



GENOME DATABASE FOR VACCINIUM

Genomics, genetics, and breeding resources for blueberry, cranberry, bilberry, and lingonberry research

Issue 12 | July 2024

What's new in GDV?

New Training Videos

- [How to download protein sequences](#) (1:27 mins)
- [How to use the ortholog/paralog search](#) (2:02 mins)

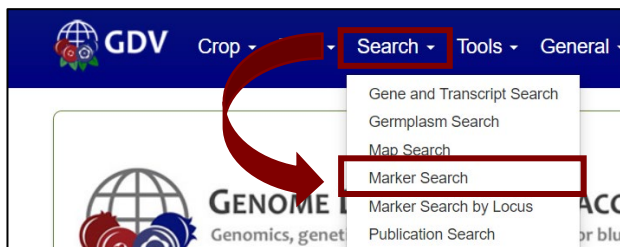
New Data and Functionality

- 6 genetic markers and 3 QTL from Kawash et al. *Phytopathology*. 2024.
- 22,047 Rapid Genomics Blueberry Genotyping probes from VacCAP project

Rapid Genomics Blueberry Genotyping Array

One of the many products of the [VacCAP project](#) is the 22K Rapid Genomics genotyping platform for blueberry. All the details about the development of the platform can be found in [Clare et al., 2024](#). GDV recently added the probe information from the array to the database. This means that you can search and view the data in a variety of ways.

Search for array probes using Marker Search



Select the Marker Search from the tool bar and either search by one or more array marker names, or filter by array name.

Remember to select data fields you want to display or download on the right. Learn how to use the Marker Search with [this video](#).

Query

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

Marker Type

Any

Marker Name

contains

File Upload

Choose File

No file chosen

SNP Array Name

RAPIDGENOMICS_FS_1903

Organism

Mapped in Organism

Any

Vaccinium corymbosum

Vaccinium macrocarpon

Vaccinium sp.

Clear

Refresh Count

Downloadable Fields

View

CSV

TSV

Sequence retrieval

☒ All Fields

☒ Unique Name

☒ Marker Name

☒ Organism

☒ Mapped Organism

☒ Marker Type

☒ Sequence

☒ Map

☒ Linkage Group

☒ Map Position (Start)

☒ Map Position (Stop)

Viewing blueberry array associated QTL and probes aligned to genome

Certain probes on the Rapid Genomics blueberry genotyping array are associated with QTL traits. We have stored that association as a QTL which can be queried under the [QTL/GWAS Search](#). The associated traits covered by 194 different probes include fruit firmness, abscission force, chilling requirement, cold tolerance, fruit color, fruit firmness retention, fruit diameter, early green fruit, fruit flavor, full bloom, berry picking scar, fruit size, brix (soluble solids), and fruit weight.

You can also visualize QTL and markers with genome positions in JBrowse. The blueberry genotyping array is aligned to the [Vaccinium caesariense clone W85-20 P0 v2.0 genome sequence](#). Below is a screenshot from the [W85-20 P0 JBrowse instance](#) displaying a region with a couple QTL associated with array probes and the QTL and SNP tracks turned on. To view more details, and to see a link back to more details on GDV, just click on the feature. For QTL features, note that the 'name' hyperlink opens details about the trait while the 'dbxref' link takes you to details for that specific QTL.

match Fruit flavor

Primary Data

Name	Fruit flavor
Type	match
Description	Vce1_p0.Chr08.16017420-16017629
Position	Vce1_p0.Chr08:16017420..16017629
Length	210 bp

Attributes

Dbxref	7547040
Id	qFRF.RG_FS_1903.Vce1_p0.Chr08.16017420-16017629
Seq_id	Vce1_p0.Chr08
Source	GDV

Region sequence

```
>Vce1_p0.Chr08 Vce1_p0.Chr08:16017420..16017629 class=match
length=210
tcaactaacaatgcaaacacacaaagaaaataaaaatggacaagcaatgggtccaccaagttt
gatgattaagagtagctaaaatgctgaacaacctatcatgatgcagtagttgggtacaaaattg
agtagagtgatgggtcctagatcgaagatgggtctacaggatgggtgattagattcatgatgata
qataaaqatgctgaatc
```

match Vce1_p0.Chr08.16044834-16045041

Primary Data

Name	Vce1_p0.Chr08.16044834-16045041
Type	match
Position	Vce1_p0.Chr08:16044834..16045041
Length	208 bp

Attributes

Dbxref	7537637
Id	Vce1_p0.Chr08.16044834-16045041
Seq_id	Vce1_p0.Chr08
Source	GDV

Region sequence

```
>Vce1_p0.Chr08 Vce1_p0.Chr08:16044834..16045041 class=match
length=208
ATCAACTGCACCAAAATAAACAAACATCAACGGTTGGGATCAGCAGTTCGGCACCAAAACCAC
TTTTCAGTGGACCATCACCAGATAGCAAAATGAAGCTGTTAACCATAGAAATGGGAAGACA
AAATGTATCGAGAGGGTGAACGGTATCGTTTGTCTATACCTTGACGTAGTTAGTGGTATCGAGG
GTGAACCGTGTTAA
```

Join the [GDV Mailing List](#) and follow us on [Twitter](#)

Funded by: USDA-SAES NRSP10, SCRI-NIFA
Award 2019-51181-30015 (VacCAP), SCRI-NIFA
Award 2022-51181-38449