

Keeping Your Greens Green

With Tupperware® FridgeSmart Containers

How many of you have money to burn? If so, see me after the demonstration – I want to learn your secret! Most of you (OK, all of you) would tell me it is **CRAZY** to throw away money. But throwing away the things that you have bought with your money is the same thing, isn't it? You have traded the only thing you can never regain, your time, which you exchanged for money, for something perishable. And according to the University of Arizona's Garbage Project, you throw away 150 pounds of it a year?!? Even if you were throwing away 150 pounds of something inexpensive like cabbage, currently 33 cents per pound, that is \$50. Now let's think of something a bit more expensive like grapes at \$1.50; that is still \$225. Or lettuce at \$1.69 per head during our drought. I don't know about you, but the thought of losing that kind of money makes me *ill*. What is the last thing you had to send down the disposal?

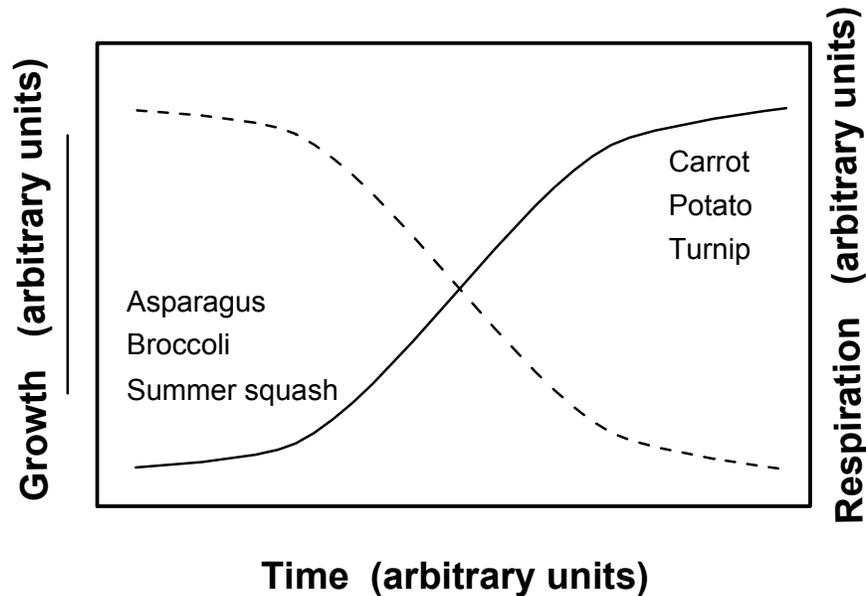
Would you like to be proud of the condition of the fresh fruits and vegetables in your refrigerator? Would you like to be able to take advantage of terrific sale prices on seasonal produce and enjoy it for weeks, freeing you from enslavement to market prices? Would you like to be confident that you are serving fresh, nutritious foods to your family?

One more thing to consider: What does your family eat for snacks? Do you go for "convenience" foods, like prepackaged cookies, or do you eat fresh fruits and vegetables? If you are not eating healthy snacks, is it because they are inconvenient? After all, when faced with a huge watermelon on a platter in the fridge, or a pack of Oreos, what's it going to be?

Tupperware has the answer with FridgeSmart, a series of scientifically designed, intelligent containers that preserve the quality of your produce. Tupperware commissioned scientists at the University of Florida's Horticultural Sciences Department in 1997 to pursue research on ways to extend the storage life of produce. This team spent nearly three years comparing items stored unwrapped in the crisper, sealed in traditional Tupperware containers such as the Easy Crisp, and in Tupperware containers with "vent patterns." Traditional Tupperware containers performed well with some items, like lettuce, but others, notably broccoli, did not fare so well. Why is this? Thanks to the generosity of the principal researcher, we now have the scientific facts, and I will share some highlights with you tonight.

Did you know that after produce is harvested, it is not really "dead"? Think about potatoes for a moment. Don't they sprout after a certain period of time? Did you know that the yellow broccoli you may have in your fridge is actually a **FLOWER**? The fruits and vegetables you buy are actually **LIVING, METABOLICALLY ACTIVE** organisms! And these different products "behave" differently after harvest, depending upon the stage of development that has been reached. For example, "broccoli is composed of small, immature (undeveloped) flower buds, which would eventually develop into fully mature, yellow pigmented flowers." Carrots, at the other extreme, are harvested at the end of their growth cycle and will remain in a dormant state for a fairly long period of time.

So what exactly is going on with these “zombies”? They are **BREATHING!** Yes, that is correct – they are breathing. Specifically, they are converting sugars to generate the energy to continue growing or to maintain their cells, consuming oxygen and producing carbon dioxide. The more immature (or even damaged) the item, the more respiratory activity occurs. Here is a graphic illustration from the research team:



So what does that have to do with whether my broccoli is good or spoiled? Well, in a sealed container, broccoli quickly uses up all the oxygen as it releases carbon dioxide. It actually *modifies* the atmosphere of the container. Within 24 hours, the optimal oxygen level of 21% declines to only 1 to 2%. In short, your broccoli is suffocating!

Berries, on the other hand, fare best in an atmosphere low in oxygen and high in carbon dioxide. Oxygen is the high-octane fuel needed by botrytis, or gray mold spores. Storing berries in a cold, tightly sealed container, or “atmospherically controlled environment”, will preserve their quality for a longer period of time than in the containers provided at the market.

Tupperware recognized the need to accommodate a wide range of produce, from the heavy breathers like broccoli to the uptight little berries. But how to do that, since they all have different oxygen requirements? The research team documented that “providing even small ventilation channels...[reduces] problems caused by O₂ depletion and CO₂ accumulation.” There is a need to ventilate for the high respirers and to maintain a closed environment for the low respirers.

These findings led to some radical changes in product design, which yielded a prestigious European Red Dot Award for Tupperware. Parenthetically, the new Egg Storer is also a past Red Dot winner.

- ✓ **ACE/Vent Covers:** The most notable difference in the new FridgeSmart containers compared to traditional Tupperware, and, frankly, anything else on the market, are the two white vent covers and air vents present on the front of every container. The vent covers can be both open, both closed, or one open and one closed. This innovation creates what is called an Atmosphere Controlled Environment, or ACE, which maintains proper levels of oxygen and carbon dioxide for a wide variety of produce items.
- ✓ **Integrated grid:** Some traditional Tupperware containers featured a separate grid insert to elevate the contents above any condensation in the container. While some moisture is necessary to maintain a desirable crisp texture, direct contact can cause the contents to become soggy and even rot. FridgeSmart containers feature a corrugated bottom, inside and out. Inside, the contents are elevated to promote airflow within the container and protection from condensation. Outside, the “grid” promotes airflow *around* the container, which results in better cooling and preservation.
- ✓ **Thicker Construction:** The research team noted that, particularly in longer containers, there was a problem with air leakage. You may have noticed this with products like the Easy Crisp or the Jumbo Bread Server. They recommended modifying the form of the containers so that they would be more rigid and impermeable. This design change resulted in the thicker walls and seals and the new method of sealing the containers often referred to as “running track”. To seal them, first open a vent cover so that we are not forcing a vacuum into the container. (This would make it very difficult to close the container, and can even result in damage to the seal.) Begin at the closest edges, press firmly on each of those corners until hearing the confirming clicks, then press firmly along the distance between those corners. Then we press firmly from those closest corners toward the farthest corners, and finally, across the far edge. Last, select the appropriate vent setting. Tupperware also noted that the thickness of the walls and resulting wide seal groove makes the seals easier to clean.
- ✓ **Modular Design:** FridgeSmart containers are designed to work together for efficient, organized refrigerator storage. Like Modular Mates, FreezeSmart, and even Rock ‘N Serve, they form a modular system to maximize storage space. Two Mini’s fit atop a Small. A Small and a Medium will fit atop a Large. A Mini and a Medium Long will fit atop a Large. Use the crisper drawer to store soft drinks or canned biscuits, and use the bottom shelf to neatly display your beautiful fruits and vegetables!
- ✓ **Textured Seal:** The top of each seal features a textured “wave” design which minimizes sliding when containers are stacked and complements the design of the bottom grid.
- ✓ **Translucent Color:** Translucent bases enable you to easily identify the contents.
- ✓ **Dishwasher Safe:** All parts are dishwasher safe for easy care. Vent covers are also removable.
- ✓ **Storage Chart:** Tupperware provides a convenient vent-setting chart in every FridgeSmart container. The four-piece set even comes with a durable plastic chart for ready reference. In addition, they provide a full-page larger print version on our web office to share with our Customers.

FridgeSmart containers are offered in a variety of shapes and sizes, as follows:

Size	Volume (cups)	Dimensions	Price
Mini (set of 2)	1 ³ / ₄	6 x 2 ¹ / ₂ x 3 ¹ / ₂	\$10.00
Small	4 ¹ / ₂	6 x 6 x 3 ¹ / ₂	9.50
Medium	7	6 x 8 x 3 ¹ / ₂	15.50
Medium Long	8 ¹ / ₂	6 x 12 x 3 ¹ / ₂	18.50
Large	19 ³ / ₄	6 x 15 x 5	23.50
Large Round	20	9 Diameter x 6.75 H	18.50
Medium Square (NEW)	18	Appx. 8 x 8 x ?	18.50
Large Square (NEW)	34	Appx. 12 x 12 x ?	25.00
Divider Set (2)	N/A		8.50

Additionally, product sets are priced to save Customers money. The four-piece set includes the Small, Medium, Medium Long, and Large containers for \$55.00, a savings of \$12, or 18%, off the regular combined retail prices of \$67.00. A second product set offer is available in the View Into You Get Smart Set. This set adds a Mini and the two-piece divider set for \$10 more, or \$65. The effective discount on that set is 19.25%. And hosts of qualifying parties (\$175 retail sales) may purchase either of these sets for half-price!

A few storage notes: a Small will hold about a pound of baby carrots. A Medium Long will hold about 2 pounds of grapes. A Large or Large Round will hold HALF of an average watermelon. The new Medium Square easily holds 4 pounds of grapes.

So who do you want in control – you, an intelligent person, or these zombie vegetables that, if left to their own devices, will modify their environments to their own peril?

Author's Note:

I am indebted to the Horticultural Sciences Department at the Institute of Food and Agricultural Sciences at the University of Florida for the technical information included in their report, “Behavior of Fruits and Vegetables in Sealed-Environment Systems: Influence of Developmental Stage at Harvest, Temperature, and Respiration,” (December 1997) as well as for helpful information obtained by telephone interviews and email correspondence.