

PREVENIREA ȘI COMBATEREA PRINCIPALILOR PATOGENI ȘI DĂUNĂTORI LA SPECIA CIREȘ THE PREVENTION AND CONTROL OF MAJOR PATHOGENS AND PESTS IN CHERRY SPECIES

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Abstract

During 2009-2010 period at RSFG Iasi were tested some new plant protection products against key pathogens and pests of cherry trees. For *Monilinia* sp, and *Coccoomyces* on fruit and shoots were used fungicides: Signum and Folicur Solo and insecticides for cherries fly Calypso, Decis 25 WG. Both fungicides and insecticides used had a very good performance.

Keywords: pathogen, protection, pesticides, pests;

Cuvinte cheie: patogen, pesticide, protecție, dăunători

1. Introduction

Cherry, like other fruit species, is attacked by many pathogens and pests such as bean leaf cherry leaf screening, monilia disease, bites cherries, quation, San Jose Scale tested, etc. Preventing and combating the damage caused by these pathogens and pests can be achieved only by applying a complex of agro-technical, biotechnical, biological and chemical. Of these, an important role but is fighting chemicals. In 2009-2010, the RSFG Iasi, were carried out research on chemical control of pathogens and pests in cherry species, which were used for plant protection products to next generation. (1-6).

2. Material and methods

The experiments to control pathogens and pests in sweet cherry were performed at RSFG Iasi, on two cherry cultivars: Stella and Boambe Cotnari; trees were planted in 1985 at a distance of 6x5m and ruled as a pyramid.

In the experiments aimed to combat antrachose, monilinia, cherries fly the following pesticides: were used Funguran OH, Folicur Solo, Signum, Calypso, Decis 25 WG and Progress Novadim (scheme in table 1). During the experiments observations and determinations were made in respect with the frequency and intensity both on pathogens and pests.

Rating climate a important role in the evolution of pathogens and pests has climatic conditions.

Thus, during May-June 2010 was an total amount of 231.0 l/m² respectively 77.2 l/m² for May and 153.8 l/m² for June, and maximum temperatures were 28.1°C in May and 35.0°C in June, leading to pathogen evolution, especially *Monilinia* sp and *Coccoomyces*, but and for pests.

Also the number of days with rainfall in May-July was quite high; the number of days with rain per month was 15 in every of all three months (15 days in May, 15 days in June and 15 days in July).

3. Results and discussions

The climatic conditions of the experimental period were particularly favorable for the development and attack of pathogens and pests for cherry trees.

In order to reduce as far as possible environmental and fruit pollution have been used several products from a new generation with active substances more efficient and less toxic (Table 3 and 4).

The antrachose leaf cherry (*Coccoomyces hiemalis*) attack manifested very strongly in the untreated control, evidenced by a frequency of 67.4% and a 50.0% intensity. Compared with these values fungicides Folicur Solo (active substance: tebuconazole) and Signum (2 active substance: boscalid and pyraclostrobin) have shown a high efficiency, with values of 3.7%-4.7% rate in the varieties Stella and Boambe Cotnari about 15 times lower. A slight superiority of the product Signum to Folicur Solo is observed. Regarding monilinia attack, this occurred on both the shoots and fruits. In untreated control after blossoming fruit monilinia. frequency was 31.2% versus 1.0% -2.5%; 42.5% in the shoots untreated variants compared to 1.0% -2.1% when applying fungicides. And in *Monilinia* sp. insignificant differences are found for fungicide Signum.

Given the extremely favorable conditions for pathogen evolution and the factors that the fungicides Folicur Solo and Signum were very efficient, ensuring healthy foliage, with a great power of assimilation, led to obtain competitive and economic fruit quality.

Rhagoletis cerasi pest monitoring and related treatment was performed using Atraceras traps. They revealed the presence of the pest and its density in cherry plantings.

In untreated control 64.7% fruits have been attacked by fruit fly cherries which means, practically, almost total production.

Insecticides Decis 25 WG and Calypso assured healthy fruit rate of 99.5% -98.5%, with a slight increase in efficacy when alternating Calypso - Decis 25 WG. The results shows a greater sensitivity for variety Boambe Cotnari compared to Stella in *Coccomyces*, and vice versa for the fruit *Monilia* sp.

4. Conclusions

Climatic conditions during 2009-2010 in Iasi area were very favorable for the development of *Coccomyces* attack, and for fly and monilinia sp. cherries. Signum and Folicur Solo applied fungicides after shaking petals and preceded by antefloral treatment with Funguran OH prefloral assured cherry plantations (Stella and Boambe Cotnari varieties) almost perfect health. The insecticides Calypso and Decis 25 WG realized control of fly cherries proportion of 98.5% - 99.5%.

5. References

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Tables and figures

Table 1. The phytosanitary treatments applied to cherry species during 2009-2010 at RSFG Iasi

Nr. crt.	phase	fought against pathogens and pests	Pesticides used	
			Variant I	Variant II
1	white button	antrachnose, monilinia sp, sifting	Funguran 0.3%(4.5l/ha)	Funguran 0.3%(4.5l/ha)
2	started shaking petals	antrachnose, monilinia sp., insects	Folicur Solo 0.075%(1.5 l/ha)+ Decis 25 WG 0.003%(0.06kg/ha)	Folicur Solo 0.075%(1.5 l/ha)+ Decis 25 WG 0.003%(0.06kg/ha)
3	mellow entry	monilinia sp., Rhagoletis	Signum 0.0375%(0.75 kg/ha)+ Calypso 0.02%(0.4l/ha)	Folicur Solo 0.075%(1.5 l/ha)+Calypso 0.02%(0.4l/ha)
4	7 days after previous	antrachnose, monilinia sp. aphids, Rhagoletis	Signum 0.0375%(0.75 kg/ha)+ Decis 25 WG 0.003%(0.06kg/ha)	Folicur Solo 0.075%(1.5 l/ha)+ Decis 25 WG 0.003%(0.06kg/ha)
5	after harvest	antrachnose, monilinia sp., aphids, Rhagoletis	Funguran 0.2%(4l/ha)+Novadim Progres 0.1%(2l/ha)	Funguran 0.2%(4l/ha)+Novadim Progres 0.1%(2l/ha)

Table 2. The climatic conditions of 2010 (January-August)

months	temperature °C			reinfall	No rainy days	humidity%
	medium	maximum	minimum			
I	-6.4	-10.4	-26.0	35.6	11	91
II	-1.1	12.6	-12.6	22.6	12	85
III	4.5	22.6	-7.5	16.2	8	65
IV	12.6	23.3	2.0	28.0	10	61
V	17.3	28.1	6.5	77.2	15	63
VI	19.8	35.0	8.2	153.8	15	63
VII	21.8	33.7	11.4	25.6	15	79
VIII	23.1	37.0	9.4	45.2	6	69
Total				404.2	92	

Table 3. Effectiveness of pesticides in the RSFG lasi cherry experiments

Cultivar	Variant 1						
	Antrachnose		Monilinia fructigena		Monilinia laxa		Rhagoletis
	F%	I%	F%	I%	F%	I%	% attaked fruits
Stella	3.7	10.0	2.5	10.0	1.3	10.0	0.5
Boambe de Cotnari	4.5	10.0	2.3	10.0	2.1	15.0	1.2
Mn after bloom	67.4	50.0	31.2	65.1	42.5	50.0	64.7

Table 4. Effectiveness of pesticides in the RSFG lasi cherry experiments

cultivar	Variant 2						
	Antrachnose		Monilinia fructigena		Monilinia laxa		Rhagoletis
	F%	I%	F%	I%	F%	I%	% attaked fruits
Stella	3.8	10.0	1.3	5.0	1.0	10.0	0.7
Boambe de Cotnari	4.7	10.0	1.0	5.0	1.4	10.0	1.5
Mn after bloom	67.4	50.0	31.2	5.0	42.5	50.0	64.7