PRELIMINARY RESULTS CONCERNING THE CONTROL OF WINE PESTS AND DISEASES UNDER THE CONDITION AGROCLIMATIC OF DEALU BUJORULUI VINEYARD

REZULTATE PRELIMINARE PRIVIND COMBATEREA PRINCIPALELOR BOLI SI DAUNATORI AI VIȚEI DE VIE IN CONDITIILE AGROCLIMATICE DIN PODGORIA DEALU BUJORULUI

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Abstract. *At the Research Station for the vine growing and Bujoru, in to 2007 does experimentation have a program of combat integrate has principals pests and diseases of vine in the plantation Dealu Bujorului or has introduction of the pesticide has last generation as are: Calypso 480 SC, Reldan 40 EC, Expo Max WDG, Falcon 460 EC, Demitan si Acrobat MZ 90/600 WP. This products plant health to apply in a number to low of treatments has to ensure effectiveness exceptional in the combater's principal of agent's pathogen and pests and diseases one in the wine plantation.*

Rezumat: *In anul 2007 la S.C.D.V.V. Bujoru a fost experimentat un program de combatere integrata a principalelor boli si daunatori ai vitei de vie din podgoria Dealu Bujoru in care au fost introduse pesticide de ultima generatie cum ar fi: Calypso 480 SC, Reldan 40 EC, Expo Max WDG, Falcon 460 EC, Demitan si Acrobat MZ 90/600 WP. Aceste produse fitosanitare aplicate intr-un numar redus de tratamente au asigurat o eficacitate deosebita in combaterea principalelilor agenti patogeni si daunatori din plantatiile viticole.*

MATERIAL AND METHOD

The pest control of vineyard represents a technological measure important for the production's quality maintenance as well as for the maintenance of the productive potential of the vineyard plantations. Because now days the pesticides are found in a large variety, to establish the specific kind of pest-killers to be used it is necessary to consider their biological and economical efficiency as well as the extent in which they are able to reduce the grapes' pollution as well as the entire ecosystem pollution.

The purpose of using new pesticides was to combatthe main pathogens in Dealu Bujorului vineyard in a context in which the climate factors' deviation from the usual annual average affects their biology, their occurrence as well as their evolution.

The experimental lots were located within a plantation started in 1980 including two grape vine sorts: Aligote and Feteasca regala which has as a partner the mother plant Berlandieri X Riparia S0 4-4 with a leading form bilateral cordon semiînalt with a plantation distance of 2/1,20 m. The vine leaves and grapes were carefully observed and marked (on a scale from 0 to 6).

This way there were determined the frequency and the intensity of the attack of the wine manna (*Plasmopara viticola – Berk et Curt*), wine mildew (*Uncinula necator – Schw. Burr*), grey rot(*Botrytis cinerea -Pers*) and grape moth (*Lobesia botrana – Den et Schiff*) on wine.

RESULTS AND DISCUSSIONS

The wine Manna (*Plasmopara viticola-Bert et Curt*)

The climate conditions during May, June and July did not favour the occurrence and the evaluation of this pest. The initial infections occurred in the first decade of June. There was no evidence of vine pathogen attack on the leaves and the grape clusters which were kept under control with the help of phytotherapeutical treatments.

The wine Mildew (*Uncinula necator - Schw-Burr)*

There were favouring conditions for the vine mildew development during the vine vegetation period. The mildew attack was noticed after the budding period and during the growth of the vine copes. After that, sixteen mildew generations were recorded. They were kept under control through five phytotherapy treatments. According to the observations regarding the frequency and the intensity of the mildew attack on vine it was noticed that 0,36% of Feteasca regala sort and 0,57% of the Aligote sort were damaged. In the experimental lots, the disease evolution was kept under control, very little evidence of the pathogen attack being found for all experimental designs. On grape clusters the pathogen attack was insignificant. Only 0,02% of the witness sort –Cabernet Sauvignon showed the evidence of the mildew attack (Table 4).

The Grape Moth (*Lobesia botrana - Den et Schiff)*

The grape moth is a pathogen very frequently met in the south eastern vine yards of Moldavia. It produces great damage, especially in the third generation. Under the ecological conditions of S.C.D.V.V. Bujoru the pathogen has three generations a year. Three traps/ha with synthetic sexual attractive substance, type ATRABOT, were installed in the vineyards in order to establish the population level, the best moment to apply the treatment methods and last but not least, to warn and monitor the whole process. Given the 2007 climate conditions, the grape moth had a very large biological reserve, the average number of the captured butterflies exceeding the level of damage 100captured butterflies/trap/week) for all generations. It have been noticed that the pathogen attack frequency per inflorescence was 26,33% on design III and 37,33% on Cabernet Sauvignon. The larva attack frequency on grapes reached 35,33% on Design III and 45,33% on the witness sort- Cabernet Sauvignon. Analyzing the climate data recorded at Targu Bujor weather station it have been noticed that during the vegetative rest the lowest absolute temperatures did not drop under the vine endurance to cold (-18 C). On 24/02/2007 was recorded the lowest temperature (12 C) which did not affect the vine buds viability from the experimental lots. The climate conditions of the spring were less usual for this period of time being characterised by high average temperatures compared to the normal standards. The average temperatures of May, June and July where higher than the normal average temperatures; several hot days with a maximum absolute temperature of 34,0 C on May the 23rd , 37,8C on June the 26th, 41,0C on July the 28th and 40,0C on August the 24th and 25th being recorded.

The active vegetation period started with low and unevenly distributed precipitations. On 28/06/2007 severe weather conditions including thunderstorms, abundant precipitations (65,5%) and hale was recorded.

Table 1

The Vine Pathogens and Deseases Attack Degree on Vine at S.C.D.V.V. Bujoru in 2007

Num.	Sort	The Manna Attack (*Plasmopara viticola*)						The Wine Mildew (*Uncinula necator*)						The Grape Moth Frequency of damaged inflorescence %		
		Leaves			Grape Cluster			Leaves			Grape Cluster					
		F	I	GA %	F	I	GA %	F	I	GA %	F	I	GA %	G I	G II	G III
1.	Aligoté – Design. I	0	0	0	0	0	0	10,66	5,38	0,57	0	0	0	36,0	40,33	Grapes affected by hale
2.	Feteasca regala – Design. II	0	0	0	0	0	0	7,0	5,1	0,36	0	0	0	28,33	41,33	-//-
3.	Feteasca regala – Design. III	0	0	0	0	0	0	9,33	4,5	0,41	0	0	0	26,33	35,33	-//-
4.	Witness Sort - Cabernet Sauvignon	0	0	0	0	0	0	20,0	12,15	0,32	1,0	2,0	0,02	37.33	45.33	16,33

These weather conditions affected the integrity of the vines from the experimental lots. For this reason, an immediate treatment with copper sulphate was applied to reduce the damage, which was necessary because the grapes and copes were vulnerable to the attack of the vine manna, gray rot, and anthrocosis and because the lesions produced by hale act as opened doors for the pathogens. To maintain the vine healthy, there were phytotherapeutical treatments applied to the experimental lots using: Sulfavit 80 PU, Sulfavit 95 PP, copper sulphate, Expo Max WDG, Reldan 40 EC, Ridomil Gold Plus 42,5 WP, Falcon 460 EC. The treatments were applied as according to the warnings. A type MPSP 3- 300 machine was used and the treatments were adjusted depending on the targeted pathogens. The quality of the solution that was used was 400/ha for the first two treatments. The following treatments used 900- 1000 L/ha of solution.

The Tested wine Sorts per Each Experimental design:

1. Aligote -1st design
2. Feteasca regala-2nd design
3. Feteasca regala-3rd design
4. Witness - Cabernet Sauvignon

The results regarding the efficiency of the phytotherapeutical products applied to the experimental designs are presented in Table 1. The climate conditions from the first part of the vegetation period did not favoured the occurrence and evolution of the vine pathogens (manna, mildew a.s.o). The preliminary results confirmed the efficiency of fungicides Expo Max WDG, Falcon 460, Acrobat MZ 290/600WP, a.s.o. In the insecticides category Reldan 40 EC proved itself a little bit better than Calypso 480 SC. However we found as necessary to repeat the experiment during another year with weather conditions which favour more the occurrence and development of the vine pathogens.

CONCLUSIONS

The Wine Manna – Although the pathogen biological reserve from the previous year was a large one, the weather conditions -which didn't favour the occurrence and development of the vine manna- led to a lack of evidence of the pathogen presence in the experimental lots. Normally when the weather conditions favour the pathogen evolution (frequent precipitation, high atmospheric humidity, the persistence of water on the grape leaves, foggy, humid days) there is more wine damage.

The Vine Mildew was kept under control with the help of the phytotherapeutical treatments.

The Grape Moth. The large biological reserve from the previous year and the easy winter favoured the massif occurrence and development of the pathogen exceeding the economic damage level of the captured moths/ trap/week.

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