

The Convergent Innovation Webinar Series: Pulse Program: Inventing “One-World” Food Solutions for Sustainable Development and Affordable Healthcare



Fast-track the breeding of new varieties using doubled haploidy



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Presentation Abstract

Doubled haploidy methodology is commonly used in many agronomically important crops to speed the development of new cultivars. There are a number of advantages in using haploidy technology in both practical application (varietal development, mutagenesis, transformation) and basic research (genomics, biochemical, and physiological studies). Haploid plants are commonly produced using one of four methods: culture of anthers or microspores (androgenesis), culture of unfertilized ovules (gynogenesis), interspecific or intergeneric crosses followed by chromosome elimination, and by pollination with irradiated pollen. The most efficient method depends on the species. There are a number of factors affecting microspore embryogenesis including genotype, donor plant growth conditions, stage of microspore development, composition of the culture medium, and environmental conditions during culture. The frequency of embryo production will depend on whether or not these conditions are optimal and varies depending on the species. The pulses are considered recalcitrant to doubled haploidy methodology. For the past 25+ years, the National Research Council – Saskatoon has been developing doubled haploidy protocols in a number of different species. This webinar will discuss doubled haploidy, give some successful results and discuss the potential for the pulses.

About the Series

The **Convergent Innovation Webinar Series** will feature cutting edge science, technology and innovation in agriculture, food and health domains as well as in the behavioral, commercial, social and complexity sciences. These, combined with traditions from around the world, will altogether articulate an interdisciplinary research and action strategy to transform agricultural products like pulses from undifferentiated commodities into higher-margin whole and value-added food products that support sustainable development and affordable healthcare. Progressively, programs in the CI-Food webinar series will be developed for other agricultural products with high CI potential, e.g., dairy, fruits, vegetables, and others.



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#LovePulses

