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Lars Mogren

Department of Biosystems and Technology, LTV Faculty, SLU

**Lettuce talk about quality of field grown vegetables!**

Field grown vegetables in one way or another are a part of most diets. Consumers prefer that they look “fresh” in the supermarket. And the price should be low. And they should taste good. And contain high contents of vitamins and minerals. And be grown in a sustainable way. And be safe. And locally produced. And be of the “right” size. Yes, the list can be very long. In conclusion, we expect the vegetables we eat to be of high quality. Research about how the production, harvest and storage affect vegetable quality is what I will talk about in my presentation.

The quality work start at the planning stage. What cultivars should be grown? Maybe you are one of the consumers that have noticed that sometimes you cry an ocean when you chop your onions – but the next time you are almost not affected at all. Even if you bought the onions in the same supermarket, there is a high chance that you actually bought different cultivars. When it comes to apples and potatoes, most consumers ask for a certain variety – but onions are just considered to be “onions”. They are expected to look and taste the same all year round. In my opinion, that is strange. Of course there is a huge variation. Tools to predict this variation is something that I have studied.

In my research, I study what happens in field while the vegetables are growing and combine that with factors at harvest and follow the performance during storage (or at least the few days from harvest to consumption in the case of spinach). In all steps, the quality can be affected.

Humans often feel stressed in today’s society. But did you know that vegetables also can be stressed? Too much or too little of heat, water and light affect the quality in many ways, both before and after harvest. On the other hand, a little bit of stress seems to increase the content of healthy substances. In my research, much of the focus has been on factors before, during and after harvest that affect the content of healthy colour compounds (in onions) and vitamins (in spinach).

A salad might seem to be a simple thing. Just chop some leaves, and some pieces of fruits (like cucumber and tomato) and voila – finished. But in reality it is very complicated. As soon as you start “processing” the leaves, for example wash and chop, you damage some cells. Damaged cells provide sugars and nutrients for microorganisms. And the respiration of the cells increase dramatically. Yes, your salad is breathing! From a scientific point of view, I am interested to find ways to keep the vegetable quality high as long as possible, and by that reduce the waste.

Field grown vegetables are often produced in open fields where it is hard to keep wild animals away. Organic fertilizers are a potential source of unwanted microorganisms and irrigation water can be contaminated. How to avoid this? To boil your salad before consumption is not a real option. Instead, it is important to reduce the risks as much as possible. Both in field, storage, supermarket and your home fridge.

In my presentation, I will discuss vegetable quality from different perspectives and share some thoughts about the future for vegetable research.