DivSeek Canada Portal Documentation

Lacey-Anne Sanderson

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GUIDES:

The DivSeek Canada Portal is a web-based platform to implement association genetics workflows supporting plant breeding and crop research focusing on large scale plant genetic resources / crop genotype-phenotype data sets whose access is brokered / managed by the project.

CHAPTER

ONE

GENOME CANADA PILOT PROJECT

The first iteration of the platform is funded under a Genome Canada Project with co-funding from other partners.

> Growing populations, a changing climate and increasing constraints on land, water and fertilizer together translate into increased risks to global food security and pressure to dramatically expand agricultural productivity in Canada – and quickly. This can't happen, though, without accelerated plant breeding programs to develop high-yielding, climate-friendly and "earth-friendly" plant varieties. Further, Canada is required by the terms of international treaties and agreements to develop mechanisms for sharing these plants and the genetic information underlying them.
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> DivSeek Canada is a project that will offer a way forward on both fronts. DivSeek Canada is the Canadian arm of an international initiative, DivSeek – a community driven effort involving a diverse set of partners who have voluntarily come together to unlock the potential of crop diversity to enhance the productivity, sustainability and resilience of crops and agricultural systems. This new Canadian-based project will accelerate plant breeding by leveraging the genetic diversity in the world's live collections and seed banks to create a unified, coordinated and cohesive information management platform. Canadian stakeholders will be consulted to guide the development of the platform, establish it on Compute Canada infrastructure and populate it with genomic information for three Canadian crops (lentils, flax and sunflower). It will also make mapping, breeding and visualization tools available on the platform for plant breeders, develop training resources and develop a long-term plan for its continued enhancement, as well as sustainable hosting, outreach and stakeholder support in Canada.
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> The platform not only provides an expandable database for Canadian crop information, but also offers a model for the DivSeek initiative globally. It is expected to galvanize the use of genomic information by plant breeders to accelerate crop breeding in Canada, particularly in small to medium-sized crop communities who have not previously had the financial resources or bioinformatics skill set to exploit the genomic information available.
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> —DivSeek Canada: Harnessing Genomics to Accelerate Crop Improvement in Canada