Abstract

Developing drought-resistant cultivars in tree crops demands a meticulous and strategic genotypic selection process. This study introduces a novel and clever genotypic determination procedure aimed at establishing a breeding population for the purpose of cultivating drought-tolerant varieties in tree crops. The procedure encompasses a multifaceted approach integrating genomic analysis, phenotypic screening, and selective breeding strategies.

Our protocol involves an initial screening phase employing high-throughput genomic techniques to identify

Keywords:

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drought stress conditions, both in controlled environments and field trials. This meticulous phenotypic assessment serves to validate their performance and adaptability to drought.

By integrating genotypic data with robust phenotypic evaluations [4], a selective breeding population is assembled, comprising individuals showcasing superior drought tolerance traits. This protocol not only expedites the breeding process but also ensures the development of tree crop varieties capable of thriving in water-limited environments. This innovative approach, poised at the intersection of advanced genotypic analysis and precise phenotypic screening, not only accelerates the development of drought-tolerant tree crop cultivars but also lays the groundwork for sustainable agricultural practices in regions susceptible to drought, thereby fostering resilience and productivity in tree crop cultivation.

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