

Title Effect of concentrations of oxygen and/or carbon dioxide on the microbial growth control in fresh-cut lemongrass

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Abstract

Cut lemongrasses (20 cm) treated with warm water (55°C) for 5 min and hydrocooling at 3°C for 5 min are packed in a polyethylene bags filled with different concentrations of oxygen (O₂) and/or carbon dioxide (CO₂) in the 1st day of and kept at 5°C; 90+5%RH for 3 weeks. Microbial growth is monitored at 7, 14, and 21 days. It is found that 5%O₂ and all gas mixtures are effective in controlling coliforms and fecal coliforms up to 15 days. E. coli growth is inhibited in the mixture of 1 %O₂ and 10%CO₂ and the mixture of 5%O₂ and 10%CO₂. Yeast and Salmonella are inhibited in all gas mixtures within 7 days and 14 days, respectively. The gas mixtures are ineffective in controlling fungal included yeast and mold growth within 15 days. It is concluded that the storage of freshly-cut lemon grass up to 14 days under the controlled atmosphere where the bacterial growth is minimal.