



Partners in Innovation

Ministry of Agriculture

Partners in Innovation highlights how UBC – through its research, community engagement and teaching – is working with and supporting BC's government initiatives. Each edition identifies existing collaborations and new areas of research and discovery that may be of use to Ministers and senior public servants within the ministry.

CHEMISTRY

Researchers in the **Department of Chemistry** at UBC's Okanagan campus are working on projects with profound implications for BC's agricultural sector, these projects include developing a new grapevine rootstock that thrives in drier conditions; identifying and characterizing the phytochemicals in hawthorn extracts that have shown efficacy in treating symptoms of chronic heart failure; and understanding the chemical complexities of the cranberry. Through their research contributions, UBC chemists are helping the agricultural industry by improving existing production methods and developing new products.

PROJECT HIGHLIGHT

Creating a Better Wine

Dr. Cédric Saucier, associate professor in the Department of Chemistry at UBC's Okanagan campus, was awarded a grant from the federal government's Developing Innovative Agri-Products program to better understand the quality of tannins in grapes and wine. Tannins are present in red wine and are important contributors to the taste and aging potential of the wine. Cédric uses physical, chemical, and spectroscopic tools to measure the amount and qualities of the tannins present in wines, grapes, and grape extracts. His current work is focused on finding the right balance of nitrogen for the Okanagan's dry, sandy soils. Soil nitrogen is key to producing quality wine and grapes. Growers will benefit from a greater understanding of which varieties grow best in different soils. This increased knowledge about tannins will also enable vintners to adjust their wine making to account for the tannins present in their grapes. Cédric and his Enology lab are working in partnership with the BC Wine Grape Council and are supported by the BC Knowledge Development Fund, Genome Canada, CFI, and NSERC.



PARTNERSHIP POSSIBILITIES

Wine Lovers Rejoice!

A new strain of wine yeast developed by UBC professor, **Dr. Hennie van Vuuren**, could lead to a reduced number of headaches triggered by the amines found in red wines and Chardonnays. Malolactic yeast was developed to produce fewer bioamines than traditional wine yeasts. Bioamines in wines can trigger headaches, hypertension, and migraines in wine drinkers. Scientists have estimated that approximately 30% of the world's population cannot consume wine since they are sensitive to bioamines. The new yeast strain has been approved for commercial use by Environment Canada, Health Canada, and the US Food and Drug Administration. Hennie has also developed a yeast strain that will produce 90% less ethyl carbamate, a carcinogen found in wines, bread, and other foods. This technology has been licensed to a private company and has been approved for commercial application by the US Food and Drug Administration.

The Future of BC Salmon

Pacific salmon numbers are on a worrying downhill trend, and the decline of the species could have serious cultural, environmental, and economical impacts on the province. In BC alone, the fishing industry accounts for \$1.5 billion in economic activity a year and tens of thousands of jobs. A new aquatic systems laboratory housed in the University's refurbished Biological Sciences building will allow UBC's internationally recognized researchers to investigate the effects of environmental changes on the performance and survival of outgoing juvenile and returning adult salmon and for the acceleration of research that is urgently needed to inform responsible and sustainable fisheries management. When completed, the **Initiative for the Study of the Environment and its Aquatic Systems (InSEAS)** will be Western Canada's premier aquatic research laboratory. InSEAS' state-of-the-art marine and freshwater labs will enable researchers to study salmon at the genetic and ecosystem levels and will provide solutions to help save our rapidly dwindling Pacific salmon stocks.

The University of British Columbia appreciates the generous support and vision provided by the Province of British Columbia. It is through this valuable partnership that UBC is able to maintain its position among world-leading research institutions and attract talented individuals to BC; individuals who help drive the economy in our region and promote innovative thinking through research and application to benefit all British Columbians.