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Enhancement of nutritional quality in maize grain through QTL-based approach

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Abstract

Maize is one of the important food crops after rice and wheat. It has good nutritive value in terms of starch, proteins, vitamins, and micronutrients which makes this crop important for industrial use. Many elite maize inbred lines and hybrids have already been developed which are having several combinations of nutritional quality traits, viz., quality protein maize (QPM), provitamin A, low phytate, and vitamin E using molecular marker-assisted breeding (MAB), especially in India, and China. Hence, the identification of quantitative trait loci (QTLs) for various quality traits is an important aspect. Several QTLs have been identified for quality traits and introgressed into elite germplasm by various research groups to develop multi-nutrient-rich maize genotypes. The use of potential QTLs in molecular breeding with advanced phenotyping platforms for quick

identification or quality check may help the breeders to develop and commercialize biofortified maize. In this review, comprehensive information about QTLs for different quality traits in maize has been discussed for their potential utility in maize breeding programs.

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Ethics declarations

Conflict of interest

There is no conflict of interest.

Additional information

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