

Does antioxidant packaging extend food shelf life?

Antioxidant active packaging can highly inhibit the rancidity of food. The release behavior of antioxidant is the key for extending food shelf life. The research progress on controlled-release antioxidant packaging is summarized. The factors affecting the release characteristics of antioxidants are introduced.

Do packaging materials release antioxidants?

Packaging materials can release antioxidants from the film to the food surface slowly and continuously at a certain rate, thus precisely controlling the concentration of active compounds around the food product inside the package (Balasubramanian, Rosenberg, Yam, & Chikindas, 2009).

How do antioxidants diffuse from packaging film to food surface?

In this type of noncovalent incorporation, antioxidants are freely dispersed in the polymer matrix. They can diffuse from packaging film to the food surface by three ways: diffusion induced release, swelling induced release and disintegration induced release (Almasi, Oskouie, & Saleh, 2020).

Which antioxidants are used in active packaging?

BHA and BHT are the two most studied synthetic antioxidants in active packaging (Jamshidian, Tehrani, & Desobry, 2012). Synthetic antioxidants have been extensively used to maintain the quality of ready-to-eat foods.

What is the release mechanism of antioxidants in active packaging?

The release mechanism of antioxidants in active packaging, the factors affecting the controlled-release and the packaging design considerations are introduced from the aspects of packaging material components (polymer matrix and active substances), combination of other components and preparation methods.

Does controlled-release antioxidant packaging extend the shelf life?

The release rate of some active substances over time can be regulated through some technologies so that their concentrations on the food surface can be maintained to prevent food oxidation and spoilage, thereby extending the shelf life. In this paper, the latest research on controlled-release antioxidant packaging is reviewed.



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