

Turning the plant breeding phenotyping bottleneck into a pipeline

Henry Cordoba-Novoa¹, Isabella Chiaravalotti¹, Laura Esquivel¹, Robert McGee¹, Jeff Smith¹, Shangpeng Sun¹, and Valerio Hoyos-Villegas¹

¹Affiliation not available

October 11, 2022

Henry Cordoba-Novoa¹, Isabella Chiaravalotti¹, Laura Esquivel¹, Robert McGee¹, Jeff Smith¹, Shangpeng Sun¹ and **Valerio Hoyos-Villegas¹**

¹*McGill University, Montreal, Canada*

ORCID: 0000-0003-1080-9148

Keywords: plant breeding, genetic gain, phenotypic plasticity, phenes, pulses.

BodyText: Despite progress in multiple areas, measuring phenotypes in plant breeding remains a bottleneck in the plant breeding and improvement cycle. This becomes particularly true when dealing with complex trait dissection. In the coming years, a revolution in plant breeding will be realized thanks to advanced in photo optic, ultrasonic, capacitive sensors, etc. This seminar reviews topics and discusses the current avenues that need to merge to alleviate phenotyping bottlenecks for plant breeding programs and improve true genetic gain. As case studies, it reports the research that the Pulse Breeding and Genetics laboratory at McGill University carries out for the development of pulse crop varieties. This is part of the efforts to build phenomics capacity in eastern Canada as part of the ECP3 initiative.