

Title: Hybrid Rice and Genomic Prediction: Innovating for a Future of Food Security

Abstract

Bayer focuses on the industrial application of Direct-Seeded Rice (DSR) as a solution to the growing challenges posed by climate variability and labor shortages in rice production. As the global demand for rice increases, there is an urgent need to develop high-yielding, climate-resilient varieties that are adaptable to continuous cultivation cycles. Utilizing genomic selection and next-generation sequencing (NGS) technology, we identify rice varieties with enhanced traits that are optimal for DSR systems. These innovations not only boost productivity but also reduce the resource intensity of rice farming, making it more sustainable. From an industrial standpoint, the adoption of DSR combined with cutting-edge genomic tools offers a scalable approach to meet the demands of a growing population while supporting smallholder farmers. This study highlights the potential of integrating advanced breeding technologies into industrial rice production to enhance yield, sustainability, and resilience in the face of climate change.