Orange and grapefruit growers devastated by citrus diseases have new hope: CRISPR gene editing

In the past few decades, two bacterial diseases — Huanglongbing (HLB) and citrus canker— have decimated the Florida citrus industry by killing millions of trees, costing the state billions in lost revenue, and reducing production by 80%. HLB disease has spread to Alabama, California, Georgia, Louisiana, Mississippi, South Carolina, and Texas. There are currently no economical solutions for these industry-threatening diseases. Growers are applying large amounts of pesticide to combat the disease; this is unsustainable and has little to no effect.

Biotechnology start-up Soil Culture Solutions, LLC (d/b/a Soilcea), in conjunction with the Univ. of Florida (UF), is attempting to solve this problem by developing disease-resistant citrus trees using CRISPR precision breeding. CRISPR precision breeding is a powerful tool for breeding new resistant varieties that the U.S. Dept. of Agriculture (USDA) can classify as non-GMO. This process mimics natural evolution, where edits occur that delete the DNA that causes susceptibility to diseases, allowing the plant to adopt the beneficial change slowly through natural selection.

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Yianni Lagos, CEO of Soilcea, says, “We are excited to partner with growers and nurseries to get new canker- and HLB-resistant trees in the field, and to help restore the Florida citrus industry.”

This is an excerpt. Read the original post here