# How to Use Plant GRADEN A plant portal site for plant genome and marker information

Kazusa DNA Res Inst



GARDEN = Genome And Resource Database ENtry

Named with ease of remembering

https://plantgarden.jp

B ver. Open: 2019 March

Regular ver. Open: 2020 Jul

English

#### Japanese







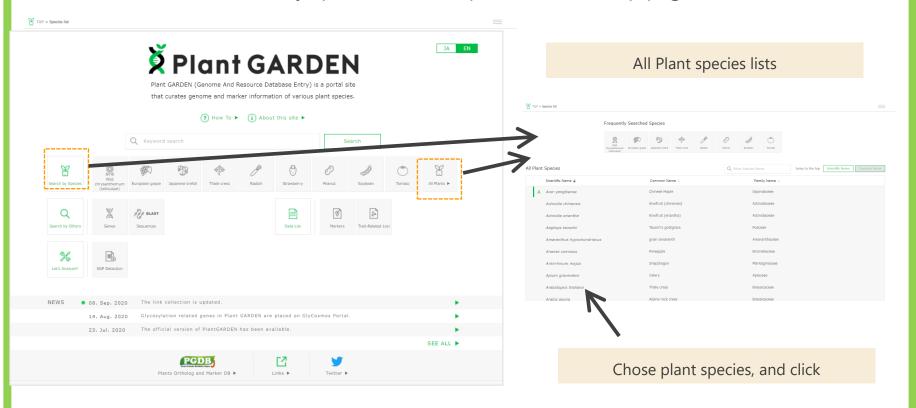
#### **Top PAGE**

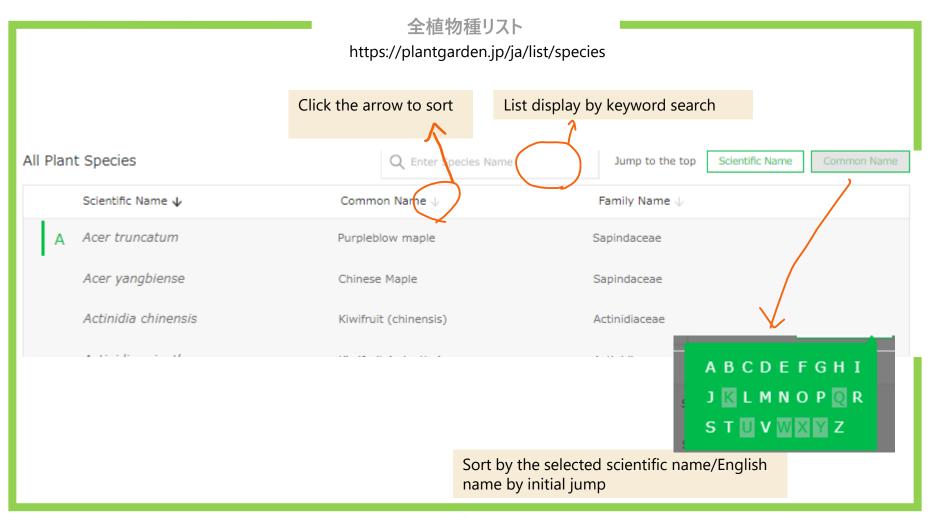


- Displaying items to understand the actions to be taken
   Four main Items
   Simple design and words
- □ Targets
  Biologist/Breeder + Education
- □ Covering the plant species, which are constructed high quality genomes, as many as possible

#### Search Plant

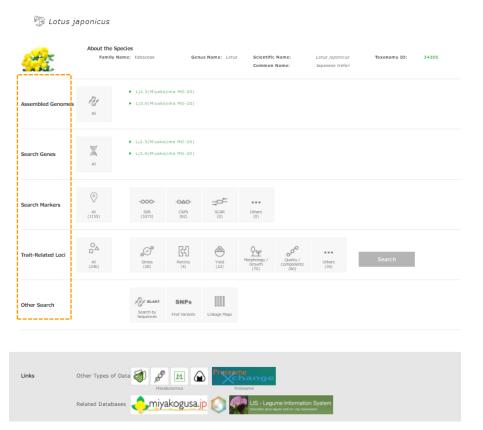
# Click [Search by species] or [All plants] on the top page





#### Plant species Page

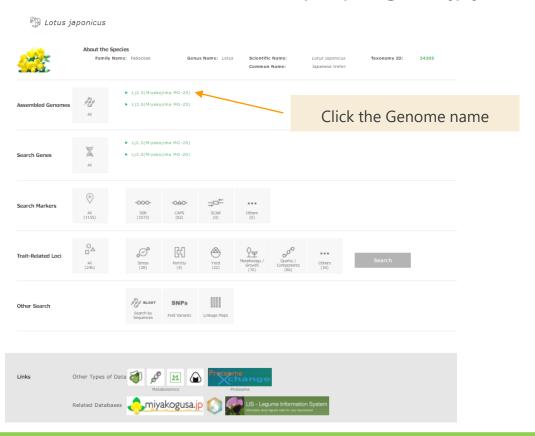
#### https://plantgarden.jp/ja/list/species

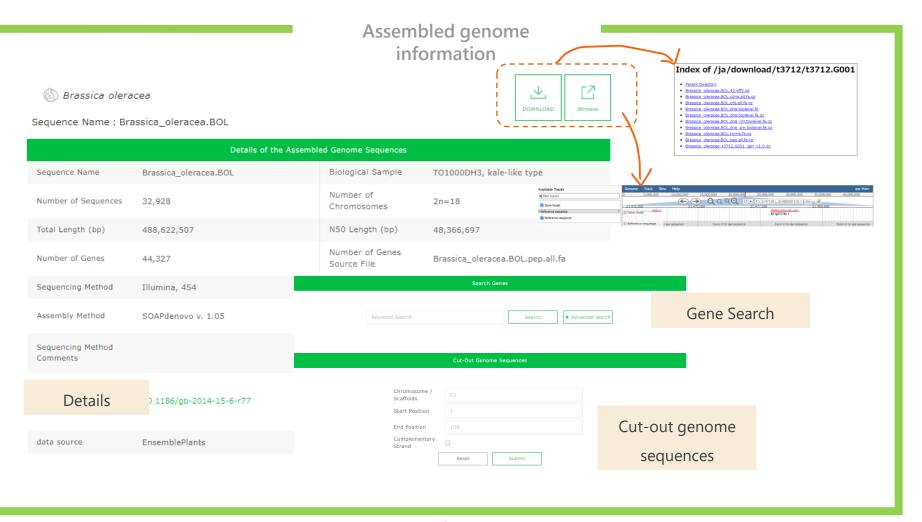


- Curate publicly available genome, gene, marker information. SNPs on the publicly available SRA files are also analyzed and stored
- Genome sequences are displayed for each version
- The contents in PGDBj (DNA marker, QTL and linkage map) are also stored
- ☐ Link to the metabolomics and protein DBs for each species
- ☐ Linking typical DBs for each species

### **Plant species Page**

# https://plantgarden.jp/ja/list/species

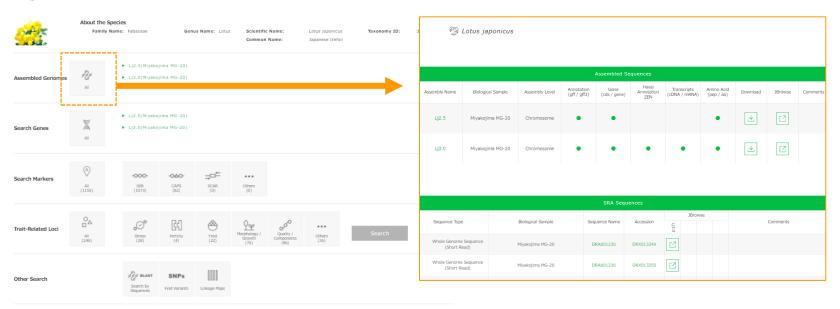




#### Genome sequence list

#### By clicking the 'all' icon, lists of assembled genome and SRA are shown.

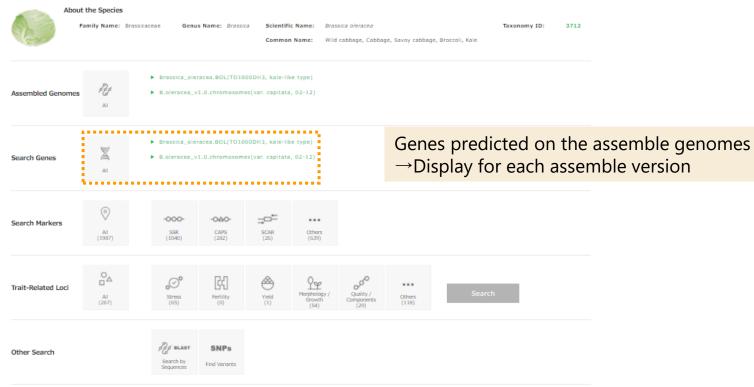




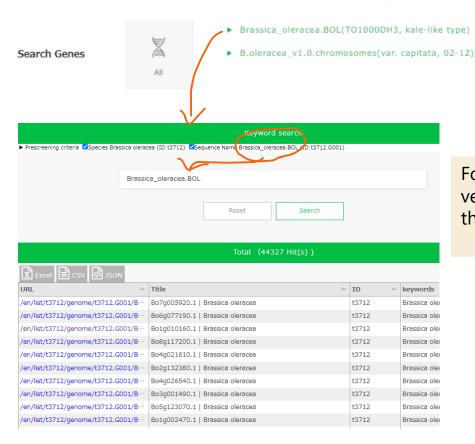


#### Search Genes





#### Gene Keyword Search



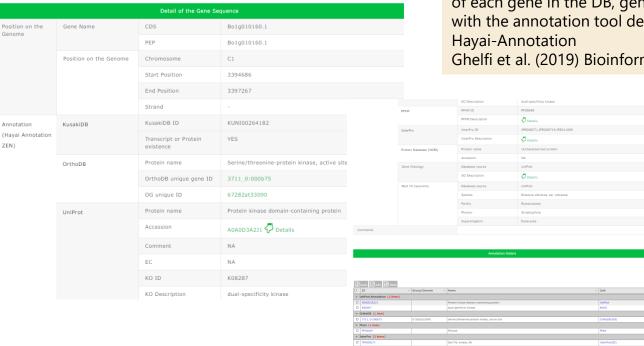
For example, if you put the genome version, a list on the genes predicted on the assembled genomes are searched.

#### **Gene Pages**



Sequence Name: Brassica\_oleracea. BOL





In order to unify the annotation items and criteria of each gene in the DB, genes are re-annotated with the annotation tool developed by us.

Ghelfi et al. (2019) Bioinformatics 35:4427-4429

#### Search from gene function

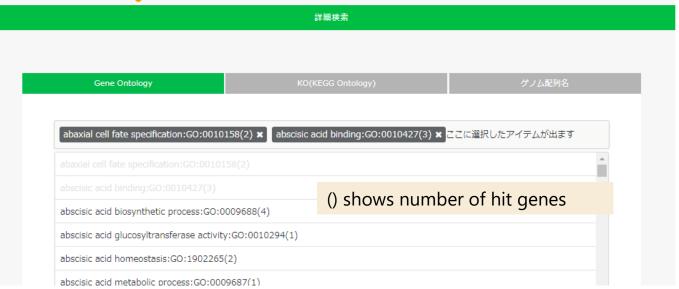
Search Genes



- ▶ Brassica\_oleracea.BOL(TO1000DH3, kale-like type)
- ▶ B.oleracea\_v1.0.chromosomes(var. capitata, 02-12)

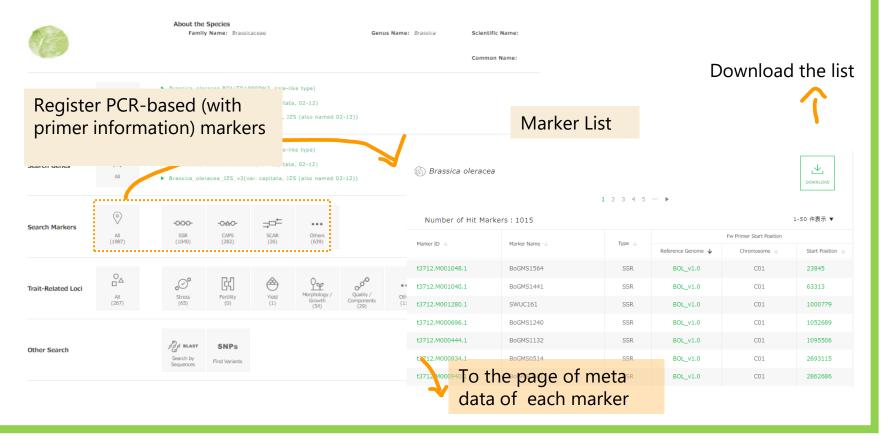


Search from gene function (GO, KEGG) based on the results by Hayai-annotation



# Search for DNA marker information





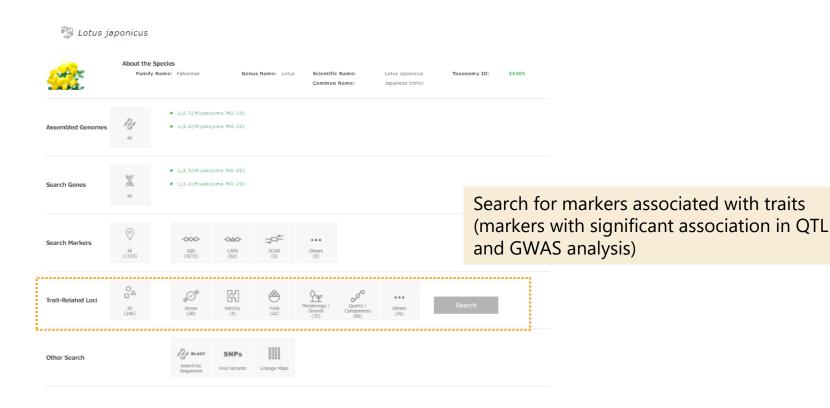
## **DNA Markers Page**



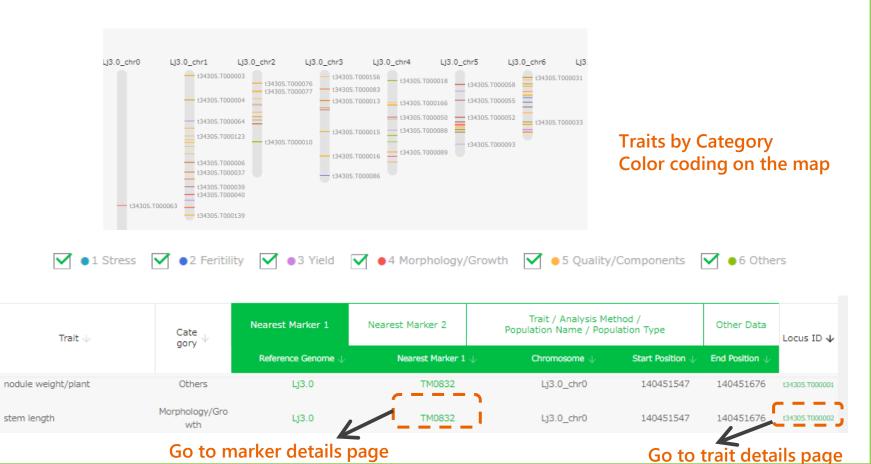


Marker ID		t3712.M001280.1	
Marker Name		SWUC161	
Туре		SSR	
Position on the Genome	Reference Genome	BOL_v1.0	
	Chromosome	C01	
	Fw Primer	TTCCCTCACTTCACCACCTC	
	Start Position	1000779	
	End Position	1000798	
	Rv Primer	AGATGCAATCTCCGGTGGTA	
	Start Position	1000933	
	End Position	1000914	
Target Sequences		NA	
Allele [Sample Name]		NA	

#### Search for Trait related loci

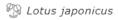


#### 形質ページ



stem length

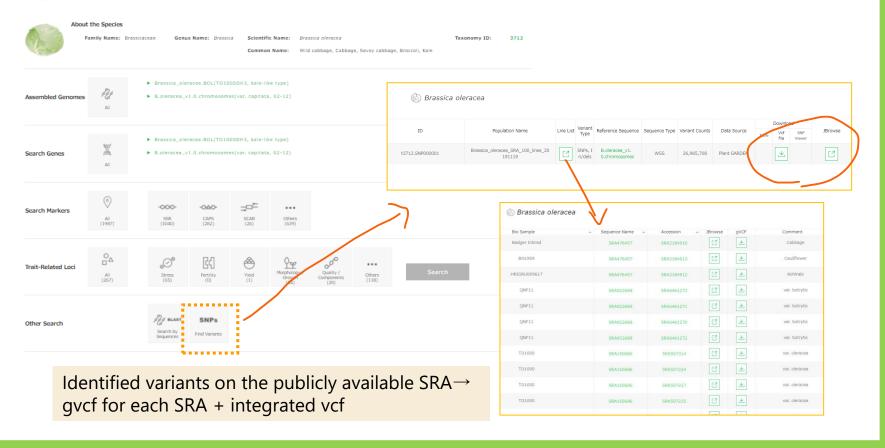
# Trait details page



Locus ID		t34305.T000001		
Locus Name		NW		
Trait		nodule weight/plant		
Trait Category		[6]Others		
Analysis Method		QTL analysis		
Population Name		Miyakojima MG-20 x Gifu B-129		
Population Type		RIL		
Position on the Genome	Reference Genome	Lj3.0	Go to marker de	tails page
	Nearest Marker 1	TM0832		
	Chromosome	Lj3.0_chr0		
	Start Position	140451547		
	End Position	140451676		
	Nearest Marker 2	NA		
	Chromosome	NA		
	Start Position	0		
	End Position	0		_

#### Search SNPs (variants)

#### Brassica oleracea



#### For users

https://plantgarden.jp

# **Ž** Plant GARDEN

■ We would like to incorporate the opinions of users as much as possible. Please let us know your request for data to be stored or when you find a problem on the DB. We will respond to your request as much as possible.

Please contact plantgarden@Kazusa.or.jp