

Breeding innovation from selection to design by data driven platform

Dr. ISHIMOTO Masao

Institute of Crop Science, NARO, Tsukuba, Japan

Summary

NARO has more than 100-year history of crop breeding and a track record of developing breakthrough cultivars. As such, NARO maintains huge numbers of breeding materials (cultivars, and genetic resources such as landraces and wild species), cultivation metadata (pedigrees, cultivation conditions and field environmental records), and multi-omics data (phenome, transcriptome, genome). Currently, efforts are being made to develop an “Agronomic information infrastructure” to organize, integrate and utilize these data resources. Work is already underway to improve crop breeding (Smart Breeding) using the partially developed Agronomic information infrastructure.