

### Abstract:

As *Botrytis cinerea* and *Monilinia fructigena* are important postharvest fungi for many fruit and vegetable species and stone and pip fruit, respectively, fundamental research towards suitable inactivation techniques is needed. This research aims at the development of a predictive model, able to describe the combined effect of the environmentally friendly mild heat and pulsed white light treatments on the in vitro inactivation of both fungi. Based on model structures and associated parameter values for both treatments individually, combined model predictions are proposed, illustrating the additive or synergistic effect for selected treatment combinations. The proposed modelling methodology offers a fail-safe approach to predict the inactivation of the fungi, making it possible (i) to select a combination of treatments which results in a pre-specified level of inactivation (if feasible) or, (ii) to predict the effect of a specific treatment combination, if encompassed by the experimental working region used in this research.