

4th International Conference on Agriculture & Horticulture

July 13-15, 2015 Beijing, China



Andy Renz

Benson Hill Biosystems Inc., USA

Trends in AgBiotech

Agricultural Biotechnology is far more than herbicide tolerant or insect resistant crops, although these two are key traits with multiple products in the market today. Driven by the realization that agricultural productivity will not suffice to feed the growing world population, and enabled by break-through advancements in genome sequencing and synthetic biology, new product concepts, approaches and traits have been developed. Disease resistant crops can now be developed through novel molecular breeding technologies such as genomic selection, and through transgenic approaches. Biologicals add a completely new dimension to the field of disease resistance in crops. Yield-enhanced crops and crops with improved abiotic stress tolerance are being developed by multi-nationals and start-up companies. To successfully develop products for this complex trait, a combination of molecular breeding, omics, synthetic biology, advanced phenotyping and precision agriculture is necessary. Biologicals have been developed that show promising effects on crop productivity in the field. The development of quality-improved crops has been challenging, and it now facilitated by progress in synthetic biology and genome editing. Future trends in AgBiotech may include integrated solutions of today's AgBiotech approaches. In the biologicals field, these may include integrated products for improved crop-microbiome interactions and combinations of biologicals with agrochemical products. For yield-enhanced and stress tolerant crops these may be multi-gene stacks with precise genomic integration through genome editing, in combination with modern breeding-derived traits. Both, GM and non-GM products may be possible.

Biography

Andy Renz received his PhD in Plant Molecular Biology from the University of Bayreuth, Germany. After Postdoctoral studies at the Max-Planck-Institute of Molecular Plant Physiology in Potsdam, Germany, he joined BASF Plant Science in 1999 as lab leader for metabolic engineering of oilseed crops. From 2016 to 2014 he was leading international teams at BASF Plant Science and was responsible for numerous technology acquisitions in Europe, Asia and the Americas. In 2014 he joined Benson Hill Biosystems as Vice President Business Development. Andy is on the Industry Advisory Board of several organizations, including Ag Innovation Showcase and Global AgInvesting.

arenz@bensonhillbio.com

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