Genetic resources and cherry production in Bosnia and Herzegovina

Gordana Đurić1,2, Nikola Mićić2,1, Miljan Cvetković2

University of Banja Luka

1) Genetic Resources Institute 2) Faculty of Agriculture

Đurić, Mićić, Cvetković, UNIBL; Genetic resources and cherry production in BiH; COST Action FA1104; 1st Working Group and 2nd Management Meetings, 21-23 November 2012, Palermo.
Territory of Bosnia and Herzegovina was exposed to the influence of different civilizations throughout the history.

Paunović and Mićić (1997) indicate results of earlier researches within the area of Yugoslavia and according to that there are 124 registered wild fruit species and their relatives.

Regarding studies on germplasm, forest fruits are of huge importance (Mićić et al. 1987, Miletić et al. 1997).

Paunović and Mićić (1997) concluded that area of Bosnia and Herzegovina, as well some other parts of former Yugoslavia, could be considered as gene centre for species of wild fruits and their relatives from a number of genera: *Malus, Pyrus, Chaenomeles, Sorbus, Crategus, Mespilus, Eriobotrya, Prunus, Amygdalus, Juglans, Corylus, Castanea, Cornus, Morus, Sambucus, Fragaria, Ribes, Rubus, Rosa, Ficus, Punica, Zizyphus, Citrus.*
First scripts about fruit cultivation in Bosnia and Herzegovina area date from period of Ottoman Empire (Vitolović 1949), but first registers and statistics on fruit growing were done from 1882 till 1896 during Austria-Hungary Empire (Bubić 1977).

Some fruit collections in BiH were established as educational fields at agricultural faculties and schools in fifties (Betanija/Sarajevo; Goražde), but during last decades of past century majority of these collections were totally destroyed.

A few collecting mission on germplasm were done in BiH in past:
- Pear autochthonous cultivars collecting mission on Balkans, between 1976 and 1980 (van der Zwet et al, 1978),
• During 80’s through “SFRJ Strategy of Technological Development” it was planned to establish Yugoslav Plant Gene Bank as federal institution,
• Within this project all relevant institutions from BiH were involved.
• Data and material from that period are not saved on appropriate manner or is lost.
SEEDNet
South Eastern European Developing Network on PGR 2004-2010

- SEEDNet partners:
  1. Albania
  2. Croatia
  3. BiH - Federation f B&H
  4. BiH - Republika Srpska
  5. FYR Macedonia
  6. Kosovo
  7. Montenegro
  8. Serbia
  9. Slovenija
 10. Romania
 11. Bulgaria
 12. Moldova
 13. Hungary

Đurić, Mićić, Cvetković, UNIBL; Genetic resources and cherry production in BiH;
SEEDNet
Objectives

- Establishment of national PGR strategies and work plans
- Strategies for conservation and sustainable utilisation of PGR at the national and regional level
- Established standards and improved conditions for the conservation of PGR
- National inventories of PGR
- Documentation on PGR material
- Network activities and projects on conservation and utilisation
SEEDNet
Working Groups

• Fruits and Vitis
• Vegetables
• Industrial Crops
• Fodder Crops
• Cereals and Maize
• Medicinal and Aromatic Plants

Bosnia and Herzegovina become an ECP GR member in 2008, during the last year of the VII phase. Implementation of ECP GR activities are organized on the base of entity’s SeedNet working groups.

11/29/2012

Đurić, Mićić, Cvetković, UNIBL; Genetic resources and cherry production in BiH; COST Action FA1104; 1st Working Group and 2nd Management Meetings, 21-23 November 2012, Palermo.
<table>
<thead>
<tr>
<th>Br.</th>
<th>Accession</th>
<th>Owner</th>
<th>Address</th>
<th>Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Banjalučka crnica</td>
<td>Bakara Dušan</td>
<td>Kriškovci bb</td>
<td>Laktaši</td>
</tr>
<tr>
<td>2.</td>
<td>Cipov</td>
<td>Dakić Milan</td>
<td>Donja Jurkovica bb</td>
<td>Gradiška</td>
</tr>
<tr>
<td>3.</td>
<td>Bjelica - Biljur</td>
<td>Bakara Dušan</td>
<td>Kriškovci bb</td>
<td>Laktaši</td>
</tr>
<tr>
<td>4.</td>
<td>Crveni hrušt</td>
<td>Agricultural high school</td>
<td>Drakulić, Banjaluka</td>
<td>Banja Luka</td>
</tr>
<tr>
<td>5.</td>
<td>Ašlamka</td>
<td>Ivan Stipo</td>
<td>Ivanjska 26</td>
<td>Banja Luka</td>
</tr>
<tr>
<td>6.</td>
<td>Azijanka</td>
<td>Debeljak Jakov</td>
<td>Šargovac br. 274</td>
<td>Banja Luka</td>
</tr>
</tbody>
</table>


Master thesis. University of Banjaluka, Faculty of Agriculture
MORPHOMETRIC AND MERISTIC CHARACTERISTICS OF THE FRUIT OF INDIGENOUS GENOTYPES OF WILD CHERRY PRUNUS AVIUM L. OF TUZLA REGION
Sead NOĆAJEVIĆ, Džemail FERHATOVIĆ, Hrustem SMAILHODŽIĆ, Said KARIĆ
University of Tuzla
Second International Colloquium „BIO DIVERSITY – THEORETICAL AND PRACTICAL ASPECTS”
3. 12. 2010, Sarajevo, Bosnia and Herzegovina; Special Editions CXLVIII, Department of Natural Sciences and Mathematics, Proceedings 22, 279-292.
Cherry genetic resources in BiH

<table>
<thead>
<tr>
<th>Cherry Variety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crvena trešnja</td>
</tr>
<tr>
<td>Bijela trešnja, Bijela ašlama</td>
</tr>
<tr>
<td>Aprilka (Mostarka)</td>
</tr>
<tr>
<td>Đurđevka</td>
</tr>
<tr>
<td>Alica</td>
</tr>
<tr>
<td>Rani hrušt</td>
</tr>
<tr>
<td>Kasni hrušt</td>
</tr>
<tr>
<td>Gorki hrušt</td>
</tr>
<tr>
<td>Badovinski hrušt</td>
</tr>
<tr>
<td>Aršlama</td>
</tr>
<tr>
<td>Karaašlama</td>
</tr>
<tr>
<td>Crvena ašlama</td>
</tr>
<tr>
<td>Hrušt</td>
</tr>
<tr>
<td>Bosanlija</td>
</tr>
<tr>
<td>Azijatka</td>
</tr>
<tr>
<td>Divljaka</td>
</tr>
</tbody>
</table>

Đurić, Mićić, Cvetković, UNIBL; Genetic resources and cherry production in BiH; COST Action FA1104; 1st Working Group and 2nd Management Meetings, 21-23 November 2012, Palermo.
Bosnia and Herzegovina has great potentials in agriculture and food processing sector thanks to numerous favorable conditions such as:

- over 1.5 million hectares of agricultural land;
- excellent climate and fertile soil, as well as high quality water;
- most soils do not contain chemical fertilizers and there is no practice of using pesticides.

In addition, BH has a long tradition in this sector, as well as experienced and skilled workforce. All these conditions create an excellent environment for the production of different varieties of fruits and vegetables, with the possibility of harvesting and gathering crop and fruit as many as three times a year.
Sweet cherry production in Bosnia and Herzegovina is mostly based in Herzegovina (appr. 70% of the total production).

The most common varieties are: Aprilka, Rani i Kasni hrušt, Alica; than Germersdorfer, Lyons, Hedelfinger, Volovsko Srce, Van, Bing, Burlat, as well some new cultivars.

The rootstocks is mainly seedlings of *Prunus mahaleb*, and in last decade some orchards are on Gisela (G5 and G6), Colt, Santa Lucia.

Production of sour cherry in the continental part of Bosnia and Herzegovina is mainly related to growing of the Oblačinska variety, and in Herzegovina, due to different climate, Maraska variety is grown.
### Cherry production in BiH

#### Number of bearing tress of sweet cherry and production

<table>
<thead>
<tr>
<th></th>
<th>2011*</th>
<th>1990**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RS</td>
<td>FBiH</td>
</tr>
<tr>
<td>Number of bearing tress</td>
<td>304 000</td>
<td>407 501</td>
</tr>
<tr>
<td>Yield kg/tree</td>
<td>15,6</td>
<td>14,4</td>
</tr>
<tr>
<td>Production (t)</td>
<td>4 799</td>
<td>6 191</td>
</tr>
</tbody>
</table>

According to official statistical data, the number of sweet cherry trees is around 750,000. Total yield is approximately 11,000 tons, with an average yield of about 14 kg per tree.

The number of yielding sour cherry trees was approximately 454,897, with the total yield of approximately 3,803 tons, and with an average yield per tree of about 8.4 kg.


11/29/2012

Durić, Mićić, Cvetković, UNIBL; Genetic resources and cherry production in BiH; COST Action FA1104; 1st Working Group and 2nd Management Meetings, 21-23 November 2012, Palermo.
But, there are no well data on whole fruit production in BiH, regarding the total land under orchards. Official statistics data are made in line with Cadastre evidences, but these data are not real.

According these data, there is 96,000 ha of orchards and vineyards. Some analyses show there is no more than 10% of this land surface.

It is necessary to make a census of fruit tress in orchards.
Production before 1992

$10 \times 10 \text{ m} = 100 \text{ tress / ha}$

Đurić, Mićić, Cvetković, UNIBL; Genetic resources and cherry production in BiH; COST Action FA1104; 1st Working Group and 2nd Management Meetings, 21-23 November 2012, Palermo.
or

\[8 \times 10 \text{ m} = 125 \text{ tress/ ha}\]
Đurić, Mićić, Cvetković, UNIBL; Genetic resources and cherry production in BiH; COST Action FA1104; 1st Working Group and 2nd Management Meetings, Palermo.
New cherry orchards in Mostar region

Đurić, Mićić, Cvetković, UNIBL; Genetic resources and cherry production in BiH;
Đurić, Mićić, Cvetković, UNIBL; Genetic resources and cherry production in BiH; COST Action FA1104; 1st Working Group and 2nd Management Meetings, 21-23 November 2012, Palermo.
Đurić, Mićić, Cvetković, UNIBL; Genetic resources and cherry production in BiH;
Đurić, Mićić, Cvetković, UNIBL; Genetic resources and cherry production in BiH; COST Action FA1104; 1st Working Group and 2nd Management Meetings, 21-23 November 2012, Palermo.
Đurić, Mićić, Cvetković, UNIBL; Genetic resources and cherry production in BiH;
THANK YOU FOR YOUR ATTENTION!