Frozen fruits and vegetables: a healthy choice

Richard Béliveau

Translated from Le Journal de Montréal, April 25, 2016

Over the course of the winter, it is often remarked how difficult it is for the poorest of households to obtain fresh fruits and vegetables due to the high prices of these foods. It is worthwhile to remember that frozen fruits and vegetables are as good for the health as fresh products, but at a fraction of the price.

Vegetables remain the most neglected of our actual dietary habits, with only 20% of the population eating the strict minimum of five daily portions (400 g) of fruits and vegetables. In terms of cancer prevention, this deficiency is most unfortunate since vegetables are the only foods capable of slowing the progression of microscopic tumors which spontaneously form over the course of our lives.

Aside from being a vital source of essential nutrients such as vitamins, minerals and fibre, plants metabolically produce an arsenal of insecticidal, bactericidal and fungicidal molecules which serve as their defense against pathogens present in their environment.

What is even more interesting for us, however, is that some of these phytochemical compounds also possess well-defined pharmacological properties which interfere with several phenomena essential to the origin and to the progression of cancerous cells in humans.

Regularly eating significant quantities of plant-based foods can thus be considered as a form of preventive chemotherapy, where the thousands of phytochemical contents in these foods creates an inhospitable environment for the microscopic tumors and permits us to maintain them in a latent and inoffensive state.

STOPPING THE DETERIORATION

The invention of refrigeration has greatly contributed to easing access to fruits and vegetables throughout the year, and to also let us profit from their anti-cancerous properties.

Freezing is even more effective than refrigeration for conserving these foods, because these very low temperatures greatly reduce the speed of the enzymatic reactions involved in the degradation of biological tissues, and the crystallization of the water deprives bacteria of the solvent necessary for their growth.

When the fruit or vegetable is frozen shortly after picking, its content of nutrients is consequently much more representative of the freshly picked produce than when the same fruits and vegetables pass long periods of time on the shelf. However, frozen fruits and vegetables still have a bad reputation today and some believe, wrongly, that it is best to avoid eating vegetables rather than to consume them from the frozen form.

PRESERVED CONTENTS

Two recent studies illustrate the extent to which this perception is false and how frozen fruits and vegetables are perfectly adequate themselves in terms of their contents of vitamins, minerals and phytochemical compounds.

In one of these studies, the scientists compared the contents of vitamins from fruits (blueberries, strawberries) and vegetables (spinach, carrots, broccoli, peas, beans and corn) conserved by either refrigeration or freezing. They first observed that, contrary to popular belief, vitamin C was much better preserved in the frozen foods than in the refrigerated foods[1]. A similar phenomenon was observed for vitamin E, which was much more abundant in the frozen form for most of the foods studied.

The vitamin content of frozen vegetables is thus excellent, often better than that of foods which have been stored in the refrigerator.

The same team also examined variations in the composition of minerals, fibre and phytochemical compounds (phenolics) in frozen vs refrigerated vegetables[2]. The quantities of calcium, zinc and copper showed no changes due to freezing. The content of dietary fibre did not show any significant differences, nor did the phenolic compounds.

It is interesting to note that frozen blueberries contained slightly greater quantities of the phenolic compounds, an interesting characteristic since several studies have shown that these molecules play a key role in the anti-cancerous properties of these berries.

We must evidently count on the upcoming harvest season to take advantage of the fresh fruits and vegetables which will soon appear in our markets. On the other hand, after summer is gone, when the produce is either not available or is again too expensive, then the frozen fruits and vegetables will be an excellent alternative solution for taking advantage of the benefits of these foods. Whether they are grown in the common manner or organic, conserved fresh or frozen, only one aspect is paramount: what matters, first and foremost, is to put them into our diet as much as possible.

(1) Bouzari A et al. Vitamin retention in eight fruits and vegetables: a comparison of refrigerated and frozen storage. J. Agric. Food Chem. 2015;63:957-962.

(2) Bouzari A et al. Mineral, fiber, and total phenolic retention in eight fruits and vegetables: a comparison of refrigerated and frozen storage. J. Agric. Food Chem. 2015;63:951-956.

You find the content of this column useful? Make a donation at www.richardbeliveau.org to speed up our research

You find the content of this column useful? Make a donation at www.richardbeliveau.org to speed up our research

You find the content of this column useful? Make a donation at www.richardbeliveau.org to speed up our research