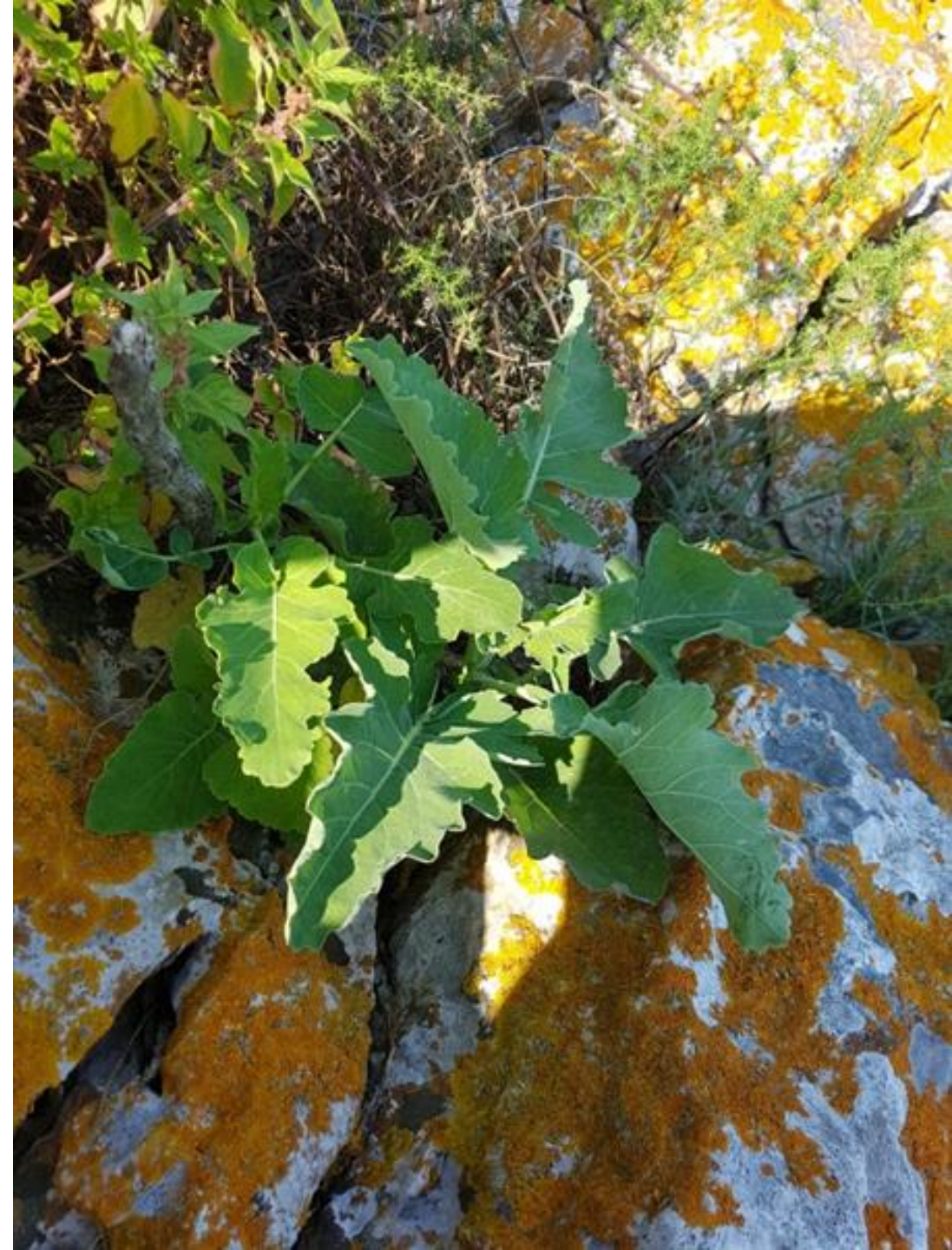




*Achievements and
outcomes of the
EUBRASSWILD in
Croatia*

*Smiljana Goreta Ban
Institute of Agriculture and Tourism*



Introduction

- *Brassica* genus: economically significant species of vegetables
- Origin: Mediterranean area
- Wild *Brassica* species: many are native to the Mediterranean - *Brassica incana* Ten.



Introduction

Brassica incana Ten.

[Synonyms: *Brassica botteri* Vis.; *Brassica cazzae* Ginzb. & Teyber; *Brassica mollis* Vis., *Brassica taurica* (Tzvelev) Tzvelev]

- **Distribution:** Tyrrhenian coastal areas of Central and South Italy, north-east and east Sicily, Adriatic coastal localities in Puglia and in Croatian islands, South Albanian coast and Greek Ionian islands
- Occurs mainly in the herbaceous vegetation of the **salt-sprayed low rocky coasts**, but also in the maquis in the upper belt (weakly influenced by the sea aerosol)
- **Endangered:** climatic changes, enlargement of urban areas, tourism, summer fires, specific habitat

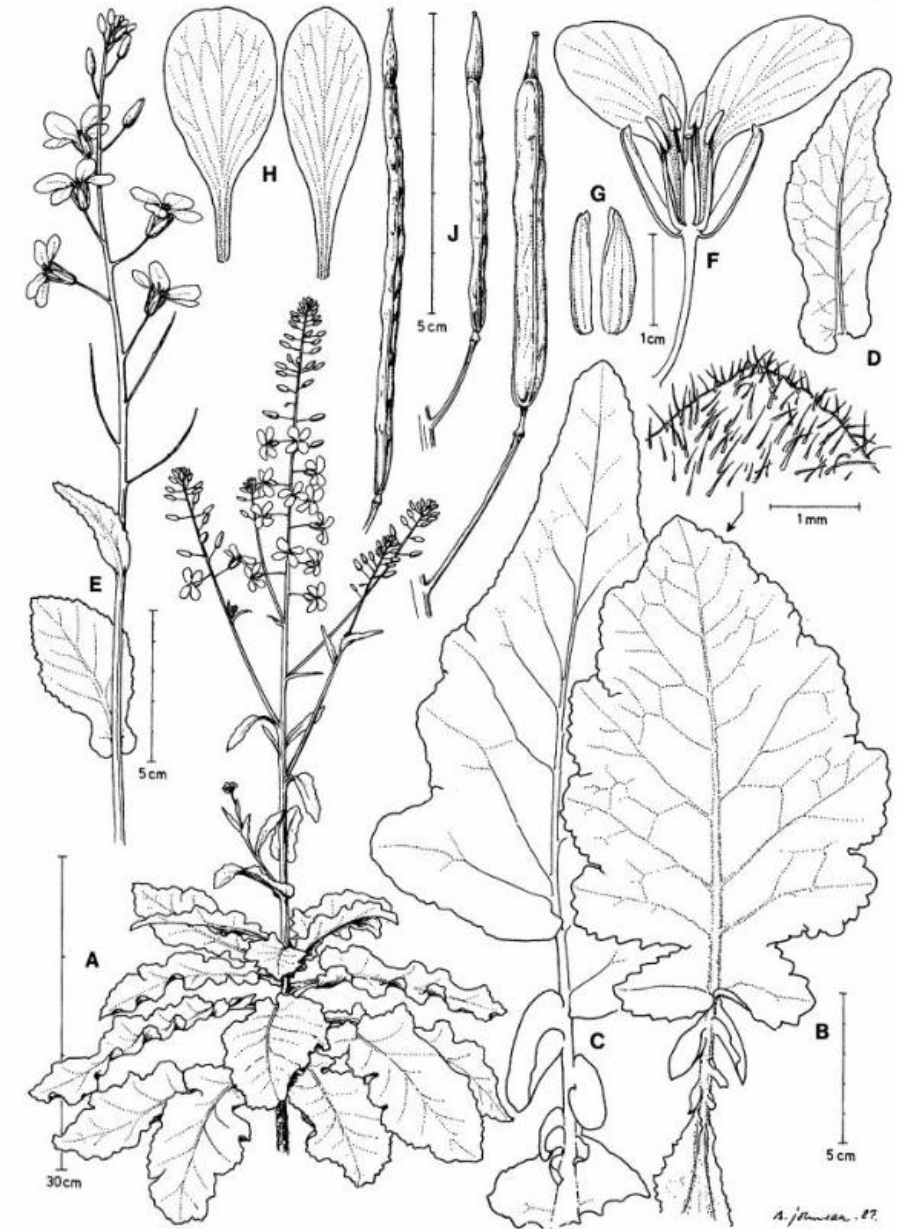


Fig. 18: *B. incana*. – A: 2.5 years old plant in first flower, cult., interpopulation cross. – B, C: Lower cauline leaves, Sicily, Agnone Bagni; Campania, E Praiano. – D: Leaf of inflorescence, E Praiano. – E: Inflorescence of later branch, E Praiano. – F, G: Dissected flower and sepals, E Praiano. – H: Petals, E Praiano; Sicily, Castel Mola. – J: Siliques, the two left E Praiano, Italy, right islet of Obljak, Yugoslavia.

Missions

- 2 collecting missions set on southern Croatian islands and islets to collect *B. incana* for long-term conservation
- Opportunity to monitor the population status of previously mentioned populations
- Source: Flora Croatica Database (Nikolić, 2022) and personal communication



1st collecting mission

- Korčula
- Obljak, Kosor, Stupa
- Sučac

2nd collecting mission

- Vis
- St. Andrija (Svetac)

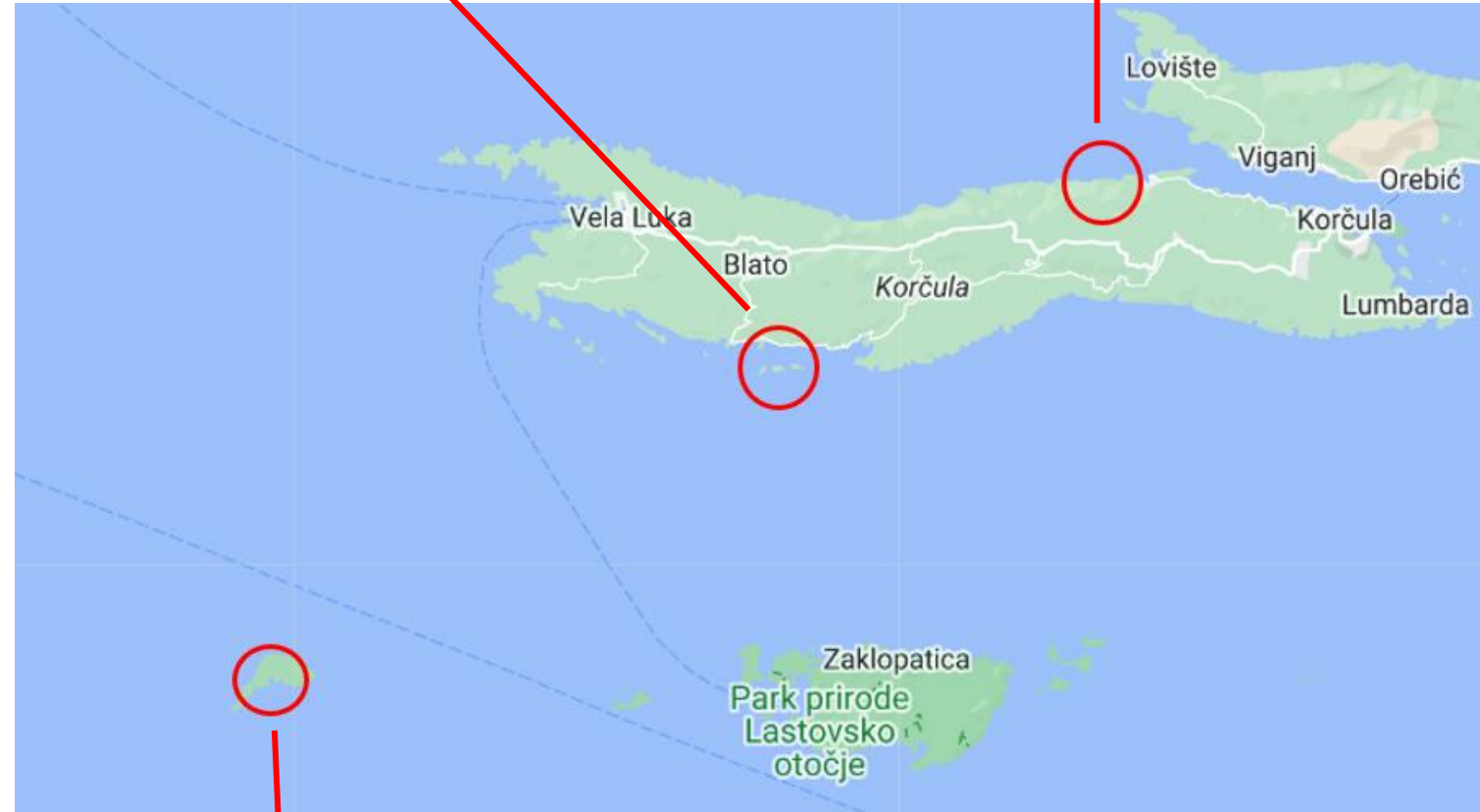


Mission 1

- 5th July – 8th July 2022.
- **6 previously known localities** (Sušac, Stupa, Obljak, Kosor, Vaja pebble beach, Samograd cove)
- **Loss of two previously recorded habitats due to anthropogenic influences:** Vaja pebble beach, Samograd cove
- **Mature siliques were collected from four localities:** the island of Sušac, and the islets of Obljak, Kosor, and Stupa

Stupa, Obljak, Kosor

Vaja beach, Samograd cove



Sušac



Mission 1

2022 (June) – Korčula, Sušac, Stupa, Obljak and

Collected samples;



Taxon literature	Taxon new?	Locality	Date	GPS	Gene bank accession numbers
<i>Brassica cazzae</i>	<i>Brassica botteri</i>	Sušac	July 2022	42.751570, 16.489470	IPT521
<i>Brassica mollis</i>	<i>Brassica botteri</i>	Kosor	July 2022	42.901346, 16.761636	IPT518
<i>Brassica mollis</i>	<i>Brassica botteri</i>	Stupa	July 2022	42.894560; 16.786568	IPT522
<i>Brassica mollis</i>	<i>Brassica botteri</i>	Obljak	July 2022	42.904644, 16.749480	IPT520

Mission 2

- 22nd May – 26th May 2023.
- **7 previously known localities:** the island of St. Andrija or Svetac, two coastal localities on the island of Vis (Oključina, Gradac) and 4 inland localities on the island of Vis (St. Duh Church, hiking trail near St. Duh church, Crvene stijene, St. Mihovil)



Results – 2nd mission

- Locality St. Duh church: **significant population loss = 3 - 5 young plants**



Mission 2

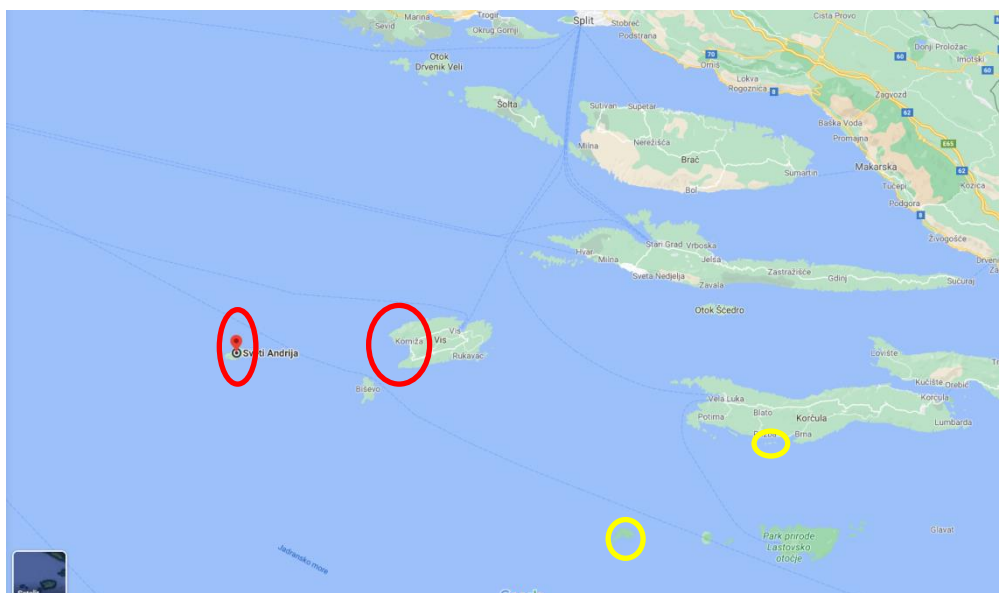
- Unripe green siliques were collected from **6 localities**: the island of St. Andrija or Svetac, two coastal localities on the island of Vis (Oključina, Gradac) and 3 inland localities on the island of Vis (hiking trail near St. Duh church, Crvene stijene, St. Mihovil)
- Young plants for **vegetative propagation** were collected from localities: Svetac, Oključina, Gradac and Crvene stijene



Mission 2

2023 (May) – Svetac and Vis

Collected samples;



Taxon	Locality	Country	Date	GPS	Gene bank accession numbers
<i>Brassica incana</i>	Svetac	HRV	May 2023	43.019725, 15.728069	IPT 618
<i>Brassica incana</i>	Vis (Oključina)	HRV	May 2023	43.074649, 16.102745	IPT 619
<i>Brassica incana</i>	Vis (Gradac)	HRV	May 2023	43.075623, 16.134977	IPT 620
<i>Brassica incana</i>	Vis (hiking trail from St. Duh church to St. Nikola church)	HRV	May 2023	43.034960, 16.110665	IPT 621
<i>Brassica incana</i>	Vis (Crvene stijene)	HRV	May 2023	43.047342, 16.107393	IPT 622
<i>Brassica incana</i>	Vis (St. Mihovil church)	HRV	May 2023	43.048160, 16.112421	IPT 623
<i>Brassica incana</i>	Svetac	HRV	May 2023	43.019725, 15.728069	IPT 618

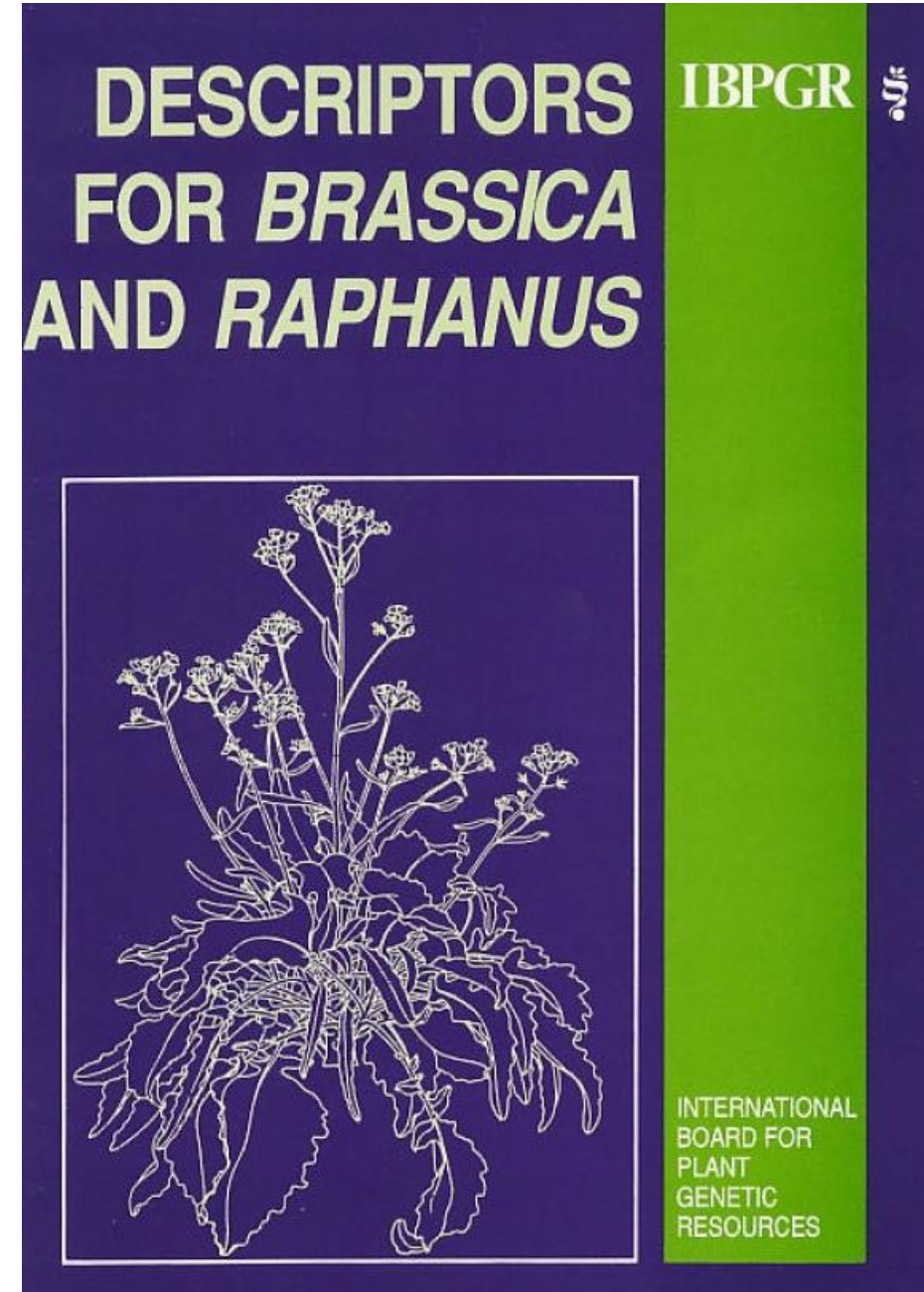
Characterization

- **Vegetative and generative propagation:** experimental greenhouse and field in Poreč (Institute of Agriculture and Tourism)



- Descriptors:
phenotypic
uniformity

- 4.2.1. Morphotype uniformity
- 4.2.2. Plant growth habit
- 4.2.3. Plant height (cm)
- 4.2.4. Plant diameter (cm)
- 4.2.10. Number of leaves and leaf scars, counted
- 4.2.12. Leaf length (cm)
- 4.2.13. Leaf blade width (cm)
- 4.2.15. Leaf angle
- 4.2.16. Leaf blade shape in outline, including lobes
- 4.2.17. Leaf division (margin)
- 4.2.18. Leaf division (incision)
- 4.2.19. Leaf apex shape
- 4.2.21. Leaf blade blistering
- 4.2.24. Leaf colour
- 4.2.25. Leaf hairiness
- 4.2.26. Leaf bloom
- 4.2.27. Petiole and/or midvein enlargement
- 4.2.33. Petiole and/or midvein colour
- 4.2.54. Vegetative stem length (cm)
- 4.2.55. Vegetative stem width (mm)
- 4.2.60. Stem colour
- 4.3.4. Flower synchrony
- 4.3.7. Flower stalk color
- 4.3.8. Flower stalk bloom
- 4.3.9. Flower stalk length (cm)
- 4.3.11. Flower stalk internode length
- 4.3.13. Flowering plant, degree of branching
- 4.3.14. Flowering plant, stalk stiffness
- 4.3.15. Flowering plant hairiness
- 4.3.16. Flower color variability in the crop
- 4.3.17. Petal color
- 4.3.18. Flower scent
- 4.3.19. Silique color before drying



Characterization and regeneration



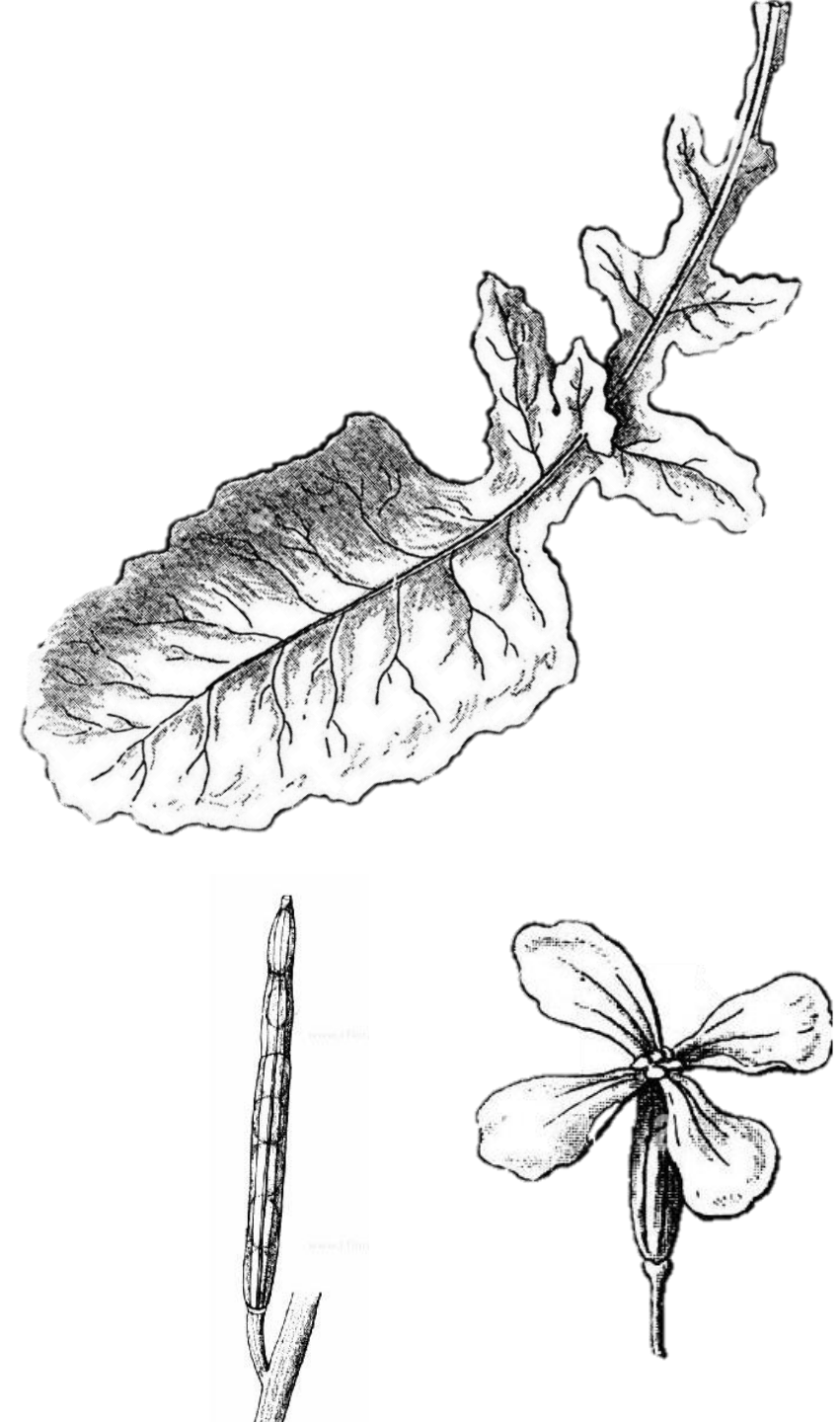
Status of the *B. incana* complex in Croatia (November, 2017)

Taxon	Locality	Date	GPS	Gene bank accession numbers	Characterisation
<i>Brassica botteri</i>	Sušac	July 2022	42.751570, 16.489470	IPT521	Yes
<i>Brassica botteri</i>	Kosor	July 2022	42.901346, 16.761636	IPT518	Yes
<i>Brassica botteri</i>	Stupa	July 2022	42.894560; 16.786568	IPT522	Yes
<i>Brassica botteri</i>	Obljak	July 2022	42.904644, 16.749480	IPT520	Yes
<i>Brassica incana</i>	Koločep	October 2021	42.668715, 18.014589	IPT517	Yes/Flower
<i>Brassica incana</i>	Svetac	May 2023	43.019725, 15.728069	IPT 618	Yes
<i>Brassica incana</i>	Vis (Oključina)	May 2023	43.074649, 16.102745	IPT 619	Plants
<i>Brassica incana</i>	Vis (Gradac)	May 2023	43.075623, 16.134977	IPT 620	Plants
<i>Brassica incana</i>	Vis	May 2023	43.034960, 16.110665	IPT 621	
<i>Brassica incana</i>	Vis (Crvene stijene)	May 2023	43.047342, 16.107393	IPT 622	Plants
<i>Brassica incana</i>	Vis (St. Mihovil church)	May 2023	43.048160, 16.112421	IPT 623	Plants

Additional accessions (IPT514, IPT515, IPT516, IPT517) – (Plants, flowers, seeds)

Conclusion

- Monitoring, collecting, preserving and multiplying this important genetic resource is of great value for future breeding programs and the ever-increasing demands of food production
- **Future plans:** abiotic stress resistance experiments





EUBRASWILD: Capturing Brassica Wild Relatives Diversity in the South Eastern Europe

Thank you for your attention!

