

Manitoba-grown foods as medicine



Dr. Peter Jones, director of the RCFN

Photo by RCFN.

Would you rather take a pill, or eat a cup of berry-flavoured frozen yogurt to manage the effects of diabetes? The latter could soon be scientifically confirmed as an alternative to medication thanks to *Growing Forward 2* funded research in functional foods.

One study will include compressing Manitoba-grown whole Saskatoon berries into a powder and mixing it with dairy to create a novel frozen yogurt. Researchers will monitor blood samples of participants to see if the antioxidants in berries help in managing glucose levels, an important component in managing pre-diabetes and Type II diabetes.

Manitoba functional foods researchers have been monitoring how different grains, fruits, vegetables and oils have an effect on the body, and in some cases could replace medicine to improve health.

"Foods have always been the poor cousin when it comes to lowering cholesterol," says Dr. Peter Jones, director of the Richardson Centre for Functional Foods and Nutraceuticals (RCFFN).

People know they should be eating healthy, says Jones, the difference between eating generally healthy and eating functional foods is the latter can be used to target a specific health issue.

A focus on individual test results

One study Dr. Jones has been working on is looking to find foods that benefit those who are statin-intolerant, and cannot take pills for cholesterol. The study is partially funded through *Growing Forward 2* and works on what he calls an 'every person is their own control' method of trial.

"It's about controlling everything except the factor you're interested in. People will inevitably be different from each other, so instead of looking at the results of the entire sample, we look at the individual results," Dr. Jones says.

This is the first time researchers are looking at a clinical solution, instead of just a dietary or lifestyle change, according to Lee Anne Murphy, executive director at Manitoba Agri-Health Research Network. A patient would actually be prescribed functional foods, instead of being encouraged to change their lifestyle on top of medicine.

Another study that could potentially replace medication is the effect ground flax has on high blood pressure.

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"We put ground flax in muffins, granola, bagels and other products and gave patients one of these products everyday for a year," says Dr. Grant Pierce, executive director of research at St Boniface Hospital and professor with the University of Manitoba. "We saw that there was an extremely large decrease in blood pressure, which would result in less heart attacks, stroke and death."

According to Dr. Pierce flax does not lower the blood pressure of already-healthy individuals. This means that the food would be a great maintenance aid option once blood pressure is reduced.

Local research, global impact

Although the research is being done with foods that are farmed within 1,000 kilometres of the lab, Dr. Pierce says that it's important to think of the impact it could have on a global level.

"These findings are really important, not only for people in Canada, but also for those in developing nations who are at risk of a heart attack or stroke and cannot afford medication," he says.

Studies on flax were originally funded through *Growing Forward* and continue to be funded through *Growing Forward 2* specifically to see if it is possible to replace medication with functional foods in certain instances.

Foods to target inflammation

Dr. Carla Taylor, principal investigator in Metabolic Nutrition at the Canadian Centre for Agri-Food Research in Health and Medicine (CCARM) was the lead researcher on a study that gave an omega-3 enriched diet to animals that are genetically obese. The ones who had canola and flaxseed oil in their diets ended up, over time, having less fat accumulation in their livers.

"This research may help people who are overweight and those who have a condition called fatty liver," Dr. Taylor says.

Fatty Liver Disease is caused by an excess level of fat in the liver and can only be determined by an MRI or ultrasound. The disease results in liver inflammation and insulin resistance, which can lead to diabetes.

"Flaxseed and canola oils contain omega-3 fatty acids which are anti-inflammatory. What's interesting in the animals we studied is that they did not change in body weight or amount of fat tissue, but their fat cells shrunk and produced more anti-inflammatory molecules and fewer pro-inflammatory molecules due to the omega-3 oils in their diet," she says.

For more information of functional foods and current research projects, visit mahrn.org and sbrc.ca/ccarm. ■