

Apple-powered research

February 17 2014, by Stephanie Rogers



Vasantha Rupasinghe in his lab. Credit: Danny Abriel

We all know that fruits and vegetables are part of a healthy diet. But Vasantha Rupasinghe, associate professor and Canada Research Chair in Fruit Bioactives & BioProducts at the Faculty of Agriculture, says their daily consumption can actually help prevent major diseases.

"Phytochemicals such as [flavonoids](#) present in fruits have attracted a great deal of interest during the last two decades due to growing scientific evidence of their beneficial effects on human health," he explains.

One of the most exciting findings of Dr. Rupasinghe's work is that flavonoids present in apple peels can not only act as strong dietary antioxidants but also exert a wide range of pharmacological activities.

"We have developed a process to isolate a specific group of flavonoids from the peels of local apples which is currently waste material from apple pie manufacturing in Nova Scotia," he says, speaking to a research collaboration with George Robertson of Dal's Departments of Psychiatry and Pharmacology.

The study shows that flavonoids show remarkable neuroprotective qualities in mice when it comes to strokes and multiple sclerosis. "Our studies also show that apple flavonoids have the ability to reduce plasma and liver cholesterol levels and blood pressure in experimental animals fed with high fat diet," he adds.

Dr. Rupasinghe has several patent applications pending and is now in the process of identifying a nutraceutical company to commercialize this technology.

Supporting local industry

His research program is also assisting local [fruit](#) producers and food processors to develop and diversify value-added food products for commercialization. This product development research includes functional foods and ingredients, nutraceuticals and natural health products.

For example, in partnering with the Nova Scotia Fruit Growers Association, Rupasinghe and his team have developed an apple-derived food antioxidant that can be used to stabilize omega-3 rich fish oil from oxidation. Working with Noggins Corner Farm in Annapolis Valley, Rupasinghe's team has developed a product prototype for non-fried,

antioxidant impregnated apple chips. His lab worked with Apple Valley Foods, one of the largest [apple](#) pie manufacturers in North America, to develop a process to turn the company's waste into a fiber-and antioxidant-rich bakery ingredient. And currently, the lab is working with Mason and Liquid Beverage Inc, to commercialize a fermented fruit beverage product targeted for lowering blood cholesterol levels.

What's next for this disease fighter?

"We have recently signed a new research partnership with Honibe, a PEI-based natural health product company to help identify specific plant compounds that protect against group A Streptococci which causes sore throats."

Provided by Dalhousie University

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