



Long term fruits and grapes  
experiment at EF of Faculty of  
agriculture, University of Novi Sad,  
SERBIA

**Associate prof. Nenad Magazin**



# University of Novi Sad Faculty of Agriculture



*... founded in 1954.*



# University of Novi Sad

## - Organisation -

### 14 FACULTIES + 2 INSTITUTES

- Faculty of Philosophy
- Faculty of Agriculture
- Faculty of Law
- Faculty of Technology
- Faculty of Technical Sciences
- Faculty of Medicine
- Faculty of Sciences
- Academy of Arts
- Faculty of Sport and Physical Education
- Faculty of Economics in Subotica
- Faculty of Civil Engineering in Subotica
- Teachers' Training Faculty in Hungarian in Subotica
- "Mihajlo Pupin" Technical Faculty in Zrenjanin
- Faculty of Education in Sombor
- Institute of Lowland Forestry and Environment
- Institute of Food Technology





# Faculty of Agriculture

- Founded in 1954
- The oldest faculty within the University

## Facts and figures (number of students entering I year)

- Bsc studies – 680
- Integrated studies – 60
- Msc studies – 273
- PhD studies – 55

Teaching Staff - 246

Non-teaching staff - 135



# Faculty of Agriculture



## DEPARTMENTS (8):

1. Department of Field and Vegetable Crops
2. Department of Animal Husbandry
3. Department of Fruit growing, viticulture, horticulture and landscape architecture
4. Department of Agricultural Engineering
5. Department of Plant and Environment Protection
6. Department of Water Management
7. Department of Agricultural Economics
8. Department of Veterinary Medicine



# Department of fruit growing and viticulture



- Established in 1947 in Sremski Karlovci – **70 years of existence**
- Since 1971 a part of Faculty of Agriculture Novi Sad
- In 2006 name changed from Institute to Department for fruitgrowing, viticulture, horticulture and landscape architecture

**Experimental field for fruitgrowing**  
**Rimski Šančevi (30 ha)**

**UNIVERSITY**

Петроварадин  
Petrovaradin

Danube

**Experimental field for viticulture**  
**Sremski Karlovci (33 ha)**

**Experimental field for fruitgrowing**  
**Gladnoš – curently only field crops (20 ha)**





# Main activities in the Department (at experimental fields)



- Education
- Science
- Extension
- Nursery production
- Fruits & grapes production
- Vine production





# Experimental field for fruitgrowing Rimski Šančevi (30 ha) Founded in 1976

Mother trees  
(certified buds)

Cherry genotypes collection

Orchard  
2,3 ha  
(Apples, cherries, plums, apricots)

**Altitude:** 83 m a.s.l.  
**Soil:** degraded chernozem  
**Mean annual temp.** 11.3°C  
**Annual precipitation:** 583 mm  
**Irrigation:** on whole surface

Hangar

Labs and accomodation

Nursery shop

Greenhouses

# *Experimental field Rimski Šančevi*

## **OPEN FIELD “LAB” FOR FRUIT GROWING:**

- Testing fruit species and cultivars/rootstocks
- Testing new agronomical and pomological techniques in fruit growing and nursery production
- Breeding and selection



# Testing fruit species and cultivars/rootstocks

## Modern orchard on 2,3 ha (established in 2012)

Sweet cherry: 8 cultivars, 3 rootstocks

Apricot: 7 cultivars and selections, 2 rootstocks

Plum: 5 cultivars, 3 rootstocks

Apple: 4 cultivars, 2 rootstocks



# Sweet cherry

***Main target:*** to test introduced cultivars and rootstocks



# Sweet cherry

Forming trees



# Apricot

***Main target:*** to test cultivars  
and selections from  
domestic breeding program  
in high density system



# Apricot



## Plum

***Main target:*** to test cultivars and new, introduced rootstocks – orientation towards more intensive orchards





# Plums

11.5.2017.



# Apples

**Main target:** to promote high density apple planting



**Breeding and selection**  
***Prunus spp.* genotypes collection**  
**( $\approx$  100 genotypes)**



# Breeding and selection



Columnar apples (6 cultivars)

Apricots (5 cultivars)

Walnuts (5 cultivars)

Peaches 3 cultivars

....



# Recent releases (2016)



# Experimental field for fruit growing “Rimski Šančevi”

## NURSERY PRODUCTION

### Annual production of:

- 30.000-50.000 top trees
- 20.000-60.000 vine grafted plants
- 400.000-500.000 certified budwood and graftwood
- 15 ha of field crops (soybean, wheat, peas)



Long term trials with:



Grafted walnut trees

Grafted hazelnut trees



# Experimental field for viticulture in Sremski Karlovci





# EXPERIMENTAL FIELD FOR VITICULTURE – SREMSKI KARLOVCI



The whole research work in viticulture could be systematized into four sections:

- Ampelographic research (**Ampelographical collection** with over 800 genotypes)
- **Grapevine breeding**
- Grapevine physiology
- Grapevine agrotechnique

# EXPERIMENTAL FIELD FOR VITICULTURE – SREMSKI KARLOVCI

## Ampelographical collection :

1. *Vitis Vinifera* varieties (245)
2. Resistant varieties (210)
3. DUS and VCU (378)

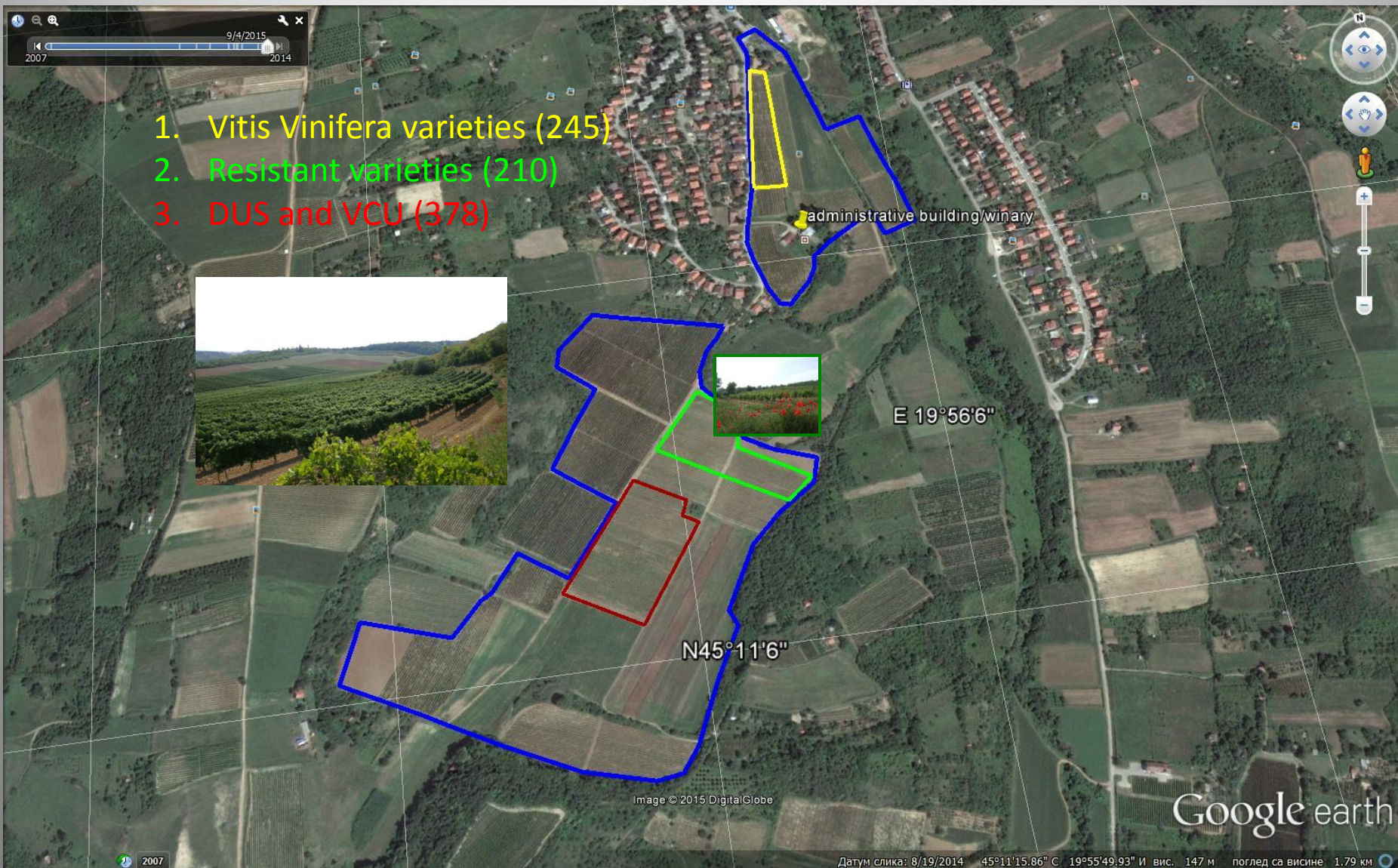


Image © 2015 DigitalGlobe

Google earth

Датум слика: 8/19/2014 45°11'15.86" S 19°55'49.93" И вис. 147 м поглед са висине 1.79 км

# EXPERIMENTAL FIELD FOR VITICULTURE – SREMSKI KARLOVCI

Depending on the **plant breeding objectives**, three phases in creating new grape varieties were determined:

## **PHASE 1 (6 varieties)**

**Objective:** Improvement of the quality of cultivated autochthonous grape vine varieties (Smederevka, Kevidinka, Prokupac, Kadarka) by its cross-breeding with top quality Western European grape varieties.

***PROBUS - VINUM RECTORIUM***  
***University of Novi Sad***

***The best red wine – Internation***  
***University wines competition in***  
***Maribor (Slovenia) 2016***



# EXPERIMENTAL FIELD FOR VITICULTURE – SREMSKI KARLOVCI

## PHASE 2 (7 varieties)

**Objectives:** Resistance to low winter temperatures

Grape and wine quality

Cross-breedings include hereditary base of Eastern Asian species called *Vitis amurensis* which is known for its high resistance to low temperatures, tolerance to fungal diseases and short vegetation.

**PETRA** – progeny of Traminer  
High resistance to low temperatures



# EXPERIMENTAL FIELD FOR VITICULTURE – SREMSKI KARLOVCI

**PHASE 3** (9 varieties)

**Objectives:** Increase in fungal disease resistance

+

Better grape and wine quality

The hereditary base of North American species highly resistant to *Plasmopara viticola* and *Oidium tuckeri* is expanded by **Seyve Villard** hybrid and its varieties

**DIONIS** – RELEASED IN 2017.

Red grape, high resistance on downy mildew



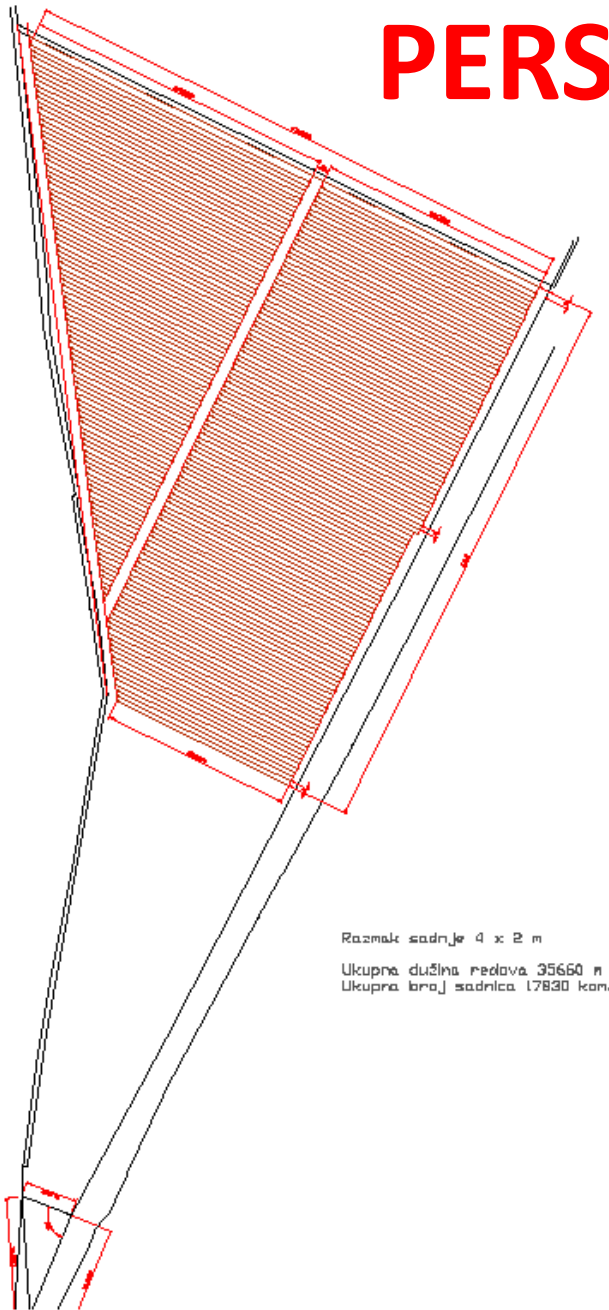
# Long term experiments with different varieties and rootstocks



# PERSPECTIVE

- From 2017: **IPA CRO-SER Cross border project CROSS TREE (220.000 EUR)**
- Few more project applications at state and international level

# PERSPECTIVE



Razmak sadnje 4 x 2 m  
Ukupna dužina redova 35660 m  
Ukupno broj sadnica 17830 kom.

- **Experimental field “Gladnoš”** – Project for establishing 14 ha of sour cherry orchard in 2019. Nursery plants are being developed.