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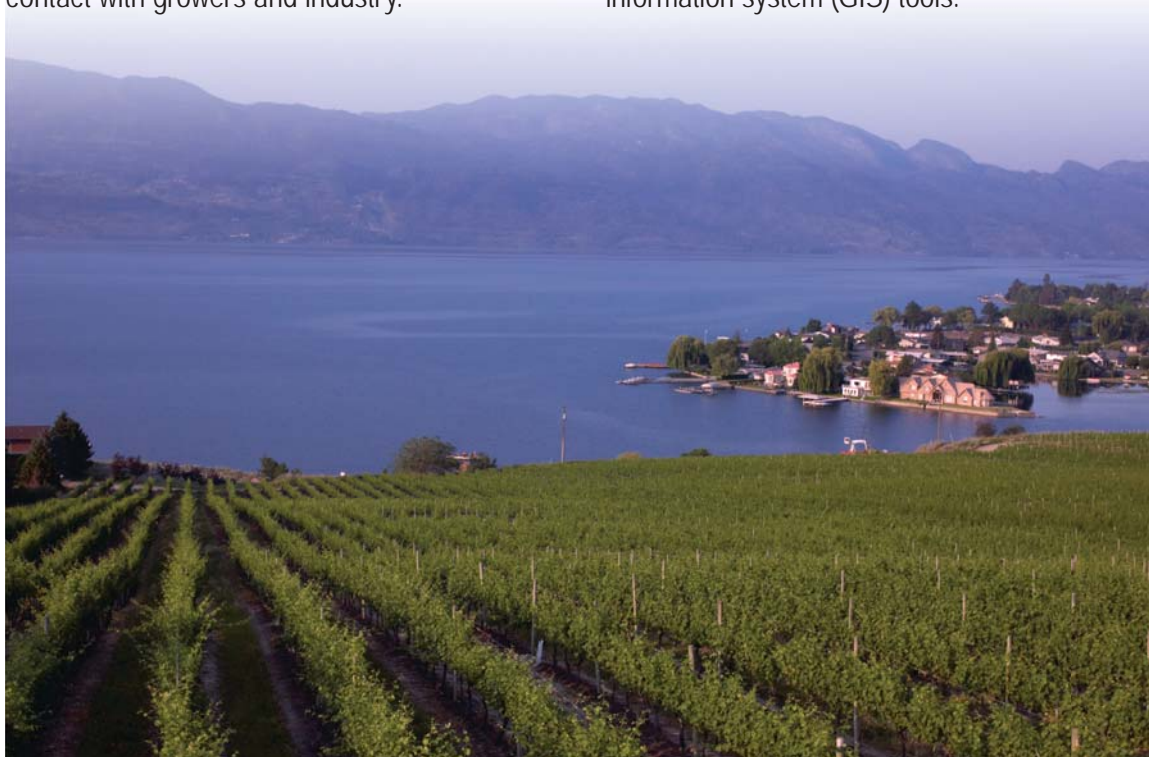
Science: A Key Ingredient in Producing High Quality Canadian Wines

Scientists from Agriculture and Agri-Food Canada's (AAFC) Pacific Agri-Food Research Centre (PARC) in Summerland, British Columbia are helping the Canadian grape and wine industry raise the bar for wine quality. Working out of the Okanagan Valley, PARC's wine grape team collaborates with grape growers, wineries, academics and government to address the whole spectrum of wine production. Whether it's controlling vineyard pests and diseases or improving viticulture and enology practices to enhance the quality of Canadian wines, the team is on the case.

Most of the team's viticulture research is done in commercial vineyards, which creates direct contact with growers and industry.

Relationships with industry organizations such as the BC Wine Grape Council are key to the team's success. These relationships keep the lines of communication open and let the industry see results first-hand. In spring 2010 this partnership was enhanced through an AAFC grant under Developing Innovation Agri-Products (DIAP). The BC Wine Grape Council received \$2.8 million for "Integration and Implementation of Applied Science Towards the Development of a Sustainable, High-Value Wine Industry in BC."

Under the DIAP project the team will develop soft management practices for pests; disease control techniques that employ advanced diagnostic tools; and terroir descriptions using geographic information system (GIS) tools.



The team will also study how irrigation and nutrient management affect vine and fruit development and find the optimum combinations of practices for producing the highest fruit quality for each terroir.

Working with nature is a strategy that works well for vineyard pest control. The team helps growers to understand the ecology of insects in vineyards, which is essential for the adoption of pest control methods such as the use of naturally occurring biological control agents including insect predators, parasitic nematodes and insect diseases.

Beyond the vineyard, the PARC team is also collaborating with scientists at the National Research Council to explore the influence of climate and water stress on grapevine hormones such as abscisic acid (ABA) which can influence grape berry ripening and development and ultimately, wine quality. This partnership has recently earned a Best Paper Award from the American Society for Enology and Viticulture for their scientific paper "Profiles of Abscisic Acid (ABA) and Its Catabolites in Developing Merlot Grape (*Vitis vinifera*) Berries". For the first time, researchers were able to track the production and metabolism of ABA over the course of berry development. This study will be used as a baseline to assess the effects of stress and hormone treatments on developing grape berries. Ultimately grape producers hope to be able to manipulate cultivation conditions, mildly stressing the plants at specific times to conserve resources while producing fruit with desired colour and flavours for winemaking.

Another exciting partnership for the PARC team officially began in April 2010 with the signing of a Memorandum of Understanding with Brock University's Cool Climate Oenology and Viticulture Institute in Ontario. The new PARC-CCOVI

Wine Grape Research Network will strengthen cooperation between researchers in Ontario and British Columbia and focus on national grape and wine research priorities for the Canadian industry.

All in all, these collaborative efforts are benefiting growers, wineries and consumers, as well as strengthening Canada's wine industry, which produces a reported 54.6 million litres of wine annually. It's no wonder that the wine industry in Canada has grown substantially over the last decade, with revenues increasing from



\$409.2 million in 1998 to \$820.9 million in 2007, and more than doubling employment in that same period. What a stunning example of collaboration which results in positive benefits to growers, industry and the Canadian economy!

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See also: www.agr.gc.ca/ScienceandInnovation

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