PREVENIREA ŞI COMBATEREA PATOGENULUI *VENTURIA INAEQUALIS* ÎN CONDIŢIILE ANULUI 2010 LA SCDP IAŞI

PREVENTING AND COMBATING THE PATHOGEN *VENTURIA INAEQUALIS* IN TERMS OF 2010 AT RSFG IASI

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Abstract
During 2009-2010 at RSFG Iasi were tested new products in plant protection against apple scab. Fungicides tested were: Maccani, Flint plus, Folicur Solo, Clarinet and Captan 80 WDG. As a result, all products had a very good performance and can be successfully used in plant protection programs.

Keywords: pathogen, effectiveness, control, cultivar;
Cuvinte cheie: patogen, eficacitate, control, cultivar

1. Introduction

Venturia inaequalis is the main pathogen that causes significant damage to apple species. Disease caused by this disease called apple scab affects leaves, flowers and especially fruits are present every year in all basins trees. Paper RSFG presents results of research conducted at Science during 2010 to highlight the effectiveness of fungicides applied protection programs, in a very favorable year pathogen development (1-4).

2. Material and methods

The experiments for testing new products to control pathogen *Venturia inaequalis* were performed at RSFG Iasi on a plantation with apple varieties: Idared, Starkrimson, Jonathan and Golden Delicious trees planted in 1995 at distance 4x3m.

The experiment used following plant protection products: Maccani, Flint plus, Folicur Solo, Clarinet and standard witness Captan 80 WDG.

Treatments were applied for ten trees each variant: cultivar - fungicide.

To determine the efficacy against scab were performed three plant treatments for all four cultivars of apple.

The first treatment was applied in the fluffy fenofaza of corolla, the second at the early petals shed stage the third in the fruit (apple) type nut stage.

Phytosanitary treatments were performed with pump type sprayer Solo and the amount of solution was 2.4 l/mp, which is 2000l/ha. Note that the treatments used and other insecticides and fungicides to control other harmful pathogens.

At 7-8 days after the last treatment application observations and measurements were made in respect with frequency and intensity of scab attack on leaves and fruit, finally calculating the degree of attack. Efficacy of the products was made after the formula Abbout.

Climatic conditions:

The pathogens and pests are influenced by the climatic conditions in their development.

It is known that primary infection by scab ascospori occur once the temperature exceeded 6^{o}C at only 0.3 mm rainfall, when the leaves remain wet for several hours.

The year 2010 provided very favorable conditions for apple scab (Table 1).

The monthly average temperatures from March until August period and the rainfall exceeded the average range. If we refer only to rainfall during March to August it was 404.2 l/mp, annual precipitations exceeding the norm, and days with precipitations were 40 in May and July. For example, in May 15 days in June 15 and July 10 days, favored scab attack.

3. Result and discussions

The results on the effectiveness of fungicides applied to control apple scab at RSFG Iasi are presented in Table 2 and 3.

Experimental data show a good to very good health in terms of controling pathogen *Venturia inaequalis*, given the climatic conditions of 2010, which were very favorable for evolution of this pathogen. Thus, if the untreated control on both leaves and fruit the efficacy was between 25.0% -69.0,%, at variants treatments it ranged between 98.9% and 99.99%, which means a reduction. All products used have a very good performance, remarking for particular Maccani fungicide at a concentration of 0.11%, which is a systemic product that has in two active ingredients (pyraclostrobin 12% +4% ditianon where the attack on the fruit was between 0.4% to 0.6% at Golden Delicious and Starkrimson and for leaves

between 0.8% and 1.0%. As effective was and fungicide Flint at a concentration of 0.1% which showed a 0.4% degree of attack on the fruit of the variety Golden Delicious and 0.6% at Idared variety and extension of the attack on foliage was higher, respectively 0.9% for Idared variety and 1.1% for Jonagold. Approximately the same values were obtained to other products Folicur Solo concentration 0.05% and Clarinet concentration 0.1%. For example, the effectiveness on the variety Golden Delicious fruits was between 97.6% -98.4%.

Captan 80 WDG at standard witness effectiveness showed almost the same values and even higher than other pesticides used, namely: at the variety Starkrimson. The Captan product had an efficacy of 98.0% fruit, compared to the effectiveness of Folicur Solo when 97.1% only.

Following the results, in terms of varietals susceptibility to scab, Starkrimson variety was found to be most sensitive followed by Idared. The percentage of fruit damage was higher than other varieties (Table 2).

4. Conclusions

The climatic conditions during 2009-2010 were very favorable to development of pathogen like Venturia inaequalis; Maccani and Flint fungicides made an anti-scab control from 98.0 to 98.6%; Aut of all studied varieties, the most susceptible to scab were Idared and Starkrimson;

5. References

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Tables and figures

Table 1. The main climate factors (march-august) 2010

months	temperature °C			rainfall	No rainy days	humidity
	medium	minimum	maximum			
III	4.5	-7.5	22.6	16.2	8	65
IV	12.6	2.0	23.3	28.0	9	61
V	17.3	6.5	28.1	77.2	15	63
VI	19.8	8.2	35.0	153.8	15	63
VII	21.8	11.4	33.7	25.6	10	79
VIII	23.1	37.0	9.4	45.2	6	69
Total III-VIII				404.2	92	

Table 2. Effectiveness in controlling scab fungicides on apple fruit at RSFG Iasi

cultivar / fungicide	Golden delicious		Ionagold		Starkrimson		Idared	
	Ga%	E%	Ga%	E%	Ga%	E%	Ga%	E%
Maccani	0.4	98.4	0.4	98.6	0.6	98.3	0.5	98.5
Flint Plus	0.4	98.4	0.5	98.0	0.7	98.0	0.6	98.2
Folicur Solo	0.6	97.6	0.7	97.6	1.0	97.1	0.5	98.5
Clarinet	0.4	98.4	0.6	97.9	0.8	97.7	0.4	98.8
Captan	0.5	98.0	0.6	97.9	0.7	98.0	0.5	98.5
Mn după implored	25.0		29.7		35.4		33.6	

Table 3. Effectiveness in controlling scab on leaves at RSFG Iasi

cultivar / fungicide	Golden delicious		Ionagold		Starkrimson		Idared	
	Ga%	E%	Ga%	E%	Ga%	E%	Ga%	E%
Maccani	0.9	98.6	0.9	98.5	1.0	98.6	0.8	98.6
Flint Plus	1.0	98.5	1.1	98.1	1.0	98.6	0.9	98.4
Folicur Solo	1.2	98.2	1.4	97.6	1.2	98.3	1.0	98.3
Clarinet	1.0	98.5	1.0	98.3	1.1	98.4	0.8	98.6
Captan	1.1	98.4	1.2	98.0	1.3	98.2	0.9	98.4
Mn după implored	69.0	-	60.4	-	73.2	-	59.3	-