

Commitment to develop the following contribution for use by the Excellence in Breeding Platform

Information about the product

Title ¹	The Development of a Public Breeding Program Best Practice Manual on Measuring Short and Long Term Breeding Program Genetic Progress
Description or specifications of the final product (< 2000 words)	<p>A written manual (draft) for public breeding programs to include:</p> <ol style="list-style-type: none"> a. standardised (as best as practically and biologically possible) recommended practices to assess RGP (including the dot points above describing what RGP should incorporate) of public breeding programs on an annual basis b. common recommend practices to assess long term genetic gain including trial designs and analyses going forward and methods for making RGT assessments using historical (including recent) data acknowledging sub-optimal designs may have been implemented. c. Recommendations or best practices of how breeding program’s trials should be designed in order to measure RGP on a short- term basis when historical trial designs do not allow a long-term trend to be established. d. Recommended program measurements as part of an annual product advancement and program review process <p>RGP should annually assess multiple stages of testing so that genetic trends are compared over time to assess the health of breeding program. This will add accuracy to the assessment and mitigate genotype by year effects and can assist in identifying potential problems in the selection process.</p> <p>RGP should incorporate all of the following:</p> <ul style="list-style-type: none"> • Estimated on annual basis for multiple stages of testing including at the earliest possible test stage • Consideration of all key traits relevant to the product profile • Elimination of environmental effects on production • Mitigate genotype by year effects • Analysis of the accuracy of the data upon which the assessments are based • Quantify genetic variability at that test stage • Breeding cycle time (defined as period from initial cross to use of advanced line as a recycled parent) • Improvement in Breeding Value relative to an appropriate set of Genetic Gain Checks

	<ul style="list-style-type: none"> • Be applicable to multiple crops (Ops, hybrid, asexually propagated) with minimal modifications <p>With the agreement of the team, additional milestones are possible as the project develops.</p>
Proposed delivery date	January 31, 2019
Proposed time investment, in days	<p>Leader (Consultant) – 12 days (Compensated)</p> <p>Public Team: 10-15 days (Compensated)</p> <p>Private Team: 5 days (Gratis)</p>
Additional Toolbox material (e.g. commodity specific) made available at no additional costs by the applicant	To be completed later.

¹The list of desirable topics can be found on the EiB website.