



200 million eggs go to waste each year in the United States | Photo source Rice

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## EGG-BASED EDIBLE PRESERVATIVE KEEPS PERISHABLES FRESH

 FOOD & DRINK

### The antimicrobial coating extends the shelf life of fruits and vegetables and diverts eggs from landfill

**Spotted:** A team from Rice University researchers have discovered a way to use the 200 million eggs that go to waste each year in the United States. Using both yolks and egg whites, the scientists created an edible, water-soluble protein coating that keeps food fresh for longer. Proteins are relatively good for the human body, which means the new preservative is not only better for the environment, but is also healthier to consume.

The preservative currently used most frequently is wax, which is fat-based and found on most supermarket produce. In tests, the egg-based coating's preservation was comparable to that of wax. For consumers who cannot eat egg, the coating washes off in water. Consisting of 70 per cent egg, the other 30 per cent of the coating is a mix of ingredients that include cellulose and curcumin. The cellulose is made from wood and creates a barrier to water, which helps the food stay hydrated. Curcumin is the main active ingredient in turmeric and provides the antifungal qualities that help slow the ripening process.

Continued work on the preservative includes looking for additional agricultural waste products that could be used similarly. The team is also investigating plant-based proteins.

Reducing food insecurity is a cornerstone of broad global social improvements, and part of that involves reducing food waste. Springwise has spotted an [edible nanofilm](#) that can coat up to a tonne of food for only €1 to €2, and a [nanosensor](#) that tracks the plant growth hormone that indicates ripeness.

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### **Takeaway:**

No waste ethical eating is a goal that many people strive for yet very few achieve. Cost is one of the most significant barriers to healthy eating and is one of the most important challenges that urban farms and local circular economies strive to overcome. Innovations in architecture and public design are helping to support such aspects of systemic change by finding new ways to bring hydroponic and rooftop farming, as well as green roofs and walls, to land-locked communities too frequently caught in food deserts.