

Is there a role for Genomics in Crop Improvement?

Steven Rothstein Department of Molecular Biology and Genetics
University of Guelph, Guelph, Ontario Canada N1G 2W1

The availability of large-scale DNA sequence information and the associated genomic tools like large-scale transcript profiling has changed the way biological research is performed. However, it is still not clear what impact this information will have when applied to crop improvement. This seminar will focus on maize improvement starting with a description of what types of changes have been selected for by breeders over the last 70 years. This will be followed by a discussion of the ways in which genomic information can have an impact on crop improvement in several areas. First, a discussion of modifying metabolite flow to improve an agronomic trait will be described. Second, there will be a discussion of attempts to develop transgenic lines to improve a complex trait like abiotic stress tolerance. Finally, the possibilities and difficulties of using genomic information to improve breeding selection will be discussed.