanshu Vrati (Former Executive Director, RCB)
- Dr. Suchita Ninawe (Advisor, DBT)
- Dr. Saurabh Raghuvanshi (Former Lead, IBDC)
- Dr. Richi Mahajan (Scientist D, DBT)
- Mr. Naveen Kumar (System Administrator, IT, RCB)
- Vipul Adhana (Technical Assistant, IBDC)
- Gautam Kanwal (Technical Assistant, IBDC)
- Locuz

NATIONAL INFORMATICS CENTRE

National Institute of Immunology

सत्यमेव जयते
जैवप्रौद्योगिकी विभाग
DEPARTMENT OF BIOTECHNOLOGY

UNESCO
United Nations Educational, Scientific and Cultural Organization
RCB
क्षेत्रीय जैव प्रौद्योगिकी केन्द्र
Regional Centre for Biotechnology

ICGEB
International Centre for Genetic Engineering and Biotechnology

Thank
you

NATIONAL INFORMATICS CENTRE

National Institute of Immunology

जैवप्रौद्योगिकी विभाग
DEPARTMENT OF BIOTECHNOLOGY
सत्यमेव जयते

United Nations Educational, Scientific and Cultural Organization

क्षेत्रीय जैव प्रौद्योगिकी केन्द्र
Regional Centre for Biotechnology

International Centre for Genetic Engineering and Biotechnology

IBDC

Indian Biological Data Center,
Regional Centre for Biotechnology,
NCR Biotech Science Cluster, 3rd Milestone,
Faridabad-Gurugram Expressway,
Faridabad – 121 001

https://ibdc.dbtindia.gov.in/

support@ibdc.rcb.res.in

@ibdctweets

Be the contributor towards data sustainability and conservation to revolutionize the Indian Biodata infrastructure...