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Incidence of the F129L mutation in Serbian *A. solani* population

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INTRODUCTION

Potato early blight occurs worldwide and strobilurines (QoIs) are frequently used in their control. The presence of the F129L mutations were revealed in *Alternaria solani* populations in different European countries. In 2016, *A. solani* isolates obtained from various commercial potato fields in Serbia, were tested for presence of the F129L mutations.

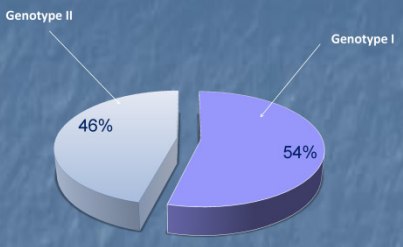

Fig. 1. Distribution of genotypes I and II in Serbian *A. solani* population

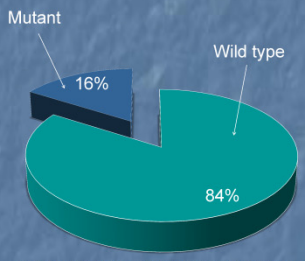

Fig. 2. Frequency of F129L mutation in *A. solani* genotype I isolates

MATERIAL AND METHODS

During 2016, potato leaves with early blight lesions were collected from different Serbian potato growing areas. Isolates were obtained via single spore isolation directly from diseased tissue and transferred to petri plates containing V8 medium. Genomic DNA of *A. solani* isolates was extracted from mycelia cultivated on V8 medium for 14 days at 21°C. Mycelium were carefully scraped off and ground in liquid nitrogen. Genomic DNA extraction was carried out using the DNeasy Plant Mini Kit (Qiagen, USA) according to the manufacturer's instructions. Two different primer sets were used for genotypes identification. All isolates were screened for presence of mutations on cytochrome B gene by DNA fragments sequencing.

RESULTS

A. solani isolates obtained from various locations in the Serbia, according to their *cytb* gene structure were identified as two different genotypes (Fig. 1). In the Serbian *A. solani* populations, the F129L mutation was identified in both genotypes. Within the genotype I wild type of strain were dominated with 84% of strains, until the F129L mutation was found in some 16% of strains (Fig. 2). Sequence analysis revealed the F129L mutation also in genotype II isolates, where it occurred in 81% (Fig. 3).

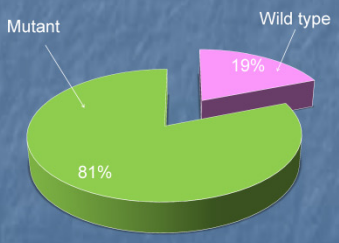

Fig. 3. Frequency of F129L mutation in *A. solani* genotype II isolates

DISCUSSION AND CONLUSION

Our results suggest that after the survey of *A. solani* in Serbia, two different genotypes were detected among the investigated isolates. After the screening for the presence of the F129L mutation in the cytochrome b gene, mutants are present in both genotypes. The F129L mutation in *A. solani* occured in 46% of the isolates. This indicates on intensive application of QoIs in early blight control, which may contribute to decreasing of the fungicide efficacy. Intensive further monitoring of mutant presence in *Alternaria* population is necessary for improving control strategy for this pathogen.