Nutrients Shrink As Veggies Grow

A study finds that high crop yields means fruits and vegetables have less energy to absorb minerals.

By Howard Cohen, MIAMI HERALD

March 6, 2005 - It's a good thing Popeye was created many moons ago. The ornery cartoon character would have to gobble 65 cups of spinach today to get the same amount of iron he got from gulping down a can of the stuff in 1950. That wouldn't leave much time to woo Olive Oil.

That's the message from a new study conducted by the University of Texas at Austin, based on U.S. Department of Agriculture data. Compared to 50 years ago, today's fruits and vegetables contain smaller amounts of some key nutrients, including protein, calcium, phosphorus, iron, riboflavin and vitamin C. The declines included a 6 percent dip for protein and 38 percent loss of riboflavin.

"This is one more reason to eat more vegetables because they are still, by far, our most nutrient-dense food," said Dr. Donald Davis, the study's lead author and researcher with the university's Biochemical Institute in the Department of Chemistry and Biochemistry.

Counters Dr. Robert Lawrence of West Palm Beach's Original Medicine, which markets Garden of Life whole food supplements, "There is already an obesity epidemic and while vegetables are certainly good for you it's not possible to eat 65 cups of spinach in one sitting."

Lawrence recommends supplementing one's diet with a good multivitamin.

Davis said there may be more than one explanation for the fall-off in nutrients, but the main reason is that farmers breed higher-yielding crops these days. The study of 43 fruits and vegetables, which included broccoli, strawberries, celery and green peppers, looked at 13 nutrients, and found that plants have a fixed amount of energy they can spend and varieties with high yields may have less energy to take minerals from the soil.

Researchers found that celery, green peppers and tomatoes lost the most protein; cantaloupe, lettuce and tomatoes have less phosphorus than they did in the era of the space race, and eggplant and tomatoes contain less vitamin C than they used to.

"That's the unintended side effect of our efforts to increase the yield of crops," Davis said, calling the phenomenon the Dilution Effect.

"When you irrigate and fertilize and control weeds to intensively increase the yield of a crop, it dilutes amounts of some nutrients. By encouraging a plant to grow faster and bigger, it does grow faster and bigger but it doesn't have the ability to uptake or synthesize the nutrients at the same faster rate," Davis said.

Mark Overbay, a spokesman for United Fresh Fruit & Vegetable Association, a Washington D.C.-based trade organization representing the produce industry, had no comment on the findings because the association hadn't looked at the study yet.

Davis' study was inspired by a 1991 British study that also found that the nutrient content of fruits and vegetables had declined in recent years.

However, the results are not beyond question he says. "The analytical techniques used 50 years ago are not the same as now," Davis said. For instance, magnesium, zinc, vitamins B-6 and E, dietary fiber and phytochemicals were not reported in 1950. "The possibility of what we are seeing could be artifacts of that nature. It might be that the plants haven't changed but the analytical methods have.

"The advantage is that people can look at nutrients that we may not have known about 50 years ago—or at least not analyzed. We hope our research will stimulate more comparisons," he said, citing the need to do similar research on grains, legumes, meat, milk and eggs.

http://www.myrtlebeachonline.com/mld/miamiherald/living/11048629.htm