User manual for FHBMarkerDb

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FHBMarkerDb
Fusarium Head Blight

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Fusarium Head Blight

FHBMarkerDb - The Fusarium Head Blight Marker Database (FHBMarkerDb) is a comprehensive resource designed to integrate and showcase genomic and trait-based information related to FHB across multiple crop species, including wheat (various species), barley, maize, and oats. The database compiles previously identified SNPs and QTLs associated with FHB resistance or FHB-related traits, along with their corresponding chromosomal positions, candidate genes, and gene functions. Additionally, it includes detailed gene ontology (GO) annotations and pathway associations to facilitate a better understanding of the molecular mechanisms underlying FHB resistance. By consolidating dispersed genomic data into a unified platform, the FHB Database aims to support researchers, breeders, and geneticists in identifying key resistance loci, understanding cross-species relationships, and accelerating the development of FHB-resistant crop varieties.

LOCATION

ICAR - NATIONAL BUREAU OF PLANT GENETIC RESOURCES
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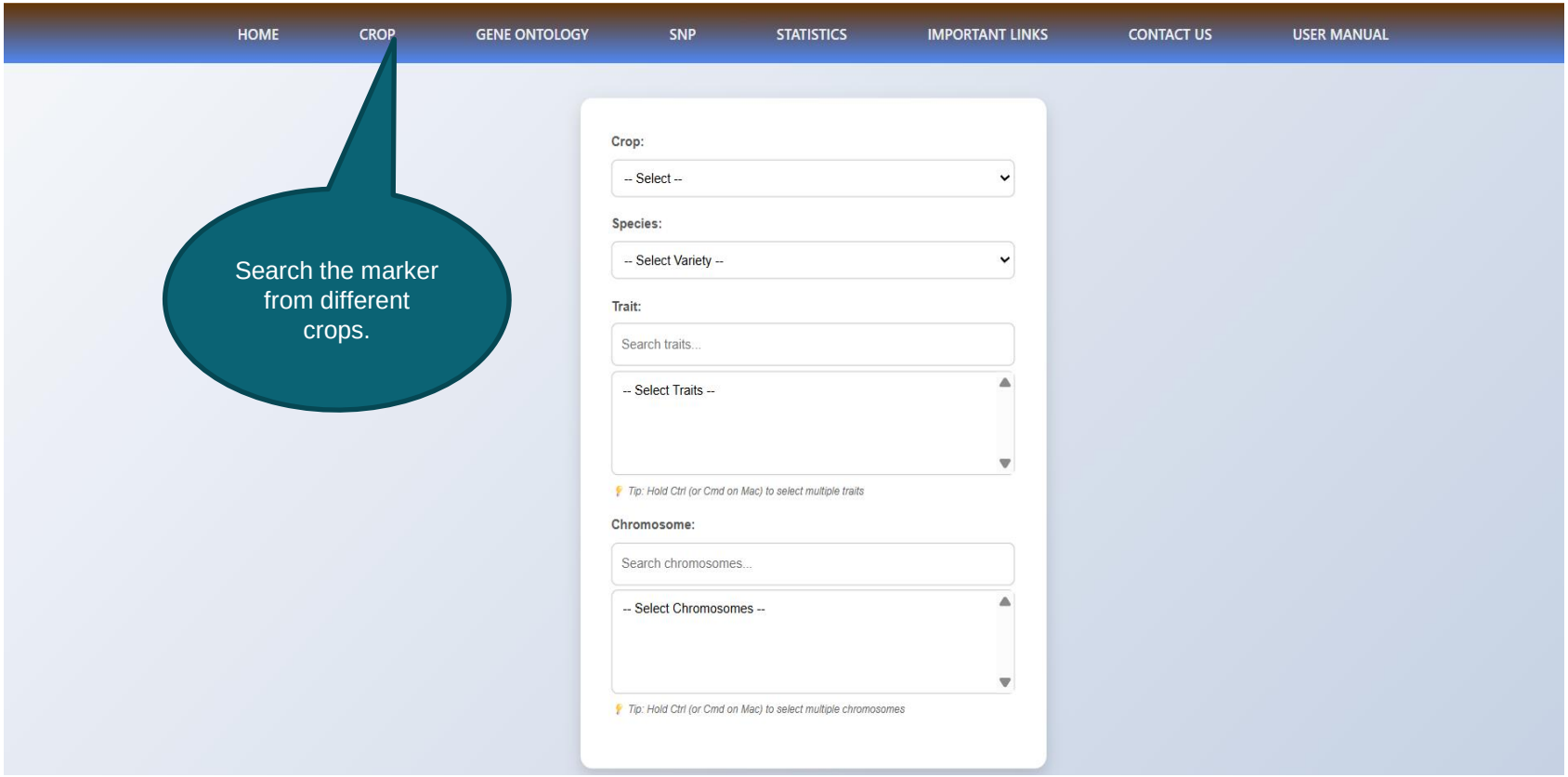
OFFICIAL WEBSITE

https://nbpgr.org.in/nbpgr2023/

VISITOR MAP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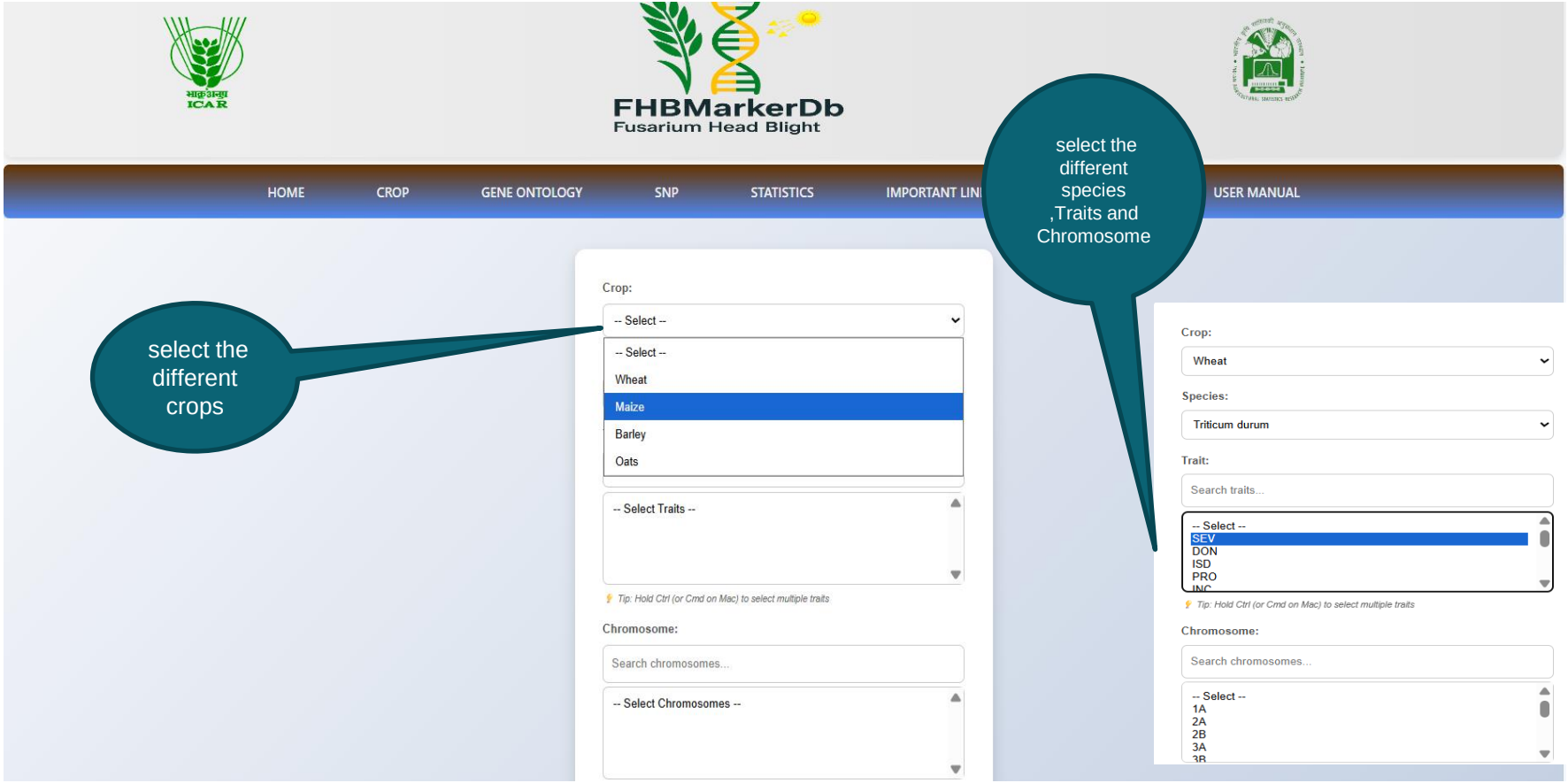
Search the marker from different crops.
Crop:
-- Select --
Species:
-- Select Variety --
Trait:
Search traits...
-- Select Traits --
Tip: Hold Ctrl (or Cmd on Mac) to select multiple traits
Chromosome:
Search chromosomes...
-- Select Chromosomes --
Tip: Hold Ctrl (or Cmd on Mac) to select multiple chromosomes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select the different crops
Crop:
-- Select --
-- Select --
Wheat
Maize
Barley
Oats
-- Select Traits --
Tip: Hold Ctrl (or Cmd on Mac) to select multiple traits
Chromosome:
Search chromosomes...
-- Select Chromosomes --
select the different species ,Traits and Chromosome
Crop:
Wheat
Species:
Triticum durum
Trait:
Search traits...
-- Select --
SEV
DON
ISD
PRO
Tip: Hold Ctrl (or Cmd on Mac) to select multiple traits
Chromosome:
Search chromosomes...
-- Select --
1A
2A
2B
3A

Here is the Result Table.

click here for Gene ontology.

ID	Crop	Variety	QTN/SNP	Chromosome	Position in bp	Trait	Candidate Gene	Starting Position	Ending Position	Functions	References
7	Wheat	Triticum durum	BS00000209_51	2A	746761687	SEV	TraesCS2A03G1206100	746607904	746610664	Transmembrane protein DDB_G0292058-like	Haile et al., 2023
8	Wheat	Triticum durum	BS00000209_51	2A	746761687	SEV	TraesCS2A03G1205200	746320666	74,63,21,542	Sterile alpha motif/pointed domain superfamily	Haile et al., 2023
9	Wheat	Triticum durum	BS00000209_51	2A	746761687	SEV	TraesCS2A03G1204800	746181994	746183644	Autophagy-related protein 101	Haile et al., 2023
10	Wheat	Triticum durum	BS00000209_51	2A	746761687	SEV	TraesCS2A03G1203800	745859614	745862234	Domain of unknown function DUF6598	Haile et al., 2023
11	Wheat	Triticum durum	BS00000209_51	2A	746761687	SEV	TraesCS2A03G1209900	747559731	747560610	Plant defense and hormone signaling protein	Haile et al., 2023
12	Wheat	Triticum durum	BS00000209_51	2A	746761687	SEV	TraesCS2A03G1208600	747133866	747138988	ATPase, V1 complex, subunit D	Haile et al., 2023
13	Wheat	Triticum durum	BS00000209_51	2A	746761687	SEV	TraesCS2A03G1206800	746790716	746792308	Protein of unknown function DUF674	Haile et al., 2023
14	Wheat	Triticum durum	BS00000209_51	2A	746761687	SEV	TraesCS2A03G1207000	746808131	746809529	Oxoglutarate/iron-dependent dioxygenase	Haile et al., 2023
15	Wheat	Triticum durum	BS00000209_51	2A	746761687	SEV	TraesCS2A03G1204300	746160510	746809529	Ubiquitin-like domain	Haile et al., 2023
311	Wheat	Triticum durum	wsnp_CAP8_c2110_1147974	2A	30071760	SEV	TraesCS2A03G0116800	29708489	29713281	P-loop containing nucleoside triphosphate hydrolase	Ruan, Yuefeng, et al.,2020, Szabo-Hever, Agnes, et al.,2018

Showing 1 to 10 of 38 entries

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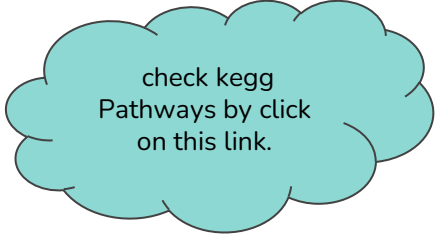


Wheat Aestivum Gene Ontology

Triticum aestivum gene ontology data

← Back to Crops

543	0	0	0
Total Records	Unique Genes	GO Terms	Ontologies

Search in Wheat Aestivum Candidate_gene

Download CSV

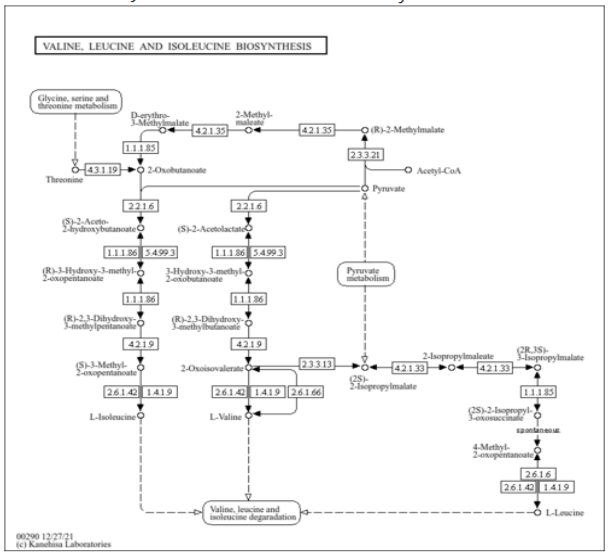
ID	Species	Candidate_gene	GOTERM_BP	GOTERM_CC	GOTERM_MF	KEGG_PATHWAY
1	Triticum aestivum	TraesCS3B03G0003000	GO:0008299~isoprenoid biosynthetic process,GO:0051484~isopentenyl diphosphate biosynthetic process, methylerythritol 4-phosphate pathway involved in terpenoid biosynthetic process,		GO:0005515~protein binding,GO:0030145~manganese ion binding,GO:0030604~1-deoxy-D-xylulose-5-phosphate reductoisomerase activity,GO:0070402~NADPH binding,	taes00900
2	Triticum aestivum	TraesCS7D02G405500	GO:0009695~jasmonic acid biosynthetic process,GO:0031408~oxylipin biosynthetic process,	GO:0005777~peroxisome,	GO:0010181~FMN binding,GO:0016491~oxidoreductase activity,GO:0016629~12-oxophytodienoate reductase activity,	taes00592
3	Triticum aestivum	TraesCS1A02G221200			GO:0016491~oxidoreductase activity,GO:0046872~metal ion binding,	

KEGG

PATHWAY: taes00290

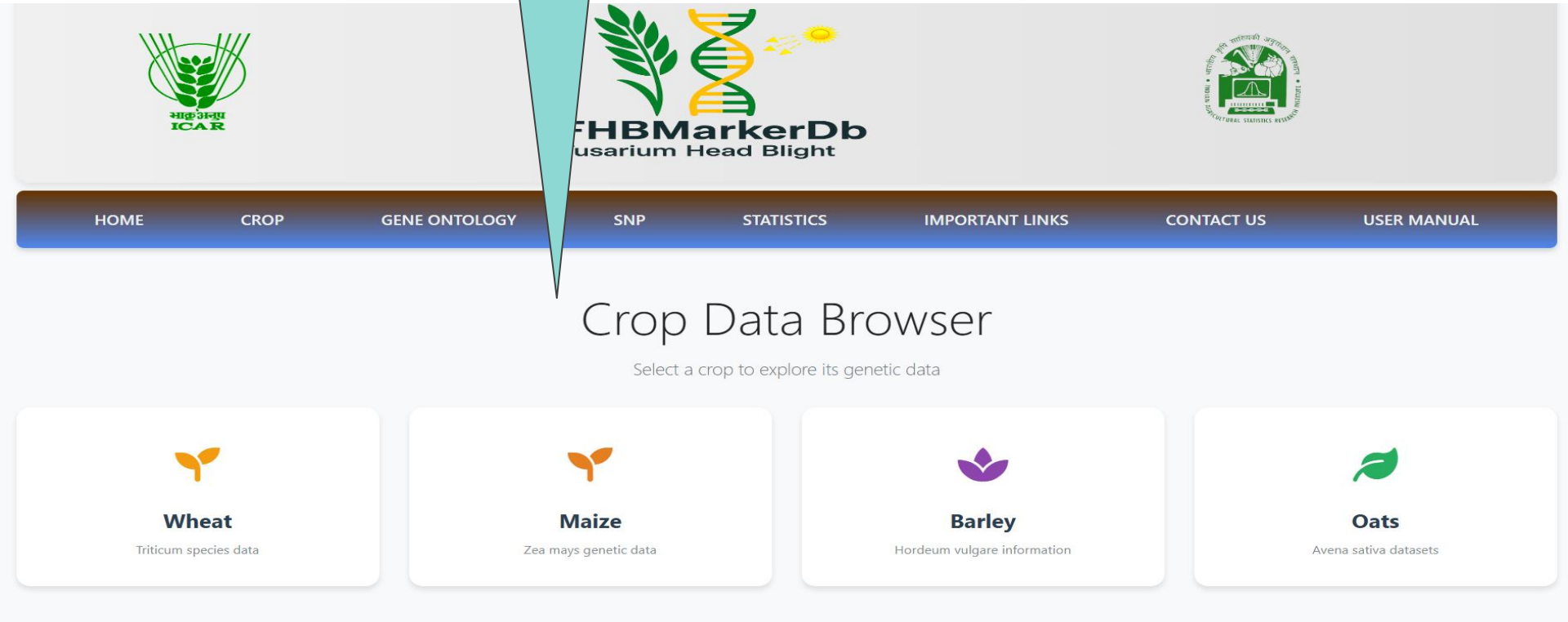
Help

Entry	taes00290 Pathway
Name	Valine, leucine and isoleucine biosynthesis - Triticum aestivum (bread wheat)
Class	Metabolism; Amino acid metabolism BRITE hierarchy
Pathway map	taes00290 Valine, leucine and isoleucine biosynthesis
Module	taes_M00019 Valine/isoleucine biosynthesis, pyruvate => valine / 2-oxobutanoate => isoleucine [PATH:taes00290] taes_M00432 Leucine biosynthesis, 2-oxoisovalerate => 2-oxoisocaproate [PATH:taes00290] taes_M00570 Isoleucine biosynthesis, threonine => 2-oxobutanoate => isoleucine [PATH:taes00290]
Other DBs	GO: 0009097 0009098 0009099



Pathways Results.

Click the “Crop Data Browser” to download whole data of different crops



Database Statistics

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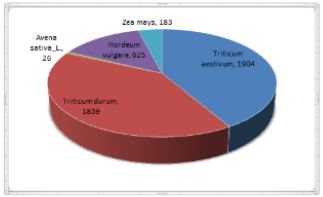
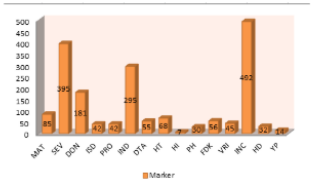
Database Statistics

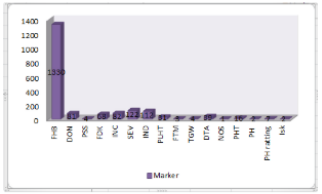
elow are multiple images showing statistics of the data in the database.



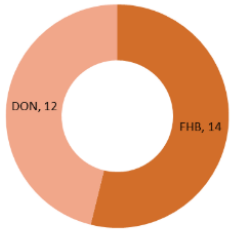
Crops Data



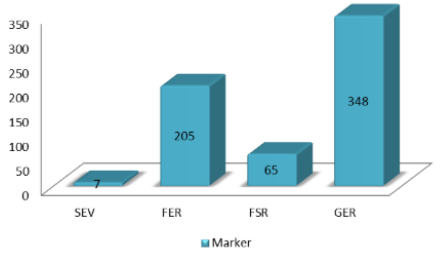
Wheat- Triticum aestivum



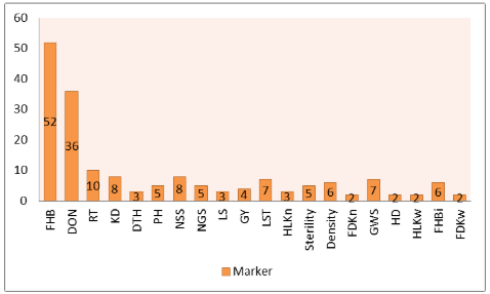
Wheat- Triticum durum



Oats- Avena sativa_L



Maize- Zea mays



Barley- Hordeum vulgare

Important Links

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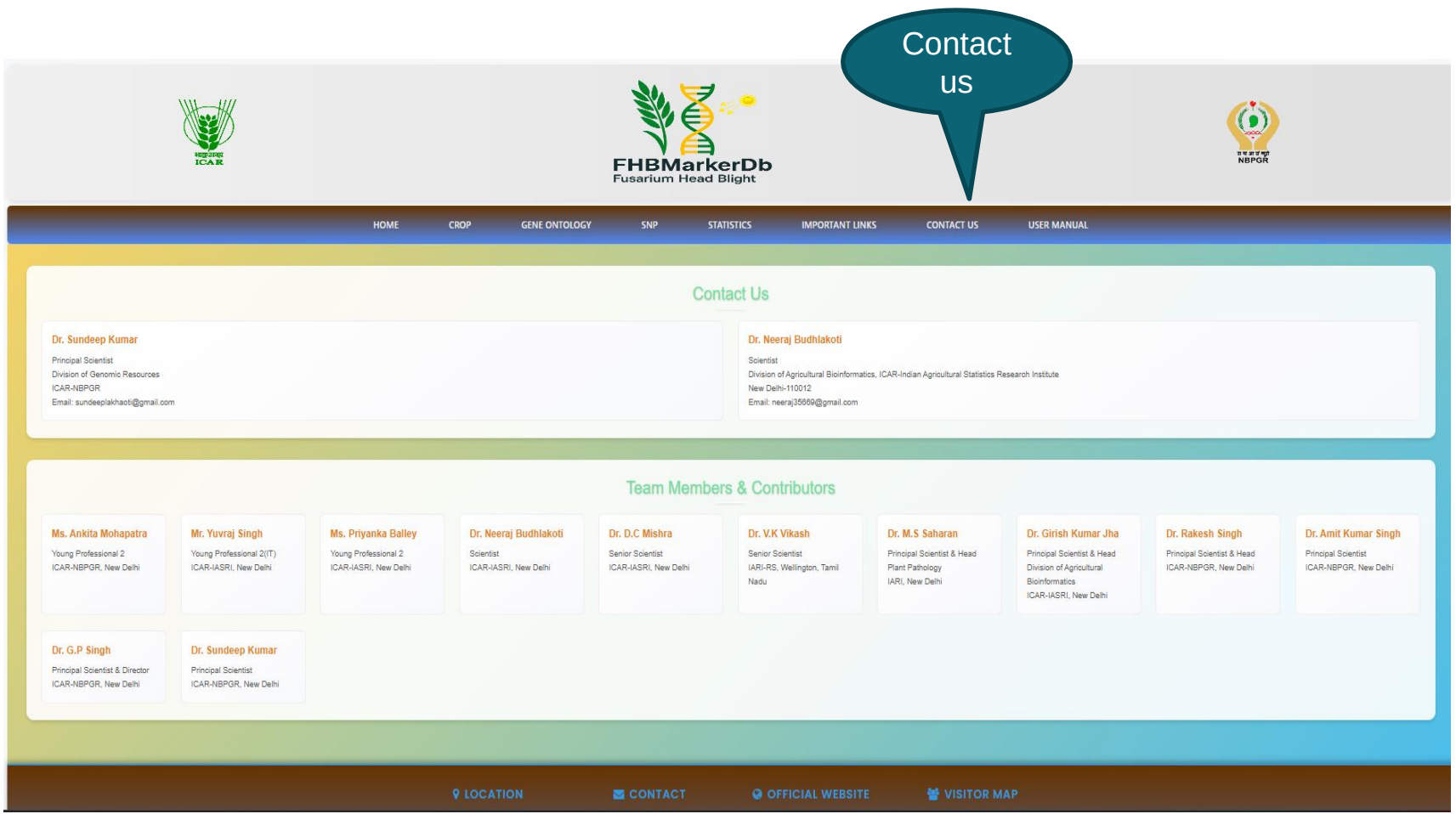
Important Links

Name	Related Links
Indian Council of Agricultural Research (ICAR)	www.icar.org.in
ICAR-Indian Agricultural Statistics Research Institute (IASRI)	www.iasri.res.in
Center for Agricultural Bioinformatics (CABin)	www.cabgrid.res.in
ICAR-Indian Agricultural Research Institute (IARI)	www.iari.res.in
Department of Science & Technology (DST)	www.dst.gov.in
Bioinformatics Centre, Pune University	https://bioinfo.net.in/
Centre for Development of Advanced Computing (C-DAC)	www.cdac.in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Abbreviation

Traits	Full Form	Abbreviation	Full Form
DTA	Days to Anthesis	**ISD**	Index of Severity and Deoxynivalenol
DTH	Days to Heading	**ISK**	Incidence, Severity, and Kernel Damage Index
DON	Deoxynivalenol	**KD**	Kernel Discoloration
FDK	Fusarium-Damaged Kernels	**Lst**	Length of the Main Stem
FDKn	Number of Fusarium-Damaged Kernels	**MAT**	Multi-Trait Genomic Selection
FDKw	Weight of Fusarium-Damaged Kernels	**MTA**	Marker–Trait Association
FER	Fusarium Ear Rot	**NOS**	Not Otherwise Specified
FHBi	Fusarium Head Blight Index	**NSS**	Number of Scabbed Spikelets per Spike
FHB	Fusarium Head Blight	**PH / HT / PHT / PLHT**	Plant Height
FSR	Fusarium Head Blight Spread Resistance	**PRO**	Proline Content
FTM	Fourier Transform Method	**PSS**	Percentage of Symptomatic Spikelets
GER	Gibberella Ear Rot	**RT**	Row Type
GY	Grain Yield	**SEV**	Disease Severity
HD	Heading Date	**SL**	Spike Length
HLKn	Hectoliter Kernel Number	**TGW**	Thousand Grain Weight
HLKw	Weight of Healthy Kernels	**VRI**	FHB Visual Rating Index
INC	FHB Incidence	**YP**	Yellow Pigment
IND	FHB Index		

THANKS

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