Controlled release of volatile organic compounds

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Application filed

License Status
Seeking licensee

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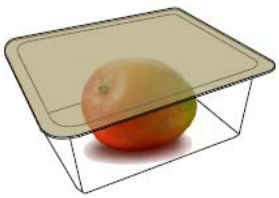

Opportunity

Researchers at the University of Guelph have developed a novel method to encapsulate and control the release of volatile organic compounds (VOCs) in packaging materials. It can be used with a variety of VOCs to improve and extend the shelf life of fresh fruits, vegetables, flowers and other perishable products. Farmers, packers and distributors who use this method may benefit financially from decreased product waste and loss.

Naturally occurring VOCs, such as hexanal, are increasingly used as preservatives to combat the natural spoilage of perishable products. Many consumers prefer them as an alternative to synthetic preservatives. However, VOCs are highly volatile and release quickly, making them unsuitable for many post-harvest applications. This invention meets these shortcomings by encapsulating and controlling the release of desired VOCs in packaging applications. Additionally, release kinetics can be individually designed for numerous perishable products and packaging materials.

Applications and Advantages

- Method can be used with a variety of VOCs and can also be modified for use with various perishable products
- Entraps relatively high quantities of the VOC
- Achieves significantly higher release and binding rates compared to existing solutions
- Release kinetics can be fine-tuned to meet target applications

Keywords

preservative, perishable, packaging, volatile organic compound, controlled release, post-harvest, hexanal, release kinetics, shelf life, encapsulation