Better Tomatoes! Gene Introgression for Improving Fruit Quality

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ABSTRACT

Researchers at the University of California, Davis have developed methods for improving fruit quality by introgressing genes encoding specific transcription factors into the plant.

FULL DESCRIPTION

Fruit chloroplasts are an essential element of the process required for fruit development. Studies suggest that fruit chloroplasts may contribute to the overall accumulation of starch and sugars by green fruit, thus contributing to the quality of the fruit when it ripens.

Researchers at the University of California, Davis have identified the role of specific transcription factors in fleshy green fruit development and a method for preparing a plant with improved fruit quality. The introgression of select genes, which code for specific transcription factors, into the plant leads to their expression in the green fruit of the plant. Increased chloroplast biogenesis in the fruit occurs as a result of this method and thus the ripe fruit exhibit enhanced quality characteristics.

The trait should improve the flavor of fresh tomatoes and increase the processing efficiency and quality of processed tomatoes.

APPLICATIONS

- Useful for commercial varieties of tomato.

FEATURES/BENEFITS

- Improved fruit quality in plants
- Increased level of soluble solids and/or sugars
- Increased levels of starch
- Standard breeding methods can be used
- Any standard method of screening for desired plants can be used

RELATED MATERIALS

- Powell, et al., Uniform Ripening Encodes a Golden 2-like Transcription Factor Regulating Tomato Fruit Chloroplast Development, Science, 336, 1711 (2012) - 06/29/2012
- Kolata, Flavor Is Price of Scarlet Hue of Tomatoes, Study Finds, New York Times, (Jun 28 2012) http://www.nytimes.com/2012/06/29/science - 06/28/2012
- Granka, Researchers isolate reason market tomatoes don't taste as good as homegrown, The Sacramento Bee (Jun 28, 2012) http://www.sacbee.com/2012/06/28/4591395/researchers-isolate-reason-

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OTHER INFORMATION

KEYWORDS

improved fruit quality, plant transcription factor, chloroplast biogenesis, tomato

CATEGORIZED AS

- Agriculture & Animal Science
- Plant Traits
- Plant Varieties

RELATED CASES

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PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	9,549,509	01/24/2017	2011-841

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