

PENNY SAVER NEWS

Oct. 2, 2014

BY: Mary A. Keith, Ph.D., L.D.
Food, Nutrition and Health Agent

Using Bacteria to Fight Bacteria

Preservatives - we love to hate them, don't we? They certainly have a bad reputation. But at the same time, we love the benefits they give us. We can have any kind of cheese we want, year round. We can buy a loaf of bread today and finish eating it next week, without losing half of it to mold. Our bottle of cooking oil can sit on the shelf for months as we use it bit by bit, and it still tastes good down to the last drop. Those are some of the good things that come from preservatives.

But where do these preservatives come from? You might be surprised! Some of the more common preservatives are also vitamins! Vitamin E and Vitamin C are often used for their preservative powers. They are antioxidants. In foods that means that they actively prevent oils, fats and other ingredients from going rancid. Not only do rancid oils taste awful, they are not good for us. So even if you can get them past your nose, don't eat them. But if vitamin E or C has been added to your breakfast cereal, your fruit-flavored drink or your salad dressing, they won't get rancid.

Another surprising source of a preservative is a grape! Tartaric acid, sometimes called tartrate, was originally scraped from the insides of wine barrels. The puckery tang of a not-quite-ripe grape comes from its tartaric acid. If you ever unearthed an old bottle of grape juice or wine you might have found some strange white crystals in the bottom. Those were crystals of tartrate. And tartaric acid may be added to candy, gelatin, yogurt and baked goods to help slow down the growth of bacteria.

Several other preservatives are made by bacteria. One kind makes something to keep other bacteria from growing. My college microbiology professor used to say that they're just trying to 'protect their turf', keep everything else away so that they get all the food. But we figured out that we can use what they make to protect our food too!

So you may see on a bread label that it contains 'calcium propionate'. That preservative is made naturally, by bacteria and in our own stomachs. Propionates are especially effective at stopping molds and fungi from growing. But they don't affect yeast's growth. That makes them almost perfect for use in breads and baked goods. We want the yeast to grow, but not the mold.

Where do you think we first found propionates? Swiss cheese! Think how long Swiss cheese will keep in the refrigerator. Some food scientist decided to figure out why it didn't mold, and discovered that the bacteria that make Swiss cheese were protecting their turf too.

Another preservative we've stolen from bacteria is nisin. This is often used in cheese, liquid eggs and salad dressings, as well as some meat products. It is made by a few kinds of Lactobacillus bacteria. They're the ones that ferment milk and turn it into cheese, yogurt, buttermilk or kefir. But they do a good job of stopping many other bacteria, especially ones that can make us sick, from growing. So, we grow the good ones, take the nisin they've produced, and put it in other foods.

These have all been tested to be sure they're safe. How much may be used in a food is strictly controlled. Still, if you are eating a lot of preserved foods, a lot of commercial baked goods, cheese, candy, oils or mixes for cakes, cookies, muffins, pancakes and other dry foods with oil, you might be getting a lot. Better to eat more fresh, frozen or canned fruits and vegetables which won't need preservatives, and cut back on the cookies, chips, cheeses and high fat foods.

Here's an easy salad for dinner that has protein, fiber, and healthy fats. Enjoy!

ABC Dinner Salad

| | |
|--|---------------------------------------|
| 1 small Avocado | 1 can (15 oz) low sodium pinto Beans |
| 1 can (15 oz) no-salt-added sweet Corn | 2 small tomatoes, washed and diced |
| 1 small red sweet pepper, diced | 2 green onions, thinly sliced |
| 1 Tbsp olive oil | 1 ½ Tbsp lime juice, fresh or bottled |
| ½ tsp salt | ¼ tsp ground black pepper |
| dash of hot sauce optional | |

Drain and rinse the beans. Drain the corn. Combine all ingredients except avocado in bowl. Cover and refrigerate at least 1 hour. At serving time cut avocado in half and twist to separate. Remove seed. Slice avocado crosswise, then use a spoon to remove slices from skin. Arrange slices on salad and serve. Serves 8-10.

Hillsborough County Extension is a cooperative service of Hillsborough County Board of County Commissioners and the University of Florida.

The Institute of Food and Agricultural Sciences (IFAS) is an Equal Employment Opportunity Institution authorized to provide research, educational information and other services only to individuals and institutions that function with non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, marital status, national origin, political opinions or affiliations. U.S. Department of Agriculture, Cooperative Extension Service, University of Florida, IFAS, Florida A. & M., University Cooperative Extension Program, and Boards of County Commissioners Cooperating.