

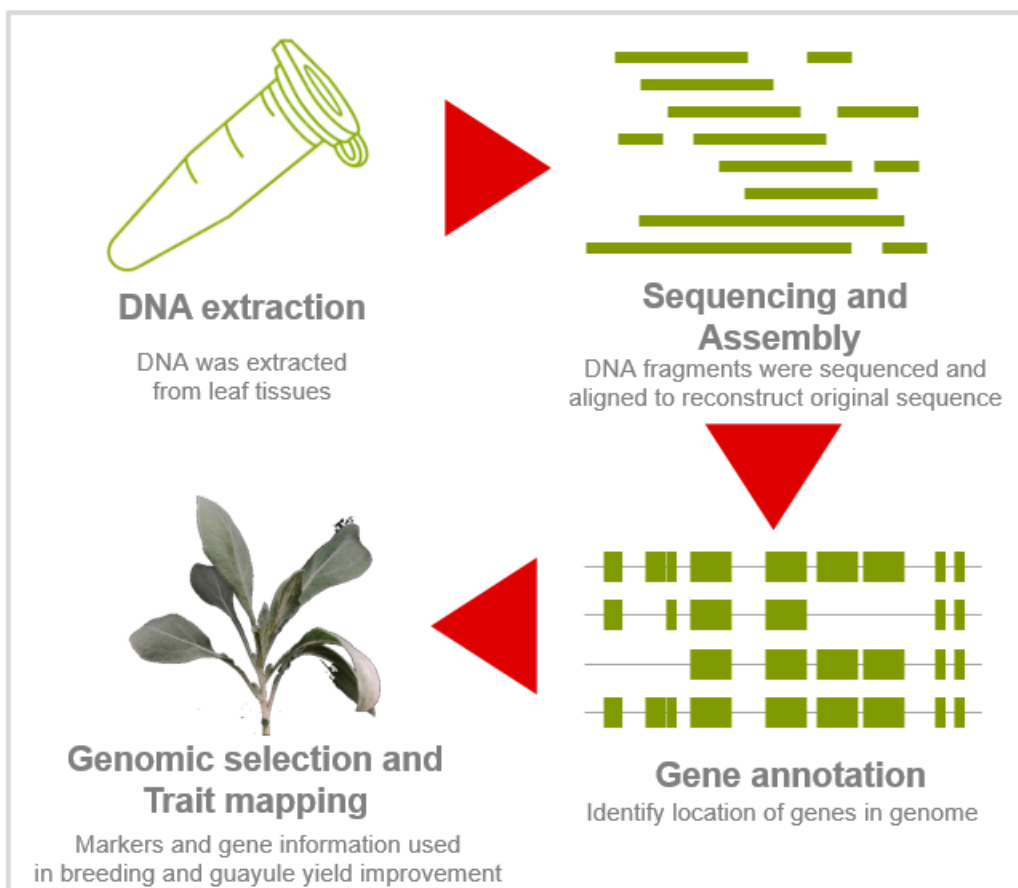
For Immediate Release

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Bridgestone Collaboration with NRGene Achieves New Milestones in the Assembly of Multiple Guayule Genomes

- This new guayule genome has been fully sequenced and assembled.
- The four-year collaboration with genomic big data solutions company NRGene to further advance the commercialization of guayule, an alternative to natural rubber.
- Bridgestone developed mapping populations that allowed NRGene to construct a genetic and physical map by successfully identifying the correct order of DNA fragments.

TOKYO (January 20, 2021) — [Bridgestone Corporation](https://www.bridgestone.com) (Bridgestone) today announced results of its four-year collaboration with genomic big data solutions company NRGene to further advance the commercialization of guayule, an alternative to natural rubber, as part of the effort to diversify its sources of raw materials. The combined effort focused on analyzing DNA to allow more efficient use of inherent genetic diversity to breed highly productive varieties of guayule, an alternative to natural rubber.



Native to the desert regions of the southwestern United States and northern Mexico, guayule is a shrub capable of producing natural rubber and can grow on marginal farmland with minimal fertilizer inputs. Guayule has the physical and genetic characteristics of a desert plant, successfully tolerating arid environments and making its demand for water lower than other commercial crops grown in the region. This is important since dwindling water resources in the Southwest U.S. are demanding that agriculture find ways to reduce water usage and guayule could be a solution.

Utilizing NRGene's DeNovoMAGIC™ system, scientists at Bridgestone and NRGene have successfully assembled a specific guayule genome. This achievement provided a complete description of the genome sequence and all its genes, allowing for the use of additional genomic diversity in the identification of the genetic basis for important traits such as rubber percentage.

Furthermore, Bridgestone developed mapping populations that allowed NRGene to construct a genetic and physical map by successfully identifying the correct order of DNA fragments. These maps enable Bridgestone to use the information contained in the genetic code to assist in its breeding efforts. The joint work was successful in constructing pseudochromosomes (i.e. molecules that contain most of the information of the chromosomes) using an approach that combines multiple genomes, marking a historic milestone in guayule research.

"The collaboration between Bridgestone and NRGene will provide important advances for the future of the automotive and rubber industries," said William Niaura, director, Innovation, Bridgestone Americas. "The combination of our previous work with the sequencing and assembly of the hevea genome and our current work with guayule uniquely positions Bridgestone to utilize these resources for comparative genetic analysis of the rubber biosynthetic pathways and become a leader in the genetics and improvement of rubber-producing plants."

"Today we mark another important milestone towards expanding natural rubber resources and reducing production costs," said Dr. Gil Ronen, founder and CEO of NRGene. "Using Guayule, Bridgestone could not only meet the critical performance standards for the tire industry but also produce more sustainable products, relying on domestic plant-based resources."

To achieve the company's vision, "2050, Bridgestone continues to provide social value and customer value, as a sustainable solutions company", Bridgestone have set a new environmental mid-term goal, Milestone 2030, to further promote the challenges of "decoupling" the growth of its business from its environmental impact and increased resource consumption. The company provides solutions through innovation to contribute to safer and more secure transportation, as well as it will further reduce its impact on the environment by contributing to CO₂ reduction and realizing the circular economy including expanding renewable resources.

Bridgestone will continue to evolve technological innovations by combining our unique rubber knowledge with digital technologies and will co-create value through the work with various partners.

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About Bridgestone Corporation:

Headquartered in Tokyo, Bridgestone Corporation is a global leader providing sustainable mobility and advanced solutions. With a business presence in more than 150 countries worldwide, Bridgestone offers a diverse portfolio of original equipment and replacement tires, tire-centric solutions, mobility solutions, and other rubber-associated and diversified products that deliver social and customer value. Guided by its global corporate social responsibility commitment, Our Way to Serve, Bridgestone is dedicated to shaping a sustainable future of mobility and improving the way people around the world move, live, work and play.

About NRGene:

NRGene develops and commercializes cutting-edge genomic tools that are reshaping agriculture worldwide. Our cloud-based software solutions are designed to analyze big data generated by New Generation Sequencing technologies in an affordable, scalable and precise manner. By applying our vast proprietary database and AI-based technologies, we provide leading international ag, seed and food companies with computational tools to optimize and accelerate their breeding programs, significantly increasing crop yield and saving time and money.