

RESULTS REGARDING ON THE DYNAMICS OF THE ATTACK OF THE PATHOGEN *UNCINULA NECATOR* IN THE CLIMATIC CONDITIONS OF THE YEAR 2021, IN THE SEGARCEAS WINE FARM-ARCHDIOCESE CRAIOVA, DOLJ COUNTY

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ABSTRACT

*The Archdiocese of Craiova cultivated 40 ha with vines within in the locality of Segarcea the main varieties being both varieties for Merlot, Cabernet Sauvignon, Sauvignon Blanc, Romanian Tămâioasă and Chardonnay. The phytopathogenic agent of the wine *Uncinula necator*, was monitored in terms of the evolution of the attack on the crop, in correlation with the climatic conditions and the way of reaction of the varieties to the attack of the phytopathogen was observed.*

The National Phytosanitary Authority, through the Dolj Phytosanitary Office, in the climatic conditions of year 2021, issued warning bulletins based on the basic criteria: biological, phenological and ecological of the vine.

INTRODUCTION

Viticulture is an important sector of agriculture that brings multiple benefits in the economy of our country, because it capitalizes very well on sandy, sloping lands and is an important source of raw materials.

The vine, a plant with great ecological values, during the vegetation period is attacked by several main pathogens whose attack, in the absence of phytosanitary treatments can endanger not only the production of the current year but even the existence of vineyards (Ilișescu, 2004; Tomoioagă et al., 2006).

Ioan Roșca, 2018, recommend for the success of the control programs, that they be based on the knowledge of the reaction of the varieties to the attack of each pest organism, and the warning of the treatments should be based on the concomitant use of the biological, ecological and phenological criteria.

Bădărău et al., 2007, recommends for obtaining high quality and good harvests, that the treatments against the pests in the vine plantations should be done strictly adhering to the recommended doses and the application techniques.

MATERIAL AND METHOD

In order to control the previously reported pests, in the Segarcea vineyard, Craiova Archdiocese, 6 phytosanitary treatments were carried out according to the warning bulletins issued by the National Phytosanitary Authority, through the Dolj Phytosanitary Office and a series of products were applied within the treatment schedule shown in table no. 1

Table 1**Treatment scheme applied in 2021 in the Segarcea winery, Craiova Archdiocese**

No. treatment	Used product	Active substance %	Dose/ha	Target organism
1	Karathane Gold 350 EC	Meptyldinocap - 0,35%	0,5l	<i>Uncinula necator</i>
2	Flint Max 75 WG + Kumulus	Trifloxystrobin - 25% and tebuconazole - 50% Sulf 80%	0,17kg 3kg	<i>Uncinula necator</i>
3	Kumulus + Talendo	Sulf - 80% Proquinazid - 20%	3kg 0,4l	<i>Uncinula necator</i>
4	Kumulus + Karathane Gold	Sulf - 80% Meptyldinocap - 0,35%	3 kg 0,5l	<i>Uncinula necator</i>
5	Kumulus	Sulf - 80%	3 kg	<i>Uncinula necator</i>
6	Kumulus	Sulf - 80%	3 kg	<i>Uncinula necator</i>

The 6 treatments within the treatment scheme were applied to the following dates: 25.05.2021; 12.06.2021; 28.06.2021; 15.07.2021; 3.07.2021; 28.10.2021.

The estimation of the attack produced by the micromycetes *Uncinula necator* was performed on the leaves and bunches as appropriate, according to the methodologies used in the Forecast and Warning Stations.

The frequency (F%), intensity (I%) were established and the degree of attack (DA%) was calculated, the data collected being processed according to the usual formulas (Dumitriu D.G., Mitrea R., 2021).

RESULTS AND DISCUSSIONS

In the climatic conditions of the year 2021, following the 6 treatments, as shown in table no.2, the degree of attack of the *Uncinula necator* fungus registered different waves depending on the variety and the attacked organ.

The year 2021, characterized as a warm year, was favorable for the development of the phytopathogen *Uncinula necator*, so that the 6 treatments applied during the vegetation period controlled the phytopathogen.

Table 2**Biological efficacy of some products in combating *mildew* in some vine varieties**

Variety	Attack on the leaf			Attack on the bunches		
	F%	I%	DA%	F%	I%	DA%
Merlot	21,40	0,98	0,23	20,47	1,49	0,28
Cabernet Sauvignon	21,94	1,60	0,35	20,67	2,18	0,45
Romanian Tămâioasă	33,76	3,02	1,04	25,70	4,78	1,21
Sauvignon Blanc	30,24	2,78	0,85	25,21	3,49	0,88
Chardonnay	24,52	3,75	0,92	22,32	4,35	0,97

For red wines, DA values on leaves were between 0,23% for Merlot and 0,35% for Cabernet Sauvignon, while for white wines, they were slightly higher, by 0,85% in the Sauvignon Blanc variety, respectively 1,04% in the Romanian Tămâioasă variety.

The values of the degree of attack on bunches were slightly higher, being between 0,28% in the Merlot variety and 1,21% in the Romanian Tămâioasă variety.

The degree of attack regardless of the variety and the analyzed organ was influenced to a greater extent by the incidence of the attack, compared to its virulence (Dumitriu D.G., Mitrea R., 2020).

The frequency of the attack (F%) on the leaves, as seen from the data in the same table, had values between 21,40% and 33,76%, while the intensity values (I%) of the attack on the leaves were between 0,98% and 3,75%.

The frequency of the attack on bunches had values between 20,47% and 25,70% respectively, and the intensity of the attack oscillated between 1,49% and 4,78%



Figure 1 - Mildew attack on leaves in 2021-Graphical Representation - original

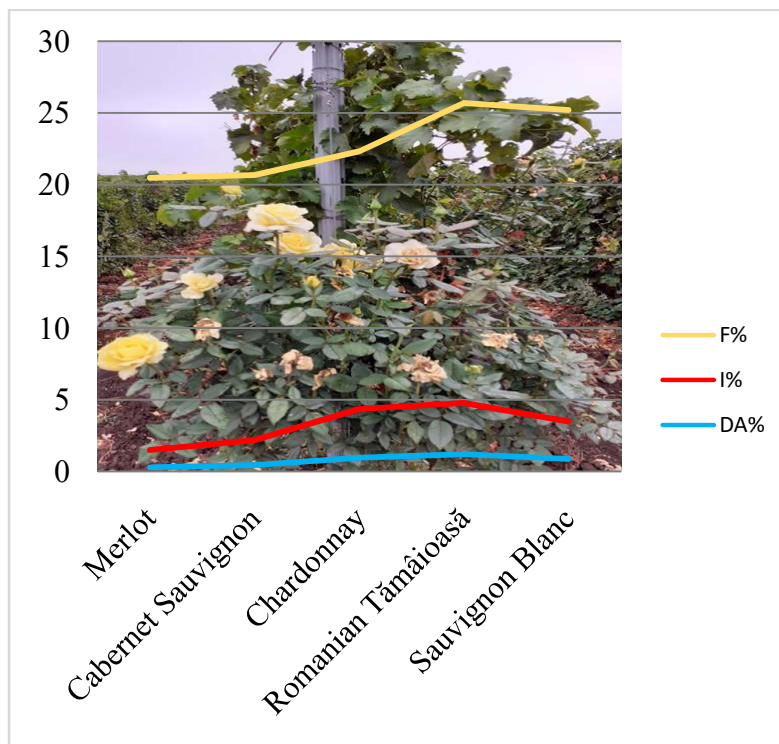


Figure 2 - Mildew attack on bunches in 2021 - Graphical Representation - original

CONCLUSIONS

This phytopathogenic agent shows symptoms on all organs of the plant from the first stages of development and if it is identified in time, high yields of grapes can be obtained, by stopping the negative effect of its attack.

The location of the experience is characterized by ecopedological conditions favorable to the cultivation of vine but also to the development of key pathogen for this plant, *Uncinula necator*.

The 5 varieties of vines studied under the direct influence of the applied treatment scheme and the climatic conditions, behaved differently at the attack.

Good resistance to attack of the phytopathogen *Uncinula necator* not only on the leaves but also on the bunches, they had especially the varieties Merlot and Cabernet Sauvignon.

The introduction of the Talendo fungicide in the treatment scheme was beneficial for the 5 varieties of vines in the culture, because the fungicide contains the active substance Proquinazid which is an active substance specialized in combating powdery mildew with great efficiency, due to its trivalent action, contact, local systemic and vaporization.

Proquinazide is a new active substance in the quinazoline group that acts specifically against powdery mildew.

The unique effect of gaseous tension (vapor phase) increases its range by up to 10 cm from the place of application and allows penetration in hard to reach places (eg closed bunch).

Protects untreated tissues as well as newly formed tissues after treatment.

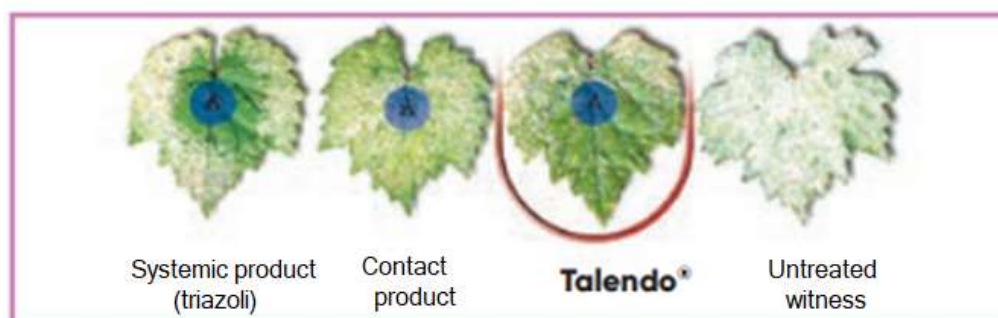


Figure 3- The action of the fungus Talendo - Corteva Agriscience

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