

On farm conservation of grapevine in Croatia

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Viticulture in Croatia today

- 20.941 ha in total;
- Average of vineyard - 0,26 ha (0,51 ha/producer)
- 41.118 grape producers, even 93% less then 1 ha;
- 1.624 wine producers, cca 4.500 labels, production in total 575.389 hl of wine
- 75 % of wine under AOC system;

regions	%
East Continental Croatia (Slavonia & Danube)	30,5
West Continental Croatia (Croatia Uplands)	22,2
Coastal Croatia (Istria, Kvarner & Dalmatia)	47,3

Viticulture regions and climatic zones



3 regions:

- Western Continental Croatia;
- Eastern Continental Croatia;
- Coastal Croatia (Istria, Kvarner and Dalmatia)

12 subregions...

B

CII

CII

CI

Graševina, Malvazija & Plavac mali - major grape varieties in Croatia



Grapevine varieties erosion

- ...many native varieties disappeared. Also, after *Phylloxera* time new varieties introduced from other countries. Number of varieties continuously decreased to the end of 20th century.
- many old varieties, used to be important missed...
- Now, 250 varieties, \approx 130 of them native. Mostly rare, neglected, 15 economically important



Start with preservation activities (since 1997)

Inventory of vinegrowing regions - visiting old vineyards...

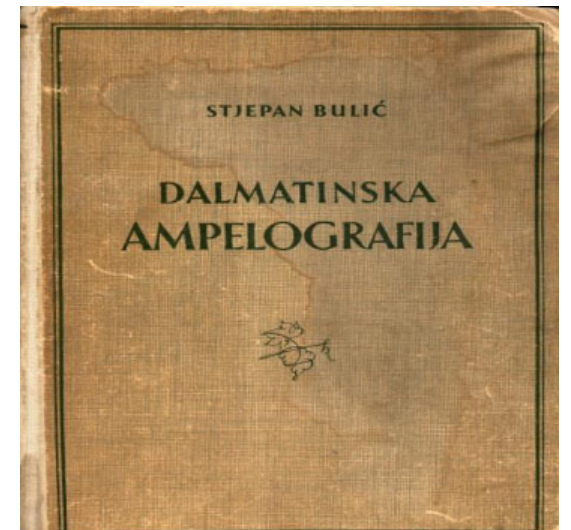
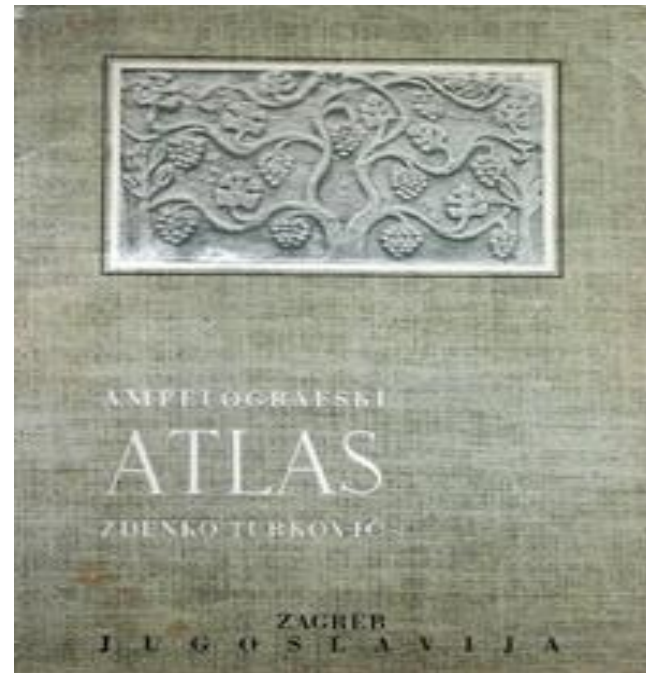
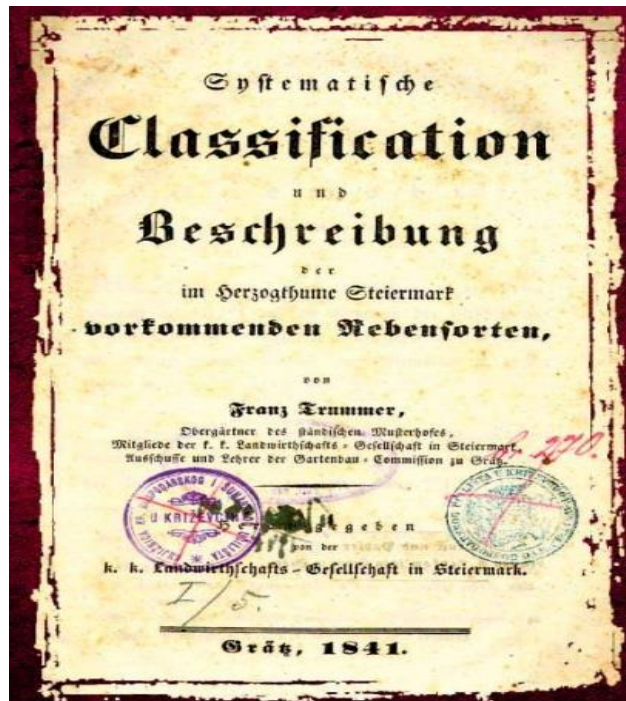




Autochthonous grape varieties

Literature search:

More than 400 cultivars in use (pre-phylloxera time)!



Establishing *ex situ* collection of Croatian native varieties since 2001: Faculty's experimental field Jazbina (National collection: 140 accessions, 3–7 plants/variety), 2 regional collections: Split (Dalmatia) and Poreč (Istria)



Example of revitalization and growers respond



Revitalization of some rare and old varieties – a case study: Crljenak kaštelanski (syn. Zinfandel) and Malvasija dubrovačka (syn. Malvasia delle Lipari). Good example why this work is valuable...

Malvasija dubrovačka



From \approx 300 vines (2002) to over then 50.000 vines planted (2010);

2009 International Malvasia wine competition (Mediterranean Malvasias): Malvasia dubrovačka no. 1 out of 250 samples!

Revitalization process of Tribidrag (Crljenak): since 2004



From 25 survived vines (2002) to 80 hectares, 12 wine producers (2016)



Feedback from growers and others

Rare variety	Potential Partner for on farm conservation (family winery)	Commercial wine available	Growers associations
Trnjak	Grabovac, Đuzel, Franić	Yes; 2 producers	Imotski
Svrđlovina	Mladen Anić	Yes; 1 producer	Zadar
Palagružanka	Ante Ivčević	No	Island of Vis
Crljenak viški	Ivčević, Senjanović	No	Island of Vis
Palaruša	Antonio Lipanović	No	Island of Vis
Ninčuša	Anton Kovač	No	Kaštela
Babica	Neven Vuina	Yes; 1 producer	Kaštela
Zlatarica vrgorska	Gašpar	Yes;	Vrgorac
Dobričić	Kaštelanac, Zanchi	Yes; 4 producers	Island of Šolta
Bilina Privlačka	Marko Glavan	No	Privlaka (Zadar)
Sokol	Zvonko Sever	Yes; 1 producer	Klanjec
Surina	Giorgio Clai	Yes; 1 producer	Istria

Announcement of the initiative

- **Meetings of professionals**
- Sabatina 2016
- 300 wine exhibitors
- Workshop about rare native cultivars
„Old grapevine varieties – innovative wines”
- Started in 2010
- Last year presented Trnjak (syn. Rudežuša)
- 6 growers/wine makers presented wines
- New scientific findings presented
- Technological and commercial aspect discussed
- Practical aspect discussed
- Market potential



Announcement of the initiative

- Meetings of professionals
- Wine Exhibition „Vinski podrum” Split 2017
- 85 wine exhibitors (wine producers)
- Workshop about rare varieties
- **Tribidrag, Dobričić, Svrđlovina, Malvasia dubrovačka**
- History, technology and other aspects discussed
- Wine makers presented wines



Palagružanka b.

- A very rare cv from island of Palagruža (seedling?);
- Saved by A. Ivčević, a small wine producer from the island of Vis;
- He started to graft and established a new vineyard, start to produce a wine;
- One of 14 selected agric. producers in EU project „Natura” (supported by Deutsche Bundesstiftung Umwelt), exhibition in EU-parlament (Bruxelless)...
- Very limited production, sold as „exclusive” wine



More other examples...



Use of descriptors – approach for identification and characterization

- First step checking for **true to type** – matching the morphological/commercial profile with profile described in old ampelography literature (mostly with Dalmatian ampelography, Bulić 1949)
- Names – synonyms - homonyms
- OIV descriptors limited number (**shoot, mature leaf, bunch and berry; time of budburst, time of ripening**)
- **6 SSR** markers of Genres081 + **3 SSR** GrapeGen06
- Safety duplicate in Croatian National germplasm collection



Report about national Croatia's regulation

- Wine law (National gazette No 96/03, 25/09, 22/11, 55/11, 82/13, 14/14)
- Croatian national list of grapevine cultivars (National gazette No 53/14)
- Every wine on the market has to be produced from one or more cultivars listed in National list
- 196 grapevine cultivars
- There are about 10-15 varieties not included in National list
- Process to include some old variety in National list is according to Ministry of Agriculture; few months



Conclusions

- On farm conservation could be very valuable for securing duplicates of grapevine cultivars in Croatia
- There are about 130 grapevine cultivars with presumed Croatian origin; among them 20-30 cultivars have commercial potential
- There are interest of Croatian wine producers for on farm conservation driven mainly by market niche, technological potential
- Wine growers and consumers in Croatia like old varieties - three main grapevine cultivars (Graševina, Malvazija istriana and Plavac mali) are traditional/native cultivars encompassing about 50% of wine production
- Definition of rules for on farm conservation need to be listed
- Joint EU initiative for old rare grapevine cultivars and possible common wine labeling on market could be of great importance for conserving – some producers are very interested in it;

Thank you for your attention

