

Product idea germinated from vineyard waste



Researcher makes grape seed oil
Uses leftover grape skins and seeds
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SPECIAL TO THE STAR

Niagara-on-the-Lake — Every year in Niagara, thousands of tonnes of grape pomace — the seeds and skins left in the press during the winemaking process — are discarded. Some of it is returned to the vineyards as compost, some is hauled away to landfill sites.

But some of this waste material is being collected by a Niagara winemaker and entrepreneur who sees promise in the pits.

Joseph Pohorly, who owns and operates Joseph's Estates Wines, has launched a new product developed from that winemaking waste. His grapeseed oil, the result of several years of research and a doctoral thesis, is flying off the shelves of his Niagara-on-the-Lake winery. Bottled in attractive, frosted green 100-millilitre bottles that retail for \$40, the oil is cold-pressed from dried *vinifera* grape seeds — stuff that is normally thrown away. Pohorly, a researcher who started life as an immigrant farmer's son in Vineland, Ont., is no stranger to innovation and the development of new ideas. While others in Niagara have been improving their viticultural and viticultural techniques with the latest research and technology, Pohorly is off on another tangent, creating something from nothing.

"I've been a bit of a researcher all my life," said Pohorly, whose career incarnations also include teacher, civil engineer and architectural designer. Along the way, he obtained his master's of science degree and, most recently, his PhD in environmental engineering management.

"I've always been looking for a way to make that better mousetrap," added Pohorly.

In the late 1970s, Pohorly converted the family farm on Niagara Stone Road in Virgil and built Newark Wines, one of the earliest Ontario cottage wineries. This was the beginning of the new age of Ontario winemaking. Around that time, he also attracted the attention of German investors who came on board, changing Newark to Hillebrand Estates Winery. And it was in 1983 that Pohorly made the first commercial icewine for Hillebrand, becoming, in the process, one of the first Canadian icewine pioneers.

After Pohorly left Hillebrand in 1986, he built and ran the Colonel Butler Inn in Niagara-on-the-Lake for about nine years. But the call of winemaking beckoned and, in the mid-1990s, he purchased a 20-acre fruit farm just down the road from Hillebrand and converted it into a vineyard and winery, naming it Joseph's. He built his winery, and his reputation, on the thing that made his winemaking career earlier — Vidal Icewine. A selection of fruit wines and other vintages soon followed, and Joseph's Estates Wines grew to its annual production of 32,000 cases of wines.

Then, in 1998, the seeds for his new business were planted when Pohorly, on vacation in Florida, saw several bottles of Italian-made grapeseed oil on the shelf of a winery that he was visiting. He was intrigued by the concept of turning leftover grape seeds into a valuable product and a successful business venture.

"When I returned to Canada, I started doing my research to discover what could be done with this waste, how it could be done, how cost-effective the process could be, and what would be the value of this end product," said Pohory.

In Ontario, there are approximately 42,000 to 56,000 tonnes of wine grapes harvested every fall. Grape seeds constitute 30 per cent to 40 per cent of the solid waste produced from those processed grapes, giving Pohorly tonnes of potential product with which to experiment.

Pohorly discovered that grape seeds contain several important components that are excellent dietary and nutritional supplements and are also natural antioxidants. Antioxidants are important to the human body because of their ability to slow down and reverse free radical damage, reduce the risk of disease — especially

heart disease — and slow skin aging.

Grapeseed oil is also high in beneficial essential fatty acids — most notably linoleic acid — which the body needs to help reduce its total cholesterol levels.

But not all grapeseed oils are created equal.

That's why Pohorly has spent the past five years developing a method of extracting the oil without the use of heat or chemical solvents like hexane, typically used by large manufacturers to increase the amount of oil extracted from the seeds but which also reduce or destroy the oil's nutritional components. That's fine for cooking oil, but extracted oil destined as a nutraceutical must be obtained naturally without the use of heat or chemicals.

When Pohorly started looking into the possibility of pressing grape seeds for the high quality oil he wanted, he found that there was little information available and no one in North America doing it. (In the last few years, several California wineries have started pressing grape seeds for oil.) The centres for its production were in Italy, Germany and France.

Unfortunately, he also discovered that no one was willing to share the secrets of how to successfully and cost-effectively press and process grapeseed oil, especially on a small scale. So Pohorly started from square one, and spent about \$25,000 developing and modifying his own dehydrators and presses.

While running his winery, he spent hours in the lab analyzing the grape seeds, their properties and components. His research, much of which was completed at the University of Guelph, resulted in his receiving his PhD in Environmental Engineering Management from Columbus University in the United States in 2002. The following year, he launched Dr. Joseph's Grape Seed Oil, making about 3,000 bottles. He hopes to expand operations with the upcoming fall grape harvest.

And while oil is good for the body, reclaiming it is good for the soil. Vineyard soil, that is. Even though pomace can be composted and returned to the land, there are problems with decay, run-off, smell and fruit flies that are attracted to the decomposing waste. Pomace is not popular with nearby neighbours, so wineries are anxious for their leftovers to be gone.

"So recovery of by-products, or pomace, from winery waste is both an important economic consideration and an important environmental benefit," said Pohorly.

As a result of his efforts, Pohorly won the 2003 regional innovation award for sustainable development from the National Research Council of Canada Industrial Research Program and the Canadian Manufacturers and Exporters.

Gene Luczkiw, director of the Niagara-based Institute for Enterprise Education, has studied Niagara's wine industry and is familiar with its strategies and its challenges. As it continues to grow, he suggests that wineries must differentiate themselves in unique ways and believes people like Pohorly can lead the way in developing new ideas and creating new value-added ventures.

"You know the expression, 'one person's trash is another one's treasure?' Well, that's Joe's forte," said Luczkiw.

"His grapeseed oil production is an example of an innovative approach to using waste and turning it into treasure. Joe has a great way of conceptualizing and taking ideas further, and that kind of approach is critical to Niagara's wine industry as it approaches maturity. Innovation is about differentiation. It's about creating new markets, new products and new opportunities. What Joe is providing is not only a lesson in creating a new product, it's a lesson in how to continue innovating and to have a strategy of innovation on the edge of an organization."

And while many of his contemporaries are looking forward to or enjoying their retirement years, Pohorly has no plans to slow down now.

"I could stop but I don't think that would be fair," he said, expressing hopes to expand production and discover new uses and new applications for grapeseed oil. "There are a lot more things I want to do."