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# Genomic research will forecast the potential of a forestry biofuels industry

Whistler, B.C.

As Canada and the world begin to reduce their dependence on fossil fuels, the emerging bioenergy sector faces a key challenge: the sheer volume of biomass required to produce biofuels, and how to guarantee a steady supply.

A new research project largely funded by Genome Canada, Genome BC and Genome Alberta will tackle this problem, by developing genomic tools that will allow a more strategic approach to resource planning. The sustainable use of Canada's forests for biofuel production would help economically diversify the forestry sector and reduce dependence on fossil fuels. But predicting and guaranteeing sources of feedstock is complicated by natural and environmental factors, such as the current mountain pine beetle epidemic.

Dr. Joerg Bohlmann (UBC) is co-leading this project along with Dr. Janice Cooke (U of Alberta). "We are currently faced with millions of hectares of dead trees, and have a surplus of potential bioenergy feedstock, but this does not guarantee a supply for the future. The question is: what are we going to replant with?" says Bohlmann.

The \$7.8 million dollar research project spans universities and scientific institutions across BC and Alberta, and will create tools for the prediction of available sources of feedstock so that investments in bioenergy are made in the right place and at the right time.

"This is where genomic tools can help us be more strategic in terms of how we plan feedstock development in our forests -- taking into account a holistic approach: biodiversity of our forests, climate change and pest prevalence -- to name a few," Dr. Bohlmann adds.

The research project titled, Genomics-Enhanced Forecasting Tools to Secure Canada's Near-Term Lignocellulosic Feedstock Supply for Bioenergy using the Mountain Pine Beetle System, will study the current mountain pine beetle epidemic in search of genomics information on pine trees, bark beetles, and associated fungal pathogens.

"The integrated genomics, risk modeling and economics approach of this project is innovative and novel on an international scale," says Dr. Alan Winter, Genome BC's president and CEO. "This project will build on well-established, multidisciplinary expertise and will further Canada's international leadership in forest health genomics as it relates to renewable bioenergy production."

Government and industry will have immediate access to the resources and tools developed in this project, which will potentially lead to applications in less than five years of project completion, expected in the fall of 2012.