



**ECPGR – European Cooperative Programme for Plant Genetic Resources - „Increasing the efficiency of conservation of wild grapevine genetic resources in Europe “ – InWiGrape**

**Prof. dr Vesna Maraš, Milena Mugoša, Vesna Kodzulivic, Jovana Raičević, Sanja Šućur**

**Montenegro**

**Split 05.07.2016.godine**

Montenegro has very long tradition of grapevine growing - dates back from the pre-roman period

Although *Vitis vinifera ssp. sylvestris* widespread in Montenegro so far, there is poor written informations about it...

No of entry	Year of publication	Reference (authors, year of publishing, title of article, name of journal, No, pages)	Type of article (research or review)	Focus of article (e.g. identification, diversity, resistance)	Type of identification (morphology, DNA markers)	Population investigated (natural habitat, germplasm collection, both)	Country	Name of population
1	2012	PETROVIĆ, D., HADŽBLAHOVIĆ, S., VUKSANOVIĆ, S., MAČIĆ, V., LAKUŠIĆ, D. (2012.): Catalog of area types of Montenegro important for European Union (Podgorica – Belgrade – Zagreb)	Review	Genetic diversity	Morphology, ecology	Natural habitat	Montenegro	<u>Morača c</u>
2	2006	MRATINIĆ EVICA , MIRANOVIĆ KSENUA, M. KOJIĆ (2006): Wild fruit species of Montenegro, Belgrade, Agriculture faculty, (Podgorica: Pobjeda) 167. st., 365. st.,	Research	<u>Descriptin</u> of population wild plant, location,	Morphology, ecology	Natural habitat	Montenegro	<u>Piva and Komarnic canyon, I</u>
3	2002	STEŠEVIĆ DANIJELA (2002):Taxonomic-ecological and phytogeographical characteristics of hill <u>Gorica</u> ' flora in the Podgorica ( <u>Natura Montenegrina</u> ,Podgorica) 35. st.	Research	Location, genetic diversity	ecology	Natural habitat	Montenegro	Podgoric
4	2002	<u>Crmnica</u> heritage and future (2002): Proceedings of the symposium held at the <u>Viru</u> , 124 st.	Review	Location	ecology	Natural habitat	Montenegro	<u>Montener</u>

The project "Genetic diversity of vines in Montenegro", is the most comprehensive research of vitis sylvestris that will be done



Given the importance of germplasm vine for viticulture and wine sector in Montenegro, the company actively participates in international projects aimed at the identification, characterization and conservation of germplasm of our varieties.

As a result of SEED.net and SEE.ERA.net project activities, in 2012 Montenegro is for the first time presented its *Vitis* varieties in the Eu vitis database.

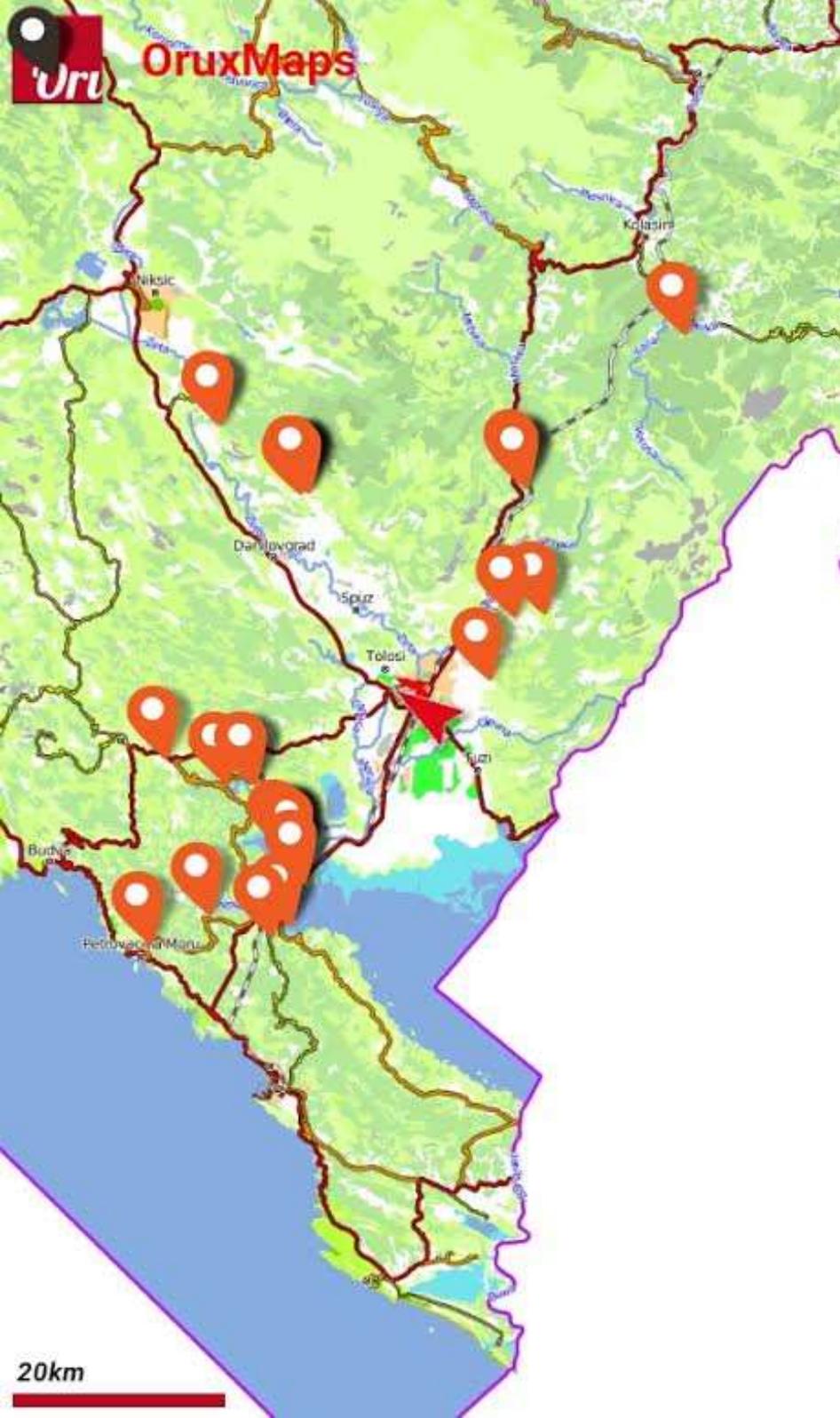
In order to further characterize the genetic diversity that exists in cultivated and wild populations of grapevine ( *Vitis vinifera* L. ) in Montenegro, the company "13. jul-Plantaže" a.d. in 2013. started with the project "Genetic diversity of vines in Montenegro", in cooperation with the Institute of Vine and Wine (ICVV) in La Rioja.





Within this project, in 2013 was marked 318 grapevine samples (*Vitis vinifera ssp. sativa* and *Vitis vinifera ssp. sylvestris*) in different localities from two Montenegrin viticultural regions.





## *Vitis vinifera ssp. sylvestris*

From all 318 marked vines, 27 are selected as *Vitis vinifera ssp. sylvestris*

Selected vines are:

- photographed
- located with the GPS
- young leaves for genetic analysis were taken

Samples were sent for analysis to the Institute of Vine and Wine in Logroño - La Rioja, where they did a genetic analyses.

All samples of grapevine (*Vitis vinifera ssp. sativa* and *Vitis vinifera ssp. Sylvestris*) from Montenegro have been genotyped for 48 SNP molecular markers, including three chloroplast SNPs.



Twenty five of them corresponded to **27 samples of the sylvestris form** of *Vitis vinifera* found in different populations along the country.

Clorotipos	Unknown	A	B	C	D
Sylvestris	0	18	0	4	3

Most *sylvestris* forms carried chlorotype A, while cultivated forms mainly displayed C and D chlorotypes.

Regarding the type of chloroplast, known as chlorotype, most *sylvestris* forms carried chlorotype A, which is common in Western natural populations of the Mediterranean Sea.



## We continued with research in 2016

From a total of 154 newly marked vines (*Vitis vinifera ssp sativa* and *Vitis vinifera ssp. Sylvestris*) 18 vines are supposed to be wild forms (*Vitis vinifera ssp. sylvestris*)

No	Code	Name	Region, subregion	Locality	GPS position
1	MNE 195	<i>Vitis sylvestris</i>	Basen Skadarskog jezera, podgorički subregion	Kuči, Vrbica	N 42° 27 184' E 19° 20 060' 218m
2	MNE 197	<i>Vitis sylvestris</i>	Basen Skadarskog jezera, podgorički subregion	Kuči, Kosor	N 42° 29 930' E 19° 21 743' 425m
3	MNE 200	<i>Vitis sylvestris</i>	Basen Skadarskog jezera, podgorički subregion	Kuči, Ubli	N 42° 30 068' E 19° 23 758' 486m
4	MNE 212	<i>Vitis sylvestris</i>	Basen Skadarskog jezera, podgorički subregion	Ka Kucima	N 42° 26 639' E 19° 20 007' 221 m
5	MNE 213	<i>Vitis sylvestris</i>	Basen Skadarskog jezera, crmnički subregion	Provale, Brčeli, Crmnica	N 42° 14 518' E 19° 00 788' 319 m
6	MNE 237	<i>Vitis silvestris</i>	Basen Skadarskog jezera, bjelopavički subregion	Gornje brijestovo, Danilovgrad	N 42° 36 525' E 19° 07 242' 457 m
7	MNE 238	<i>Vitis silvestris</i>	Basen Skadarskog jezera, bjelopavički subregion	Gornje brijestovo, Danilovgrad	N 42° 36 566' E 19° 07 168' 471 m
8	MNE 250	<i>Vitis silvestris</i> - ženski cvijet	Basen Skadarskog jezera, bjelopavički subregion	Posle raskrsnice za Gradac	N 42° 36 254' E 19° 06. 992' 332 m
9	MNE 251	<i>Vitis silvestris</i>	Basen Skadarskog jezera, bjelopavički subregion	Gornje brijestovo, Danilovgrad	N 42° 36 368' E 19° 07. 484' 330 m
10	MNE 252	<i>Vitis silvestris</i>	Basen Skadarskog jezera, bjelopavički subregion	Gornje brijestovo, Danilovgrad	N 42° 36 355' E 19° 07. 490' 333 m
11	MNE 264	<i>Vitis sylvestris</i>	Basen Skadarskog jezera, riječki subregion	Lješanska nahija, Dobarsko selo	N 42° 22 642' E 18° 57. 825' 310 m
12	MNE 269	<i>Vitis sylvestris</i>	Crnogorsko - primorski region, budvansko - barski subregion	Medigovići	N 42° 13 073' E 18° 56. 748' 374 m
13	MNE 271	<i>Vitis sylvestris</i>	Basen Skadarskog jezera, crmnički subregion	Crmnica, Boljevici	N 42° 13 424' E 19° 05. 029' 19 m
14	MNE 272	<i>Vitis sylvestris</i>	Basen Skadarskog jezera, crmnički subregion	Crmnica, Godinje	N 42° 13 961' E 19° 06. 288' 87 m
15	MNE 273	<i>Vitis sylvestris</i>	Basen Skadarskog jezera, crmnički subregion	Crmnica, Godinje	N 42° 13 962' E 19° 06. 277' 86 m
16	MNE 275	<i>Vitis sylvestris</i>	Basen Skadarskog jezera	Lesendro	N 42° 16 264' E 19° 07. 164' 6 m
17	MNE 276	<i>Vitis sylvestris</i>	Basen Skadarskog jezera	Lesendro	N 42° 16 266' E 19° 07. 154' 3 m
18	MNE 277	<i>Vitis sylvestris</i>	Basen Skadarskog jezera	Mala Cakovica	N 42° 17 366' E 19° 06. 978' 4 m
19	MNE 278	<i>Vitis sylvestris</i>	Basen Skadarskog jezera	Velika Cakovica	N 42° 17 457' E 19° 06. 581' 0 m
20	MNE 279	<i>Vitis sylvestris</i>	Basen Skadarskog jezera	Velika Cakovica	N 42° 17 510' E 19° 06. 580' 0 m
21	MNE 280	<i>Vitis sylvestris</i>	Basen Skadarskog jezera	Velika Cakovica	N 42° 17 538' E 19° 06. 579' 0 m
22	MNE 281	<i>Vitis sylvestris</i>	Basen Skadarskog jezera	Kamenik	N 42° 17 599' E 19° 06. 476' 0 m
23	MNE 282	<i>Vitis sylvestris</i>	Basen Skadarskog jezera	Kamenik	N 42° 17 787' E 19° 06. 029' 0 m
24	MNE 283	<i>Vitis sylvestris</i>	Basen Skadarskog jezera	Rijecki kanal	N 42° 21 305' E 19° 03. 796' 3 m
25	MNE 284	<i>Vitis sylvestris</i>	Basen Skadarskog jezera	Rijecki kanal	N 42° 21 295' E 19° 03. 762' 3 m
26	MNE 285	<i>Vitis sylvestris</i>	Basen Skadarskog jezera	Rijecki kanal	N 42° 21 319' E 19° 02. 025' 3 m
27	MNE 286	<i>Vitis sylvestris?</i>	Basen Skadarskog jezera, podgorički subregion	Prije mjesta Kupine, na putu za Kolasin	N 42° 36 573' E 19° 22. 476' 157m
28	MNE 287	<i>Vitis sylvestris?</i>	Basen Skadarskog jezera, podgorički subregion	Prije mjesta Kupine, na putu za Kolasin	N 42° 36 595' E 19° 22. 493' 157m



In the coming period we will monitor selected vines (with ampelographic and ampelometric) to determine their quality and with genetic analysis to select the most interesting, multiply them and make the national collection of wild grapevine (*Vitis vinifera ssp.sylvestris*) as we have already planted the national collection of autochthonous varieties from Montenegro.



***Thank you for your  
attention!***

