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Oral Communication Abstract – 7.02

GENOME EDITING FOR BETTER, HEALTHIER TOMATOES

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Genome editing is revealed as a powerful tool for scientists, breeders and plant biotec engineers. It is not only contributing to a better understanding of the genetic basis of plant development and responses to the environment by facilitating reverse genetic approaches but it is also directly providing important genetic materials for breeding and biotech applications. The power of the technology relies in that it is easy to implement in most important vegetable crops, it is efficient accurate and fast. In my talk I will present examples of CRISPR Cas application in crops, mainly in tomato, and support that these characteristics excel when CRISPR CAS is applied to plant breeding for traits that depend mostly by single gene or by multiple traits.

Furthermore, CRISPR technologies provides isogenic materials for better comparison of mutations underlying important phenotypes and this has enable the confirmation of gene to trait but also the discovery of new aspects of the phenotype. I will present also examples of other New Plant Breeding Technologies like cisgenesis and how CRISPR Cas is an excellent approach that can be combined with markers assisted plant breeding, cisgenesis and even transgenesis.