Abstract

Methods that prevent post-harvest microbial growth and mycotoxin production in Fusarium head blight infected malting barley were evaluated. The objectives of the study included (a) To evaluate the effects of electron-beam radiation and hot water treatments on the safety and quality of *Fusarium* -infected malting barley and (b) To evaluate the effect of gaseous ozone and hydrogen peroxide treatments for reducing *Fusarium* survival in malting barley. We found that both hot water and electron-beam irradiation treatments have potential as physical treatments to decrease the level of *Fusarium* infection and mycotoxin production during the malting process. Electron-beam radiation had a more pronounced effect on the malt quality parameters than hot water treatments. For the second objective, both ozone and hydrogen peroxide appear to have potential for treating mildly FHB-infected malting barley. Hydrogen peroxide treatments achieved greater levels of *Fusarium* reduction with no impact on germination for most of the treatments. Ozone also caused a significant decrease in *Fusarium* levels without effecting the germination in good quality barley.