United States Department of Agriculture

Animal and Plant Health Inspection Service

Biotechnology Regulatory Services

4700 River Road
Riverdale, MD
20737

Dr. Tim Ulmasov
Dr. Michaela McGinn
CoverCress, Inc.
1100 Corporate Square Dr., Suite 135
St. Louis, MO 63132

Re: Confirmation of the regulatory status of genome-edited CRISPR mutagenized *Thlaspi arvense* L. (pennycress) lines.

Dear Drs. Ulmasov and McGinn,

Thank you for your letter dated August 15, 2019, inquiring whether the pennycress (*Thlaspi arvense* L.) lines described in your letter are regulated articles under 7 CFR part 340. Your letter describes mutant pennycress lines obtained using CRISPR gene editing technology and traditional breeding methods resulting in the desired phenotypes claimed as confidential business information (CBI).

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 genetically engineered (GE) organisms that are, or have the potential to be, plant pests. Regulations for GE organisms that are, or have the potential to be, plant pests, under the PPA, are codified at 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 provisions of these regulations, a GE 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 GE organism is a plant pest or has reason to believe it is a plant pest.

In your August 15, 2019 letter, you describe the production process of your genome-edited CRISPR mutant pennycress lines and the intended phenotypes. Additionally, supporting evidence regarding the intended phenotypes was provided on August 20th, 2019 and November 11th, 2019. These genome-edited pennycress lines were obtained using a CRISPR/Cas9 DNA construct designed for targeted genome editing of three genes, using a disarmed strain of *A. tumefaciens* and a standard plant transformation method. The expression cassette introduced into the wild type pennycress lines contained the DNA elements necessary for gene editing and the expression of a visual marker, and included DNA from plant pests. As a result of the introduced CRISPR/Cas9 activity and the plant's error prone endogenous DNA repair mechanism, two mutant lines

were created that contained mutations at the targeted loci. Mutant lines containing no traces of the introduced construct were generated by traditional plant breeding methods.

Based on the information you provided in your August 15, 2019 letter and supporting material, USDA has concluded that your genome-edited mutant pennycress lines are not themselves plant pests. USDA has accepted your attestation that these genome-edited pennycress lines do not contain any deliberately inserted DNA sequences. Therefore, consistent with previous responses to similar letters of inquiry, USDA does not consider the genome-edited pennycress lines, as described in your August 15, 2019 letter, to be regulated pursuant to 7 CFR part 340. Additionally, pennycress is not listed as a Federal noxious weed pursuant to 7 CFR part 360, and USDA has no reason to believe that the intended phenotypes in your two pennycress lines would increase the weediness of pennycress.

Please be advised that the importation of seeds or plants from your genome-edited pennycress lines, like all other pennycress, will be subject to Plant Protection and Quarantine (PPQ), permit and/or quarantine requirements. For further information, should you plan to import these pennycress seeds or plants, you may contact the PPQ general number for such inquiries at (877) 770-5990.

Please be advised that your mutant pennycress lines, while not regulated under 7 CFR part 340 may still be subject to other regulatory authorities such as the U.S. Environmental Protection Agency (EPA) or the U.S. Food and Drug Administration (FDA). To inquire about the regulatory status of your product with the EPA, please contact Alan Reynolds at 703-605-0515. To inquire about the regulatory status of your product with the FDA, please contact Robert Merker at 240-402-1226.

Should you become aware at any time of any issues that may affect the Agency's conclusion regarding this inquiry, you must immediately notify the Agency in writing of the nature of the issue. We hope that you appreciate our commitment to plant health and support for the responsible stewardship for the introduction of GE plants.

Sincerely,

1/29/2020

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

Date