

Canola discovery a Manitoba success Expected to be hit in billion-dollar market

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CANOLA meringue pie, anyone? Or how about some canola-based mayonnaise in that sandwich?

People around the world may some day eat a host of foods and wear cosmetics made with protein extracted from canola meal through a unique technology invented and perfected in Winnipeg.

Canola protein is expected to be a hit in the multibillion-dollar protein market as consumers become increasingly nervous about animal welfare or the diseases animal products can transmit. Soy is already treading that path, but it took Manitoba know-how to overcome the technical barriers to pulling protein out of the world's second-largest oilseed crop -- a crop created in Manitoba. And it took a bit of Icelandic entrepreneurial spirit to turn that science into a product that's on the verge of hitting the market.

It might never have happened if two childhood friends from Gimli had not gotten together for lunch in the late 1990s.

Johann Tergesen -- whose brother runs the well-known Tergesen's store in Gimli -- was working in Vancouver for some Hong Kong real estate investors. They wanted to branch out into technology investments, so Tergesen came back to his home town to look at the pig farrowing bins being made by Faroex. Tergesen met up with his old friend, Paul Stefansson -- son of the late Baldur Stefansson, the father of canola.

Stefansson suggested Tergesen check out a new discovery that might again put Manitoba on the agricultural products map. The University of Manitoba's Don Murray had worked out a way to extract usable protein from canola -- a quest others had been pursuing for decades without success.

Soy protein can be extracted from soy meal using acids, but that process destroys canola protein. Murray found another way to do the job that is remarkably simple -- he dissolved in salt water the canola meal left after crushers extract the valuable oil.

When cold water is added, a valuable protein precipitates out.

After Tergesen's Burcon bought the company Murray and some associates had started, researchers discovered that a second protein with even more market potential remains dissolved in the salty water.

In a lab beside the company's modest pilot plant in Fort Garry, Martin Schweizer whips up a batch of what looks like the puffy egg white for a meringue -- except that it's even stiffer.

The company's Supertein protein could replace egg white in foods or anything else that needs that foamy look.

It also dissolves easily in water, opening up other possibilities, like the athletic protein supplement market.

"You can imagine clear apple juice with high protein content," Tergesen said.

The Puratein protein that settles out in cold water has similar properties to egg yolk and could be used in mayonnaise or as an emulsifier. Everything from protein bars to cosmetics might eventually be made with canola protein. Plant proteins are usually cheaper than animal proteins, Tergesen said.

Soy protein, meanwhile, is not really a competitor, since it does not have the same foaming or emulsifying properties.

Schweizer had just finished an engineering PhD in France when he found Burcon on the Internet and moved to Winnipeg to take the job as technical manager.

Canola protein leaped from clever idea to potential success story when Burcon caught the attention of international food giant Archer Daniels Midland last year. The U.S.-based company hopes to build the world's first canola protein plant in Germany by mid-2006. The U.S. Food and Drug Administration is currently testing Burcon's proteins for safety.

Tergesen said the \$30-million US plant might well have been built in Manitoba if it weren't for another biotech success story.

ADM wants to ensure global markets for canola protein by using crops that are not genetically modified. Most canola grown on the Prairies is genetically modified and it's almost impossible to guarantee traditional canola is not at least slightly contaminated with GM seed. In Europe and other regions, GM foods are shunned by consumers over health fears many scientists believe are unfounded.

If Supertein and Puratein are successful, ADM may eventually build other plants in North America and Asia. The technology may also be applied to other oilseeds like flax.