

Results:

UV-C cart we built is suitable and fit for the purpose. Optimization of exposure time indicates that any exposure time above 20 sec can substantially damage plants. However, exposure time below 20 sec is not effective in killing powdery mildew spores. Although 20 sec exposure time cause some phytotoxicity, but plants can recover within 5 days. Our results indicate that 20 sec exposure to UV-C is very effective in killing powdery mildew spores as the disease did not come back even after incubating 72 h post exposure to UV-C. We hope to apply the treatments in the greenhouse in 2022 on older plants. It is anticipated that phytotoxicity in older plants may be lower than younger plants.

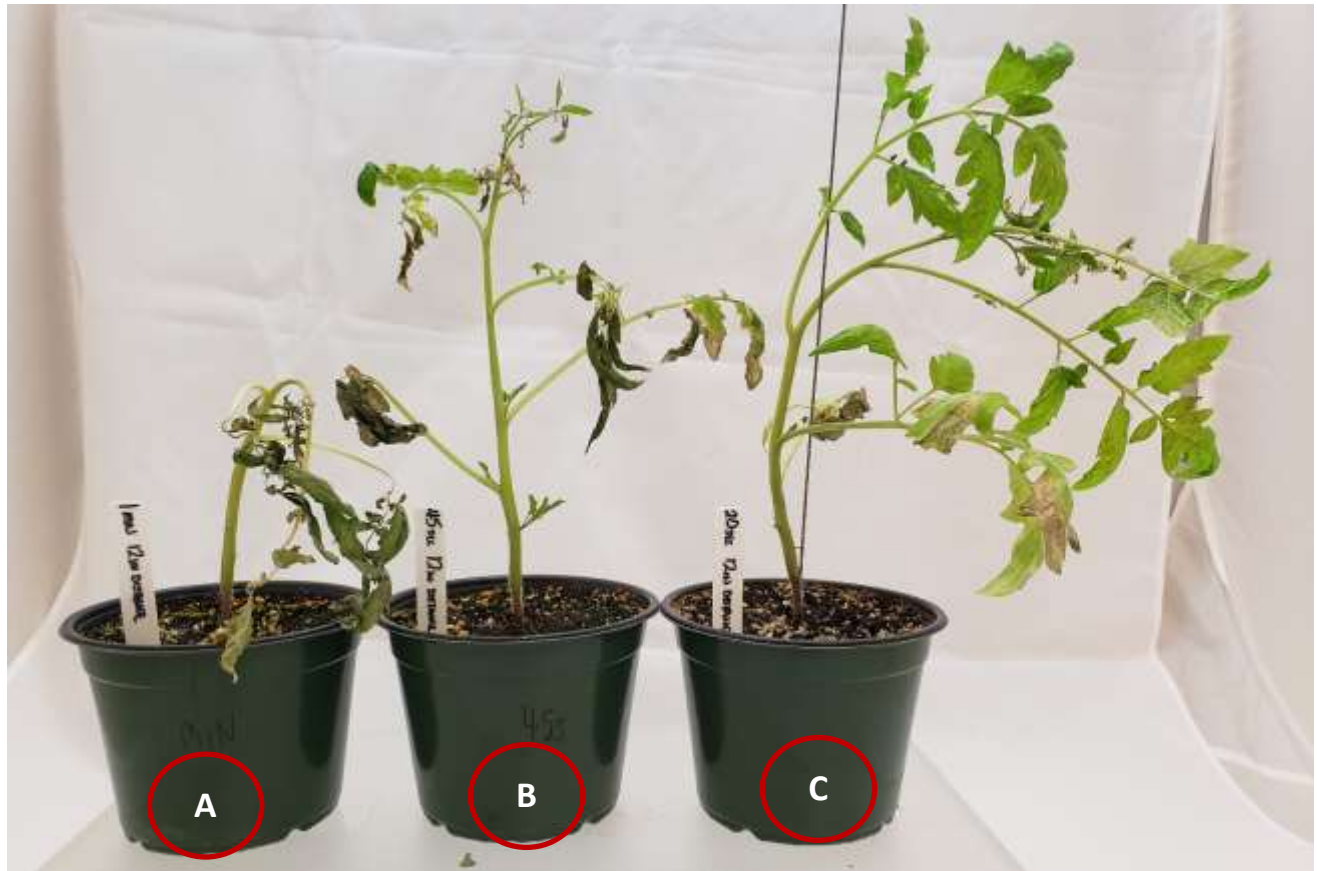


Fig. 1. Optimization of UV-C exposure time that can effectively suppress powdery mildew with minimum phytotoxic effect; A) One minute exposure time that was found to cause severe phytotoxicity; B) 45 second exposure time that caused moderate phytotoxicity; C) 20 seconds exposure time that caused minor phytotoxicity but effectively controlled powdery mildew.