BASELINE SENSITIVITIES OF ALTERNARIA SOLANI ISOLATES FROM POTATO TO PENTHIOPYRAD AND NOVEL SUCCINATE DEHYDROGENASE INHBITORS

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Abstract

Potato (Solanum tuberosum L.) is the most widely grown solanaceous crop in the world. Early blight is one of the most prevalent foliar diseases of potato caused by Alternaria solani. In present study, we assessed the baseline sensitivities of A. solani isolates to penthiopyrad and novel SDHIs viz., C1-C12. The fungicide concentration that effectively inhibits mycelial growth by 50% relative to the control (EC50) for 25 isolates showed that the majority of the isolates were sensitive to all the new succinate dehydrogenase inhibitions (SDHIs). Analysis of EC50 values for penthiopyrad showed that 19 isolates were sensitive and 6 isolates had reduced sensitivity to penthiopyrad in mycelial growth assay. In contrast, all the isolates were sensitive to newly designed SDHIs. The EC50 values were also established for spore germination assay. Analysis of EC50 values of spore germination assay for penthiopyrad showed that 18 isolates were sensitive and 7 isolates had moderate resistance against penthiopyrad. While all the isolates were sensitive to twelve novel SDHIs in spore germination assay. The discrepancies of sensitivities of A. solani isolates to penthiopyrad and SDHIs propose that their binding confirmation in complex II may differ slightly. The data presented in this study will help the potato growers in regions with prevalent penthiopyrad resistance to avoid fungicides against which resistance is reported and in selecting SDHI candidates that remain efficacious.

Keywords: *Complex II, fungicide resistance, SDHI, early blight, potato.*