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Project Code: #05162: Canadian AgriScience Cluster for Horticulture
Title: Identifying genetic markers to enhance apple breeding in Canada
RE: Executive summary of research results

Dear CHC members,

I am pleased to provide you with a brief summary of the results of our research that was supported by the CHC through the Canadian AgriScience Cluster for Horticulture.

Funding from the CHC was critical for the establishment of one of the most diverse collections of apples in the world – the Apple Biodiversity Collection (ABC). The ABC contains over 1000 apple varieties including well-known elite cultivars, heirloom varieties and hundreds of wild apple trees from the forests of Central Asia. It is located at AAFC's Atlantic Food and Horticulture Research Centre (AFHRC) in Kentville, Nova Scotia and will produce its first fruit this year (2014). Its establishment has attracted significant media attention from CBC TV and radio, Global TV, Canadian Geographic magazine and many others. Thus, in addition to being an extremely valuable resource for research, it is proving to generate substantial positive public attention to Canada's apple industry.

The funding enabled our research team to collect DNA sequence data from the entire ABC, which now represents by far the most comprehensive data set on apple genetic variation in the world. This has put Canada on the map as a world leader in apple genomics, which was evident by the reaction of the international apple research and breeding communities after my keynote presentation about our CHC-supported work at the Rosaceous Genomics conference in Trento, Italy in 2012.

The data we are collecting and analysing will lead to genomics tools that have the potential to significantly accelerate the development of improved apple varieties. However, it is critical that the Canadian apple industry be the first to benefit from these technologies. **To stay ahead of international competitors, my team must begin working closely with Canada's apple breeders to translate our technologies into tangible economic benefits to Canadian apple growers.**

The CHC has played a critical role in establishing an extraordinary resource of apple genetic diversity. Continued support from the CHC is essential to ensure that the technologies we are developing here in Nova Scotia provide a competitive advantage to apple growers across Canada. To this end, I am currently developing a proposal with breeders and researchers nationwide. You will be informed fully about this project in the near future. Given that the CHC was the main source of funding to generate the foundation for this long-term research endeavour, I am hopeful that you will also see value in financially supporting the next logical step: to translate our research into deliverables for your industry.

Thank you very much for your attention and support.

Best regards,

Dr Sean Myles
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