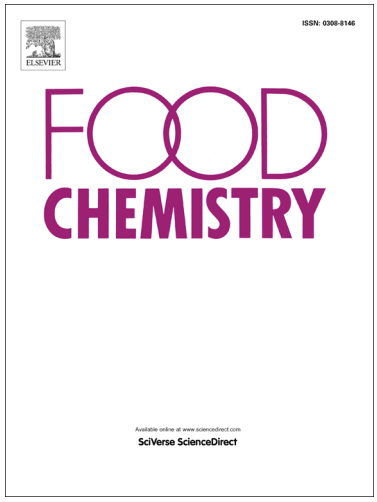

Effect of ozone treatment on the quality of grain products

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Effect of ozone treatment on the quality of grain products

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Abstract

Ozone is a strong oxidant and has different food applications to ensure food safety. Ozone treatment is considered an eco-friendly and cost-effective food processing technique. In this mini-review, the impact of ozone treatment on the composition (e.g., mycotoxins) and physicochemical properties of components (e.g., starch and protein) of different food grains (e.g., wheat, rice and maize) is summarised. The rheology, color, storage, and germination capacity of the grains/flours affected by ozone are reviewed. The quality attributes (e.g., texture) of food products (e.g., bread, noodle, and cake) made from ozone treated cereals are also examined. It becomes evident that ozone has great potential to improve the functionalities of grain products while ensuring food safety.

Keywords: gluten; starch; bread; deoxynivalenol; dough rheology; cereal; noodle; wheat

1. Introduction

Ozone (O_3) is a powerful oxidant and has the GRAS (Generally recognized as safe) status (Gaou et al., 2005). It has found different applications in food industry (Guzel-Seydima et al.,