

4th International Conference on Agriculture & Horticulture

July 13-15, 2015 Beijing, China

Increased crop yield through improved photosynthesis

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Benson Hill Biosystems, The Photosynthesis Company™ established a unique platform for the discovery and validation of approaches to increase photosynthetic efficiency and ultimately crop yield. Based on a deep knowledge of photosynthesis, state-of-the-art transcriptomics and proprietary computational biology databases and algorithms, candidate genes have been identified to improve the photosynthetic machinery of plants. We established unique model systems for crops with C3 and C4-photosynthesis for a fast and systematic validation of candidate genes in planta. Lead genes have been identified that when over-expressed under the control of developmentally regulated promoters lead to a significantly increased photosynthesis rate, plant growth, biomass production and seed yield in model plants. Promising lead genes have been transformed into several crops and their performance has been confirmed in field trials. We will present our discovery and validation platform and will discuss results from the over-expression of our most promising lead genes in model plants and crops. Benson Hill Biosystems already established commercial partnerships with market leaders: For potato we collaborate with Simplot for sugarcane in Brazil with Centro de Tecnologia Canavieira (CTC) for corn and wheat with Limagrain. We are actively seeking for new partnerships with seed companies in Asia that are interested to work with us in crops such as corn, rice, sugarcane, soybean, cotton and trees to increase crop yield through improved photosynthesis.

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. He is on the Industry Advisory Board of several organizations including Ag Innovation Showcase and Global AgInvesting.

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