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The effect of Sterionizer technology on development of Botrytis on Cherry tomatoes

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Introduction: The Sterionizer instrument ionizes water molecules present in the air producing peroxides that can prevent the development of microorganisms. *Botrytis cinerea* is one of the major molds that attack vegetables and fruits during storage.

Objective: to assess the effect of the Sterionizer instrument on cherry tomato inoculated by *Botrytis* during storage.

Method: Placement of a Sterionizer instrument in a 200 L container at 10C, inoculation of cherry tomatoes by wounding with and placement of 1.6×10^6 /ml fungal spores and examination on a weekly basis. Control tank did not include the instrument. Inoculation of potato dextrose agar (PDA) plates with *Botrytis* and exposure for 5 d for the Sterionizer followed by removal from the container and incubation for 2 d at 20C.

Results: Inoculation of cherry tomato with *Botrytis* and storage for 2 weeks resulted in development of *Botrytis* on 14 of 25 fruit and in all cases sporulation occurred. In contrast, on control tomatoes there was reduced number of infected fruit but more importantly no sporulation was observed, suggesting that fungal development was delayed. Likewise, inoculation of PDA plates with *Botrytis* resulted in delayed sporulation and hyphal development as observed from the area of reduced growth in the center of the PDA plate on the left. Growth was resumed once plates were removed from the container as observed by the outer ring of the plate. In addition, a higher number of *Penicillium* colonies is observed in the control plate on the left.

Conclusions: The sterionizer instrument delayed development of *Botrytis* under conditions that are relevant for postharvest storage of fruit and vegetables. Further research at larger scale is required to prove its efficacy under commercial conditions.

