



Occurrence and evolution of potato late blight on some varieties and the influential factors in 2014-2015, Brasov, Romania

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INTRODUCTION

Late blight caused by *Phytophthora infestans* (Mont.) de Bary remains the greatest potential disease to the potato crop in Romania. The climatic conditions are favorable to potato production and also favor blight. Potato production answer very well to repeated and frequent fungicide applications knowing that almost potato cultivars are susceptible to late blight. The main aim of this research was to test the influence of two different densities (53300 plants/ha and 44400 plants/ha) and two different late blight control technologies (using on side only contact fungicides – TECH 1 and on the other side systemic and contact fungicides –TECH 2) on three most cultivated varieties (Riviera, Christian and Roclas)

MATERIALS AND METHODS:

Location: NIRDPBS Brasov

Plots size : 25.2 m²

Layout : randomized complete block design with 4 replicates.

The research is based on three factorial type experience 3A *2B * 2C * 4R with following factors and graduations:

Factor A - potato variety with graduations:

a1. Riviera

a2. Roclas

a3. Christian

Factor B - density of plants:

b1. 53300 pl / ha

b2. 44400 pl / ha

Factor C – late blight control

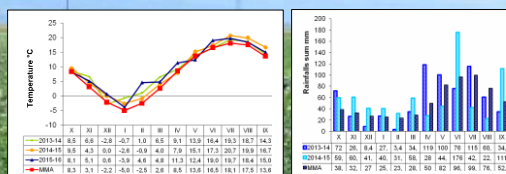
c1. TECH 1 – contact fungicide only

c2. TECH 2 – contact, translaminar and systemic fungicides.

Observation of late blight first symptoms: daily check of all plots after emergence till first symptoms is observed in one of the plots (2014, June 17th, 2015 July, 1st)
Late blight assessment: plots are assessed for the extent of blight spots on the leaves. Each plot is assessed as a whole for percentage disease severity using a standard accepted severity key.



Year	Variety	Late blight occurrence			End of observations			Late blight obs. days
		Date	Days after planting	Days after emergence	Date	Days after planting	Days after emergence	
2014	Riviera			35	July 31		79	44
	Roclas	June 17/ week 25	77	28	31	121	72	
	Christian			28	31		72	
2015	Riviera			41			74	33
	Roclas	July 1 / week 27	65	39	August 3/ week 32	98	72	
	Christian			39	32		72	



RESULTS AND DISCUSSION

In 2014, the first appearance of late blight was registered on June 17, (week 25), 35 days from emergence of Riviera and 28 days from emergence of Roclas and Christian varieties.

In 2015, the favorable climatic conditions during June led late blight to appear on July 1, (week 27), 41 days after emergence of Riviera and 39 days from emergence of Christian and Roclas varieties.

Final late blight observations were done between July 27 to August 3. The number of days from planting until the last late blight notation varied between 98 and 121 days by year. Depending on the variety, the last late blight assessment, were made to 72-79 days in 2014, to 72-74 days in 2015. The length of follow-up phase of late blight attack was between 33 days (2015) and 44 days (2014). From the results of the years 2014-2015 can be seen that the most important for late blight occurrence is the presence of days with rain than their quantity, although obviously rainfalls intensity influences the late blight attack.

Late blight appears undisturbed if there is humidity, and has an unlimited succession of secondary infection, in a relatively short time, the attack is generalized throughout the potato crop.

In figures 1-3 there are presented the weekly marks for Riviera, Roclas and Christian varieties considering the technologies applied in two years of study.

CONCLUSIONS

In 2014, the vegetation of Riviera variety was interrupted in late July due to plants maturity and late blight attack even TECH 1 and TECH 2 were applied. Roclas and Christian varieties with lower sensitivity, in terms of protecting with TECH1 late blight attack on foliage did not exceed mark 3 and with TECH 2 treatments mark 2.

2014 was remarkable for both varieties and both densities. TECH 2 treatments efficacy was significantly greater than TECH 1.

In 2015, late blight attack arrived later and the intensity was low, with marks between 2.3 and 3.9 - Riviera variety, the favorable differences of TECH 2 treatments been significant to the both densities.

The late blight attack on Roclas and Christian varieties in different variants remains generally under mark 2.

Acknowledgement

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