United States Department of Agriculture

Animal and Plant Health Inspection Service

Biotechnology Regulatory Services

4700 River Road
Riverdale, MD 20737

Dr. Craig Richael
Ms. Tracy A. Rood
Simplot Plant Sciences
5369 W. Irving Street
Boise, ID 83706

Re: Confirmation of the regulatory status of genome edited avocado with reduced PPO

Dear Dr. Richael and Ms. Rood,

Thank you for your letter dated June 16, 2020 inquiring whether the avocado (*Persea americana* Mill.) product described in your letter is a regulated article under 7 CFR part 340. Your letter describes CRISPR-Cas9 genome editing of avocado, to lower the activity of polyphenol oxidase (PPO), resulting in a non-browning phenotype.

The Plant Protection Act (PPA) of 2000 gives USDA the authority to oversee the detection, control, eradication, suppression, prevention, or retardation of the spread of plant pests or noxious weeds to protect the agriculture, environment, and economy of the United States.

USDA regulates the importation, interstate movement and environmental release (field testing) of certain organisms developed using genetic engineering that are, or have the potential to be, plant pests under 7 CFR part 340, "Introduction of Organisms and Products Altered or Produced Through Genetic Engineering Which Are Plant Pests or Which There Is Reason To Believe Are Plant Pests." Under the regulations, an organism is deemed a regulated article if it has been genetically engineered using a donor organism, recipient organism, or vector or vector agent that is listed in § 340.2 and meets the definition of a plant pest; or that is an unclassified organism and/or an organism whose classification is unknown, or if the Administrator determines that the organism is a plant pest or has reason to believe it is a plant pest.

In your letter, you describe your use of the CRISPR/Cas9 system to create targeted double-stranded breaks in the target gene in avocado. CRISPR/Cas9 reagent will be introduced by transfection of avocado protoplast cells with ribonucleoprotein complexes (RNP) consisting of purified Cas9 protein and synthetic guide RNA. Avocado plants will be regenerated from callus grown from the transfected protoplasts and screened molecularly for plants containing the targeted modifications. You further state that because no vector DNA is used in the RNP method, plants do not need to be screened for the absence of vector DNA.

Based on the representations you made in your letter, your genome edited avocado is not itself a plant pest and no plant pest sequences were integrated into the plant genome of avocado. Consistent with previous responses to similar letters of inquiry, USDA does not consider your genome edited avocado to be regulated pursuant to 7 CFR part 340.

Although your genome edited avocado is not regulated under 7 CFR part 340, other regulatory authorities may apply. For example, the importation of your avocado seeds or plants will be subject to applicable Plant Protection and Quarantine (PPQ), permit and/or quarantine requirements. For further information, should you plan to import these avocado seeds or plants, you may contact the PPQ general number for such inquiries at 877-770-5990. To inquire about the regulatory status of your product with the Environmental Protection Agency (EPA), please contact Alan Reynolds at 703-605-0515. To inquire about the regulatory status of your product with the Food and Drug Administration (FDA), please contact PlantBiotech@fda.hhs.gov.

Should you become aware at any time of any issues that may affect USDA's conclusion regarding this inquiry, you should immediately notify us in writing of the nature of the issue.

Sincerely,

August 6, 2020
Date

Bernadette Juarez.
APHIS Deputy Administrator
Biotechnology Regulatory Services
Animal and Plant Health Inspection Service
U.S. Department of Agriculture