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“Genome editing tool development and deployment”

Syngenta has been working on gene editing systems for over a decade and have evaluated a range of technology options in crop plants. With the progress of CRISPR/Cas technology, Syngenta has been significantly optimized Cas12a editing system in Syngenta crops. Here we present unpublished examples of improved Cas12a editing capability in crop plants. Deployment of genome editing across a range of elite varieties still remains a challenge in a number of crop species. We have developed a number of elite transformation crop protocols as well as developing a novel approach to deliver edits to wide range of elite varieties in corn, sweet corn, wheat and *Arabidopsis*. The system referred to as HI Edit combines both CRISPR Cas technology and double haploid (DH) inducer lines. The HI EDIT system can deliver a homozygous edits in any elite variety using a single cross thus avoiding a laborious backcrossing approaches.