Abstract

To extend shelf life of food and other related products is one of the main concern of producers. Keeping in view the current scenario, greener technology is required to as an n alternative of conventional technologies. Conventional technologies provides related harmful impacts on the environment or extend shelf life for a shorter run. To reduce these harmful impacts, based preservation technique is studies as it do not cause any potential negative impact. Ozone is an antioxidant, self-destructive alternative preservation gas that can preserve the food entities without any harmful impact on environment. It dissipates into oxygen and releases into the environment without release of any harmful by product. Ozone quickly decompose and cause near to none residual effect. Food industries uses ozone in water and equipment disinfection. Whereas ozone is also used to inactivate germs on fresh and dried products including cereals, legumes, and spices. This current study utilized impact of ozone treatment on spice and vegetables powders in order to reduce its microbial load along with preservation of other nutritional parameters. 3 g/h and 5 g/h gaseous ozone is investigated at the exposure rate of 60 min and 120 min with controls to observe the spice and vegetable behavior against ozone gas. It was observed that exposure at the rate of 5 g/h for 120 min proved the best among all other scenarios. It reduced microbial content of about 90%, moisture reduction of 85% while preserving other nutritional qualities. It also enhanced the shelf life to about 60% while preservation rate is increased 50% through it. To understand ozone impacts on food, this study provides a brief and concise investigation of certain vegetables and spices but more studies investigating different vegetables fruits and spices at different doses and exposure times through ozone treatment is required as little research is available for preservation of food through ozone solely.

Keywords: Ozone, food preservation, Microbial load, nutritional quality, shelf life, decay factor