Agricultural Institute of Slovenia

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

Slovenia (KIS)

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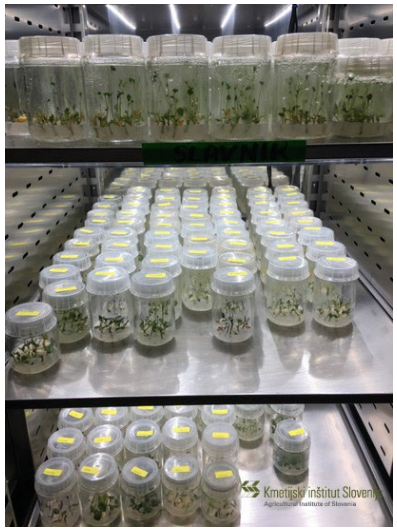
Agricultural Institute of Slovenia (KIS)

- KIS is the leading research institute in the field of agriculture in Slovenia
- Employs 252 workers of which 95 are researchers
- Areas: ***crop science and agriculture with seed science***, ***genetics, breeding, preservation selection and gene banks in agriculture***, animal production, fruit science, viticulture, plant and environment protection, fertility and quality of agricultural lands,, agricultural engineering and energetics and economics of agriculture, etc.

Crop Science Department

- Plant Breeding and Genetics
- Production Technologies and Physiology of Plants
- Introduction and ecological zoning of new field and vegetable varieties
- Seed and seed technology
- Slovene Plant Gene Bank



Collecting expedition

- In the **1st year** a new accession belonging to *Eruca? or Diplotaxis?* spp was found in the village of Zapoge (46.17823N, 14.46273E; sub-alpine climate; central Slovenian region)
- The plant was transferred to greenhouse pot conditions to obtain mature seeds and multiplied in **2nd year**

Fig. 1. Mature seeds of collected *Eruca/Diplotaxis* spp.

Unknown *Eruca/Doplotaxis* spp. analysis

- Multiplied seeds were tested for **viability** → **89%**
- **Ploidy level** was measured with CyFlow Ploidy Analyser (Sysmex Partec) using DAPI staining (CyStain UV kit) and with UV let light at 365nm
- Results showed that the unknown accession is **diploid** belongs to ***Diplotaxis* spp**
- Accession is currently in the process to obtain SRGB number

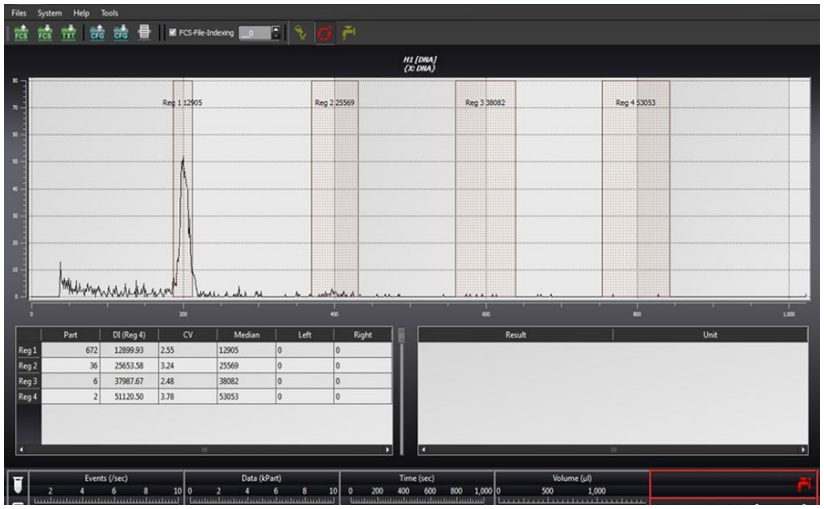


Fig. 2. Diploid plant/accession of *Diplotaxis* spp.

Overview in Gene bank collection

- In the 1st year **18 wild accessions** of *Brassicaceae* have been identified in SRGB → belong to *Diplotaxis* spp, some of them to *Diplotaxis tenuifolia* and *Diplotaxis muralis*

No. ACC	V bazi SRGB	GENUS	SPECIES	SPAUTHOR	CROPNAME	COLLSITE	LATITUTE	LONGITUDE	ELEVATION
1	SRGB04737	Diplotaxis	spp.	L.; tenuifolia	rocket, rucola	Biljenski griči, vinograd nad Biljami	4590--N	01364--E	80
2	SRGB04738	Diplotaxis	spp.	L.; tenuifolia	rocket, rucola	Velike Žablje, vinograd pod vasjo	4587--N	01384--E	100
3	SRGB04739	Diplotaxis	spp.	L.; muralis	rocket, rucola	Zavino, vinograd nad vasjo	4585--N	01348--E	170
4	SRGB04740	Diplotaxis	spp.	L.; tenuifolia + muralis	rocket, rucola	Ljubljana, ob cesti za Litostrojem	4608--N	01450--E	300
5	SRGB04741	Diplotaxis	spp.	L.	rocket, rucola	Lazaret, poti med njivami ob mejnem prehodu	4559--N	01373--E	10
6	SRGB04742	Diplotaxis	spp.	L.	rocket, rucola	Lazaret, poti med njivami ob mejnem prehodu	4559--N	01373--E	10
7	SRGB04743	Diplotaxis	spp.	L.	rocket, rucola	Ankaran, cesta proti Purissimi	4557--N	01376--E	60
8	SRGB04744	Diplotaxis	spp.	L.	rocket, rucola	Ajdovščina, cesta proti Planini	4587--N	01390--E	100
9	SRGB04745	Diplotaxis	spp.	L.	rocket, rucola	Ajdovščina, cesta poti Colu	4589--N	01394--E	280
10	SRGB04746	Diplotaxis	spp.	L.	rocket, rucola	Bled, na začetku naselja iz smeri Lesc	4637--N	01413--E	500
11	SRGB04747	Diplotaxis	spp.	L.	rocket, rucola	Vrhnika, na začetku naselja iz smeri Zaplane	4596--N	01428--E	350
12	SRGB04748	Diplotaxis	spp.	L.	rocket, rucola	Vrhnika, na začetku naselja iz smeri Zaplane	4596--N	01428--E	350
13	SRGB04749	Diplotaxis	spp.	L.	rocket, rucola	Pragersko, ob železniški progi	4639--N	01566--E	250
14	SRGB04750	Diplotaxis	spp.	L.	rocket, rucola	Biš, ob cesti skozi naselje - hišne št. 34-38	4653--N	01589--E	220
15	SRGB04751	Diplotaxis	spp.	L.	rocket, rucola	Ptuj, ob cesti Ptuj - Ormož, pred naseljem Spuhlja	4641--N	01591--E	220
16	SRGB04752	Diplotaxis	spp.	L.	rocket, rucola	Rače, ob prehodu čez železniško progo	4645--N	01567--E	260
17	SRGB04753	Diplotaxis	spp.	L.	rocket, rucola	Zagorje, ob mostu čez Savo, proti železniški postaji	4612--N	01499--E	240
18	SRGB04754	Diplotaxis	spp.	L.	rocket, rucola	Medlog pri Celju, med cesto in železnico ob Vrtnarski šoli	4623--N	01523--E	240

Diplotaxis spp. collection results

- In the 2nd year **wild accession collection** was sown for characterisation and seed multiplication
- Only a **few descriptors were evaluated**, as the floods at beginning of August 2023 destroyed the plants

Accesion	Leaf attitude	Leaf colour	Leaf length	Time of flowering	Taste
SRGB04737	elect	green	medium	early to medium	pleasant
SRGB04738	semi erect	green	short	early	herbaceous
SRGB04739	semi erect	green	short to medium	early to very early	herbaceous to pungent
SRGB04740	semi erect	green	short	medium	very pungent
SRGB04741	erect to semi erect	green	medium	medium	herbaceous
SRGB04742	erect to semi erect	green	short to medium	early to medium	pleasant
SRGB04743	semi erect	green	short to medium	early	herbaceous
SRGB04744	semi erect	green	short to medium	late	pungent
SRGB04745	semi erect	green	short to medium	late	pungent
SRGB04746	semi erect	green	short to medium	late	pungent
SRGB04747	horizontal	green	medium to long	late	pungent
SRGB04748	erect to semi erect	green	short to medium	late	very pungent
SRGB04749	semi erect	green	short to medium	late	pungent
SRGB04750	semi erect	green	short to medium	late	herbaceous to pleasant
SRGB04751	semi erect	green	short to medium	late	herbaceous
SRGB04752	erect	green	short to medium	late	herbaceous
SRGB04753	semi erect	green	short to medium	late	pungent
SRGB04754	semi erect to horizontal	green	short to medium	late	herbaceous

Thank you for attention!

Dr. Barbara Pipan

- Plant Genetics/Breeding
- Genetic diversity
- Population genetics

Dr. Lovro Sinkovič

- Food Science/Technology
- Crop Quality/Nutritional value
- Secondary metabolites

Dr. Vladimir Meglič

- Genetic Resources/ Genetics/Breeding
- Biotechnology/ Molecular breeding
- KIS coordinator/responsible