

## **Genomics-assisted breeding of oat at AAFC, Ottawa**

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The oat genomics research group at AAFC Ottawa has been spearheading the development and implementation of genomic tools in breeding and genetics research. This talk presents a mega genotyping-by-sequencing effort that profiled thousands of cultivated oat lines. Results from this analysis include the identification of genomic regions responsible for local adaptation in elite North American germplasm and the inference of the first oat haplotype map. Most importantly, we will present the evaluation of a haplotype-based GBS marker system for genomic selection, its application in the Ottawa breeding program, and validation results. Furthermore, we will present the preliminary results of the first whole exome capture in oat, its utilization in oat phylogenetic studies, and prospects for custom SNP assay development.