



Making *Brassica* research FAIR at the UK Vegetable Genebank



Department
for Environment
Food & Rural Affairs

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UKVGB
collections



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Sarah Trinder | Warwick | October 2023



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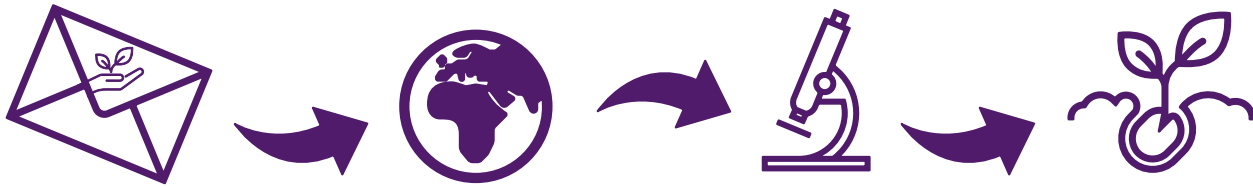


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UKVGB collections

-  The UK Vegetable Genebank (UKVGB) is a globally significant collection of vegetable crop seed.
-  Conserve crop genetic diversity in vegetables and support its use in breeding, research and education.



UKVGB collections

National Vegetable
Research Station



1949

UKVGB collections

National Vegetable
Research Station



1949

UK Vegetable
Genebank built



1980

UKVGB collections

National Vegetable
Research Station



1949

UK Vegetable
Genebank built



1980

DEFRA takes
over funding



1987

UKVGB collections

National Vegetable
Research Station



1949

UK Vegetable
Genebank built



1980

DEFRA takes
over funding



1987

Warwick
HRI



2004

UKVGB collections



UKVGB collections



~500
kale

~900
cauliflower



~1,000
brussels
sprouts

~1,000
cabbage



~390
broccoli




~700
*Brassica
rapa*



~150 wild
Brassica



UKVGB collections

-  Specialist collections
-  European Clubroot Differential (ECD) series
 - 15 lines
 - Buczacki *et al.*, 1975
-  S allele collection
 - David Ockendon

UKVGB collections



Plant breeding, research, education,
training and development

- Standard Material Transfer Agreement



Search and order @

grin-global.warwick.ac.uk/gringlobal



UKVGB collections

grin-global.warwick.ac.uk/gringlobal

Advanced search function

Simple Search | List Search | **Advanced Search** | Results

The more information you provide, the better the search will be.

Scientific name (any part)

Plant name

Up-to-date
availability

Shopping
cart style
ordering

<input type="checkbox"/>	ACCESSION	NAME	TAXONOMY	ORIGIN	AVAILABILITY
<input type="checkbox"/>	<input type="text" value="Search ACCESSION"/>	<input type="text" value="Search NAME"/>	<input type="text" value="Search TAXONOMY"/>		
<input type="checkbox"/>	ECD 15	ECD 15 Verheul	<i>Brassica oleracea</i> L.	United Kingdom	
<input type="checkbox"/>	HRIGRU 10654	LATE PURPLE SPROUTING NO 4039	<i>Brassica oleracea</i> L. var. <i>italica</i> Plenck	United Kingdom	
<input type="checkbox"/>	HRIGRU 11183	PURPLE VIENNA	<i>Brassica oleracea</i> L. var. <i>gongylodes</i> L.	United States	



UKVGB collections

grin-global.warwick.ac.uk/gringlobal

Details for: HRIGRU 10654, *Brassica oleracea* L. var. *italica* Plenck, LATE PURPLE SPROUTING NO 4039

Summary

Passport

Taxonomy

Other

Pedigree

IPR

Observation

Core Passport Data

Taxonomy: [Brassica oleracea](#) L. var. [italica](#) Plenck
Top Name: LATE PURPLE SPROUTING NO 4039
Origin: Donated – United Kingdom
Maintained: [UK Vegetable Genebank](#)
Received by UKVGB: 1991
Improvement Status: Cultivar
Reproductive
Uniformity: Population
Form Received: Seed-Long-term storage MCPD code 13

Accession Group(s)

Group name: AIR-BOCC

Note: This accession was a member of the AIR-BOCC project.
To search for accessions in this group, click the following link. [AIR-BOCC](#)

Accession Names and Identifiers

LATE PURPLE SPROUTING NO 4039	BROCCOLI
Type: Accession name	Type: Common name
BI78260A	HRIGRU 10654 1991
Type: Donor identifier	Type: Inventory

Images (1 total. Click on image for more.)



FAIR data



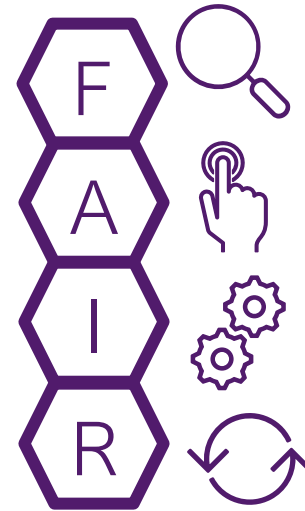
How to get greatest value out of data?

Findable

Accessible

Interoperable

Re-useable



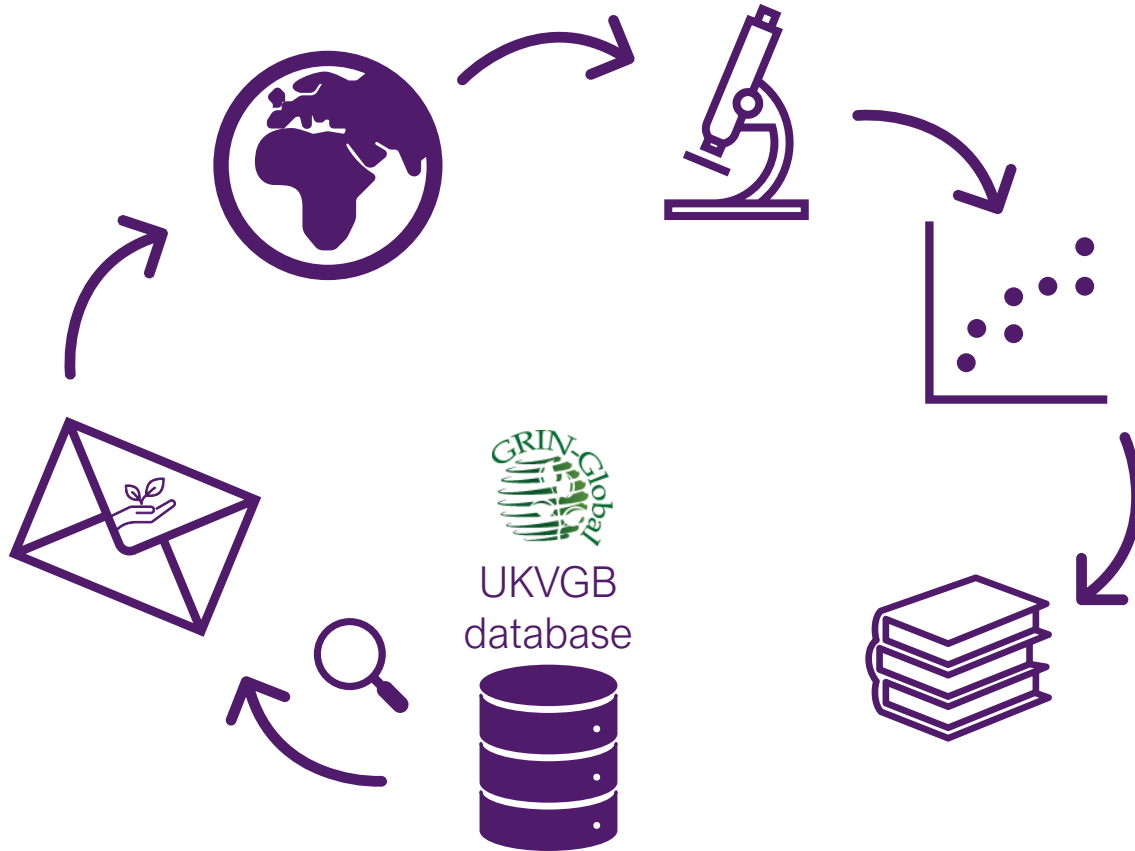
FAIR data



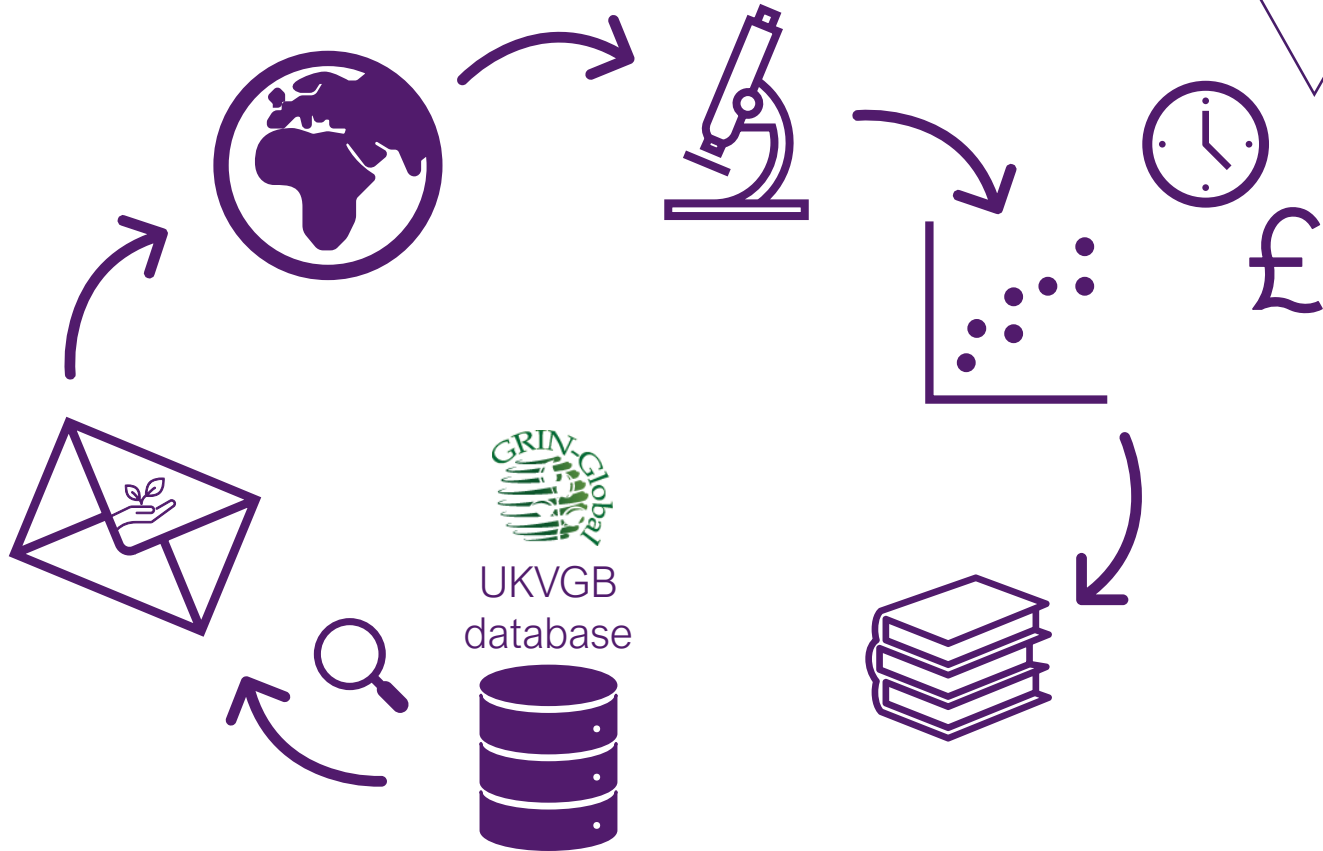
FAIR data



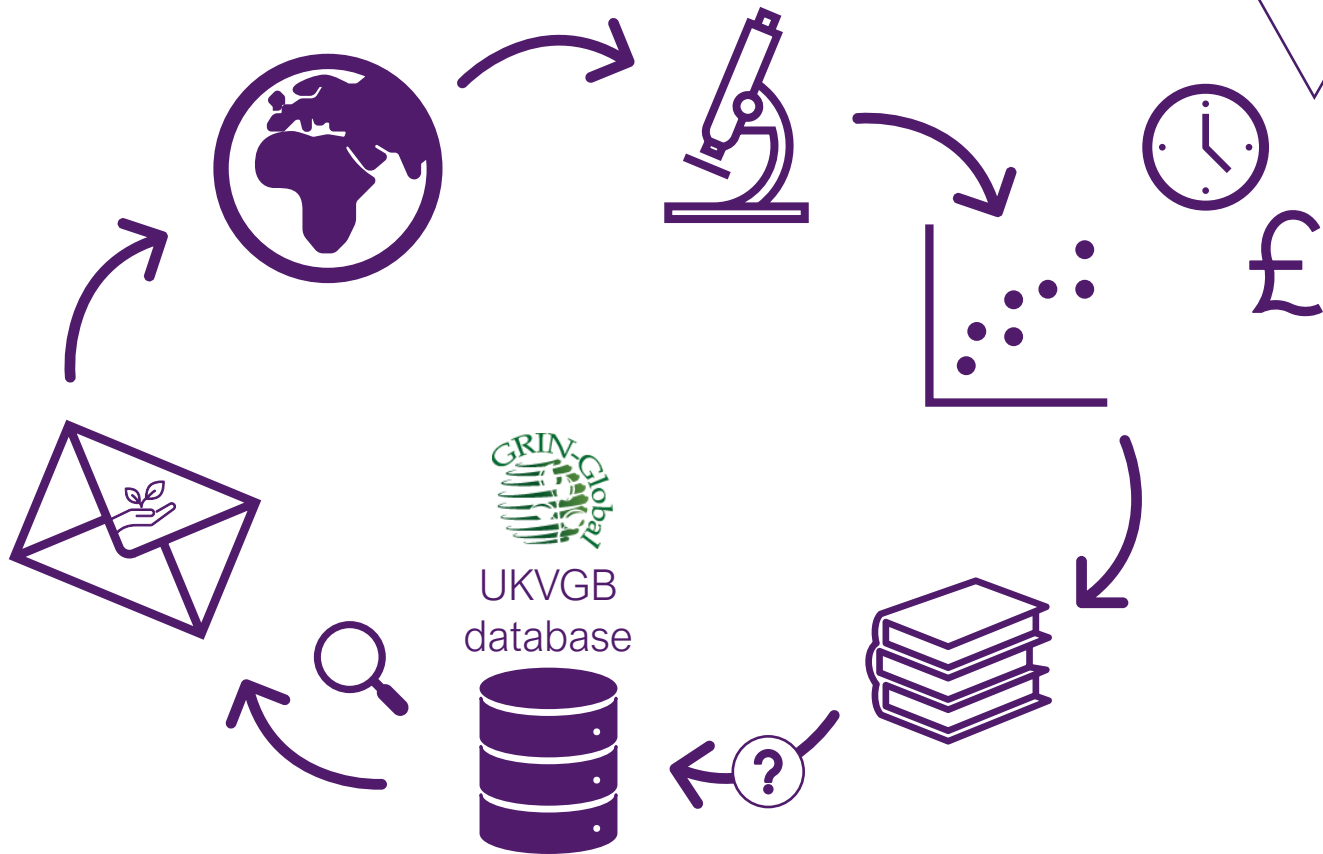
FAIR data




FAIR data



FAIR data



Brassica research data

-  Identify research outputs using our material
 - Davies and Allender (2017)
 - Use google scholar alerts
 - Communication with researchers

Brassica research data

185
research
outputs
(+148)



5,296
citations

1,589
accessions
(11% of
collection)

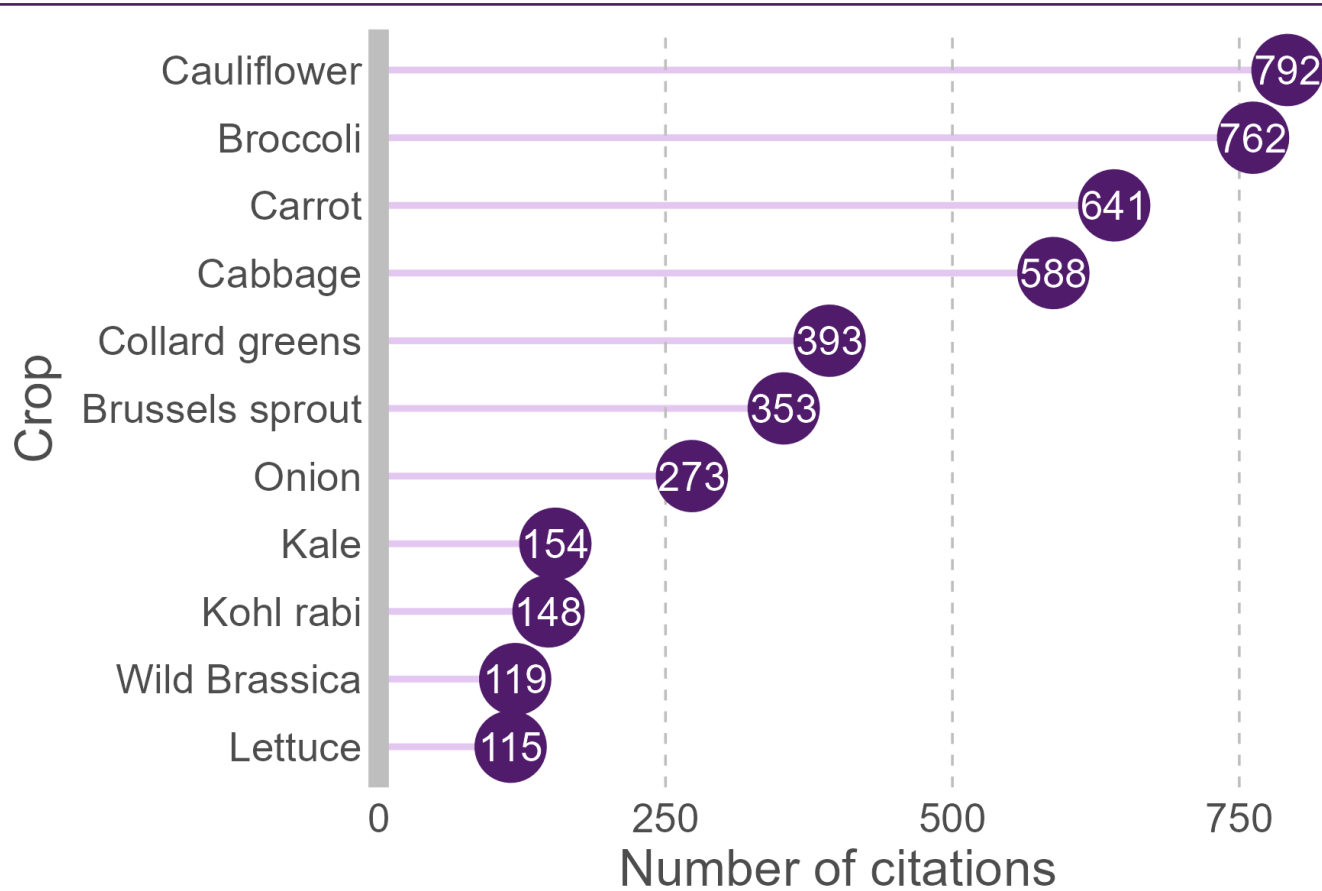


93
accessions
cited in > 10
research
outputs

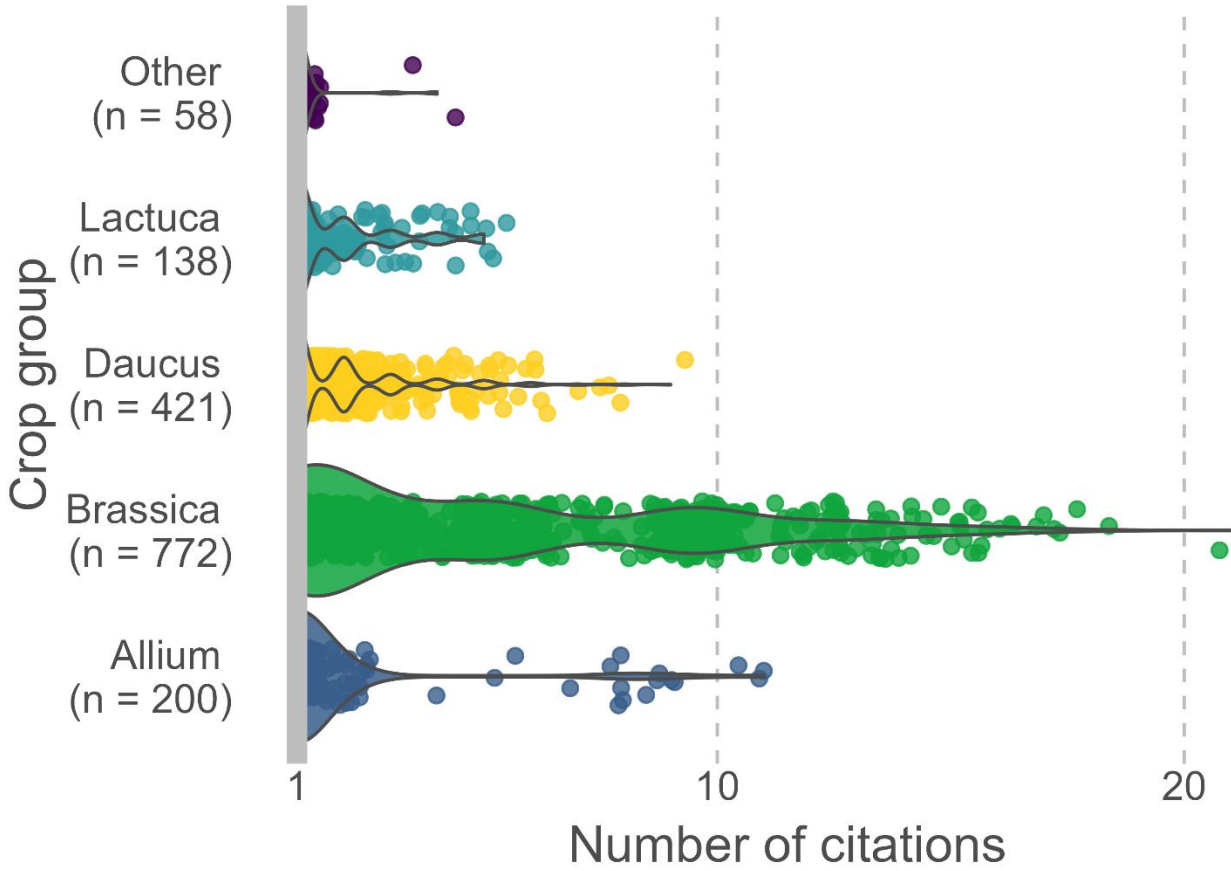
11
accessions
with genome
sequences



Brassica research data



Brassica research data



Brassica research data

Screening and evaluation of **resistance to downy mildew** (*Peronospora parasitica*) and clubroot (*Plasmodiophora brassicae*) in genetic resources of *Brassica oleracea*

MALIN CARLSSON, ROLAND VON BOTHMER, ARNULF MERKER

Simple sequence repeats reveal uneven distribution of **genetic** diversity in chloroplast genomes of *Brassica oleracea* L. and ($n = 9$) wild relatives

[C. J. Allender](#) ✉, [J. Allainguillaume](#), [J. Lynn](#) & [G. J. King](#)

Shoot **zinc (Zn) concentration** varies widely within *Brassica oleracea* L. and is affected by soil Zn and phosphorus (P) levels

[Martin Broadley](#) ✉, [Seosamh Lochlainn](#), [John Hammond](#), [Helen Bowen](#), [Ismail Cakmak](#), [Selim Eker](#), [Halil Erdem](#), [Graham King](#) & [Philip White](#) [...show less](#)

Brassica research data

Details for: HRIGRU 7795, *Brassica oleracea* L., MIS79038

Summary

Passport

Taxonomy

Other

Pedigree

Records formatted and uploaded to UKVGB database

Other Links

[NCBI Genbank BioSample](#)

[NCBI Genbank SRA - Whole Genome Sequencing](#)

[NCBI Genbank Project](#)

Citations

- **Allender, et al.,** 2007. [Simple sequence repeats reveal uneven distribution of genetic diversity in chloroplast genomes of *Brassica oleracea* L. and \(n = 9\) wild relatives.](#) Simple sequence repeats reveal uneven distribution of genetic diversity in chloroplast genomes of *Brassica oleracea* L. and (n = 9) wild relatives. Allender, 2007 **Number of accessions cited: 140**
- **Allender, et al.,** 2010. [Origins of the amphiploid species *Brassica napus* L. investigated by chloroplast and nuclear molecular markers.](#) Origins of the amphiploid species *Brassica napus* L. investigated by chloroplast and nuclear molecular markers. Allender, 2010 **Number of accessions cited: 140**
- **Pelgrom, et al.,** 2015. [Host plant resistance towards the cabbage whitefly in *Brassica oleracea* and its wild relatives.](#) Host plant resistance towards the cabbage whitefly in *Brassica oleracea* and its wild relatives. Pelgrom, 2015 **Number of accessions cited: 80**
- **Saban, et al.,** 2023. [Extensive crop-wild hybridization during *Brassica* evolution and selection during the domestication and diversification of *Brassica* crops.](#) Extensive crop-wild hybridization during *Brassica* evolution and selection during the domestication and diversification of *Brassica* crops. Saban, 2023 **Number of accessions cited: 8**

Brassica research data

Details for: HRIGRU 7795, *Brassica oleracea* L., MIS79038

Summary

Passport

Taxonomy

Other

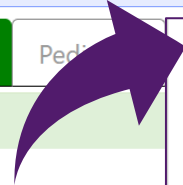
Pedigree

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- **Saban, et al.,** 2023. [Extensive crop-wild hybridization dur](#) *Brassica* crops. Extensive crop-wild hybridization during B crops. Saban, 2023 **Number of accessions cited: 8**



SRX19225845: WGS of *Brassica oleracea*

1 ILLUMINA (HiSeq X Ten) run: 45.6M spots, 13.7G bases, 4.6Gb downloads

Design: WGS of leaf DNA

Submitted by: University of Southampton

Study: Whole genome sequencing of Brassica wild relatives
[PRJNA929712](#) • [SRP420194](#) • [All experiments](#) • [All runs](#)
[show Abstract](#)

Sample: WGS of Brassica oleracea
[SAMN32970199](#) • SRS16632070 • [All experiments](#) • [All runs](#)
Organism: [Brassica oleracea](#)

Library:
Name: BOL5
Instrument: HiSeq X Ten
Strategy: WGS
Source: GENOMIC
Selection: RANDOM
Layout: PAIRED

Runs: 1 run, 45.6M spots, 13.7G bases, [4.6Gb](#)

Run	# of Spots	# of Bases	Size	Published
SRR23282476	45,630,956	13.7G	4.6Gb	2023-01-31

Brassica oleracea L.
Brassica oleracea L.
Origins of
ons
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Brassica

Brassica research data

Details for: HRIGRU 7795, *Brassica oleracea* L., MIS79038

Summary

Passport

Taxonomy

Other

Pedigree

Other Links

[NCBI Genbank BioSample](#)

[NCBI Genbank SRA - Whole Genome Sequencing](#)

[NCBI Genbank Project](#)

Citations

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- **Allender, et al.,** 2010. Origins of the amphiploid spe... the amphiploid species *Brassica napus* L. investiga... **cited: 140**
- **Pelgrom, et al.,** 2015. Host plant resistance towards the c... towards the cabbage whitefly in *Brassica oleracea* and its v...
- **Saban, et al.,** 2023. Extensive crop-wild hybridization during *Brassica* evolution and selection during the domestication and diversification of *Brassica* crops. Extensive crop-wild hybridization during *Brassica* evolution and selection during the domestication and diversification of *Brassica* crops. Saban, 2023 **Number of accessions cited: 8**

JOURNAL ARTICLE

Extensive crop-wild hybridization during *Brassica* evolution and selection during the domestication and diversification of *Brassica* crops

Jasmine M Saban , Anne J Romero, Thomas H G Ezard, Mark A Chapman 

[Author Notes](#)

Genetics, Volume 223, Issue 4, April 2023, iyad027,

<https://doi.org/10.1093/genetics/iyad027>

Published: 22 February 2023 **Article history** ▼



PDF



Split View



Cite

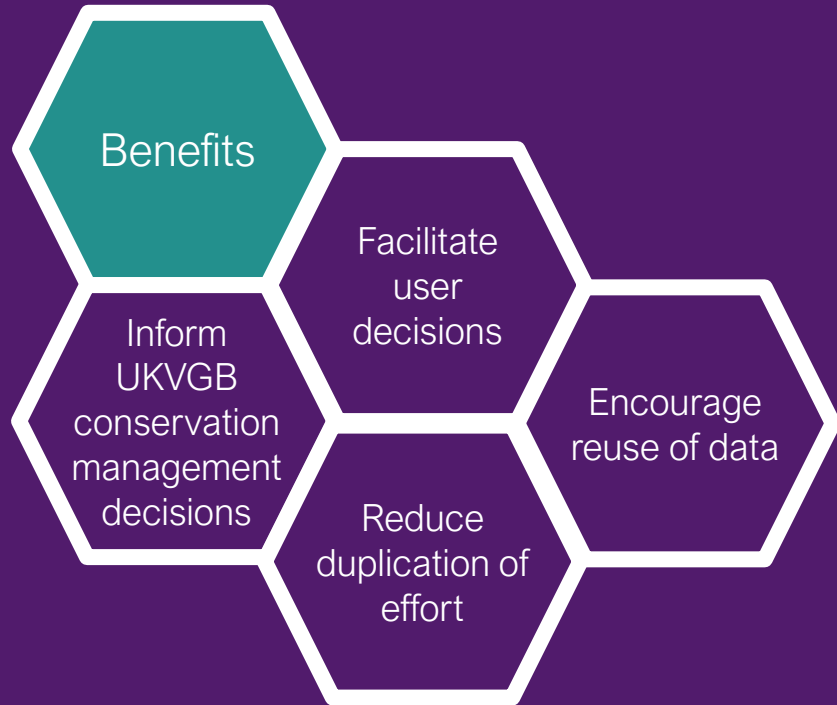


Permissions

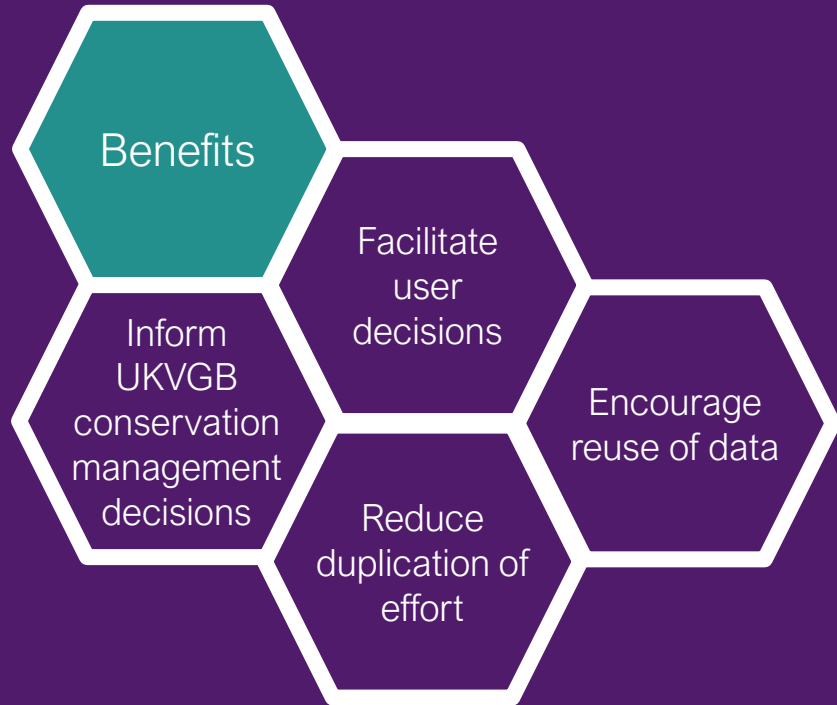


Share ▼

Brassica research data



Brassica research data



Brassica research data

 Uploading historic datasets

 Extract and record specific data observations

Details for: HRIGRU 6755, *Daucus carota* L., PUSA KESAR

Category	Descriptor	Value	Study	Availability
CHEMICAL	Borneol (BORN)-leaf	0	Keilwagen, 2017	
CHEMICAL	Borneol (BORN)-roots	0	Keilwagen, 2017	
CHEMICAL	Bornyl acetate (BORNAc)-leaf	17.38	Keilwagen, 2017	
CHEMICAL	Bornyl acetate (BORNAc)-roots	256.17	Keilwagen, 2017	
CHEMICAL	Caryophyllene oxide-	36.76	Keilwagen, 2017	

Brassica research data

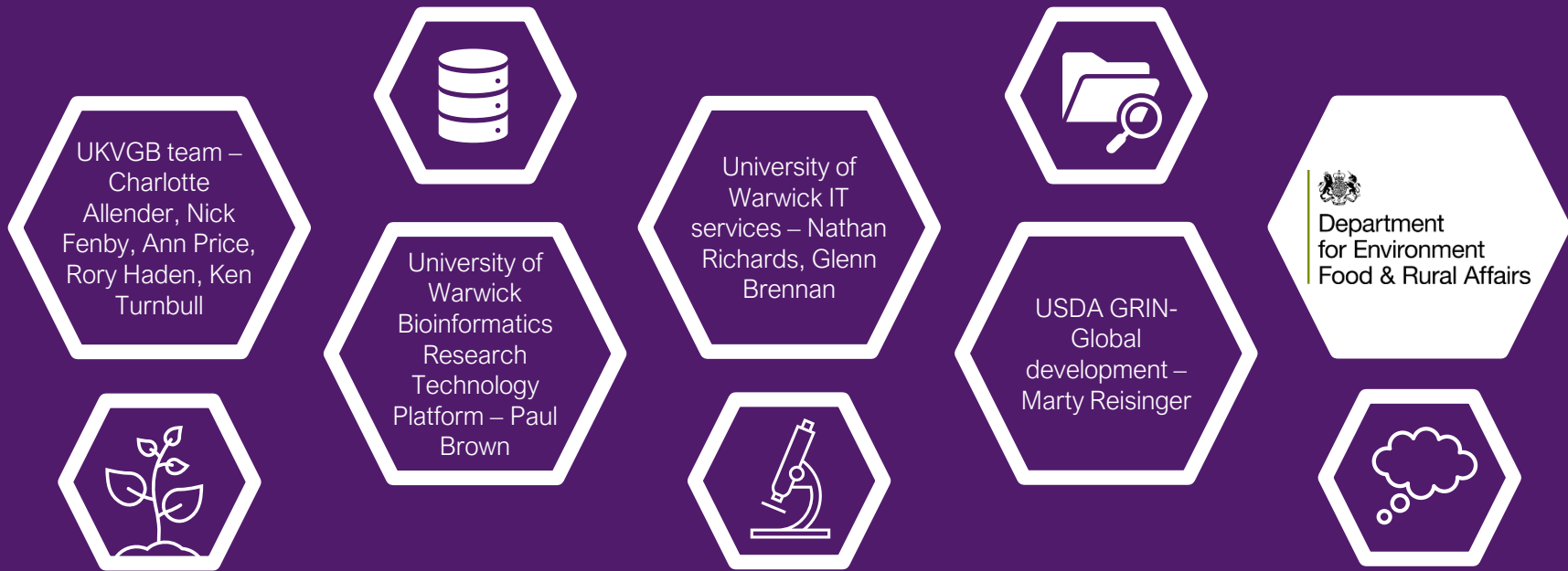
 Make use the UKVGB collections for your *Brassica* research

 Tell us about your data

- FAIR for the benefit of the whole *Brassica* research community



grin-global.warwick.ac.uk/gringlobal



Making *Brassica* research FAIR at the UK Vegetable Genebank

