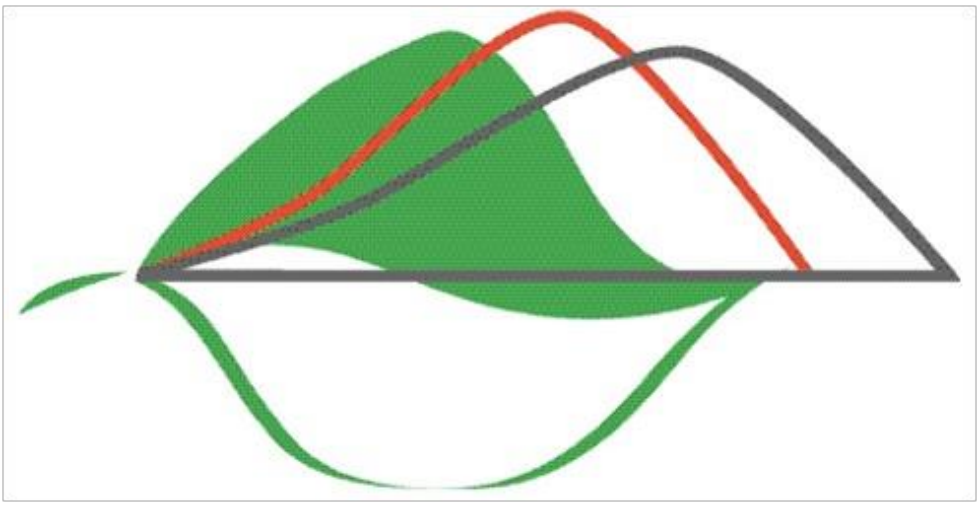
19th International Reinhardsbrunn Symposium

Modern Fungicides and Antifungal Compounds



Friedrichroda, Germany
07th – 11th April 2019

Program and Abstracts

Update March 27, 2019

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Monitoring MBC-resistant isolates of the cucurbit powdery mildew, *Podosphaera xanthii*, using loop-mediated isothermal amplification (LAMP)

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Abstract ID: 11; Oral contribution

Powdery mildew, caused by the fungus *Podosphaera xanthii*, is one of the most economically important diseases affecting cucurbit crops in Spain. Currently, chemical control is the most efficient management of the disease; however, *P. xanthii* isolates resistant to multiple classes of site-specific fungicides have been reported in the Spanish cucurbit powdery mildew population. In previous studies, resistance to the Methyl Benzimidazole Carbamates (MBC) fungicides was found to be caused by the amino acid substitution E198A on β-tubulin. To detect MBC-resistant isolates in a faster, efficient and specific way than the traditional methods used to date, a loop-mediated isothermal amplification (LAMP) system was developed. Three sets of LAMP primers were designed and one set was optimize specifically to distinguish the E198A mutant genotype. The amplification products were visualized using gel electrophoresis and hydroxynaphtol blue (HNB), an azo dye that turn from violet to sky blue if the results were negative (E198) and positive (A198), respectively. Our results have proven that the LAMP technique is a specific and reproducible method that could be used to monitoring MBC-resistance of *P. xanthii* in the field.