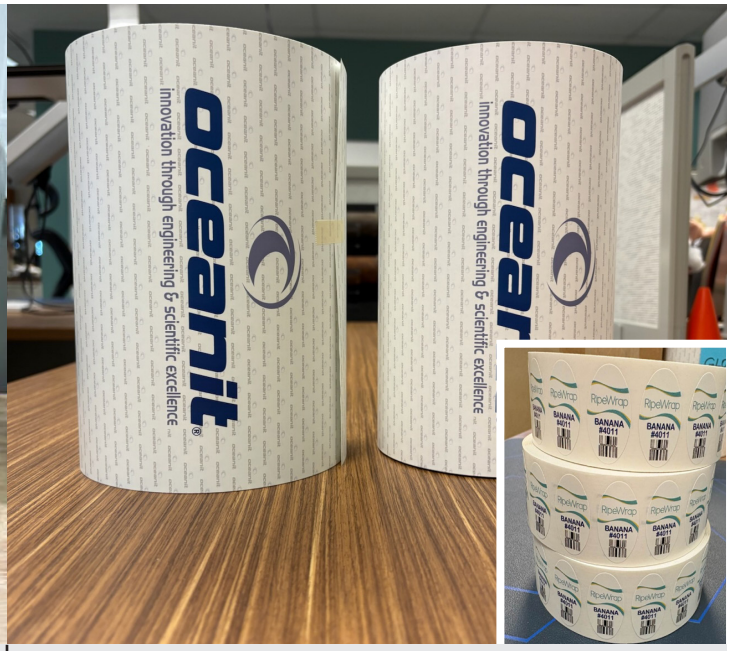
LIFE SCIENCES

RipeWrap

Smart Packaging to Extend Freshness and Increase Food Stability

Timed experiment in sealed bags: RipeWrap banana (left) versus control banana (right).



MOF MAP technology can be incorporated into liners, labels or sachets placed inside cargo boxes or individual stickers.

Summary

RipeWrap is a cutting-edge smart packaging solution to combat premature ripening and food spoilage in climacteric fruits and vegetables. Utilizing Metal Organic Framework (MOF) technologies embedded into packaging materials, RipeWrap actively manages ethylene gas to dramatically extend the shelf life of produce, reduce food waste, and increase food security across commercial and military supply chains.

Capabilities

RipeWrap technology is highly adaptable and can be integrated into polyethylene liners inside cardboard produce boxes, direct packaging films such as cellulose acetate wrap, and stickers applied directly to fruits or retail packaging.

The technology has broad applications across commercial and military use cases. RipeWrap extends produce lifespan to 25+ days for barge transport logistics, reducing food loss and resupply frequency. It also enables long-haul shipping without sacrificing freshness—perfect for global exporters, distributors and grocers. It's effective even in mixed fruit and vegetable containers, supporting broad supply chain strategies.

Typically, 30% of produce is lost post-harvest. RipeWrap prolongs the freshness of produce, ensuring that more food reaches consumers, contributing to greater food availability and stability in markets. Minimizing spoilage translates to higher profits for producers and distributors, as a larger portion of the harvest can be sold rather than discarded.

Technology

RipeWrap combines ethylene adsorption and inhibition with MOF, a metal-organic frameworks embedded within packaging materials. Adsorption slows down ripening and inhibition prevents the enzymatic ripening processes, leading to riper, fresher fruit.

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