CHEMICAL PROTECTION AGAINST VINE GRAPE

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Abstract
Ashes of the vine (Uncinula negator) are among the most important diseases of grapes and causes damage to try this crop.
This one-year research has been done with the aim of determining the number of spraying during the vegetation, setting the coefficient of the disease (infection rate) in the leaves and in horde and efficiency in fighting pathogen preparations.
The experiment is located in the municipality of Rahovec (in object - REZINA) and what we Frankovka cultivars and Burgundez black and is researched in 2012.
To combat these chemical agents are used ash: Quadris (Azoksistrobin), Cosa (prep.Squlfuri '), Bayleto (Triadimefon), Tilt 250 EC (Propikonazol), EC Karathan the (Dinokap), anvil (Heksakonazol), Rubigan EC (Fenarimol), and Saprol EC (Triforin).
Vine protection from grace has made a total of six treatments during all vegetation. Evaluation of the disease is four times during the vegetation: first assessment is made in connection phase grains, then after every 15-20 days of a rating.
Cultivar more durable against ash is shown Burgundezi black leaf disease index 14.48%, and 24.83% encampments, while cultivar Frankovka leaf disease index has been 18.57%, whereas in 29 encampments , 94%. while in terms of efficiency of chemicals to combat ash proved most successful preparations are used in variant B2 (Bayleton and Tilt 250 EC) where foliar disease index was 8.60%, while in 13.75% encampments. These results are highly significant compared with other options.
After processing the experimental data through analysis of variance (ANOVA) and LSD test 5% and 1%, it is concluded that significant statistical differences existed in terms of grape cultivars also between chemicals used to combat ash.

Keywords: vine grace, chemical preparations and vine cultivars

Introduction

Until the start of the nineteenth century, Vine yards in Europe are developed with enough intensity to speed while the appearance of diseases imported from America (Grace 1845 and blight with 1878) viticulture development intersects. During these years, starting with the study of these diseases and research chemicals for protection from these pathogenic vine. Most important pathogens which affect grape vine: blight (Plasmopara VITICOLE), Grace (Uncinula negators) and decay (bortytis cinerea). Apart from these affect grape vine pathogens also cause other diseases, such as: viruses, nematodes and bacteria.
Unlike the blight, vine grace place throughout the period of vegetation, even without the presence of moisture and the front range of temperatures from 6-30 degrees (Josifovic 1923, Delep 1954, Velfzien-STENZEL 1959).
Pathogen affects all green parts of the plant, but damage to larger encampments. In suitable conditions for the development of ash can reduce performance up 80% (Susuri, 1995). In addition to damages in yield reduction (when the infection is high) ash adversely affects the reduction of the wine.
Except for the production of wine, in our country there are cultivars table where the grapes used for fresh consumption. Before the last war our country has been about 13.000 ha vines (38% this surface in the public sector and 62% in the private) and sufficient capacity for industrial processing of grapes. In 2006, our country has been about 4538 ha of vineyards with growth trends. Average yield of grapes is 7 t/ha, while the consumption of grape table revolves around 7kg per capita, while 2l wine per capita.

Material and Methods

This research was done in 2012 and that two vine cultivars (Frankovka and black Burgundez). These cultivars are known for the production of quality wines. The experiment is located in the wine growing region of Rahovec (object - REZINA).
To fight ash and assess the preparations are using these chemical preparations: Quadris (Azoksistrobin) in conc. 0,075 %, Cosa (sulfur preparation) into conc. 0.3%, Bayleton (Triadimefon) in the conc. 0,02 %, Karathane EC (Dinokap the) konc.0,1 %, anvil (Heksakonazol) in conc.0.065 % Rubigan (Fenarimol) conc. 0.03 % and Saprol (Triforin) to the conc.0.1 %. These preparations are used in seven variants (combinations) and that:

1. Quadris (azoksistrobin) for 2-3 treatments before, COSAN then (Preparations Sulfur).
2. Bayleton (triadimefon) + Tilt 250 EC (propikonazol), interchangeable application.
3. Bayleton (triadimefon) + Karathan EC (dinokap), interchangeable application.
4. Tilt 250 EC (propikonazol) + Anvil (heksakonazol), interchangeable application.
5. Rubigan EC (fenarimol) + cosa (prep. sulfur), interchangeable application.
6. Saproll (tariforin) + Karathan EC (dinokap), interchangeable application.
7. Control.

Spray was used pumps with a capacity of 10 l. Each variant located between the two towers (10 m. Length) so are followed by the 10 branches of the vine in two repeat for each cultivar. Tactile assessment of the disease is done in four stages of development of the vine: first assessment phase connectivity of grains and then after every 15-20 days by an estimate. This assessment is done by checking from 50 horde and 100 leaves for each variant. Valuation rate used was 5 classes according to bibliographic resources (Josifovic, 1956, Ruci 2004).

Tab.1 assessment rate of infection

Class	Part of the infected in %	Vlerësimi i infeksionit

0	0 %	no infection
1	Up to 10 %	Weak
2	11-20 %	average
3	26-50 %	high
4	Mbi 50 %	Sky-high

Details of these observations are processed for each variant according McNeil index (Mc Index).

$$IMc = \frac{\sum (n \times k)}{N \times K} \times 100 \text{ ku:}$$

IMC = disease index, n = number of estimates for each class, k = the value of specific classes, N = number of all leaves or estimated hordes and K = the value of the highest grade. These data are then statistically - Analysis of variance (ANOVA).

For setting up experiment using factorial scheme with two factors: Factor preparation with 7 levels, cultivar factor 2 levels in two randomized blocks for each cultivar. For combating pathogen throughout the vegetation made 6 splashes. First spraying is done when fruiting have reached 20 cm length. (29/05/12) Other then spills are made every 12-15 days until last spray which is made after the replacement of the color of the grain.

Results and Discussion

In assessing the ash disease, the results obtained clearly seen that the rate of disease index was higher than statistically leaves. Statistical processing of the results of ash on the leaves indicates that there are very significant differences regards cultivars (Fak.A), the highest index touching the disease has had cultivar Frankovka (18.57 %), while the smallest cultivar Burgundez black (14.48 %), cultivar Frankovka is closer to the ash disease. Highly significant differences were found also to the efficiency of the preparation (Fak.B), so the highest index of the disease has been (except to control B7 -28.20 %) and B1 variant (19.60 %), which are used preparation Quadris two prior treatments and preparation Cosa other treatments, and lowest in variant B2 (8.60%) where using Tilt preparations and Bayleton subtly shifting and were more effective in combating ash leaves.

Regarding blocks (Fak.C) are not found significant differences.

AxB interaction (cultivar x preparation) index was the highest to control (B7 option) to the two cultivars, cultivar Frankovka had higher disease index (32.03 %), while cultivar Burgundez black lower (24.37 %). These differences are highly significant statistical point of view and say that cultivar Frankovka is closer to the ash compared to the cultivar Burgundez black. Highly significant differences between preparations. To interaction (A x B) the highest index of the disease is found to cultivar Frankovka - B1 variant (21,43 %), which are used Quadris preparations and Costa, while the lowest cultivar Burgundez black-B2 option (8.25%), which is used Tilt combination and Bayleton.

Interaction (AxC) between cultivar and resulted in significant blocks despite the fact that between the blocks has not been difference. This talks about the differences in susceptibilities between cultivar studies. Index highest cultivar dog disease Frankovka (18.86 %) and low to he Burgundez black (13.91 %).

Regarding the interaction (BxC) in the middle of preparations and blocks are found significant. Difference except Higher disease index the value of control options facing been not even Higher B1 variant x C2 (19.87 %) and the Reduced version

B2 x C1 (7.93 %).

Tab. No. 2.Analysis of variance and LSD hiring (U. necator) leaves (2012)

Cultivar Factor. (A)	**Preparations Factor. (B)**	**BLOCKS FAC. (C)**		**Average (A x B)**	**Average (A)**
		C_1	**C_2**		
FRANKOVKA	**B_1**	21.00	21.87	**21.43****	**18.57****
	B_2	9.56	8.37	**8.96****	
	B_3	18.75	17.68	**18.21**	
	B_4	14.25	11.93	**13.09**	
	B_5	20.93	20.68	**20.81**	
	B_6	15.68	15.25	**15.46**	
	B_7	31.87	32.18	**32.03****	
	Average (A x C)	**18.86** Ns	**18.28**		
Game	**B_1**	17.68	17.87	**17.78****	**14.48****
	B_2	6.31	10.18	**8.25****	
	B_3	14.25	14.18	**14.21**	
	B_4	9.12	9.56	**9.34**	
	B_5	15.62	16.93	**16.28**	
	B_6	11.00	11.31	**11.15**	
	B_7	23.37	25.37	**24.37****	

	Average (A x C)	13.91*	15.06	Average (B)	
Average (B x C)	B_1	19.34	19.87**	19.60**	
	B_2	7.93**	9.28	8.60**	
	B_3	16.50	15.93	16.21	
	B_4	11.68	10.75	11.21	
	B_5	18.28	18.81	18.54	
	B_6	13.34	13.28	13.31	
	B_7	27.62	28.78**	28.20**	
Mesatarja (C)		16.38	16.67 Ns	Interactions (A x B x C)	

Factors		A	B	C	AB	AC	BC	ABC
LSD	1 %	2.35847	2.93253	0.73275	4.76342	1.10977	2.52103	4.89256
	5 %	1.79171	2.12837	0.55666	3.27405	0.82259	1.73279	2.94999

Tab. 3. Analysis of variance and LSD to ash (U.necator) Horde (2012)

Cultivar Factor. (A)	Preparations Factor. (B)	BLOCKSFAC. (C)		Average (A x B)	Average (A)
		C_1	C_2		
FRANKOVKA	B_1	29.62	30.87	30.25 **	29.94**
	B_2	16.12	15.00	15.56**	
	B_3	28.37	26.62	27.50	
	B_4	20.62	20.75	20.68	
	B_5	28.37	27.87	28.12	
	B_6	24.62	23.87	24.25	
	B_7	63.50**	63.00	63.25**	
	Average (A x C)	30.17**	29.71		
Game	B_1	25.75	25.87	25.81**	24.83 **
	B_2	12.25	11.62**	11.93**	
	B_3	21.50	21.75	21.62	
	B_4	16.25	16.50	16.37	
	B_5	24.12	22.50	23.31	
	B_6	19.00	19.00	19.00	
	B_7	56.25	55.25	55.75**	
	Average (A x C)	25.01	24.64**	Average (B)	
Average (B x C)	B_1	27.68	28.37**	28.03**	
	B_2	14.18	13.31**	13.75**	
	B_3	24.93	24.18	24.53	
	B_4	18.43	18.62	18.53	
	B_5	26.25	25.18	25.71	
	B_6	21.81	21.43	21.62	
	B_7	59.87**	59.12	59.50**	
Average (C)		27.59	27.17Ns	interaction (A x B x C)	

Factors		A	B	C	AB	AC	BC	ABC
LSD	1 %	2.20817	6.02545	1.01523	9.78736	1.53759	3.49289	6.77865
	5 %	1.67752	4.37315	0.77126	6.72717	1.13970	2.40078	4.08721

Results and Discussion

Statistical results on the ash analysis showed that significant differences existed encampments as concerning cultivars (Fak.A). Highest index touching the disease has had cultivar Frankovka again (29.94%) while the smallest cultivar

Burgundez black (24.83%). So black cultivar Burgundez has shown vulnerability to be reduced to ashes in the encampments. B factor (efficiency of chemicals) is found significant differences compared with temper, but also in the midst of preparations. To control the rate of infection has been B7 (59.50%) and lower in variant B2 (13, 75 %) where using Tilt and Bayleton preparations.

Significant differences were found between chemicals with lower disease index was B1 version (28.03%), which are used Quadris preparations and Cosa, while the lowest B2 option (13.75%) where are using Tilt and Bayleton preparations.

Regarding blocks (Fak.C) are not found significant differences.

Regarding interactions between cultivar and preparations (AxB) higher index of disease has been to control (B7) to both cultivars compared to other options. From the results obtained can be seen that the cultivar Frankovka had B7 control disease percentage (63.25 %) had the highest index to touch the disease, while he Burgundez black lowest B7 (55.75%). Of this difference is Significant Statistical point of view and say that 'cultivar Frankovka is closer to ash in comparison cultivar Burgundez black. There are also differences between the preparations, the highest index was found to cultivar Frankovka - B1 variant (30.25 %), which are used Quadris preparations and Costa, KERS lowest cultivar Burgundez black-variant B2 (11.93) where using Tilt and Bayleton preparations. These differences are highly significant statistical view.

Interaction between cultivar and blocks (A x C) has shown the difference very significant. Index highest disease was cultivar Frankovka (30.17 %), while lowest black Burgundezi (24.64 %).

As interaction affected (BxC) in the middle of preparations and blocks are found highly statistical differences significant. Higher Value After controlling disease index Was B1 version x C2 (28.37 %), While the lowest variation B2 x C2 (13.31 %). During the research results have shown that fungicides adjustments seem to have good controlling infection ash compared with fungicides contacted. This provided consistent with the results of American author - Grove (1998) who concluded that fungicides with systemic action as Bayleton and Rubigan protection and remedial action and restrain pathogen interferes with formation of cellular membranes and as such are more successful in protecting the vines from the ashes. Most of the preparations used for the control of ash, by Pscheidt (2006) have begun to be used when the shoots reach 15 cm. Also size the eventual we have started with the first spray against grace when shoots have reached the size of 15-20 cm.

Conclusions

- To combat the ash on the vine (Frankovka cultivars and Burgundez black) has shown high efficiency combination systemic preparations as Tilt and Bayleton compared with organic preparations and contact.
- Low index of disease was the second option where using Tilt and Bayleton preparations.
- These preparations have shown high efficiency in controlling vine ash.
- Also in combination Tilt and Anvil has been high efficiency in the protection of the vine from grace.
- It can be concluded that in this study clearly proves the highest efficiency adjustments preparations compared to organic and contact, this information was confirmed by other authors.
- Take care to use as systemic preparations can create resistant strains of pathogens to the preparations if used more years of the same preparations.

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