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American Journal of Food Technology 

Title: Passive Modified Atmosphere Packaging of Banana (Cv. Cavendish) Using Silicone Membrane

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Abstract: Silicone diffusion was used for the generation of passive modified atmosphere at low temperature to over come the deficiencies associated with LDPE based diffusion. The optimization of MAP variables (fill weight and silicone membrane diffusion area at a constant fill volume and storage temperature) was carried out using response surface methodology in terms of responses (head-space O₂, CO₂ and storage life). The derived quadratic equations were found to support experimental data obtained under the experimental conditions. The target predicted storage life and head-space gas composition could find concurrence with experimental data in support with the optimized variables derived. The optimized variables could be used for the scale up of silicone based passive MAP of banana in rigid containers, suitable for bulk storage, transportation as well as for retail marketing.

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