

Stacked Gene Traits Improve Plant Productivity Under Multiple Environmental Stresses

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-- Combined Nitrogen Use Efficiency and Stress Tolerance Traits Drive Substantial Yield Improvement in Rice --

DAVIS, Calif. (February 21, 2014) – Arcadia Biosciences, Inc., an agricultural technology company focused on developing technologies and products that benefit the environment and human health, announced the development of rice featuring a combination of fertilizer efficiency and stress tolerance traits. Field trials of rice incorporating the "triple-stack" technology, which includes nitrogen use efficiency (NUE), water use efficiency (WUE) and salt tolerance (ST), have shown substantial yield increases over conventional rice.

In two years of field trials, Arcadia's triple-stack rice produced yield increases of 13-18% under various nitrogen application rates, 12-17% under water stress conditions, and 15% under combined stress. Parallel trials under salt stress in greenhouse conditions showed yield increases as high as 42%. These results clearly demonstrate the ability to combine multiple efficiency and resiliency traits to develop plants with robust performance under multiple conditions. The company is developing similar trait stacks in other crucial food and feed crops, including wheat and soybeans.

As one of the world's most widely cultivated food crops, rice plays a critical role in food security for more than half of the world's population. In a recent report, the International Food Policy Research Institute (IFPRI) predicted that maintaining food security in the face of climate change and population growth will require a combination of technologies that target broad-based yield improvement, abiotic stresses such as heat and drought, and improved nitrogen use efficiency.

"Rice and wheat provide the foundation of nutrition for a very large portion of our global population," said Eric Rey, president and CEO of Arcadia. "Our results with triple-stack rice clearly demonstrate the potential of developing crops with enhanced yield performance under a broad range of growing conditions. Considering the impact of climate instability on crop yields and food security, trait combinations such as Arcadia's triple-stack technology will play a critical role in sustaining future generations."

About Arcadia Biosciences, Inc.

Based in Davis, Calif., Arcadia Biosciences is an agricultural technology company focused on the development of agricultural products that improve the environment and enhance human health. Arcadia's agronomic traits, including Nitrogen Use Efficiency, Water Use Efficiency, Salt Tolerance, Heat Tolerance, and Herbicide Tolerance, are all aimed at making agricultural production more economically efficient and environmentally sound. Arcadia's health technologies and products create healthier nutritional ingredients and foods with lower production costs. For more information, visit www.arcadiabio.com.