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# Shuttle experiment leads to longer-lasting produce

September 17, 1998  
Web posted at: 11:25 a.m. EDT (1525 GMT)

*From Correspondent Rick Lockridge*

MADISON, Wisconsin (CNN) -- A NASA experiment to perfect the growing of plants in space may soon add shelf life to the produce at your local market.



A NASA experiment may help ensure longer-lasting vegetables and flowers

Researchers say they have developed a method to keep vegetables crisper, fruit fresher and flowers more vibrant.

The key, they say, is to contain ethylene gas, which is given off by ripening produce. The plant hormone is necessary for ripening, but too much of it can spoil an entire produce area.

The gas accounts for up to 10 percent of produce losses and 5 percent of flower losses -- costs which are currently passed on to consumers.

But through work with the space program, a research team has developed a new method of removing the gas and extending the shelf life of produce.

[Marc Anderson](#), a University of Wisconsin chemist, led the team that made the discovery.

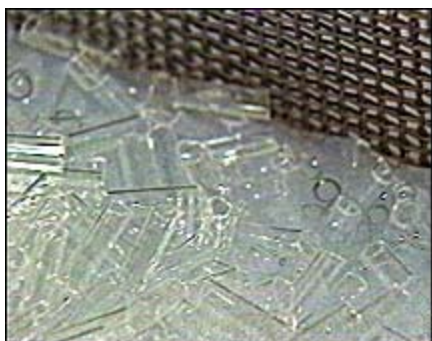
"You've probably brought a tomato home and it looked pretty good the day that you brought it home," Anderson explained. "But the next day it's got this little spot and you

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Glass pellets are used in the ethylene-removal process


open it up and it's not very good, and that's typical of ethylene damage." (168 K/11 sec. [AIFF](#) or [WAV](#) sound)

## Rocket science

Anderson and his team were working with NASA to find ways to perfect crop growth for long-term space travel.

Through experiments on several shuttle missions and aboard the Russian space station Mir, Anderson discovered that titanium dioxide, a common chemical used in paint, converts ethylene to carbon dioxide and water. The process is triggered by ultraviolet light.

To help make his discovery work on Earth, Anderson partnered with Kes Irrigation Systems, a Georgia-based company selling another ethylene removal process.

Kes was using potassium permanganate,  [RELATED VIDEO](#)  
 a purplish powder.

Now, the company uses glass pellets that have been coated with titanium dioxide. Unless the pellets are damaged, they never need to be replaced.

A unit containing the pellets is placed in a storage area. A fan draws in the ethylene-rich air, circulates it over the treated glass pellets, then pushes the cleansed air back out into the storage area.

Kes currently makes a unit that will cleanse air in up to 36,000 cubic square feet. Others are in the works now.

The technology could add one to four weeks in shelf life to fruits, vegetables and flowers, which could result in more fresh produce in the market all the time. It could also bring costs down for suppliers and consumers.

"I couldn't even begin to give you the billions of tons of food that can be given, or handed to the end user, in a usable state, rather than something that the grocery stores or the commercial enterprises have to throw out," Kes' [John Hayman, Jr.](#) said. (196 K/15 sec. [AIFF](#) or [WAV](#) sound)



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