Chemical Control of Grapevine Main Pathogens under the Climate Conditions of Baia Mare

Lucia MIHALESCU1*, Oana MARE ROSCA1, Zorica VOSGAN1, Anca DUMUTA1, Mirela CORDEA2, Aurel MAXIM2

1 Department of Biology, Technical University of Cluj-Napoca, North University of Baia Mare Center, Baia Mare, no.76 Victoriei Street, luciamihalescu@yahoo.com
2 University of Agricultural Sciences and Veterinary Medicine Cluj Napoca

Abstract. The experiences were performed in the Tautii Magheraus locality, located at 3 km from Baia Mare. Five variety of grapevine were studied: Cramposie, Feteasca regala, Muscat Ottonel, Perla de Zala and Italian Riesling. The resistance of the cultivated grapevine varieties against the attack of the main phytopathogenic fungi: Plasmopara viticola, Uncinula necator, Botryotinia fuckeliana, in terms of the 2011 year, was studied. In order to assess the resistance of the grapevine varieties against the phytopathogenic agents attack, the frequency, intensity and intensity of attack were determined. The most sensitive to the attack of downy mildew on leaves was the Italian Riesling, with a degree of attack of 71.5%; and the most resistant variety was Perla de Zala, with a degree of attack of 26%. The most resistant to the attack of grape powdery mildew on leaves was the Muscat Ottonel variety, with a degree of attack of 8.1%; and the most sensitive was the Italian Riesling variety with 18.1%. In case of the attack of downy mildew on grapes, the most sensitive was the Italian Riesling variety with a degree of attack of 11.5%; and the most resistant was Perla de Zala with 2.5%. During the vegetation of the 2011 year, the chemical protection was performed with fungicides that were administered by seven sprayings.

Keywords: varieties, attack, resistance, phytopathogenic fungi, sensitive

Introduction. Grapes, must and wine, rationally consummated, represent for man an important food source, full of sugars, organic acids and mineral salts, vitamins and amino acids, which, once involved in the metabolic processes, have an energetic mineralizing effect (Cotea, 2000). Most of the vineyards are located on eroded colluvial soils (Bulencea, 1975). The therapy of grapevine gave good results by applying the chemical treatments (Parvu, 1996).

Aims and objectives. The aim of the experimental study was to find the resistance of the vine varieties to the attack of phytopathogenic fungi. The followed objectives, based on appreciating the resistance; respectively the sensitivity versus these diseases on different vegetative organs for every variety, and the phytosanitary treatments efficacy were monitored.

Materials and methods. The experiments were carried out in the locality Tautii Magheraus, located at 3 km from Baia Mare. Two species of grapevine were studied: Cramposie and Perla de Zala. The resistance of the cultivated grapevine varieties against the attack of the main phytopathogenic fungi: Plasmopara viticola, Uncinula necator, Botryotinia fuckeliana, in terms of the 2011 year, was studied. The frequency, intensity and grade of attack were determined for the resistance assessment.

Results and discussions. The Cramposie variety presented a medium resistance to the 3 monitored pathogens. For mildew, although the attack on untreated control leaves was 50.6%, on bunches it was much less, of 37.8%. The 7 phytosanitary treatments reduced the mildew attack degree to 7.6% on leaves and 5.4% on bunch; for powdery mildew 2.2% on leaves and 1.4% on bunch; grey rot 3.2%. (Tab. 1).
The phytosanitary treatments efficacy in combating the monitored diseases (*Cramposie* variety) - 2011

<table>
<thead>
<tr>
<th>Plantation type</th>
<th>Pathogene Agent</th>
<th>Leaves</th>
<th>Grapes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treated plantation</td>
<td><em>Plasmopara viticola</em></td>
<td>32.5%</td>
<td>23.4%</td>
</tr>
<tr>
<td></td>
<td><em>Uncinula necator</em></td>
<td>16.5%</td>
<td>13.3%</td>
</tr>
<tr>
<td></td>
<td><em>Botryotinia fuckeliana</em></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Untreated plantation</td>
<td><em>Plasmopara viticola</em></td>
<td>64.2%</td>
<td>78.8%</td>
</tr>
<tr>
<td></td>
<td><em>Uncinula necator</em></td>
<td>45.0%</td>
<td>20.0%</td>
</tr>
<tr>
<td></td>
<td><em>Botryotinia fuckeliana</em></td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

The *Perla de Zala* variety proved good resistance to mildew and grey rot. For the untreated control, the attack degree of mildew was 26% on leaves and 15% on grapes. For grey rot, the attack degree was 4.9%. The applied treatments had an efficiency of over 80% for mildew, 79.6% for grey rot, and for powdery mildew 73% on leaves and 86.9% on grapes (Tab. 2).

**Conclusions**

- The most resistant variety to the mildew attack on leaves was the *Perla de Zala* variety, with an attack degree of 26.0%.
- As about the powdery mildew attack on grapes, the *Cramposie* variety proved to be the most resistant, with an attack degree of 1.4%.
- The *Perla de Zala* variety was more resistant to the attack of grey rot, an attack of 4.9% being recorded.

**REFERENCES**