



Ball Horticultural Company and KeyGene Announce the Complete Genome Sequence & Assembly of *Impatiens walleriana*

The companies' breakthrough high-quality genome sequence and assembly of *I. walleriana* leads to more efficient breeding and identification of disease resistance markers for important industry solutions.

WEST CHICAGO, IL – Ball Horticultural Company is thrilled to announce a breakthrough years in the making. Through a collaborative effort with KeyGene, the companies are pleased to announce the successful sequencing and assembly of the *Impatiens walleriana* genome. This first-of-its-kind project creates a highly accurate tool for breeders looking to provide new solutions to the industry in Impatiens.

"Genome sequencing and assembly not only provides a more efficient approach to breeding and plant trait identification, but it provides a deeper understanding of our products and their ultimate potential in the marketplace," says **Matt Mouw** Chief Technology Officer for Ball Horticultural Company.

Over the course of this project, Ball and KeyGene achieved 100x coverage using long read sequencing technology, which has already led their breeding teams to better utilize significant key plant genes, specifically, genes that confer high resistance to Impatiens Downy Mildew (IDM). The disease has severely impacted global sales of *I. walleriana* since 2008. By utilizing this new resource of high resistance, along with these newly available genomics tools, breeding companies like PanAmerican Seed are closer than ever to producing Impatiens with high resistance to IDM.

"PanAmerican Seed is known as 'the Impatiens company,' a leader in the class for years, and with this new understanding of *I. walleriana*, we continue to lead the industry toward grower solutions," says **Matt Kramer**, Research Director at Ball Horticultural Company. "Dedicated work by our breeding teams over recent years has produced positive results and we can't wait to share our discoveries with customers very soon."

While PanAmerican Seed has worked to address IDM solutions over the past five years, the impatiens genome project took more than two years to complete. It included disciplines from many areas of the industry, including pathologists, breeders, seed technologists, product development teams, and production.

"It was truly two key projects brought together to produce great success overall," says **Ruud Brinkkemper**, General Manager of PanAmerican Seed B.V. in Venhuizen, NL. "The sequencing and assembly of the *I. walleriana* genome has empowered me to better use the plant's genetic potential to unlock important traits through the use of traditional breeding techniques."

"KeyGene is proud of its collaborative spirit, and the project with Ball has been especially satisfying, as it has directly impacted current breeding and product development," says **Arjen J. van Tunen**, CEO of KeyGene. "All sequence and molecular breeding data were transferred to an *I. walleriana* CropPedia, a KeyGene software that enables easy and comprehensive analysis and marker/gene identification. In combination with our sequencing and assembly strategy, this proved to be vital for the success of the project."

According to Mouw, Ball Horticultural Company has committed to a significant investment in the area of advanced plant

technology, with the goal to deliver products, services and solutions to the industry. “This is the first in what will promise to be a pipeline of opportunities in seed and vegetative products that wouldn’t before have been possible.”

About Ball Horticultural Company

Ball Horticultural Company is a world-class breeder, producer and wholesale distributor of horticultural products. A family-owned business since it was founded in 1905, Ball has introduced many innovative, award-winning varieties to the world, including the Wave® petunia family and Super Elfin® impatiens. The company has worldwide production, sales and marketing through its many subsidiaries on six continents. For further information, visit ballhort.com.

About KeyGene, N.V.

KeyGene is the go-to AgBiotech company for higher crop yield & quality. With its intellectual capital, solution driven approach and collaborative spirit, KeyGene works for the future of global agriculture with partners in the AgriFood sector. Its goal is to help organizations with their toughest R&D challenges, combining cutting-edge breeding technologies, bioinformatics & data science expertise and plant-based trait platforms. KeyGene is based in Wageningen, Netherlands, and Rockville, Md., USA. Visit www.keygene.com.

About PanAmerican Seed

PanAmerican Seed is an internationally renowned breeder and producer based in West Chicago, Illinois, that produces high-quality seed and best-performing flower and vegetable varieties. Research facilities in North and South America, the Pacific Rim and Europe test and evaluate new varieties under numerous climatic conditions. Its state-of-the-art seed distribution center guarantees quick, efficient processing of orders for our worldwide customers. For more information, visit panamseed.com.