PULSE CROP DATABASE

Genomic, Genetic, and Breeding Resources for Pulse Crop Improvement

Issue 4 | July 2022

What is PCD?

PCD is a centralized database containing genomics, genetics, and breeding data and analysis tools for pulse crops. Annotated genome sequences are available to view and search and there is also information about genetic maps, molecular markers, and QTL. If you are a breeder who needs to manage private breeding program data, access to the Breeding Information Management System (BIMS) can be requested. Visit us at www.pulsedb.org to see everything that is available. Each issue of the newsletter will focus on a different type of data and what features are available. Short monthly how-to videos are available from the site.

New PCD search interfaces

A couple years ago, we added MegaSearch to PCD. MegaSearch was an additional way for users to search the data in PCD and also allowed further refinement to the displayed/downloaded search results over the traditional searches on PCD.

Since MegaSearch works so well, we have decided to transition all searches within PCD to MegaSearch. Not only is this an improvement in database usability, but also helps PCD run more efficiently which will help with performance.

If you have used some of the PCD searches in the past month, you probably noticed a change in the interfaces. We are still working on some of the searches, but MegaSearch is being used for the following data types:

- Genes and Transcripts
- Germplasm
- Genetic Maps
- Genetic Markers
- Publications
- QTL

Either click on the individual data search links, or select MegaSearch to start a search

Tripal MegaSearch

Tripal MegaSearch is a tool for downloading biological data. (Current limit per download: Video tutorial: 2020 presentation | 2021 tutorial (Gene/Transcript) | 2022 tutorial (QTL)

Select a data type to start building your own query and download data in bulk:

Data Type [Select a Data Type] ⌄ Reset

Data Summary:

Data Type	Number of Records	Last Updated
Contact	275	01/10/2022
Gene/Transcript	2051460	06/23/2022
Germplasm	3149	10/06/2021
Map	341	07/14/2022
Marker	922684	06/23/2022
Publication	10194	07/14/2022
QTL	5451	12/23/2021

MegaSearch Interfaces

2,051,460 Gene/Transcript. *Note: actual rows in downloaded file depend on the selected fields.*

Genes and Transcripts
[Watch the video!](#)

Query

		Downloadable Fields

Sequence Type Any ▼   Clear   Refresh Count

View | FASTA | CSV | TSV

Genome

Genome Name
Any
Cajanus cajan Asha genome v1.0
Cicer arietinum CDC Frontier genome v1.0
Cicer arietinum ICC 4958 genome v2

Chromosome/Scaffold Any ▼

Start > ▼

Stop < ▼

Data Type Germplasm ▼   Reset

Germplasm

3,149 Germplasm. *Note: actual rows in downloaded file depend on the selected fields.*

Query

	Downloadable Fields

Organism
Any
Cajanus cajan
Cajanus scarabaeoides
Cajanus spp.

☑ All Fields   View | CSV | TSV

☑ Name
☑ Organism
☑ Unique Name
☑ Accession
☑ Maternal Parent

Germplasm name

Name contains ▼

Transcriptome/Other Dataset

Transcriptome/Dataset Any
Organism Any ▼
Genome Any ▼
Chromosome/Scaffold Any ▼
Start > ▼
Stop < ▼

5,451 QTL. *Note: actual rows in downloaded file depend on the selected fields.*

QTL
[Watch the video!](#)

Query

	...dable Fields

Type Any ▼

Organism
Any
Cajanus cajan
Cajanus spp.
Cicer arietinum

View | CSV | TSV

...me

☑ Trait Name
☑ Organism
☑ Type
☑ Published Symbol
☑ LOD
☑ R2

Trait

Trait Category Any ▼

Trait Name contains ▼

Gene/Transcript name

Name contains

Choose File | No file chosen

341 Map. *Note: actual ro...*

Genetic Maps

Query

Organism
Any
Cajanus cajan
Cajanus spp.
Cicer arietinum

Map Name Any ▼

Mapping population

Population contains ▼
Maternal Parent contains ▼
Paternal Parent contains ▼

QTL

Trait Name contains ▼
Published Symbol contains ▼
QTL Label contains ▼

922,684 Marker. *Note: actual rows in downloaded file depend on the selected fields.*

Query

Note: Some of the SNP positions in the genome are >1 when the alignment was done using flanking sequences.

Marker Type Any ▼   Clear   Refresh Count

Marker Name contains ▼

Choose File | No file chosen

SNP Array Name Any ▼

Organism

Mapped in Organism
Any
Cajanus cajan
Cajanus spp.
Cicer arietinum

Developed in Organism
Any
Cajanus cajan
Cicer arietinum
Cicer pinnatifidum

Genetic Markers

Genome location

Genome Any ▼
Chromosome/Scaffold Any ▼
Start > ▼
Stop < ▼

Genetic location

Map Any ▼

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