Frozen versus fresh vegetables

Stored fresh vegetables have lower vitamin C content than frozen. Research scientists have examined and compared nutrients in frozen and fresh vegetables.

Why stored fresh vegetables have lower content of vitamin C is due to high metabolic rates after harvest, and no further supply of nutrients. However, there are great variation between the different vegetables.

Peas and beans loses nutrients faster than flowers as broccoli and cauliflower because they are seeds with high enzyme activity, while root vegetables are more stable. Fresh beans have 25 percent lower vitamin C content after 24 hours storage at room temperature.

Frozen goods

Frozen vegetables are harvested at right maturity, heat treated (blanched) to inactivate the enzymes and frozen within three hours for peas, six hours for beans and within 24 hours for other vegetables.

The storage time of fresh vegetables at the retail market are often longer than 24 hours especially during the wintertime.

Frozen vegetables loses between ten an thirty percent vitamin C from harvest to freezing, but are stable during storage.

Food research along the value chain

The quality and content of food nutrients are affected along the value chain, and an increased knowledge of what happens with the nutrients in the raw materials, harvesting, postharvest, during processes and preparation of meals are important to develop healthy and tasty vegetables. Researchers at Nofima focus along these lines and what happens with the nutrients after the food has been eaten.

"To focus along the value chain together with all shareholders with common challenges results in better understanding and cooperation for all participants," says earlier researcher and scientific and technical nutritionist Pernille Baardseth in Nofima.

She has 40 years of research experience on vegetables with emphasis to understand the importance of quality along the value chain in cooperation with the food industry.

"Communication of this knowledge to the government, food industry and consumer has been very important," she says.