Transportation Situation of Your Precious Produce

By Amy Gallagher

Have you ever taken a moment to wonder how, in the midst of a blizzard, or a heat wave, or a drought, the produce section of the local market never seems to change? How exactly do those strawberries get there with a foot of snow on the ground? Where did they come from? It’s time we get to the core of this apple of an issue. Fruits and vegetables are most beneficial and healthful when they are harvested at peak ripeness. But for those of us who live in areas that have drastic seasonal weather changes, we cannot always have easy access to the variety of produce that we desire all year round. Fruits and vegetables that are grown in North America spend on average five days in transport before they even reach the distribution center, often traveling between 1,500 and 2,500 miles. That number is 50% farther than what was common just two decades ago (1).

Produce grown in South America can spend up to several weeks in transport if they are moved by refrigerated ship. From there, they often spend a few days sitting on store shelves before they make it to purchase and consumption. Research suggests some fruits and vegetables may lose as much as 50% of their nutrients within 3-5 days after harvest.

Produce is a core part of a healthy lifestyle. Fruits and vegetables contain a variety of nutrients, such as vitamins, minerals, and phytochemicals - chemical compounds that naturally occur in plants that may have significant health benefits. However, because fruits and vegetables have so much water they are especially prone to moisture loss, nutrient breakdown, and the growth of bacteria and mold. For this reason, temperature and humidity must be carefully controlled to reduce such risks. If these levels alter even the slightest bit nutrient losses accelerate.

When produce is mechanically harvested, as is common in large scale farming, there is often a higher chance that it will be bruised. Damage to the surface may cause further breakdown of nutrients and an access point for microbial growth. Consumers often associate bright colors with higher quality vegetables. This leads to practices such as the use of chemical compounds like ethylene to preserve ripening as well as the use of waxes and dyes to improve visual appeal. Desire for optimal visual appeal can also lead to early picking or harvesting the produce before it is ripe.
Fruits such as peppers, tomatoes, apricots, peaches reach their optimal levels of vitamin C when they reach peak ripeness on the vine, if they are harvested earlier they do not have the levels of nutrients that they could potentially have(2).

These are some of the reasons that the locally grown movement has grown significantly in recent years. Locally grown produce travels significantly shorter distances before it is purchased and consumed. This allows it to be picked at peak time, when the nutrient content is highest which makes it the healthiest for the consumer. The number of farmer’s markets in the United States has increased tenfold in the past 40 years to over 3,000 (1).

The Department of Agriculture conducted a study that showed that levels of thirteen different nutrients, including calcium, phosphorus, iron and riboflavin, all of which are necessary for a healthy lifestyle, have declined in produce since 1950 (3). The authors of the article believe that this is because the focus has moved to producing as much as possible as fast as possible. This method does not allow the nutrients to fully form before the produce is picked. It also comes from the soil losing nutrients over time when it does not have time to replenish itself. When the growing process is already limiting the amount of nutrients in produce and the transportation process only lowers the levels more, one has to think of how much could possibly be left by the time it is ingested.

In cases such as these, whether an individual finds it necessary to switch from distance to local produce is often based on price, choice, and availability. In very urban areas, and even more specifically those of low socioeconomic status, farmer’s markets are rare, if present at all, and the prices of those available are often higher. Also, with local produce, not all types are available at all times of year. There is a greater variety available regardless of the season which can often influence individuals to buy from a distance to be able to have what they want. But none of this changes the fact that the longer the time between when the fruit or vegetable was picked the higher risk for contamination and the lower nutrient content that exists in the fruit.

References:
1. Barret DM. Maximizing the nutritional value of fruits and vegetables. Fruit & Veg. Specialist, Dept of Food Sci & Tech, U of California Davis.